Contact Information

2025 Upper Columbia Regional Project Pre-Application

* Pre-applications (SRFB & Monitoring) due March 12, 2025 (COB)

*Complete SRFB applications due in PRISM April 18, 2025 (COB)

*Complete Monitoring applications due in PRISM May 1, 2025 (COB)

*Revised SRFB proposals due in PRISM May 27, 2025 (COB)

*Final revised SRFB & Monitoring applications due in PRISM June 23, 2025 (noon)

Project Title	CRM Riparian Stewardship Package
Sponsor	Cascade Fisheries (Lead Sponsor), Cascadia Conservation District (Co-sponsor), Trout Unlimited (Co-sponsor)
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Project Summary

Please provide a description or summary of the proposed project, including project goals. The goal of the project should be to solve identified problems by addressing the root causes. Then clearly state the desired future condition.

The Coordinated Resource Management (CRM) group, a partnership between Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited, submits this joint proposal to restore riparian and in-stream habitat across the Upper Columbia region. This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River. The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining ecosystems.

To achieve these goals, this project will focus on managing invasive plant species and noxious weeds, replacing unsuccessful plantings, increasing groundwater availability through in-stream structures, and supplementing sites with irrigation water as needed. Additionally, efforts will be directed toward improving the effectiveness and longevity of low-tech process-based restoration (LTPBR) in-stream habitat structures, such as Beaver Dam Analogs (BDAs) and Post-Assisted Log Structures (PALS), through annual maintenance, monitoring system response, and adaptive management based on observed responses.

Beavers create, maintain, and improve habitat that supports survival, capacity and/or distribution of salmonid species by creating ponds that store cool water, create rearing habitat, aggrade incised streams,

reconnect floodplains, and lower downstream turbidity. Every year, Trout Unlimited works with landowners and public agencies to keep beavers in place through education and various coexistence measures. When leaving beavers in place is not an option and those beavers would otherwise be lethally removed, Trout Unlimited will live trap beavers and relocate them to streams where they can create and restore quality salmonid habitat.

By addressing the root causes of habitat degradation, including reduced riparian vegetation, competition from invasive species, loss of in-stream complexity, removal of beavers, and diminished hydrologic processes and functions, this project will foster resilient riparian and aquatic ecosystems. The desired future condition is a network of stable, connected habitats with thriving native vegetation and beavers, improved water retention, and enhanced capacity to support fish and wildlife populations. Through continued stewardship, this project will ensure that restoration efforts achieve lasting ecological benefits and contribute to the long-term health of these watersheds.

What are the project objectives? Objectives support and refine biological goals, breaking them down into small steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). Note: This exact question is included in the PRISM application. Example format: The project seeks to address [specify limiting factor(s)] for [limiting life stage(s)] by [specific actions proposed] to create an estimated [include specific target metrics, as described below] upon implementation in [estimated year].

This project will achieve the following objectives:

- Riparian Vegetation Establishment: Restore and expand riparian vegetation communities to address shade cover and high stream temperatures for all salmonid life stages by providing stewardship and maintenance to over 21 acres of previously planted riparian habitat through managing invasive species, replacing unsuccessful plantings, and supplementing water (irrigation) to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems. The project will also improve conditions for riparian vegetation establishment through ponds created by released beavers.
- Invasive Species Management: Manage invasive plant species and noxious weeds across more than 21 acres of previously planted riparian habitat, to promote native vegetation establishment and riparian resilience.
- In-Stream Habitat Structure Maintenance: Maintain and enhance over 500 BDAs and 100 PALS across more than 11 miles of previously treated aquatic habitat by conducting annual inspections, routine structure maintenance, and adaptive management, to achieve self-sustaining stream processes that promote the formation of riparian communities and in-stream habitat for aquatic species.
- Beaver Relocation: Reintroduce beavers to 5 sites in Chelan and Douglas Counties. Based on linear beaver colony densities reported in the literature (Scrafford et al. 2018; Cox and Nelson, 2009; Boyce, 1980; Busher et al. 1983; Busher et al. 1983) we anticipate that every beaver family maintained in place has the potential to treat 0.9 – 1.6 km of stream with ecosystem benefits (instream habitat), so beaver relocation could result in a total of 4.5-8 km of maintained and improved instream habitat across 5 sites.
- Hydrologic Process Enhancement: Improve groundwater recharge, streamflow retention, and in-stream complexity by ensuring that BDAs, PALS, and relocated beavers are actively promoting natural stream processes (i.e. lateral floodplain connectivity, pool formation, sediment retention, etc.) as observed during routine structure maintenance over the 5-year term.
- Irrigation and Water Supplementation: Support riparian vegetation survival by supplementing sites with irrigation water as needed, ensuring soil moisture levels remain within optimal ranges during the driest months of the year, to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems.

* Project objectives are summarized across all 28 project sites. While each site has specific treatments and recovery goals, these objectives establish the common recovery goals shared across all project sites. Detailed site-specific objectives are not included in this pre-application to maintain clarity and focus on the unified restoration strategy.

Budget Request

Values MAY be duplicative and do not have to equal TOTAL anticipated budget in pre-application.

Anticipated Request - SRFB (standard round)	$620,000.00
Anticipated Request - SRFB Riparian Funding	$620,000.00
Tributary Committee - Anticipated or Actual	$200,000.00
Anticipated TOTAL Budget	$820,000.00

Project Location

Briefly describe the location of the project	This project will take place across 28 different project sites (14 “work sites” or stream systems) within the Wenatchee and Entiat Rivers, and the Columbia River Tributaries. A list of river miles (or length of stream affected for smaller streams) by site can be found in “Attachment A- Worksites and Properties Info”. Beaver Relocation work will take place in rivers and streams throughout Chelan and Douglas Counties.
Latitude (decimal degrees)	A list of Latitudes and Longitudes by site can be found in “Attachment A- Worksites and Properties Info”.
Longitude (decimal degrees)	A list of Latitudes and Longitudes by site can be found in “Attachment A- Worksites and Properties Info”.
Project subbasin	Multiple Subbasins

Please explain why there are multiple subbasins

This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River.

Does the proposed project span multiple assessment units?	Yes
List the additional assessment units directly impacted by this proposal.	There are 10 total Assessment Units associated with the project sites proposed in this project. The Columbia River Tributaries do not have a designated AU. A list of AUs by site can be found in “Attachment A- Worksites and Properties Info”.
Reach(es) Name	The projects included in this proposal take place across 14 different defined reaches. However, there are 16 project sites that occur in reaches that have not yet been defined. A list of reaches by site can be found in “Attachment A- Worksites and Properties Info”. Beaver relocation and coexistence will take place as needed on public and private land in collaboration with landowners and land managers.
Identify the reach(es) priority/ reach ranking. Note: If the project involves work in multiple reaches, select "Multiple" and include details in the text box that will appear below. Please reference the Prioritization Web Map: https://prioritization.ucsrb.org/.	Multiple reaches (provide details below)

Please detail the reach-ranking of the reaches below

The projects included in this proposal take place across 14 different defined reaches. However, there are 16 project sites that occur in reaches that have not yet been defined.

A list of reaches by site can be found in “Attachment A- Worksites and Properties Info”.

Beaver relocation and coexistence will take place as needed on public and private land in collaboration with landowners and land managers.

Project Information

1. What species will the project benefit?

Spring Chinook | Steelhead | Bull Trout | Summer Chinook | Coho, Sockeye, Lamprey, westslope cutthroat

2. Select the project's objectives and the associated tracking metrics

Instream Habitat (Includes Floodplain & Off-Channel Reconnection) | Riparian Habitat

Instream Habitat: Reporting Code

Total miles of instream habitat treated | Number of beavers | Number of structures placed in channel

Riparian Habitat: Reporting Code

Total riparian miles streambank treated | Total riparian acres treated

4. Does this project already exist in Salmon Recovery Portal or PRISM?

No

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

No

6. What category is the project?

Restoration

If applicable, what is the secondary project category?

Restoration

Is the project eligible for Riparian Funding?

Yes

Design and Restoration Proposals

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)?

12 of the 28 project sites included in this proposal fall within defined reaches. Those reaches will likely have had Reach Assessments completed for them to some degree. It is unknown to the sponsor if the other 16 project sites have completed or soon-to-be-completed Reach Assessments. UCSRB's Prioritization Web Map does not name the assessments performed to gather reach data.

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

Cover - Wood
Flow - Summer Base Flow
Off-Channel - Floodplain
Riparian
Riparian - Canopy Cover
Riparian - Structure
Temperature - Adult Holding
Temperature - Adult Spawning
Temperature - Rearing

10. Which life stages will the proposed project address?

Subadult Rearing (Bull Trout)
Fry
Spawning and Incubation
Summer Rearing
Winter Rearing

11. Freshwater Benefits - Describe how your project will improve survival, capacity and/or distribution for target species at the reach scale?

Several native aquatic species are threatened, endangered, or a species of concern in the Wenatchee, Entiat, and upper Columbia watersheds. These species include steelhead (Oncorhynchus mykiss), spring Chinook salmon (Oncorhynchus tshawytscha), bull trout (Salvelinus confluentus), Pacific lamprey (Entosphenus tridentatus) and Westslope cutthroat trout (Oncorhynchus clarkii lewisi). Coho salmon (Oncorhynchus kisutch), a reintroduced species of cultural importance to both the Yakama Nation and the Colville Confederated Tribes, and sockeye salmon (Oncorhynchus nerka), are also present in the Wenatchee watershed. Much of the region's available restoration funding is directed towards habitat restoration with a focus on increasing channel structure, off-channel habitat, habitat complexity and heterogeneity, and water quality within the mainstem river and side channel anadromous zones (UCSRB 2020). Comparatively few restoration dollars are directed upstream to address root causes of anadromous zone degradation. This includes reduced seasonal streamflow caused by rapid conveyance of water through disconnected and incised stream channels in headwater streams, as well as the excess sediment and nutrient transport from low order tributaries after disturbance events and legacy degradation (Powers et al. 2018). The majority of project sites in this proposal within WRIAs 45, 46, and 44 are in lower order streams within the upper extent of the active anadromous zone. The process-based restoration projects included in this proposal, that were previously implemented by the CRM, to increase structure, habitat complexity, and reconnection with floodplains are providing multiple essential benefits to onsite and downstream anadromous habitat and salmonids by:

1. Reducing erosive stream power emanating from degraded and incised headwater streams (Pollock et al. 2014, Wheaton et al. 2019)
2. Reducing large scale debris, sediment, and nutrient transport during disturbance events (Beechie et al. 2010, Wohl et al. 2018).
3. Increasing water residency time in headwater basins through the reconnection of streams with floodplains, recharging groundwater (Wohl et al. 2018, Wohl et al. 2019).
4. Slowing the groundwater return downstream of floodplain inundation moderates stream temperatures

in all seasons, cooling streams in the heat of summer and warming them in the depths of winter, both critical to salmon across life stages (Bouwes et al. 2016, Majarova et al. 2019)
5. Slowing conveyance of water through headwater basins, increasing late season stream baseflows, and moderating annual baseflows (Yokel et al. 2018, Wheaton et al. 2019).

Riparian restoration projects provide critical freshwater benefits to our region's target species throughout their life stages by enhancing habitat complexity, regulating water temperature, and stabilizing streambanks. Riparian vegetation improves instream habitat by increasing the future recruitment source of large woody debris, which creates pool habitat and cover that is essential for juvenile rearing and predator avoidance (Roni et al. 2002). The shading provided by mature riparian canopies helps moderate stream temperatures, which is particularly vital for thermally sensitive species such as bull trout (Salvelinus confluentus) and spring Chinook salmon (Oncorhynchus tshawytscha) (Poole & Berman 2001). Additionally, riparian root systems reduce sediment transport and improve substrate quality, benefiting egg incubation and early fry development by maintaining suitable interstitial flow and oxygen levels in spawning gravels (Naiman et al. 2005). The increased habitat complexity from floodplain reconnection and side channel formation further supports juvenile fish by providing low-velocity refugia during high-flow events, improving survival rates across various life stages (Beechie et al. 2010). By restoring riparian function, these projects address both local and downstream habitat conditions, supporting the long-term resilience of anadromous and resident fish populations in degraded freshwater systems.
Research has demonstrated how beavers create, maintain, and improve habitat that support survival, capacity and/or distribution of all life stages of salmonid species:
1. Beaver ponds retain surface water, store cool water, and elevate water tables to enhance base flows and promote aquifer recharge. (Naiman, Johnston and Kelley, 1988 and Dittbrenner et al. 2022)
2. Ponds offer habitat for salmonids and other aquatic/terrestrial species including invertebrate food sources, and lower downstream turbidity. (Pollock et al., 2004)
3. Beaver dams and BDAs increase stage to aggrade incised streams, reconnect streams with floodplains, and create critical off-channel habitat. (Bouwes, et al., 2016)
4. Beaver activities attenuate flooding and sediment transport. (Rosell and Parker, 1996)
5. Beaver habitats create natural fire breaks and refugia and increase riparian vegetation fire resistance. (Fairfax and Whittle, 2020)
6. Beavers recruit woody debris to the stream system. (Orr, et al., 2020)

Benefits to other aquatic and riparian dependent species: All native aquatic and riparian dependent species that evolved in WRIA 45 and 46 are challenged by current conditions of watershed degradation, changing precipitation patterns, and a warming climate. Riparian areas and their streams hold some of the most complex and biodiverse ecosystems around the world and the majority of all freshwater and terrestrial species are dependent upon riparian/aquatic systems for some stage of their life cycle, if not the entirety (Abell, Robin, et al. 2008, Naiman et al. 1993). LTPBR and riparian planting provide immense value by returning water to the riparian floodplain and helping maintain wetted conditions across a greater proportion of valley widths throughout these watersheds. This broad scale wetting would exponentially increase habitat conditions conducive to diverse life and restore resiliency into our ecosystems (Wheaton et al. 2019). This resilience will enable faster recovery from ongoing climate exacerbated weather events. A number of riparian and aquatic species are currently at risk and would benefit from broad watershed LTPBR actions to improve habitat quantity and quality: state ESA listed endangered greater sage-grouse (Centrocercus urophasianus), several species of freshwater mussels, many bat species including the spotted bat (Euderma maculatum), Townsend's big eared bat (Corynorhinus townsendii), and little brown bat (Myotis lucifugus) and amphibians including the Columbia spotted frog (Rana luteiventris) are candidate species for at risk listing in WA (ISSSSP 2020, WDFW 2020).

The 28 project sites included in this proposal fall across 10 different Assessment Units (AUs) within the Wenatchee and Entiat watersheds. Due to the majority of included project sites occurring in lower order streams within the upper extent of the active anadromous zones of WRIAs 45 and 46, many of the project sites do not have associated reaches that have been defined. 12 of the 28 project sites included in this proposal fall within defined reaches. Out of those 12 projects (covering 14 reaches), 8 reaches have had the necessary information collected to allocate priority rankings for restoration on the UCSRB prioritization list.
These 8 reaches are listed here by rank:
- Rank 1:

- Nason Creek Lower 10
- Peshastin Creek Lower 01
- Alder Creek 01
- Rank 2:
- Peshastin Creek Lower 03
- Chumstick Creek 02
- Roaring Creek 03
- Rank 3:
- Wenatchee River Ollalla 01
- Stromy Creek 01

Though there are no defined ranks associated with the majority of the project sites included within this proposal, these projects still provide multiple essential benefits to the region's priority species at multiple life stages within these systems, and extend to downstream systems and their associated life stages. These projects were originally identified by the CRM group to address the limiting factors that exist within our priority species' habitats, supported by funding from various partners, and have been implemented by the CRM partners utilizing process-based restoration techniques (primarily LTPBR methods) and riparian restoration.

The overarching goal of this proposal is to restore riparian communities through continued stewardship and to restore structure to tributary streams through the maintenance of LTPBR actions and reintroduction of beavers, addressing the many forms of habitat degradation in WRIAs 45, 46, and 44. The restoration projects included in this proposal provide freshwater benefit in these systems, with regards to the way that riparian planting, LTPBR, and beaver reintroduction projects address the historic loss of habitat and habitat forming processes. Our project follows Castro & Thornes' "stream evolutionary model" that includes hydrology, geology, and biology, with biology being the active agent for the change and healing of watersheds (2019). By providing the necessary inputs to restore the normative hydraulic, geomorphic, and biological processes present within stream ecosystems, we aim to improve survival, capacity, and distribution for the region's target species.

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

This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in concert with beaver reintroduction across the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River. The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining ecosystems. The included projects integrate varying degrees of low-tech process-based restoration (LTPBR) techniques, beaver relocation, and riparian planting to create a powerful, holistic approach to restoring stream ecosystems and watershed functions. These efforts work together to address hydrological, geomorphic, and ecological processes that sustain resilient river systems. However, while these restoration techniques set the foundation for recovery, active stewardship and maintenance are crucial in the first few years after implementation to ensure long-term success and self-sustainability.

1. Hydrological Process Restoration
a. Floodplain Reconnection: LTPBR techniques (e.g., BDAs, PALS, wood supplementation, and side-channel reactivation) and natural beaver dam complexes slow down high flows, promoting floodplain inundation and restoring groundwater recharge.
b. Water Retention & Baseflow Improvement: Reconnected wetlands and riparian zones store water during wet seasons and release it slowly over dry periods, ensuring sustained baseflows in drought conditions.
c. Stormwater Attenuation: Increased floodplain roughness, in-stream structure (BDAs, PALS, woody material, natural beaver dams), and vegetation help slow floodwaters, reducing peak flows and protecting downstream communities.
2. Geomorphic Process Restoration
a. Bank Erosion Control: Native vegetation (e.g., willows, cottonwoods, and sedges) stabilizes banks with deep roots, reducing collapse and sediment runoff.
b. Sediment Balance & Channel Stability: In-stream structures (BDAs, PALS, woody material, natural beaver dams) and riparian vegetation reduce excessive sediment erosion while allowing natural

deposition that helps form riffles, pools, and stable banks.
c. Encouraging Channel Evolution: Streambank plantings, floodplain restoration, and beaver reintroductions promote the natural stream processes that encourage channels to evolve and change through time, leading to the formation of more complex and sinuous channels, creating diverse habitats and enhancing water storage capacity. Additionally, beavers excavate side channels to access food and habitat, enhancing this effect.
3. Ecological and Biological Process Restoration
a. Temperature & Oxygen Regulation: Riparian trees shade the stream's surface, preventing excessive heating from solar radiation and ambient air, which is crucial for temperature sensitive salmonids and other aquatic species. In-stream structures and beaver dams raise the water table and increase base stream flow, which increases the density and growth rate of riparian trees.
b. Habitat Enhancement: In-stream structures (BDAs, PALS, woody material, natural beaver dams) and riparian vegetation create diverse aquatic and terrestrial habitats for aquatic and terrestrial species, providing foraging opportunities and cover from predators.
c. Nutrient Cycling & Food Web Support: Leaf litter and organic matter from riparian plants, as well as accumulated sediment from in-stream structures and natural beaver dams, fuel aquatic food chains, benefiting macroinvertebrates and fish populations.

13. Temporal Effect - How long will it take for the project to achieve its intended response?

Less than or equal to 1 year | 1-10 years

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

Less than 10 years | 10-50 years | 50+ years

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

This proposal focuses on the stewardship and maintenance of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River.

Riparian Plant Stewardship: Of the 28 project sites included in this proposal, 16 sites included riparian planting as a project component during initial implementation. The sources of funding used to implement those projects have since, or will soon expire, leaving these sites without proper stewardship before the plants have adequately been established. Newly planted riparian vegetation requires active stewardship for 3-5 years, including watering (irrigation), mulching, and invasive species/noxious weed management, to ensure survival and the establishment of deep root systems. Stewardship of these riparian project sites allows for continued observations to track the development of riparian communities, and to replant or adaptively manage for plant mortality.

LTPBR structure maintenance: Of the 28 project sites included in this proposal, 24 sites included LTPBR methods as a project component during initial implementation. The sources of funding used to implement those projects have since, or will soon expire, leaving these LTPBR structures (BDAs and PALS) without proper maintenance before the normative stream processes have become established within the system. The longer that LTPBR structures are maintained, the higher the chance of success of restoring normative stream processes, and for those processes to become self-sustaining into the future.

BDAs require annual maintenance and inspection for the first 5 years after implementation and every other year after (up to 10 years post-implementation), to add more material and support to the structures that may have been lost due to seasonal conditions and/or high-flow events. Additionally, BDAs are constructed using natural, untreated materials that may begin to biodegrade at varying rates and need to be supplemented to maintain the structure's form and function.
Maintenance actions could include:
- Adding additional "weave" material to create a tight seal on a BDA's pond.
- Replacing the posts used for structure stability, if they have been lost or become degraded.
- Altering the size and shape of structures depending on the site conditions and the effectiveness of the treatments. (i.e. extending structure length/width, extending structure height, reinforcing structure,

etc.)
PALS require annual inspection and may require some level of maintenance from year-to-year, for the first 3-5 years after implementation. This is to evaluate the structure's integrity and to determine if it needs to be altered, due to seasonal conditions and/or high-flow events that jeopardized it's integrity. PALS are constructed using natural, untreated materials that may begin to biodegrade at varying rates and need to be supplemented to maintain the structure's form and function.
Project sites will be adaptively managed based on outcomes and effectiveness of LTPBR treatments (i.e. new structure placement, structure removal, structure "abandonment"). BDAs and PALS will be evaluated on their progress with regards to structure, complex (set of structures), and site goals.

One goal of maintaining BDAs and PALS on these projects is to create conditions that attract beavers to the site or that are favorable for relocation of beavers, who can take over the maintenance of the structures and the site, stewarding the normative stream processes into the future. Beavers maintain their dams daily and adaptively manage their habitats based on the site conditions, providing a level of maintenance and stewardship that is impractical for humans to replicate. Put simply, beavers do it better. However, beavers are unpredictable factors in the overall ecosystem, and it cannot be determined when or if beavers will colonize a site. Due to land use activities and goals, existing infrastructure, and public perception, it is not feasible to assume that beaver colonization is the end-goal at every LTPBR project site.

Beaver Relocation: Relocated beavers maintain beneficial stream conditions and enhance degraded sites. Beavers can restore degraded sites on their own or expand upon and maintain previously restored sites. TU monitors relocation sites after releasing beavers at least three times, one month post release, once in the fall following the release, and once in the spring following the release, to assess whether beavers have remained at the relocation site and whether additional releases may be advisable. TU uses game cameras and pit tags to track relocated beaver movement through watersheds and relies on a variety of resources to keep track of beaver occupancy throughout local watersheds. WDFW requires on the ground relocation site assessments for every beaver relocation, and sites must score highly enough to support beaver reintroduction.

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

As previously stated, this proposal focuses on the stewardship and maintenance of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River and beaver relocation in Chelan and Douglas Counties. The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining ecosystems.

To achieve these goals, this project will focus on managing invasive plant species and noxious weeds, replacing unsuccessful plantings, increasing groundwater availability through in-stream structures, relocating beavers, and supplementing sites with irrigation water as needed. Additionally, efforts will be directed toward improving the effectiveness and longevity of low-tech process-based restoration (LTPBR) in-stream habitat structures, such as Beaver Dam Analogs (BDAs) and Post-Assisted Log Structures (PALS), through annual maintenance, monitoring system response, adaptive management based on observed responses and reintroduction of beavers as appropriate.

Methods to achieve project objectives are:
- Riparian Vegetation Establishment: Restore and expand riparian vegetation communities to address shade cover and high stream temperatures for all salmonid life stages by providing stewardship and maintenance to over 21 acres of previously planted riparian habitat through managing invasive species, replacing unsuccessful plantings, and supplementing water (irrigation) to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems. The project will also improve conditions for riparian vegetation establishment through ponds created by released beavers.
- Invasive Species Management: Manage invasive plant species and noxious weeds across more than 21 acres of previously planted riparian habitat, to promote native vegetation establishment and riparian resilience.
- In-Stream Habitat Structure Maintenance: Maintain and enhance over 500 BDAs and 100 PALS across

more than 11 miles of previously treated aquatic habitat by conducting annual inspections, routine structure maintenance, and adaptive management, to achieve self-sustaining stream processes that promote the formation of riparian communities and in-stream habitat for aquatic species.

- Beaver Relocation: Reintroduce beavers to 5 sites in Chelan and Douglas Counties. Based on linear beaver colony densities reported in the literature (Scrafford et al. 2018; Cox and Nelson, 2009; Boyce, 1980; Busher et al. 1983; Busher et al. 1983) we anticipate that every beaver family maintained in place has the potential to treat 0.9 – 1.6 km of stream with ecosystem benefits (instream habitat), so beaver relocation could result in a total of 4.5-8 km of maintained and improved instream habitat across 5 sites. TU conducts outreach and responds to beaver conflict calls and works with landowners and managers to identify suitable coexistence solutions and relocation sites. When suitable coexistence options cannot be found, TU conducts live trapping and when successful, processes and temporarily houses beavers at their acclimation facility for up to two weeks, until all family members are captured. TU prepares the release site in advance and then relocates the beaver to the previously identified site. Relocated beavers are monitored using game cameras and a minimum of three post-release site visits are conducted.
- Hydrologic Process Enhancement: Improve groundwater recharge, streamflow retention, and in-stream complexity by ensuring that BDAs, PALS, and relocated beavers are actively promoting natural stream processes (i.e. lateral floodplain connectivity, pool formation, sediment retention, etc.) as observed during routine structure maintenance over the 5-year term.
- Irrigation and Water Supplementation: Support riparian vegetation survival by supplementing sites with irrigation water as needed, ensuring soil moisture levels remain within optimal ranges during the driest months of the year, to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems.

17. If the project is eligible and applying for Riparian Funding, does the project have in-stream components? If so, briefly describe those components, how they support riparian plant survival and/or natural regeneration, and why they are necessary for the success of the riparian habitat elements of the project.

This proposal focuses on the stewardship and maintenance of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River and beaver relocation in Chelan and Douglas Counties. The in-stream components that were previously implemented across these project sites aim to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining riparian and aquatic ecosystems.
The in-stream components on these projects are process based restoration structures, primarily LTPBR structures (BDAs, PALS, woody materials). These in-stream structures support riparian plant survival by:

1. Slowing down high flows, promoting floodplain inundation and increasing groundwater recharge.
2. Providing structure to aggrade sediment, which reverses channel incision and decreases bank erosion.
3. Promoting the lateral flow of water, reconnecting wetlands and riparian zones, which increase the storage of water during wet seasons and release it slowly over dry periods, ensuring sustained baseflows in drought conditions.
4. Raising the water table and increasing base stream flow, which increases the density and growth rate of both riparian plantings and the natural regeneration of riparian vegetation.
5. Kick-starting the natural stream processes that encourage stream channels to evolve and change through time, leading to the formation of more complex and sinuous channels, and subsequently the formation of larger riparian communities. Additionally, beavers excavate side channels to access food and habitat, enhancing this effect.

Many of the project sites included in this proposal are in remote locations where supplementing the riparian plants with water may not be feasible. The in-stream habitat structures provide the benefits listed above, increasing the residence time and storage of water already in the system to provide water to riparian plants during the dry season, and promoting the natural recruitment of riparian vegetation due to these wetter conditions. The maintenance of these project's in-stream structures is critical to ensuring that the normative stream processes develop in these systems, which provide the wet conditions that the associated riparian plants need to survive and establish.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

Landownership across all 28 project sites included in this proposal is a mix of Private and Public (state and federal) lands. A list of landownerships by site can be found in "Attachment A- Worksites and Properties Info". Beaver relocation and coexistence work takes place as needed on public and private land. TU conducts outreach and responds to beaver conflict calls, and works with landowners and land managers to identify suitable relocation sites.

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

Yes

Please explain

Landowner participation or acceptance of the projects included in this proposal has already been acquired during previous phases of each project (development, design, and implementation). As this proposal is for stewardship and maintenance at these project sites, current landowner agreements between the project sponsors and the various project landowners are still active, which details the stewardship and maintenance of project activities for 10 years post-implementation.

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

Landownership across all 28 project sites included in this proposal is a mix of Private and Public (state and federal) lands. Any landowner requirements that may exist are the responsibility of the CRM partner (Cascade Fisheries, Cascadia Conservation District, or Trout Unlimited) that is the project lead on the various project sites.
Landowners that have known requirements are as follows:

- United States Forest Service- requires project agreements and consultation with Forest Service staff during project design, permitting, and implementation.
- WA Dept. of Transportation- requires that a right of way be maintained during project actions.
- Dept. of Natural Resources- requires a Land Use License to be issued that covers project actions.
- Washington Department of Fish and Wildlife- requires landowners to notify neighboring property owners and sign a Landowner Attestation Form prior to having beavers released on their properties.
- United States Forest Service- requests to review all potential relocation sites on National Forest land prior to beaver trapping and release.

As these requirements have all been met during the initial implementation of these projects, we do not anticipate any effect on this project.

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

No, this project will not raise concerns for interest groups or the community at large. As this project focuses on stewardship and maintenance of previously implemented projects, impacts to interest groups or the community would have been considered during design and planning, and addressed before the implementation of each project.

These projects represent a continued commitment to environmental health and are a benefit to the natural spaces this community lives in and relies upon for resources, recreation, and intrinsic value.

Trout Unlimited provides valuable assistance to local landowners and land managers facing challenges

with beavers and seeks coexistence solutions or relocates beaver to sites where they will provide valuable stream and habitat benefits and are not anticipated to create future challenges. In the event that relocated or naturally occurring beavers create issues for landowners or managers, TU responds quickly to address the concern. Beavers are primarily relocated from sites where they are in conflict with landowners (falling orchard trees, causing flooding, damming culverts, etc.), to sites high in watersheds, typically on public land, far from neighboring landowners.

The CRM provides multiple opportunities for the public and youth to be involved and also informed of our stream and streamside restoration efforts, Including: WRI Birdfest tours, fall and spring tours, community tabling events, Salmon Recovery Series with the NCW Library, social media campaigns for each organization, printed materials, the CCD quarterly newsletter to all Chelan County residents, direct outreach and education with youth such as Entiat, Wenatchee, and Leavenworth Schools (Kids in the Creek, Kids in the Forest, Kids in the Snow, field trips and hands-on learning at restoration sites, etc.). These events garner a large degree of community support and interest for our restoration projects.

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

Managing and maintaining the various projects will be the responsibility of Cascade Fisheries, Cascadia Conservation District, or Trout Unlimited, whichever organization is the lead on any given project site. Project components on both private and public lands are property of the landowner after implementation, but the lead organization for that project is responsible for maintaining the project components for a time period specified in the landowner agreement. Past the end of the project or landowner agreement, any further management and maintenance are dependent on landowner willingness, continued funding, and project needs. Landowner agreements generally define participation from the landowner for 10 years from the date the agreement was signed, to allow for the lead organization and permitting agencies to return to perform maintenance, monitor project performance, and evaluate project compliance with associated permits. The landowner cannot remove or alter project components during the life of the landowner agreement and is required to provide the landowner agreement as a sales contingency if selling the property that the project is on.

6. Are other projects being proposed immediately upstream or downstream of worksite?

Yes

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

As this project focuses on stewardship and maintenance of previously implemented projects, the risk of failure would have been considered during design and planning, and addressed before the implementation of each project. There is little to no risk of failure for the projects included in this proposal, with regards to the actions that this project will perform.
This project's goal is to reduce the risk of failure of the projects included in this proposal, through the stewardship and maintenance of riparian planting sites and LTPBR structures as well as beaver relocation. This project ensures that the restoration efforts initiated in these projects achieve lasting ecological benefits and support the long-term health of these watersheds. Additionally, this project is designed to safeguard the original investment made in implementing these restoration efforts.
Beavers are wild animals and may move to other locations within release streams or watersheds after they are relocated. Regardless of where they choose to reside, relocated beavers will create habitat and restore degraded streams within Upper Columbia River watersheds. In the event that relocated or naturally occurring beavers create issues for landowners or managers, TU responds quickly to address the concern. TU monitors release sites post relocation and, if it is determined that beavers have not settled within one mile of the release site, that site becomes a viable candidate for future relocations, which will add genetic diversity to local beaver populations.

One of the important functions of the CRM is to provide a depth of staff and resources that span three organizations, each having their own unique skillsets, knowledge, experiences, relationships, tools, and other resources. No organization or agency is immune to loss of staff or funding, but as a CRM we have been able to successfully utilize the strengths and the redundancy of having multiple field crews, multiple

staff with project management skills, and a robust level of relationships with community members. This has allowed us to nimbly adapt to unforeseen challenges at the individual project level as well as the grant funding and permitting levels. We work almost interchangeably on each other's projects, allowing us to overcome every challenge we've faced since the inception of the CRM in 2019. We likewise feel confident in our ability to meet future challenges, anticipated or not. From the perspective of the CRM, we consider this proposal to be of relatively low risk.

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

The stewardship and maintenance of riparian planting sites and LTPBR structures, as well as beaver coexistence and relocation, provide our organizations with valuable opportunities to engage the public through outreach events, educational opportunities, and site visits. By actively managing these sites, our organizations can host volunteer workdays, educational tours, and hands-on restoration activities, allowing community members, school groups, and other interest groups to participate directly in conservation efforts and contribute to their community. These projects serve as a platform for immersive environmental education lessons, where participants can learn about watershed health, habitat restoration, and the importance of beaver and riparian ecosystems in supporting salmon populations.

Additionally, restoration projects located on publicly owned properties create accessible spaces for the community to recreate, explore, and strengthen their connection to the local environment. As these areas are restored and maintained, they provide opportunities for hiking, wildlife observation, and other outdoor activities that encourage a deeper appreciation for nature. By fostering public involvement and demonstrating the long-term benefits of habitat restoration, these projects help build strong community support for salmon recovery efforts, cultivate environmental stewardship, and inspire continued investment in conservation initiatives.

Furthermore, these project sites serve as demonstration areas where prospective private landowners can observe the types of restoration projects our organizations can provide and the potential ecological and aesthetic benefits that could be realized on their properties. By seeing firsthand how these efforts enhance habitat, improve water quality, and support wildlife, landowners may be more inclined to partner with organizations like us to implement similar projects on their land, expanding the reach and impact of restoration initiatives.

Beavers are charismatic animals that capture the imagination of people young and old. The Wenatchee-Entiat Beaver Project acclimation facility at the Leavenworth National Fish Hatchery draws locals and tourists alike to view the animals as they are being held prior to release. There, they learn about beavers and their relationship to salmon recovery by interacting with Beaver Project staff and interpretive signage. TU conducts community outreach and landowner education through beaver coexistence efforts. Landowners are often eager to engage neighbors who are having conflicts with beavers, thus expanding the program's reach. This outreach and interest in beavers more generally provides opportunities to discuss the interrelated nature of beaver reintroduction and salmon recovery with a diverse array of community members.

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

This project presents a significant economic opportunity by supporting local organizations, creating jobs, enhancing property values, stimulating local businesses, preventing property or crop damage, and reducing long-term resource management costs. By financially supporting the local organizations leading this proposal (Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited) this project ensures sustainability of restoration efforts while also funding full time staff and seasonal technician positions. These positions create opportunities for professionals to gain hands-on experience in natural resource management, fostering career growth and workforce development within the local economy.

Investing in the stewardship of riparian and restoration sites and addressing beaver conflicts on private, state, and federal lands benefits property owners by improving land values and alleviating management burdens. Healthy, well-maintained landscapes contribute to the renewal and sustainable use of natural

resources, reducing long-term costs associated with land degradation. Additionally, this project stimulates the local economy by directing funds toward businesses such as native plant nurseries, hardware stores, and natural resource contractors, strengthening regional supply chains and supporting small businesses.

By integrating with forest health practices and wildfire fuels reduction, this project also plays a role in reducing the risks of wildfire and the smoke created from burn piles by using excess fuels such as trees, branches, and slash in restoration work. This contributes to the creation of green firebreaks, enhances water retention in the landscape, lowers future emergency response and recovery costs, and bolsters economic activities that would otherwise be hindered by smoke. Additionally, maintaining native vegetation on restoration sites helps control the spread of invasive species, reducing the economic burden noxious weeds place on local agriculture and minimizing the costs associated with weed management programs.

Trout Unlimited provides valuable assistance to local landowners and land managers facing challenges with beavers. TU works with landowners and managers to provide free coexistence and live trapping services. Beavers are primarily relocated from sites where they are falling orchard trees, causing flooding, or damming culverts, among other impacts, potentially causing expensive damage, to sites where they can provide ecosystem benefits without conflicting with landowners. Additionally, TU has developed partnerships with Douglas Public Utility District's Wells Dam and the United States Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services to expand relocation efforts through acquiring beavers trapped by these agencies for relocation to high priority sites. As such, this project turns a potential economic burden into a positive force for salmon habitat restoration.

Ultimately, this project maximizes the return on each dollar invested by ensuring that restoration efforts continue to provide ecological, economic, and community benefits. Through job creation, local business support, land value enhancement, and reduced long-term public and private expenditures, this project serves as a cost-effective and sustainable investment in our region's environmental and economic health.

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

The Coordinated Resource Management (CRM) group is a formal partnership between Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited. Established in 2019, the CRM partners collaborate to leverage their unique resources, expertise, and opportunities in pursuit of shared missions and values, with a focus on salmon recovery in and around Chelan County. The group's mission is to create a network of healthy, connected tributaries that provide crucial habitat and climate refugia to native fish populations. These partners work closely to develop, plan, design, and implement salmon recovery projects throughout the region by employing LTPBR practices, fish barrier corrections, side-channel and floodplain reconnection projects, as well as beaver relocation and coexistence strategies. Thanks to support from the US Bureau of Reclamation, the CRM has been able to enhance and expand the ways this partnership benefits each organization's mission and increases their capacity to implement additional salmon recovery projects.

The CRM is further strengthened by its partnerships with various Federal and State agencies that collaborate on project development, design, planning, permitting, and implementation. These agencies include:

- Federal
  - US Bureau of Reclamation
  - US Forest Service
  - US Fish and Wildlife Service
  - National Resources and Conservation Service
  - Bureau of Land Management
- State
  - WA Department of Fish and Wildlife
  - WA State Conservation Commission
  - Department of Ecology
  - Department of Natural Resources

The CRM collaborates closely with these agencies to ensure that the many projects we perform align with

our shared goals of fish and wildlife recovery throughout the region. The support we receive from these partners takes many forms, including new project ideas, project funding, design review, consultation, permitting guidance, resource and equipment sharing, and even providing staff to help implement projects. The knowledge, expertise, and support exchanged between these sectors forge powerful connections that drive this important work forward. This collaborative network empowers us to produce higher-quality results at a faster pace, breaking down the silos that traditionally exist between organizations. Together, we are united in our mission to restore the precious natural resources we are dedicated to conserving, protecting, and restoring.

Optional Section - Preparation for PRISM (SRFB applications only)

The following questions are identical to the questions RCO requires in the PRISM application for SRFB projects. If desired, sponsors can complete associated questions early and copy responses into PRISM during the "Complete Application" phase due on April 18, 2025.
*please note, this section is not applicable for Monitoring proposals

Do you want to review and/or pre-populate PRISM questions?	No

Supporting Documents

Upper Columbia Process Guide 2025

SRFB Manual 18 (2025)

RCO Application Resources (2025)

PROJECT: 25-1217 REST, CRM RIPARIAN STEWARDSHIP PACKAGE

Sponsor: Cascade Col Fish Enhance Group Program: Salmon State Riparian Status: Application Submitted

Parties to the Agreement

PRIMARY SPONSOR

Cascade Columbia Fisheries Enhancement Group
Address PO Box 3162
City Wenatchee **State** WA **Zip** 98807
Org Type Non-Gov-Reg Fisheries Enhance Group
Vendor # SWV0010742-00
UBI
Date Org created
Org Notes

link to Organization profile
✓Org data updated (by Amee Bahr 04/28/2025)

SECONDARY SPONSORS

Cascadia Conservation District
Address 1350 McKittrick St, Suite B
City Wenatchee **State** WA **Zip** 98801
Org Type District-Conservation
Vendor # SWV0024685-00
UBI
Date Org created
Org Notes

link to Organization profile
☐Org data updated

Trout Unlimited - Washington Water Project
Address 103 Palouse, Ste 14
City Wenatchee **State** WA **Zip** 98801
Org Type Non-Gov-Nonprofit
Vendor # SWV0050369-00
UBI
Date Org created
Org Notes

link to Organization profile
☐Org data updated

QUESTIONS - SECONDARY SPONSOR

#1: What date was your organization created?

1959

#2: Is your organization registered as a non-profit with the Washington Secretary of State?

Yes

#2a: Please confirm the Unified Business Identifier (UBI) shown above is correct or provide if blank.

602 988 374

#3: How long has your organization been involved in salmon and habitat conservation?

>10 years

#4: Do your organizational documents (charter, bylaws, or articles of incorporation) include the authority for the protection or enhancement of natural resources or related activities?

Yes

#5: Do your organizational documents (charter, bylaws, or articles of incorporation) provide for an equivalent successor organization in case the nonprofit dissolves?

Yes

MANAGING AGENCY

Recreation and Conservation Office

LEAD ENTITY

Upper Columbia Salmon Rcy Bd L

QUESTIONS

#1: List project partners and their role and contribution to the project.

The Coordinated Resource Management (CRM) group, a partnership between Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited, submits this joint project to restore riparian and in-stream habitat across the Upper Columbia region. Each of these project partners is responsible for performing stewardship and maintenance at sites that they have previously implemented projects at, and will be the lead sponsor for their respective projects.

External Systems

SPONSOR ASSIGNED INFO

Sponsor-Assigned Project Number

Sponsor-Assigned Regions

LINK AN EXISTING SRP PROJECT

Unlink

25-1217, CRM Riparian Stewardship Package, Salmon St

Project Contacts

Contact Name Primary Org	Project Role	Work Phone	Work Email
Amee Bahr Rec. and Conserv. Office	Project Manager	(360) 867-8585	Amee.Bahr@rco.wa.gov
Doran Lower Rec. and Conserv. Office	MAgy Fiscal Contact	(360) 902-3007	doran.lower@rco.wa.gov
Phillip Klenke Cascade Col Fish Enhance Group	Project Contact	(509) 670-7411	phillip@ccfeg.org
Ariel Edwards Upper Columbia Salmon Rcy Bd L	Lead Entity Contact	(208) 540-2691	ariel.edwards@ucsrb.org
Alexandra Harwell Cascadia Conservation District	Secondary Sponsor Contac		alexh@cascadiacd.org
Lisa Foster Trout Unlimited Inc.	Secondary Sponsor Contac	(509) 888-0970	lisa.foster@tu.org

Worksites & Properties

Project Application Report - 25-1217

#	Worksite Name
#1	Alder Creek- Wenatchee River watershed

Restoration	Property Name
✓	Alder Creek downstream site- USFS
✓	Alder Creek upstream site- USFS

#2 Beaver Creek- Wenatchee River watershed

Restoration	Property Name
✓	Beaver Creek site- USFS
✓	South Fork Beaver Creek Site- USFS

#3 Nason Creek- Wenatchee River watershed

Restoration	Property Name
✓	Merrit Oxbow site- CDLT

#4 Chumstick Creek- Wenatchee River watershed

Restoration	Property Name
✓	Chumstick Creek site- Jones

#5 Eagle Creek- Wenatchee River watershed

Restoration	Property Name
✓	Eagle Creek site- Bosket
✓	Eagle Creek site- Headrick
✓	Eagle Creek site- Hedeen
✓	Eagle Creek site- Youkey

#6 Little Chumstick Creek- Wenatchee River watershed

Restoration	Property Name
✓	Little Chumstick Creek site- Conkle
✓	Little Chumstick Creek site- Drew
✓	Little Chumstick Creek site- Holte
✓	Little Chumstick Creek site- O'Neill

#7 Derby Creek- Wenatchee River watershed

Restoration	Property Name
✓	Derby Creek site- DNR
✓	Derby Creek site- Stroud

#8 Peshastin Creek- Wenatchee River watershed

Restoration	Property Name
✓	Lower Peshastin site- WDFW

#	Worksite Name

Restoration	Property Name
✓	Peshastin 2.5 site- Mountain Valley Acre

#9 Goodwin Side Channel- Wenatchee River watershed

Restoration	Property Name
✓	Goodwin Side Channel site- WA DOT

#10 Roaring Creek- Entiat River watershed

Restoration	Property Name
✓	Roaring Creek downstream site- USFS
✓	Roaring Creek upstream site- USFS

#11 Potato Creek- Entiat River watershed

Restoration	Property Name
✓	Potato Creek site- USFS

#12 Stormy Creek- Entiat River watershed

Restoration	Property Name
✓	Stormy Creek site- CDLT

#13 Rock Island Creek- Columbia River tributary

Restoration	Property Name
✓	Rock Island Creek site- Bow Knot Bar
✓	Rock Island Creek site- Breiler
✓	Rock Island Creek site- DNR
✓	Rock Island Creek site- Kane

#14 Douglas Creek- Columbia River Tributary

Restoration	Property Name
✓	Duffy Creek site- BLM

#15 Beaver Relocation and Holding Facility

Restoration	Property Name
✓	Leavenworth National Fish Hatchery

Worksite Map & Description

Worksite #1: Alder Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address 128 ALDER CREEK TIE FS 6200-200 R
City, State, Zip Lake Wenatchee WA 98826

Worksite #2: Beaver Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Leavenworth WA 98826

Worksite #3: Nason Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address 18675 US HWY 2
City, State, Zip Lake Wenatchee WA 98826

Worksite #4: Chumstick Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address 25 SYLVESTER MEADOWS LN
City, State, Zip Leavenworth WA 98826

Worksite #5: Eagle Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address 11025 EAGLE CREEK RD
City, State, Zip Leavenworth WA 98826

Worksite #6: Little Chumstick Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address 16520 CHUMSTICK HWY
City, State, Zip Leavenworth WA 98826

Worksite #7: Derby Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Peshastin WA 98847

Worksite #8: Peshastin Creek- Wenatchee River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Dryden WA 98826

Worksite #9: Goodwin Side Channel- Wenatchee River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Cashmere WA 98815

Worksite #10: Roaring Creek- Entiat River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Entiat WA 98822

Worksite #11: Potato Creek- Entiat River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Entiat WA 98822

Worksite #12: Stormy Creek- Entiat River watershed

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Entiat WA 98822

Worksite #13: Rock Island Creek- Columbia River tributary

WORKSITE ADDRESS

Street Address Multiple
City, State, Zip East Wenatchee WA 98802

Worksite #14: Douglas Creek- Columbia River Tributary

WORKSITE ADDRESS

Street Address UNASSIGNED
City, State, Zip Rock Island WA 98850

Worksite #15: Beaver Relocation and Holding Facility

WORKSITE ADDRESS

Street Address 12790 FISH HATCHERY RD
City, State, Zip Leavenworth WA 98826

Worksite Details

Worksite #1: Alder Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered		✓		

Reference or source used

UCSRB IP Layers, Upper Wenatchee Pilot Project: Aquatic Habitat Assessment and Restoration Strategy Report (2019)

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

128 ALDER CREEK TIE FS 6200-200 RD LAKE WENATCHEE, WA 98826

Worksite #2: Beaver Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.781495 -120.595298

Worksite #3: Nason Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened	✓	✓	✓	Declining
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered	✓	✓	✓	Declining

Reference or source used

UCSRB IP Layers, NOAA 2022 Status Review

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

18675 US HWY 2 LAKE WENATCHEE, WA 98826

Worksite #4: Chumstick Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

25 SYLVESTER MEADOWS LN LEAVENWORTH, WA 98826

Worksite #5: Eagle Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

11025 EAGLE CREEK RD LEAVENWORTH, WA 98826

Worksite #6: Little Chumstick Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

16520 CHUMSTICK HWY LEAVENWORTH, WA 98826

Worksite #7: Derby Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

6905 DERBY CANYON RD PESHASTIN, WA 98847

Worksite #8: Peshastin Creek- Wenatchee River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		Declining
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered		✓		Declining

Reference or source used

UCSRB IP Layers, NOAA 2022 Status Review

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.557168 -120.577467

Worksite #9: Goodwin Side Channel- Wenatchee River watershed

SITE ACCESS DIRECTIONS

Need to park on North side of Hwy 2 near Hay Canyon Rd, and use pedestrian crossing to cross Hwy 2 to the south side of the road. Then walk west along the south side of Hwy 2 for 0.4 miles, and the site is down the hill between the Hwy and the Wenatchee River.

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		Declining
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered		✓		Declining

Reference or source used

UCSRB IP Layers, NOAA 2022 Status Review

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.528268 -120.491682

Worksite #10: Roaring Creek- Entiat River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Entiat River, Threatened		✓		
Chinook-Upper Columbia River Spring, Entiat River, Endangered		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.685875 -120.349269

Worksite #11: Potato Creek- Entiat River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Entiat River, Threatened		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.796104 -120.380376

Worksite #12: Stormy Creek- Entiat River watershed

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Entiat River, Threatened		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.821637 -120.421286

Worksite #13: Rock Island Creek- Columbia River tributary

SITE ACCESS DIRECTIONS

From East Wenatchee, drive up Badger Mountain Rd heading east for 11.5 miles. Turn right onto Rd S SW for 1.1 miles. Worksite is on the left side of the road. Follow trail down to Rock Island creek at 47.50891, -120.130666

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened		✓		

Reference or source used

UCSRB IP Layers

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.50891 -120.130666

Worksite #14: Douglas Creek- Columbia River Tributary

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
No Salmon ESU or Steelhead DPS				

Reference or source used

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

47.50096 -120.04178

Worksite #15: Beaver Relocation and Holding Facility

SITE ACCESS DIRECTIONS

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Steelhead-Upper Columbia River, Wenatchee River, Threatened				

Reference or source used

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Rainbow	

Questions

#1: Give street address or road name and mile post for this worksite if available.

12790 Fish Hatchery Rd, Leavenworth, WA 98826

Project Location

RELATED PROJECTS

Projects in PRISM

PRISM Number	Project Name	Program Name	Current Status	Relationship Type	Notes
No related project selected					

Related Project Notes

Questions

#1: Project location. Describe the geographic location, water bodies or habitat types, and the location of the project in the watershed, i.e. nearshore, tributary, main-stem, off-channel, etc.

The 28 projects included in this project package are all within the Upper Columbia region, taking place in both Chelan and Douglas counties. Four projects are located in larger river/creek systems including the Wenatchee River mainstem, Peshastin Creek, and Nason Creek. While 24 project sites are located in smaller, lower order streams that are tributaries to the Wenatchee, Entiat and Columbia rivers. The Wenatchee River mainstem project (Goodwin Side Channel) is the only project that focuses solely on off-channel habitat restoration, while the rest of the projects contain varying degrees of channel and off-channel habitat restoration. These projects occur at different locations within their respective watersheds, with many projects occurring in multiple places within the same watershed.

#2: How does this project fit within your regional recovery plan and/or local lead entity's strategy to restore or protect salmonid habitat? Cite section and page number.

The UCSRB Prioritization Web Map indicates that out of the 28 project sites included in this proposal, only 12 project sites have associated reaches that have been defined. Out of these 12 projects (covering 14 reaches), 8 reaches have had the necessary information collected to allocate priority rankings for restoration on the UCSRB prioritization list. These 8 reaches, by rank, are:

-Rank 1: Nason Crk Lower 10, Peshastin Crk Lower 01, Alder Crk 01
-Rank 2: Peshastin Crk Lower 03, Chumstick Crk 02, Roaring Crk 03
-Rank 3: Wenatchee River Ollalla 01, Stormy Crk 01

Though there are no defined ranks associated with the majority of the project sites included within this proposal, these projects still provide multiple essential benefits to the region's priority species at multiple life stages within these systems, and extend to downstream systems and their associated life stages. These projects were originally identified by the CRM group to address the limiting factors that exist within our priority species' habitats, supported by funding from various partners, and have been implemented by the CRM partners utilizing process-based restoration techniques (primarily LTPBR methods) and riparian restoration.

The shared limiting factors that all of these projects address are:
-Riparian-Canopy Cover
-Riparian Disturbance
-Temperature-Rearing
-Temperature-Adult Spawning
-Temperature- Adult Holding
-Flow-Summer Base Flow
-Cover-wood
-Pool Quantity and Quality
-Off-Channel & Side-Channels
-Percent Fines and Embeddedness
-Bank and Channel Stability

The shared priority actions that all of these projects address are:
-Riparian Restoration and Management
-Water Quality Improvement
-Instream Flow Enhancement
-Floodplain Reconnection
-Fine Sediment Management
-Side Channel and Off-Channel Habitat Restoration
-Bank Restoration
-Channel Complexity Restoration

The overarching goal of this proposal is to restore riparian communities through continued stewardship, and to restore structure to tributary streams through the maintenance of LTPBR actions, and the reintroduction of beavers, addressing the many forms of habitat degradation in WRIAs 45, 46, and 44.

The restoration projects included in this proposal provide freshwater benefit in these systems, with regards to the way that riparian planting, LTPBR, and beaver reintroduction projects address the historic loss of habitat and habitat forming processes; improving the survival, capacity, and distribution of the region's native fish species.

#3: Is this project part of a larger overall project?

No

#4: Is the project on State Owned Aquatic Lands? Please contact the Washington State Department of Natural Resources to make a determination. **Aquatic Districts and Managers**

No

Property Details

Property: Alder Creek downstream site- USFS (Worksite #1: Alder Creek- Wenatchee River watershed)

✓ **Restoration**

Project Application Report - 25-1217

LANDOWNER

Name	United States Forest Service
Address	128 ALDER CREEK TIE FS 6200-200 RD
City	Lake Wenatchee
State	WA Zip 98826
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	05/05/2027
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Alder Creek upstream site- USFS (Worksite #1: Alder Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	United States Forest Service
Address	UNASSIGNED
City	Leavenworth
State	WA Zip 98826
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	05/05/2027
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Beaver Creek site- USFS (Worksite #2: Beaver Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	United States Forest Service
Address	UNASSIGNED
City	Leavenworth
State	WA Zip 98826
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	05/05/2027
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: South Fork Beaver Creek Site- USFS (Worksite #2: Beaver Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	United States Forest Service
Address	UNASSIGNED
City	Leavenworth
State	WA Zip 98826
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	01/01/2026
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Project Application Report - 25-1217

Property: Merrit Oxbow site- CDLT (Worksite #3: Nason Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	Chelan-Douglas Land Trust
Address	18675 US HWY 2
City	Lake Wenatchee
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2032
Note	

Property: Chumstick Creek site- Jones (Worksite #4: Chumstick Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	HESS SUMMER N & JONES MATTHEW
Address	25 SYLVESTER MEADOWS LN
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2034
Note	

Property: Eagle Creek site- Bosket (Worksite #5: Eagle Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	BOSKET VINCENT N ETAL
Address	11025 EAGLE CREEK RD
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Property: Eagle Creek site- Headrick (Worksite #5: Eagle Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	HEADRICK TODD R & JENNIFER L TRU
Address	9247 EAGLE CREEK RD
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2034
Note	

Project Application Report - 25-1217

Property: Eagle Creek site- Hedeen (Worksite #5: Eagle Creek- Wenatchee River watershed)

✓**Restoration**

LANDOWNER

Name	HEDEEN PAUL F & KNAPP ROSEMARY
Address	9425 EAGLE CREEK RD
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Property: Eagle Creek site- Youkey (Worksite #5: Eagle Creek- Wenatchee River watershed)

✓**Restoration**

LANDOWNER

Name	YOUKEY DONALD & KARI
Address	15 ADLER BACK LN
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Property: Little Chumstick Creek site- Conkle (Worksite #6: Little Chumstick Creek- Wenatchee River watershed)

✓**Restoration**

LANDOWNER

Name	CONKLE MICHAEL H & KAREN D MATA
Address	16520 CHUMSTICK HWY
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Property: Little Chumstick Creek site- Drew (Worksite #6: Little Chumstick Creek- Wenatchee River watershed)

✓**Restoration**

LANDOWNER

Name	DREW DOUGLAS R & KATHRYN A REV
Address	41 STARGAZER LN
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Project Application Report - 25-1217

Property: Little Chumstick Creek site- Holte (Worksite #6: Little Chumstick Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	HARWELL ALEXANDRA & KEVIN HOLTI
Address	16982 CHUMSTICK HWY
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Property: Little Chumstick Creek site- O'Neill (Worksite #6: Little Chumstick Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	O NEILL JULIA A
Address	16970 CHUMSTICK HWY
City	Leavenworth
State	WA Zip 98826
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2033
Note	

Property: Derby Creek site- DNR (Worksite #7: Derby Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	WA Department of Natural Resources
Address	UNASSIGNED
City	Peshastin
State	WA Zip 98847
Type	State

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2035
Note	

Property: Derby Creek site- Stroud (Worksite #7: Derby Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	STROUD III WILLIAM G
Address	6905 DERBY CANYON RD
City	Peshastin
State	WA Zip 98847
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2035
Note	

Property: Lower Peshastin site- WDFW (Worksite #8: Peshastin Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	WA Department of Fish and Wildlife
Address	UNASSIGNED
City	Dryden
State	WA Zip 98821
Type	State

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	20
Expiration Date	12/31/2045
Note	

Property: Peshastin 2.5 site- Mountain Valley Acre (Worksite #8: Peshastin Creek- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	MOUNTAIN VALLEY ACRES LLC
Address	UNASSIGNED
City	Peshastin
State	WA Zip 98847
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2026
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Goodwin Side Channel site- WA DOT (Worksite #9: Goodwin Side Channel- Wenatchee River watershed)

✓ **Restoration**

LANDOWNER

Name	WA Department of Natural Resources
Address	UNASIGNED
City	Cashmere
State	WA Zip 98815
Type	State

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	3
Expiration Date	12/31/2029
Note	

Property: Roaring Creek downstream site- USFS (Worksite #10: Roaring Creek- Entiat River watershed)

✓ **Restoration**

LANDOWNER

Name	United States Forest Service
Address	UNASIGNED
City	Entiat
State	WA Zip 98822
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	3
Expiration Date	01/01/2028

Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Roaring Creek upstream site- USFS (Worksite #10: Roaring Creek- Entiat River watershed)

✓ **Restoration**

LANDOWNER

Name	United States Forest Service
Address	UNASIGNED
City	Entiat
State	WA Zip 98822
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	3
Expiration Date	01/01/2028
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Potato Creek site- USFS (Worksite #11: Potato Creek- Entiat River watershed)

✓ **Restoration**

LANDOWNER

Name	United States Forest Service
Address	UNASIGNED
City	Entiat
State	WA Zip 98822
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	05/14/2027
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Stormy Creek site- CDLT (Worksite #12: Stormy Creek- Entiat River watershed)

✓ **Restoration**

LANDOWNER

Name	Chelan-Douglas Land Trust
Address	UNASIGNED
City	Entiat
State	WA Zip 98822
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	04/26/2033
Note	

Property: Rock Island Creek site- Bow Knot Bar (Worksite #13: Rock Island Creek- Columbia River tributary)

✓ **Restoration**

LANDOWNER

Name	BOW KNOT BAR HOMESTEAD LLC

CONTROL & TENURE

Instrument Type	Landowner Agreement

Address	UNASSIGNED
City	East Wenatchee
State	WA Zip 98802
Type	Private

Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	08/25/2029
Note	

Property: Rock Island Creek site- Breiler (Worksite #13: Rock Island Creek- Columbia River tributary)

✓**Restoration**

LANDOWNER

Name	BREILER, DUANE KEITH
Address	UNASIGNED
City	East Wenatchee
State	WA Zip 98802
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	08/25/2029
Note	

Property: Rock Island Creek site- DNR (Worksite #13: Rock Island Creek- Columbia River tributary)

✓**Restoration**

LANDOWNER

Name	WA Department of Natural Resources
Address	UNASSIGNED
City	East Wenatchee
State	WA Zip 98802
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	08/25/2029
Note	

Property: Rock Island Creek site- Kane (Worksite #13: Rock Island Creek- Columbia River tributary)

✓**Restoration**

LANDOWNER

Name	KANE, SCOTT M & SHEILA G
Address	UNASSIGNED
City	East Wenatchee
State	WA Zip 98802
Type	Private

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	5
Expiration Date	08/25/2029
Note	

Property: Duffy Creek site- BLM (Worksite #14: Douglas Creek- Columbia River Tributary)

✓**Restoration**

LANDOWNER

CONTROL & TENURE

Project Application Report - 25-1217

Name	United States Bureau of Land Manageme
Address	UNASIGNED
City	Rock Island
State	WA Zip 98850
Type	Federal

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	1
Expiration Date	08/15/2026
Note	Landowner Agreement was originally intended for the implementation of the project, but a new agreement will be made after expiration for site stewardship of the project.

Property: Leavenworth National Fish Hatchery (Worksite #15: Beaver Relocation and Holding Facility)

✓ **Restoration**

LANDOWNER

Name	United States Fish and Wildlife Service
Address	12790 FISH HATCHERY RD
City	Leavenworth
State	WA Zip 98826
Type	Federal

CONTROL & TENURE

Instrument Type	Landowner Agreement
Timing	Existing
Term Length	Fixed # of years
# Yrs	10
Expiration Date	12/31/2035
Note	

Project Proposal

Project Description

The Coordinated Resource Management (CRM) group, a partnership between Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited, submits this joint proposal to restore riparian and in-stream habitat across the Upper Columbia region. This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 28 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River. The primary goals are to improve the success and rate of riparian habitat establishment (over >21 acres) and to enhance the development of normative stream processes and functions (over >11 miles), promoting self-sustaining ecosystems. To achieve these goals, this project will focus on managing invasive plant species and noxious weeds, replacing unsuccessful plantings, increasing groundwater availability through in-stream structures, and supplementing sites with irrigation water as needed. Additionally, efforts will be directed toward improving the effectiveness and longevity of low-tech process-based restoration (LTPBR) in-stream habitat structures, such as Beaver Dam Analogs (BDAs) and Post-Assisted Log Structures (PALS), through annual maintenance, monitoring system response, and adaptive management based on observed responses. Also, Trout Unlimited will work with landowners and public agencies to live-trap and relocate nuisance beavers to streams where they can create and restore quality salmonid habitat.

Project Questions

Project Application Report - 25-1217

#1: Problem statement. What are the problems your project seeks to address? Include the source and scale of each problem. Describe the site, reach, and watershed conditions. Describe how those conditions impact salmon populations. Include current and historic factors important to understand the problems.

This project addresses persistent and widespread habitat degradation within the Wenatchee, Entiat, and Upper Columbia River watersheds (WRIAs 45, 46, and 44), which has significantly impacted native salmonid populations and broader aquatic ecosystems. These watersheds support ESA-listed steelhead (Oncorhynchus mykiss), spring Chinook (O. tshawytscha), bull trout (Salvelinus confluentus), and other sensitive species like Pacific lamprey (Entosphenus tridentatus) and Westslope cutthroat trout (Oncorhynchus clarkii lewisi). Coho salmon (Oncorhynchus kisutch), a reintroduced species of cultural importance to both the Yakama Nation and the Colville Confederated Tribes, and sockeye salmon (Oncorhynchus nerka), are also present in the Wenatchee watershed.

The core problem is the deterioration of natural stream processes and functions due to historic and ongoing stressors. Historic land use, including logging, roadbuilding, agriculture, and water diversion, has led to channel incision, floodplain disconnection, degraded riparian zones, and simplified in-stream habitats. These changes have reduced groundwater recharge, lowered baseflows, increased stream temperatures, and escalated sediment and nutrient transport from headwaters, especially following disturbance events.

Current restoration investments have disproportionately focused on mainstem and side-channel habitats. Comparatively little funding reaches upstream areas, where many root causes originate. Many upper watershed, low-order streams—especially within the upper extent of the active anadromous zone—remain highly degraded. These upstream reaches are vital to early life stages of salmonids, but suffer from incised channels, low habitat complexity, and poor riparian cover. The legacy of these conditions continues to reduce spawning success, limit juvenile rearing habitat, and disrupt seasonal flows critical to salmon survival across all life stages.

At the site level, the 28 project areas fall across 10 assessment units, spanning public and private lands. While only 8 of 14 defined reaches in this proposal have UCSRB restoration priority rankings, all sites address known ecological limitations. These include high water temperatures, reduced shading and large wood recruitment, lack of pool and refugia habitat, and poor sediment quality for egg incubation. Many of these problems are compounded by invasive species, degraded riparian vegetation, and the absence of beavers, which historically played a critical role in maintaining stream complexity and hydrologic stability.

The scale of the problem is both broad and foundational—affecting stream processes, water retention, habitat availability, and biological function across entire watersheds. The proposed work, therefore, targets the sources of degradation rather than its downstream symptoms.

The project's integrated approach—riparian stewardship, invasive species control, LTPBR structure maintenance (BDAs and PALS), and beaver reintroduction—directly supports the return of normative stream functions. These functions include floodplain reconnection, stream temperature regulation, sediment retention, baseflow enhancement, and channel complexity.

By restoring the biological, geomorphic, and hydrologic processes defined in Castro & Thornes "stream evolutionary model" (2019), this project addresses both immediate habitat needs and long-term watershed resilience.

In sum, the project responds to the urgent need for strategic stewardship in critical upper watershed zones to reverse decades of degradation, improve survival and distribution of salmonids, and support long-term ecosystem recovery.

#2: Describe the limiting factors, and/or ecological concerns, and limiting life stages (by fish species) that your project expects to address.

This project addresses critical limiting factors and ecological concerns affecting native salmonid populations—particularly Spring Chinook, Steelhead, Bull Trout, Summer Chinook, Coho, and Sockeye—across 28 project sites within the Wenatchee, Entiat, and Columbia River systems. These areas suffer from impaired riparian and in-stream functions due to historical land use, invasive species, altered hydrology, and degraded stream complexity.

Key Limiting Factors & Ecological Concerns:

- Loss of Riparian Cover and Function: Reduced canopy cover has led to elevated summer stream temperatures, impacting thermally sensitive species.
- Degraded Instream Habitat: Many sites lack large woody debris, have poor pool quantity/quality, and limited off-channel habitat—essential for rearing and refugia.
- Floodplain Disconnection and Channel Incision: Leads to flashy hydrology, reduced groundwater recharge, and diminished habitat diversity.
- Invasive Vegetation: Non-native plants outcompete native riparian flora, reducing bank stability and resilience.
- Beaver Loss and Hydrological Impairment: Historic beaver removal has reduced stream complexity, baseflows, and water retention in headwaters.

Limiting Life Stages (by Species):

- Spring Chinook: Limiting factors affect spawning, summer/winter rearing, and fry colonization. High priority AUs include Lower Chiwawa River and Beaver Ck.
- Steelhead: Impacted during winter rearing and spawning, particularly where cover and floodplain connectivity are lacking. High priority areas include Alder Ck and Nason Ck.
- Bull Trout: Sensitive to temperature and stream complexity; limiting stages include subadult rearing and adult non-spawning holding.
- Coho and Sockeye: Though not target ESU species in our region, they rely on off-channel rearing habitats, which are often degraded or absent.

Project Strategies to Address Limiting Factors:

- Riparian Stewardship: Over 21 acres managed through invasive control, irrigation, and replanting to establish native riparian communities.
- Instream Habitat Structure Maintenance: More than 500 BDAs and 100 PALS maintained to improve channel complexity, aggradation, and connectivity; reconnecting streams with floodplains, and raising water tables to support habitats
- Beaver Reintroduction: At 5 sites to restore hydrologic processes and enhance habitat at all life stages via rearing habitat creation, stream cooling, and nutrient retention
- Life Stage Support: Projects create resilient habitat—cool summer flows, overwintering pools, and off-channel refuge during high flows

Informed by reach-specific rankings and habitat condition assessments, this project targets Rank 1–3 reaches including Nason Lower10, Peshastin Lower01/03, Wenatchee-Ollala01, Chumstick02, Alder01, Roaring03, Stormy01. While the remaining sites occur in unranked or undefined reaches, they still address priority actions such as off-channel deficits, wood cover, bank stability, and floodplain reconnection—directly supporting focal species at limiting life stages.

#3: What are the project goals? The goal of the project should be to solve identified problems by addressing the root causes. Then clearly state the desired future condition. Include which species and life stages will benefit from the outcome, and the time of year the benefits will be realized. **Example Goals and Objectives**

The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes/functions, promoting self-sustaining ecosystems.

To achieve these goals, this project will focus on managing invasive plant species, replacing unsuccessful plantings, increasing groundwater availability through in-stream structures, and supplementing sites with irrigation water as needed. Additionally, efforts will be directed toward improving the effectiveness and longevity of LTPBR in-stream habitat structures, such as BDAs/PALS, through annual maintenance, monitoring system response, and adaptive management based on observed responses. Also, TU works with landowners and public agencies to relocate nuisance beavers to streams where they can restore salmonid habitat.

By addressing the root causes of habitat degradation, including reduced riparian vegetation, competition from invasive species, loss of in-stream complexity, removal of beavers, and diminished hydrologic processes/functions, this project will foster resilient riparian and aquatic ecosystems. The desired future condition is a network of stable, connected habitats with thriving native vegetation and beavers, improved water retention, and enhanced capacity to support fish and wildlife populations. With continued stewardship, this project will ensure that restoration efforts achieve lasting ecological benefits and contribute to the long-term health of these watersheds.

#4: What are the project objectives? Objectives support and refine biological goals, breaking them down into smaller steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). **Example Goals and Objectives**

1. Restore and expand riparian communities to provide shade and reduce high stream temperatures for salmonid life stages by managing invasive species, replacing unsuccessful plantings, and supplementing irrigation over 21 acres. Additionally, enhance conditions through ponds created by reintroduced beavers.
2. Control invasive plant species and noxious weeds across over 21 acres of riparian habitat to promote native vegetation establishment and overall riparian resilience.
3. Maintain and enhance more than 500 BDAs and 100 PALS along over 11 miles of previously treated aquatic habitat through annual inspections, routine maintenance, and adaptive management to sustain natural stream processes and promote aquatic habitat formation.
4. Beaver Relocation: Reintroduce beavers at 5 sites in Chelan and Douglas Counties. Literature indicates each maintained beaver family could treat 0.9–1.6 km of stream, potentially resulting in 4.5–8 km of improved instream habitat across the 5 sites.
5. Improve groundwater recharge, streamflow retention, and stream complexity by ensuring that BDAs, PALS, and relocated beavers actively promote lateral floodplain connectivity, pool formation, and sediment retention during routine maintenance over the five-year term.
6. Ensure riparian vegetation survival during dry months by providing irrigation as needed to maintain optimal soil moisture, supporting the trajectory toward self-sustaining, fully functioning riparian communities.

Objectives are summarized for all 28 sites.

#5: Scope of work and deliverables. Provide a detailed description of each project task/element. With each task/element, identify who will be responsible for each, what the deliverables will be, and the schedule for completion.

This project provides five years of stewardship and maintenance across 28 project sites in the Wenatchee, Entiat, and Columbia River tributaries. Each task will be implemented by one of the three CRM partners, based on which organization led the original project. Trout Unlimited will lead all beaver relocation and coexistence work. While this project's funding and reporting are tied to a 5-year period, the intent is to ensure lasting success beyond that term, as riparian plantings and LTPBR structures will continue to provide ecological benefits well into the future. This project ensures that early years of establishment are supported through active stewardship, securing long-term habitat functionality for native fish populations.

1. Riparian Plant Stewardship

- Responsible Partner(s): Cascade Fisheries, Cascadia Conservation District, Trout Unlimited
- Task Description: Maintain and support over 21 acres of riparian plantings across 16 sites. Activities include managing invasive and noxious weeds, supplemental irrigation, mulching, and replanting any unsuccessful plantings as needed.
- Deliverables: Annual maintenance at each planting site; plant survival assessments; annual reporting of treated acreage and vegetation progress.
- Schedule: Spring and summer visits for irrigation and weed control; fall assessments for mortality and replanting needs.

2. Instream Habitat Structure Maintenance (LTPBR)

- Responsible Partner(s): Cascade Fisheries, Cascadia Conservation District, Trout Unlimited
- Task Description: Maintain over 500 BDAs and 100 PALS across 24 sites. Maintenance activities may include reinforcing structures, replacing materials, and making design modifications based on field observations.
- Deliverables: Photo documentation, maintenance reports, and adaptive recommendations.
- Schedule: Annual inspections and maintenance for five years.

3. Beaver Relocation and Coexistence

- Responsible Partner: Trout Unlimited
- Task Description: Relocate beavers to 5 project sites, respond to landowner conflicts, provide coexistence strategies, and monitor relocation outcomes. Relocated beavers are monitored with game cameras and site surveillance.
- Deliverables: Records of relocation events, conflict resolution actions, post-release monitoring data.
- Schedule: Ongoing throughout the 5-year project; timed according to relocation and monitoring windows.

4. Monitoring and Adaptive Management

- Responsible Partner(s): All CRM partners for their respective sites
- Task Description: Conduct site assessments to evaluate the effectiveness of stewardship actions. Adapt strategies to improve outcomes and support site-specific ecological goals.
- Deliverables: Annual monitoring reports with observations, treatment effectiveness summaries, and adaptive actions taken.
- Schedule: Conducted annually during appropriate biological and seasonal windows.

#6: What are the assumptions and physical constraints that could impact whether you achieve your objectives? Assumptions and constrains are external conditions that are not under the direct control of the project, but directly impact the outcome of the project. These may include ecological and geomorphic factors, land use constraints, public acceptance of the project, delays, or other factors. How will you address these issues if they arise?

This project assumes favorable ecological conditions that support the recovery of riparian communities, in-stream habitats, and normative watershed processes. However, several external factors may impact success. Geomorphic constraints such as heavily incised channels or poor floodplain connectivity may limit the effectiveness of BDAs, PALS, and beaver activity. Beavers, while key to long-term restoration, are wild animals and may relocate or fail to modify sites as intended. Invasive plant species, drought, and other site conditions pose a continued threat to establishing native vegetation, especially in the early years post-planting.

Land use constraints exist, as the project spans both public and private lands with nearby infrastructure (e.g. roads, culverts) that could limit restoration actions and/or beaver activity. Continued landowner participation is assumed based on active 10-year agreements secured during prior phases.

Public perception is another factor. While generally positive, concerns around beaver relocation (e.g., flooding, tree damage) could arise. Additionally, seasonal access limitations in remote areas and potential delays in future funding could impact the project's necessary maintenance and monitoring timelines.

To address these challenges, the project integrates adaptive management, annual monitoring, and contingency planning. BDAs and PALS will be inspected and maintained annually. If beavers do not colonize, sites may be reassessed for future relocation. Invasive species will be actively managed and irrigation will be used as needed. Strong landowner agreements are in place for 10 years, and partners maintain close communication with stakeholders. Public outreach—including education, site tours, and conflict resolution—is ongoing. The CRM's collaborative structure across three organizations ensures operational redundancy, flexibility, and resilience to staffing or funding issues, reducing risk and enhancing project success across all 28 sites.

#7: How have lessons learned from completed projects or monitoring studies informed this project?

This project is informed by the CRM partners' experience implementing and monitoring riparian and LTPBR restoration across the Upper Columbia. A key lesson learned is that post-implementation stewardship is essential for long-term success. Without maintenance, riparian plantings often fail due to invasive species, drought, herbivory, and lack of support during key establishment periods. Monitoring from our past projects shows that stewardship—such as irrigation, replanting, and weed control—greatly improves plant survival and riparian function. The WA Dept. of Ecology emphasizes that maintenance during the first3–5 years is critical to help plants develop root systems and survive dry summer conditions (Ecology 2024). The Methow Salmon Recovery Foundation's Riparian Monitoring Plan also notes that early stewardship is key to preventing plant loss and ensuring long-term vegetation success.

Similarly, BDAs and PALS require ongoing maintenance to remain functional through seasonal flow changes, channel adjustments, and sediment movement. Our past projects show that maintained structures are more effective at supporting aggradation, floodplain connectivity, and habitat complexity. National studies (Bouwes et al 2016; Wheaton et al 2019) confirm that LTPBR projects benefit from continued stewardship, which extends structure life and supports ecosystem recovery. This proposal applies those lessons to protect past investments and keep sites on track to meet long-term ecological goals.

#8: Describe the alternatives considered and why the preferred was chosen.

As this project focuses on the stewardship and maintenance of previously implemented restoration actions, alternative designs and strategies were considered and addressed during the original planning and implementation phases at each site. The current proposal does not revisit those earlier design decisions but instead ensures those investments are protected, functional, and progressing toward long-term ecological goals. Re-evaluating alternatives at this stage would shift focus and resources away from maintaining the structures and vegetation that require active stewardship to succeed.

The preferred approach is based on well-established best practices for supporting riparian recovery and natural stream function through low-tech process-based restoration (LTPBR), beaver relocation, and adaptive vegetation management. These methods were chosen for their ecological effectiveness, cost-efficiency, and alignment with regional restoration strategies.

Beaver relocation, while somewhat unpredictable, remains the most effective long-term strategy for sustaining stream restoration functions without ongoing human intervention. Trout Unlimited works closely with WDFW, USFS, and other agencies to ensure that relocations meet all permitting and biological criteria.

Continued maintenance of BDAs and PALS, irrigation support, invasive species control, and responsiveness to landowner feedback are necessary to transition each site toward self-sustaining ecological conditions. This stewardship model builds on past work, avoids redundancy, and maximizes the value of prior investments.

#9: How were stakeholders consulted in the development of this project? Identify the stakeholders, their concerns or feedback, and how those concerns were addressed.

The 28 projects included in this package span a mix of private, state, and federal lands, with stakeholders including individual landowners, the USFS, WDFW, DNR, and other agencies. These stakeholders were actively engaged during the development, design, and implementation phases of each individual project. As this proposal focuses on stewardship and maintenance, new stakeholder consultation for project development is not applicable; however, the success of this work depends on ongoing cooperation with landowners and land managers who continue to provide critical feedback based on site-level observations, helping to identify any issues early.

Initial concerns included impacts to land use, infrastructure (e.g., culverts, irrigation), and beaver-related risks. These were addressed through site-specific planning, communication, and adaptive approaches. Active landowner agreements remain in place, allowing for site access and defining responsibilities for up to 10 years post-implementation.

For beaver relocation, TU coordinates with landowners and consults with USFWS, WDFW, USFS, and other agencies to secure and follow required permits. Stakeholders are engaged before trapping, during holding at the acclimation facility, and after relocation. TU responds quickly if relocated or natural beavers create conflicts.

Funding through this proposal is critical to continue addressing stakeholder concerns as they arise and to maintain trust and cooperation across all project sites.

#10: Does your project address or accommodate the anticipated effects of climate change?

Yes

#10a: How will your project be climate resilient given future conditions?

The riparian vegetation that has been planted at project sites and will be stewarded with this project will be better suited to handle changing climate conditions, including drought, warming temperatures, and changing precipitation regimes. As native plants evolved in these environments, they are more resilient to a changing climate than non-native or invasive plants species. Also, these native plants form riparian communities that will allow aquatic/terrestrial species to sustain through changing climate conditions. LTPBR projects and beaver ponds (created after reintroduction) restore and improve the normative processes and functions that occur in streams, which create complex habitats for aquatic species. Also, beaver dams/LTPBR (BDAs/PALS) ensure stream systems are more resilient to changing climate conditions by increasing processes such as: groundwater recharge/retention, flow enhancement, stormwater attenuation, floodplain activation, sediment and pollutant filtration, etc.

#10b: How will your project increase habitat and species adaptability?

Floodplains should be naturally covered in riparian vegetation, which play an important role in the floodplain's role in watershed processes. Restoring native riparian vegetation communities to the floodplain will promote natural processes including floodwater/groundwater retention and storage, sediment and pollutant filtration, bank and channel stability, and large wood recruitment. LTPBR projects and beaver ponds (created after reintroduction) restore and improve the normative processes and functions that occur in streams, which create complex habitats for aquatic species. Restoring these different watershed processes will holistically improve habitat quantity and quality, giving species more resilience to future climate changing conditions.

#11: Describe the sponsor's experience managing this type of project. Describe other projects where the sponsor has successfully used a similar approach.

Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited have implemented numerous projects with riparian restoration and LTPBR components. These projects have required some level of stewardship and maintenance to ensure projects met their intended goals. This includes riparian restoration projects like at the Lower Sleepy Hollow site on the Wenatchee River, and various project sites in the Chumstick Creek Watershed. Many of the LTPBR projects within this proposal were multi-phase projects, and the project sponsors have been performing stewardship and maintenance on those prior phases; sites like Potato Creek, Chumstick Creek, Derby Creek, Rock Island Creek, etc.
Additionally, Trout Unlimited has performed numerous beaver relocations throughout Chelan and Douglas counties in the past few years. These relocated beavers have been monitored for site colonization, retention, and how they alter their new stream ecosystems.

#12: Will veterans (including the veterans conservation corps) be involved in the project? If yes, please describe.

No

Restoration Supplemental

#1: Is the primary activity of the project riparian planting?

No

#2: Does the project include measures to stabilize an eroding stream bank?

No

#3: Does the project include side channel reconnection or floodplain re-grading worktypes?

No

#4: Does the project include an instream structure placement worktype?

No

#5: Is the primary activity of the project invasive species removal?

No

#6: Describe the steps you will take to minimize the introduction of invasive species during construction and restoration. Consider how you will use un-infested materials and clean equipment entering and leaving the project area.

Materials used for stewardship and maintenance will primarily be harvested on-site (e.g., branches, logs, organic and fill material), minimizing soil disturbance and avoiding damage to native vegetation. Any off-site materials (e.g., branches, logs, mulch, native plantings) will be Weed Free and inspected for pathogens or diseases before delivery to the project site. All equipment, vehicles, tools, and gear used on the project will be cleaned of invasive plant seed and dirt (Weed Free) before entering the site. Invasive species within the project scope will be treated on-site, and no invasive seed or plant materials will leave the site, preventing further spread. Additionally, TU inspects and quarantines all beavers at their acclimation facility prior to relocation to ensure they are not spreading diseases or pathogens throughout the population or to their introduced stream systems.

#7: Describe the long-term stewardship and maintenance obligations for the project.

This project focuses on 5 years of stewardship and maintenance for completed riparian restoration and LTPBR projects. It fulfills post-implementation obligations by supporting vegetation establishment, maintaining restoration structures, and promoting the formation of normative stream processes. These actions are designed to reduce long-term (>5 years) support needs by ensuring the sites are on a sustainable recovery trajectory. Most included projects have 10-year landowner agreements that define the project sponsor’s responsibilities for ongoing stewardship, including adaptive management and site visits to monitor site conditions and ensure restoration goals are met. Once established, beavers maintain their own habitat and related salmon habitat benefits.

Restoration Metrics

Project Application Report - 25-1217

Worksite: Alder Creek- Wenatchee River watershed (#1)

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.87
Project Identified In a Plan or Watershed Assessment (C.0.c)	1. UCSRB Restoration Prioritization- https://prioritization.ucsrb.org/ 2. Upper Wenatchee Pilot Project: Aquatic Habitat Assessment and Restoration Strategy Report (Hall, J. E., K. Ceder, S. Burgess, D. Arterburn, C. Clark, K. Ross, and P. Roni. 2019. UWPP: aquatic habitat assessment and restoration strategy. Final Report to the USFS, Wenatchee River Ranger District, Leavenworth, WA.) 3. Reach assessments performed by the Oka-Wen NF https://www.ucsrb.org/reports-plans/assessments/
Priority in Recovery Plan	The limiting factors that this project addresses to some degree (either at the site or providing downstream benefit) are: -Riparian-Canopy Cover -Riparian Disturbance -Temperature-Rearing -Temperature-Adult Spawning -Temperature- Adult Holding -Flow-Summer Base Flow -Cover-wood -Pool Quantity and Quality -Off-Channel & Side-Channels -Percent Fines and Embeddedness -Bank and Channel Stability
Type Of Monitoring (C.0.d.1)	Implementation Monitoring
Monitoring Location (C.0.d.2)	Onsite

SITE STEWARDSHIP PROJECT

Stream or streambank stewardship (C.11.b.1)

Total cost for Stream or streambank provided stewardship	$26,600
Miles of Streambank provided stewardship (C.11.b.2)	0.87
Acres of Streambank Stewarded	0

ARCHITECTURAL & ENGINEERING

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	$5,900

Worksite: Beaver Creek- Wenatchee River watershed (#2)

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	1.10
Project Identified In a Plan or Watershed Assessment (C.0.c)	1. UCSRB Restoration Prioritization- https://prioritization.ucsrb.org/ 2. Upper Wenatchee Pilot Project: Aquatic Habitat Assessment and Restoration Strategy Report (Hall, J. E., K. Ceder, S. Burgess, D. Arterburn, C. Clark, K. Ross, and P. Roni. 2019. UWPP: aquatic habitat assessment and restoration strategy. Final Report to the USFS, Wenatchee River Ranger District, Leavenworth, WA.) 3. Reach assessments performed by the Oka-Wen NF https://www.ucsrb.org/reports-plans/assessments/
Priority in Recovery Plan	The limiting factors that this project addresses to some degree (either at the site or providing downstream benefit) are: -Riparian-Canopy Cover -Riparian Disturbance -Temperature-Rearing -Temperature-Adult Spawning -Temperature- Adult Holding -Flow-Summer Base Flow -Cover-wood -Pool Quantity and Quality -Off-Channel & Side-Channels -Percent Fines and Embeddedness -Bank and Channel Stability
Type Of Monitoring (C.0.d.1)	Implementation Monitoring None
Monitoring Location (C.0.d.2)	No monitoring completed Downstream

	Onsite
	Upslope
	Upstream

ESTUARINE / NEARSHORE PROJECT

INSTREAM HABITAT PROJECT

PRE-RESTORATION ACQUISITIONS AND NURSERY OPERATIONS PROJECT

RIPARIAN HABITAT PROJECT

SITE STEWARDSHIP PROJECT

Stream or streambank stewardship (C.11.b.1)

Total cost for Stream or streambank provided stewardship	$26,600
Miles of Streambank provided stewardship (C.11.b.2)	1.10
Acres of Streambank Stewarded	0.07

CULTURAL RESOURCES

PERMITS

ARCHITECTURAL & ENGINEERING

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	$5,900

AGENCY INDIRECT COSTS

Worksite: Nason Creek- Wenatchee River watershed (#3)

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.30
Project Identified In a Plan or Watershed Assessment (C.0.c)	1. UCSRB Restoration Prioritizat https://prioritization.ucsrb.org/ 2. Up Columbia Salmon Recovery Board, Aug 2007, Upper Columbia Spring Chinook Salr and Steelhead Recovery P https://www.ucsrb.org/mdocumentslibrary/pla
Priority in Recovery Plan	The limiting factors that this project addresses to some degree (either at the site or providing downstream benefit) are: -Riparian-Canopy Cover -Riparian Disturbance -Temperature-Rearing -Temperature-Adult Spawning -Temperature- Adult Holding -Flow-Summer Base Flow -Cover-wood -Pool Quantity and Quality -Off-Channel & Side-Channels -Percent Fines and Embeddedness -Bank and Channel Stability
Type Of Monitoring (C.0.d.1)	Implementation Monitoring None
Monitoring Location (C.0.d.2)	No monitoring completed Downstream Onsite Upslope Upstream

ESTUARINE / NEARSHORE PROJECT

INSTREAM HABITAT PROJECT

PRE-RESTORATION ACQUISITIONS AND NURSERY OPERATIONS PROJECT

RIPARIAN HABITAT PROJECT

SITE STEWARDSHIP PROJECT

Stream or streambank stewardship (C.11.b.1)

Total cost for Stream or streambank provided stewardship	$26,600
Miles of Streambank provided stewardship (C.11.b.2)	0.30
Acres of Streambank Stewarded	1.75

CULTURAL RESOURCES

PERMITS

ARCHITECTURAL & ENGINEERING

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	$5,900

AGENCY INDIRECT COSTS

Worksite: Chumstick Creek- Wenatchee River watershed (#4)

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.05
Project Identified In a Plan or Watershed Assessment (C.0.c)	1. UCSRB Restoration Prioritization- https://prioritization.ucsrb.org/
Priority in Recovery Plan	The limiting factors that this project addresses to some degree (either at the site or providing downstream benefit) are: -Riparian-Canopy Cover -Riparian Disturbance -Temperature-Rearing -Temperature-Adult Spawning -Temperature- Adult Holding -Flow-Summer Base Flow -Cover-wood -Pool Quantity and Quality -Off-Channel & Side-Channels -Percent Fines and Embeddedness -Bank and Channel Stability
Type Of Monitoring (C.0.d.1)	Implementation Monitoring None

Monitoring Location (C.0.d.2)	No monitoring completed Downstream Onsite Upslope Upstream

ESTUARINE / NEARSHORE PROJECT

INSTREAM HABITAT PROJECT

PRE-RESTORATION ACQUISITIONS AND NURSERY OPERATIONS PROJECT

RIPARIAN HABITAT PROJECT

SITE STEWARDSHIP PROJECT

Stream or streambank stewardship (C.11.b.1)

Total cost for Stream or streambank provided stewardship	$26,600
Miles of Streambank provided stewardship (C.11.b.2)	0.05
Acres of Streambank Stewarded	0.50

CULTURAL RESOURCES

PERMITS

ARCHITECTURAL & ENGINEERING

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	$5,900

AGENCY INDIRECT COSTS

Overall Project Metrics

COMPLETION DATE

Projected date of completion	12/31/2030 **Note:** This is for 5 years of stewardship and maintenance funding. End date is based upon when funding would become available.

Restoration Cost Estimates

Project Application Report - 25-1217

Worksite #1: Alder Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #2: Beaver Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #3: Nason Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #4: Chumstick Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #5: Eagle Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #6: Little Chumstick Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #7: Derby Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #8: Peshastin Creek- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #9: Goodwin Side Channel- Wenatchee River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #10: Roaring Creek- Entiat River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #11: Potato Creek- Entiat River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #12: Stormy Creek- Entiat River watershed

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #13: Rock Island Creek- Columbia River tributary

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,600	
	Subtotal:	$26,600	
Admin, Architecture, and Engineering		$5,900	
	Total Estimate For Worksite:	$32,500	

Worksite #14: Douglas Creek- Columbia River Tributary

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$26,500	
	Subtotal:	$26,500	
Admin, Architecture, and Engineering		$5,000	
	Total Estimate For Worksite:	$31,500	

Worksite #15: Beaver Relocation and Holding Facility

Category	Work Type	Estimated Cost	Note
Site Stewardship Project	Stream or streambank stewardship (C.11.b.1)	$136,000	
	Subtotal:	$136,000	
Admin, Architecture, and Engineering		$30,000	
	Total Estimate For Worksite:	$166,000	

Summary

Total Estimated Costs Without AA&E:	$508,300
Total Estimated AA&E:	$111,700
Total Estimated Restoration Costs:	$620,000

Project Application Report - 25-1217

Cost Summary

	Estimated Cost	Project %	Admin/AA&E %
Restoration Costs			
Restoration	$508,300		
Admin, Architecture, and Engineering	$111,700		21.98 %
SUBTOTAL	$620,000	100.00 %	
Total Cost Estimate	$620,000	100.00 %	

Funding Request and Match

FUNDING PROGRAM

Salmon State Riparian	$620,000	100.000000

SPONSOR MATCH

Questions

#1: Explain how you determined the cost estimates

Cost estimates were calculated based on planned project actions at each site and sponsor's experience completing those activities over the term length of the project. Staff cost estimates are based on work and experience of our other recent projects of similar scope and scale.
Staff salaries are expected to increase over time due to step increases and COLA adjustments.

Other Funding

OTHER FUNDING DETAILS

Other Funds: Monetary Funding	Local Grant		
Amount			$200,000
Funding Organization			HCP Tributary Committees
Grant Program			HCP Tributary Committees
		Other Funding Detail Total:	$200,000

Cultural Resources

Cultural Resource Areas

Worksite #1: Alder Creek- Wenatchee River watershed

Area: Alder Creek DS Site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Alder Creek US site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #2: Beaver Creek- Wenatchee River watershed

Area: Beaver Creek Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Beaver Creek site (continued)

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: South Fork Beaver Creek Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #3: Nason Creek- Wenatchee River watershed

Area: Nason Creek- Merrit Oxbow Site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. This was because the riparian corridor at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Nason Creek- Merrit Oxbow Site 2

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. This was because the riparian corridor at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #4: Chumstick Creek- Wenatchee River watershed

Area: Chumstick Creek- Jones Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #5: Eagle Creek- Wenatchee River watershed

Area: Eagle Creek- Bosket Site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Eagle Creek- Headrick site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.
>
> LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.
>
> Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Eagle Creek- Hedeen Site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

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#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

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Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

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#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Eagle Creek- Youkey Site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

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Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

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#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #6: Little Chumstick Creek- Wenatchee River watershed

Area: Little Chumstick Creek- Conkle Site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

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#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

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Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

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#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Little Chumstick Creek- Drew site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

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Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

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#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

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#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

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#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Little Chumstick Creek- Holte site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

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#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

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No

Area: Little Chumstick Creek- O'Neill site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #7: Derby Creek- Wenatchee River watershed

Area: Derby Creek- DNR site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.
>
> LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.
>
> Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Derby Creek- Stroud Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Project Application Report - 25-1217

Worksite #8: Peshastin Creek- Wenatchee River watershed

Area: Lower Peshastin Creek Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

> The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. This was because the riparian corridor at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

> This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Peshastin Creek 2.5 Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

> The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. This was because the riparian corridor at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #9: Goodwin Side Channel- Wenatchee River watershed

Area: Goodwin Side Channel Site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. This was because the riparian corridor at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Goodwin Side Channel Staging site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. This was because the riparian corridor at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #10: Roaring Creek- Entiat River watershed

Area: Roaring Creek DS site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Project Application Report - 25-1217

Area: Roaring Creek US site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

> The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #11: Potato Creek- Entiat River watershed

Area: Potato Creek site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

Riparian project actions at this site include performing stewardship and maintenance on the existing riparian planting area across the project site. Stewardship activities consist of providing supplemental irrigation water to plantings, managing invasive species through chemical or physical methods, placing mulch around plantings, and/or replanting unsuccessful plantings. All riparian stewardship actions take place outside of the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for riparian plant stewardship will be localized to planting locations, if replanting is necessary due to planting mortality. Planting holes will be dug using hand shovels/spades or handheld gas-powered augers. Holes will be dug a maximum of 18 inches deep with a diameter of 12 inches wide. This ground disturbance will be relatively minor at each planting area, and will only be used when encountering unsuccessful plantings.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a riparian planting project using native vegetation plantings and invasive vegetation management to restore riparian plant buffers and riparian vegetation communities. Additionally, the existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the riparian corridor and stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #12: Stormy Creek- Entiat River watershed

Area: Stormy Creek- CDLT site

Project Application Report - 25-1217

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #13: Rock Island Creek- Columbia River tributary

Area: Rock Island Creek- Bow Knot Bar site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Rock Island Creek- Breiler site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Project Application Report - 25-1217

Area: Rock Island Creek- DNR site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

> The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Rock Island Creek- Kane site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Worksite #14: Douglas Creek- Columbia River Tributary

Area: Douglas Creek- DNR site

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

LTPBR project actions at this site include performing maintenance and stewardship on the existing BDAs/PALS within the creek. Maintenance activities consist of using vegetation materials (e.g., tree branches, sticks, logs, leaves, sod/root mats, duff, etc.) and fill materials (e.g., dirt, gravel, sand, etc.) to repair, build-up, extend, or otherwise adaptively manage BDAs and PALS structures across the site. Materials are generally harvested from on-site sources when available, but caution is taken on the level of disturbance or harm to the site. All maintenance actions take place within the Ordinary High-Water Mark. As this is not a new implementation project, maintenance and stewardship actions will have relatively little site disturbance and impact.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Ground disturbance for the maintenance of LTPBR project components will be localized to BDA and PALS structure locations. BDAs/PALS may require additional materials (vegetative and fill) added to repair, build-up, extend, or otherwise adaptively manage the structures across the site. Fill materials (e.g., dirt, gravel, sand, etc.) are generally harvested from on-site sources when available. This may involve using hand shovels/spades to excavate fill materials from the stream banks or from the floodplain (borrow pits), to add to the structures in the stream. Excavation for fill material borrow pits will be dug a maximum of 12 inches deep with a diameter of 24 inches wide. Multiple borrow pits may be needed across project sites to acquire the necessary amounts of fill material to maintenance BDA and PALS structures. Caution will be taken to not excessively disturb the site by digging these borrow pits.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

This project package consists of previously implemented riparian restoration and LTPBR project sites. The focus of this project is to provide stewardship and maintenance to the restoration components at these sites. Thus, pre-construction disturbance is outside the scope of this project, as it will have already occurred during prior phases of the project.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The existing project area conditions at this site include a LTPBR project using BDAs and PALS to restore normative watershed processes to the stream channel and to improve aquatic habitat quantities and qualities. This was because the stream channel at this site was identified as being degraded for various reasons due to historic and current land use practices, including: logging, road/infrastructure building, agriculture, grazing, fire suppression, and many others. Site disturbances from historic and current land use practices, fire, drought, and other climate changing conditions have also led to this degradation.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

Yes

#7a: Summarize the previous cultural resource review; including lead agency and date of review, reference name and numbers, etc. If RCO, include the prior phase grant number. NOTE: Do not provide any site-specific information considered confidential. Attach previous surveys or other reference documents.

This site received a Cultural Resource Review during prior phases for the initial implementation of this project. This information will be provided by the June 23rd submission deadline.

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Project Application Report - 25-1217

Worksite #15: Beaver Relocation and Holding Facility

Area: Beaver Acclimation Facility- LNFH

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

> This site is only for processing, holding, and acclimating beavers for relocation purposes. No Cultural Resource Review is necessary for these project actions at this site.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

> This site is only for processing, holding, and acclimating beavers for relocation purposes. No Cultural Resource Review is necessary for these project actions at this site.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

> This site is only for processing, holding, and acclimating beavers for relocation purposes. No Cultural Resource Review is necessary for these project actions at this site.

#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

> This site is only for processing, holding, and acclimating beavers for relocation purposes. No Cultural Resource Review is necessary for these project actions at this site.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

No

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

No

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Project Application Report - 25-1217

Project Permits

Permits and Reviews	Issuing Organization	Applied Date	Received Date	Expiration Date	Permit #
None - No permits Required					

Permit Questions

#1: Are you planning on using the federal permit streamlining process? **Limit 8**

No

Attachments

Required Attachments	8 out of 8 done
Applicant Resolution/Authorizations	✓
CCA Tribal Notification	✓
Cost Estimate	✓
Landowner acknowledgement form	✓
Map: Restoration Worksite	✓
Photo	✓
RCO Fiscal Data Collection Sheet	✓
Riparian Enhancement Plan	✓

PHOTOS (JPG, GIF)

Photos (JPG, GIF)


666828 Primary


666830 Secondary


666829


666831


666832

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

Project Application Report - 25-1217

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	05/22/2025	Landowner agreement	Youkey fully signed LOA.pdf	PhillipK	Youkey fully signed LOA.pdf, 670302 Property: Eagle Creek site- Youkey	
	05/22/2025	Landowner agreement	Holte- CF Landowner Agreement.pdf	PhillipK	Holte- CF Landowner Agreement (1).pdf, 670301 Property: Little Chumstick Creek site- Holte	
	05/22/2025	Landowner agreement	ONeill LOA Signed- Complete.pdf	PhillipK	ONeill LOA Signed- Complete.pdf, 670300 Property: Little Chumstick Creek site- O'Neill	
	05/22/2025	Landowner agreement	Stroud- Derby- DOE- Landowner Agreement-Nov 2023.pdf	PhillipK	Stroud- Derby- DOE- Landowner Agreement-Nov 2023.pdf, 670299 Property: Derby Creek site- Stroud	
	05/22/2025	Landowner agreement	Bosket fully signed LOA.pdf	PhillipK	Bosket fully signed LOA (1).pdf, 670298 Property: Eagle Creek site- Bosket	
	05/22/2025	Landowner agreement	Conkle signed landowner agreement.pdf	PhillipK	Conkle signed landowner agreement (1).pdf, 670297 Property: Little Chumstick Creek site- Conkle	
	05/22/2025	Landowner agreement	DNR- Derby- DOE-Landowner Agreement- Nov 2023.pdf	PhillipK	DNR- Derby- DOE-Landowner Agreement- Nov 2023 (1).pdf, 670296 Property: Derby Creek site- DNR	
	05/22/2025	Application Document	QAPP- CCD Riparian Monitoring - signed.pdf	PhillipK	QAPP- CCD Riparian Monitoring - signed.pdf, 670290	✓
	05/22/2025	Application Document	QAPP - CCD Structure-Based Monitoring - signed.pdf	PhillipK	QAPP - CCD Structure-Based Monitoring - signed.pdf, 670289	✓
	05/22/2025	Project Review Comments	Response to RTT and TRIB Questions and Feedback.pdf	PhillipK	Response to RTT and TRIB Questions and Feedback.pdf, 670288	✓
	05/22/2025	Application Document	Attachment A- Worksites and Properties info.xlsx	PhillipK	Attachment A- Worksites and Properties info.xlsx, 670286	✓
	05/22/2025	Application Document	CRM Riparian Stewardship Package - Regional App	PhillipK	Final_CRM Riparian Stewardship Package_JotForm_05222025.pdf, 670284	✓
	05/22/2025	Riparian Enhancement Plan	REP- Stormy Creek Riparian Enhancement Plan.docx	PhillipK	REP- Stormy Creek Riparian Enhancement Plan.docx, 670282 Property: Stormy Creek site- CDLT	✓
	05/22/2025	Riparian Enhancement Plan	REP- Potato Creek Riparian Enhancement Plan.docx	PhillipK	REP- Potato Creek Riparian Enhancement Plan.docx, 670281 Property: Potato Creek site- USFS	✓
	05/09/2025	Riparian Enhancement Plan	Duffy Creek Riparian Enhancement Plan 1-5.docx	LisaF	Duffy Creek Riparian Enhancement Plan 1-5.docx, 669296 Property: Duffy Creek site- BLM	✓
	05/05/2025	Riparian Enhancement Plan	Rock Island Creek Riparian Enhancement Plan 1-5.docx	LisaF	Rock Island Creek Riparian Enhancement Plan 1-5.docx, 668753 Property: Rock Island Creek site- Bow Knot Bar , Property: Rock Island Creek site- Breiler, Property: Rock Island Creek site- DNR, Property: Rock Island Creek site- Kane	✓
	05/05/2025	Riparian Enhancement Plan	REP- Derby Creek- DNR.docx	PhillipK	REP- Derby Creek- DNR.docx, 668710 Property: Beaver Creek site- USFS	✓
	05/05/2025	Riparian Enhancement Plan	REP- Derby Creek- Stroud.docx	PhillipK	REP- Derby Creek- Stroud.docx, 668709 Property: Derby Creek site- Stroud	✓
	05/05/2025	Riparian Enhancement Plan	REP- SF Beaver Creek.docx	PhillipK	REP- SF Beaver Creek.docx, 668708 Property: South Fork Beaver Creek Site- USFS	✓
	05/05/2025	Riparian Enhancement Plan	REP-Chumstick.docx	PhillipK	REP-Chumstick.docx, 668707 Property: Chumstick Creek site- Jones	✓
	05/05/2025	Riparian Enhancement Plan	REP-Eagle Creek.docx	PhillipK	REP-Eagle Creek.docx, 668706 Property: Eagle Creek site- Bosket, Property: Eagle Creek site- Headrick, Property: Eagle Creek site- Hedeen, Property: Eagle Creek site- Youkey	✓
	05/05/2025	Riparian Enhancement Plan	REP-Little Chumstick.docx	PhillipK	REP-Little Chumstick.docx, 668705 Property: Little Chumstick Creek site- Conkle, Property: Little Chumstick Creek site- Drew, Property: Little Chumstick Creek site- Holte, Property:	✓

Project Application Report - 25-1217

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
					Little Chumstick Creek site- O'Neill	

Project Application Report - 25-1217

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	05/04/2025	Riparian Enhancement Plan	Beaver Creek Riparian Enhancement Plan 1-5.docx	LisaF	Beaver Creek Riparian Enhancement Plan 1-5.docx, 668690 Property: Beaver Creek site- USFS	✓
	05/04/2025	Riparian Enhancement Plan	Roaring Creek Riparian Enhancement Plan 1-5.docx	LisaF	Roaring Creek Riparian Enhancement Plan 1-5.docx, 668687 Property: Roaring Creek downstream site- USFS, Property: Roaring Creek upstream site- USFS	✓
	05/04/2025	Riparian Enhancement Plan	Alder Creek Riparian Enhancement Plan 1-5.docx	LisaF	Alder Creek Riparian Enhancement Plan 1-5.docx, 668685 Property: Alder Creek downstream site- USFS, Property: Alder Creek upstream site- USFS	✓
	04/30/2025	Riparian Enhancement Plan	REP-Merritt Oxbow.docx	AaronR	REP-Merritt Oxbow.docx, 668390 Property: Merrit Oxbow site- CDLT	✓
	04/30/2025	Riparian Enhancement Plan	REP- Peshastin 2.5 - 3.0.docx	AaronR	REP- Peshastin 2.5 - 3.0.docx, 668389 Property: Peshastin 2.5 site- Mountain Valley Acre	✓
	04/30/2025	Riparian Enhancement Plan	REP- Lower Peshastin.docx	AaronR	REP- Lower Peshastin.docx, 668388 Property: Lower Peshastin site- WDFW	✓
	04/30/2025	Riparian Enhancement Plan	REP- Goodwin.docx	AaronR	REP- Goodwin.docx, 668387 Property: Goodwin Side Channel site- WA DOT	✓
	04/18/2025	Project Application Report	Project Application Report, 25-1217R (sub 04/18/25 17:39:43)	PhillipK	Project Application Report - 25-1217 (submitted 04-18-2025_17-39-43).pdf, 666884	✓
	04/18/2025	Cost Estimate	Cost Estimate	PhillipK	Cost Estimate.xlsx, 666882	✓
	04/18/2025	Photo	Site irrigation- 2.jpg	PhillipK	Site irrigation- 2.jpg, 666838	✓
	04/18/2025	Photo	Site irrigation- 1.jpg	PhillipK	Site irrigation- 1.jpg, 666837	✓
	04/18/2025	Photo	Riparian Planting Pic-5.jpg	PhillipK	Riparian Planting Pic-5.jpg, 666836	✓
	04/18/2025	Photo	Riparian Planting Pic-4.jpg	PhillipK	Riparian Planting Pic-4.jpg, 666835	✓
	04/18/2025	Photo	Riparian Planting Pic-3.jpg	PhillipK	Riparian Planting Pic-3.jpg, 666834	✓
	04/18/2025	Photo	Riparian Planting Pic-2.JPG	PhillipK	Riparian Planting Pic-2.jpg, 666833	✓
	04/18/2025	Photo	Riparian Planting Pic-1.JPG	PhillipK	Riparian Planting Pic-1.jpg, 666832	✓
	04/18/2025	Photo	Riparian Plant mulching.JPG	PhillipK	Riparian Plant mulching.jpg, 666831	✓
	04/18/2025	Photo	Invasive species management.jpg	PhillipK	Invasive species management.jpg, 666830	✓
	04/18/2025	Photo	Beaver Relocation pic.jpg	PhillipK	Beaver Relocation pic.jpg, 666829	✓
	04/18/2025	Photo	Beaver Acclimation Facility.jpg	PhillipK	Beaver Acclimation Facility.jpg, 666828	✓
	04/18/2025	RCO Fiscal Data Collection Sheet	Trout Unlimited - Fiscal Data Collection Sheet 2025	PhillipK	FiscalDataCollectionSheet TU.pdf, 666825	
	04/18/2025	Applicant Resolution/Authorizations	Trout Unlimited - Applicant Authorization Resolution 2025	PhillipK	2025_ApplicantAuthorizationResolutio… 666823	✓
	04/18/2025	Landowner acknowledgement form	Landowner Acknowledgement Form	PhillipK	Landowner Acknowledgement Form.docx, 666822	
	04/18/2025	Riparian Enhancement Plan	Riparian Enhancement Plan Example	PhillipK	RiparianPlanExample.pdf, 666816	✓
	04/18/2025	RCO Fiscal Data Collection Sheet	Cascadia CD - Fiscal Data Collection Sheet 2025	PhillipK	CascadiaCD - FiscalDataCollectionSheet.pdf, 666815	
	04/18/2025	RCO Fiscal Data Collection Sheet	Cascade Fisheries - Fiscal Data Collection Sheet 2025	PhillipK	FiscalDataCollectionSheet - Cascade Fisheries - 2025.pdf, 666814	
	04/18/2025	Map: Restoration Worksite	Beaver Relocation Potential Site Map	PhillipK	Beaver Relocation Potential Site Map.pdf, 666810	✓
	04/18/2025	Map: Restoration Worksite	CRM Riparian Proposal_Area map	PhillipK	CRM Riparian Proposal_Area map.pdf, 666809	✓
	04/18/2025	Map: Restoration Worksite	Site Map example	PhillipK	Site Map example.pdf, 666808	✓
	04/18/2025	CCA Tribal Notification	CCA-Tribal Notice	PhillipK	CCA-TribalNotice.docx, 666806	✓
	04/18/2025	Applicant Resolution/Authorizations	Cascade Fisheries - Applicant Authorization/Resolution 2025	PhillipK	ApplicantAuthorizationResolution - Cascade Fisheries - 2025.pdf, 666805	✓
	04/18/2025	Applicant Resolution/Authorizations	Cascadia CD - Applicant	PhillipK	2025-04-	✓

Project Application Report - 25-1217

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
			Authorization/Resolution 2025		CCDApplicantAuthorizationResolution… 666804	

Application Status

Application Due Date: 06/23/2025

Status Name	Status Date	Submitted By	Submission Notes
Application Submitted	04/18/2025	Phillip Klenke	
Preapplication	04/02/2025		

I certify that to the best of my knowledge, the information in this application is true and correct. Further, all application requirements due on the application due date have been fully completed to the best of my ability. I understand that if this application is found to be incomplete, it will be rejected by RCO. I understand that I may be required to submit additional documents before evaluation or approval of this project and I agree to provide them. (Phillip Klenke, 04/18/2025)

Date of last change: 05/22/2025

RESTORATION

				OVERALL PROJECT	GRANT REQUEST	MATCH			
				Budget must account for all costs to complete the project	*Enter only the amount of the grant request*	*The Grant Request and Match should equal the total project cost and Budget Check cell should be 0. Sponsors must account for all sources and types of match need to complete the project.*			
				Amount	Grant Amount	Match in PRISM	Funding not reported in PRISM	Source (Grant, Cash, Materials, Labor, Volunteers, etc)	Match Type (federal, state, local)
Construction									
Category (choose one)	**Task Description**	**Qty**	**Rate**						
Other	*Cascade Fisheries Staff time (all non AAE)*	1.00	$ 140,000.00	$ 140,000	$ 106,000	$ -	$ -		
Other	*Cascadia Conservation District Staff time (all non AAE)*	1.00	$ 148,000.00	$ 148,000	$ 112,000	$ -	$ -		
Other	*Trout Unlimited Staff time (Stewardship and Maintenance)*	1.00	$ 172,200.00	$ 172,200	$ 130,000	$ -	$ -		
Other	*Trout Unlimited Staff time (Beaver Relocation)*	1.00	$ 173,840.00	$ 173,840	$ 131,000	$ -	$ -		
Materials	*Cascade Fisheries*	1.00	$ 15,000.00	$ 15,000	$ 11,500	$ -	$ -		
Materials	*Cascadia Conservation Distric*	1.00	$ 12,000.00	$ 12,000	$ 9,000	$ -	$ -		
Materials	*Trout Unlimited*	1.00	$ 19,000.00	$ 19,000	$ 14,500	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			STotal	**$ 680,040**	**$ 514,000**	**$ -**	**$ -**		

Administrative, Architechtural & Engineering				Amount	Grant amount	Match in PRISM	Funding not reported in PRISM	Match Source	Match Type (federal, state, local)
Category	**Task Description**	**Qty**	**Rate**						
Administrative	*Cascade Fisheries*	1.00	$ 31,000.00	$ 31,000.00	$ 23,500	$ -	$ -		
Administrative	*Cascadia Conservation District*	1.00	$ 33,000.00	$ 33,000.00	$ 25,000	$ -	$ -		
Administrative	*Trout Unlimited (all)*	1.00	$ 75,960.00	$ 75,960.00	$ 57,500	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			STotal	**$ 139,960**	**$ 106,000**	**$ -**	**$ -**		

Indirect Costs				Amount	Grant amount	Match in PRISM	Funding not reported in PRISM	Match Source	Match Type (federal, state, local)
	Description	**Approved Rate**	**Total Project Base**						
	Indirect	0.000%	$ -	$ -	$ -	$ -	$ -		
	Indirect	0.000%	$ -	$ -	$ -	$ -	$ -		
			STotal	**$ -**	**$ -**	**$ -**	**$ -**		

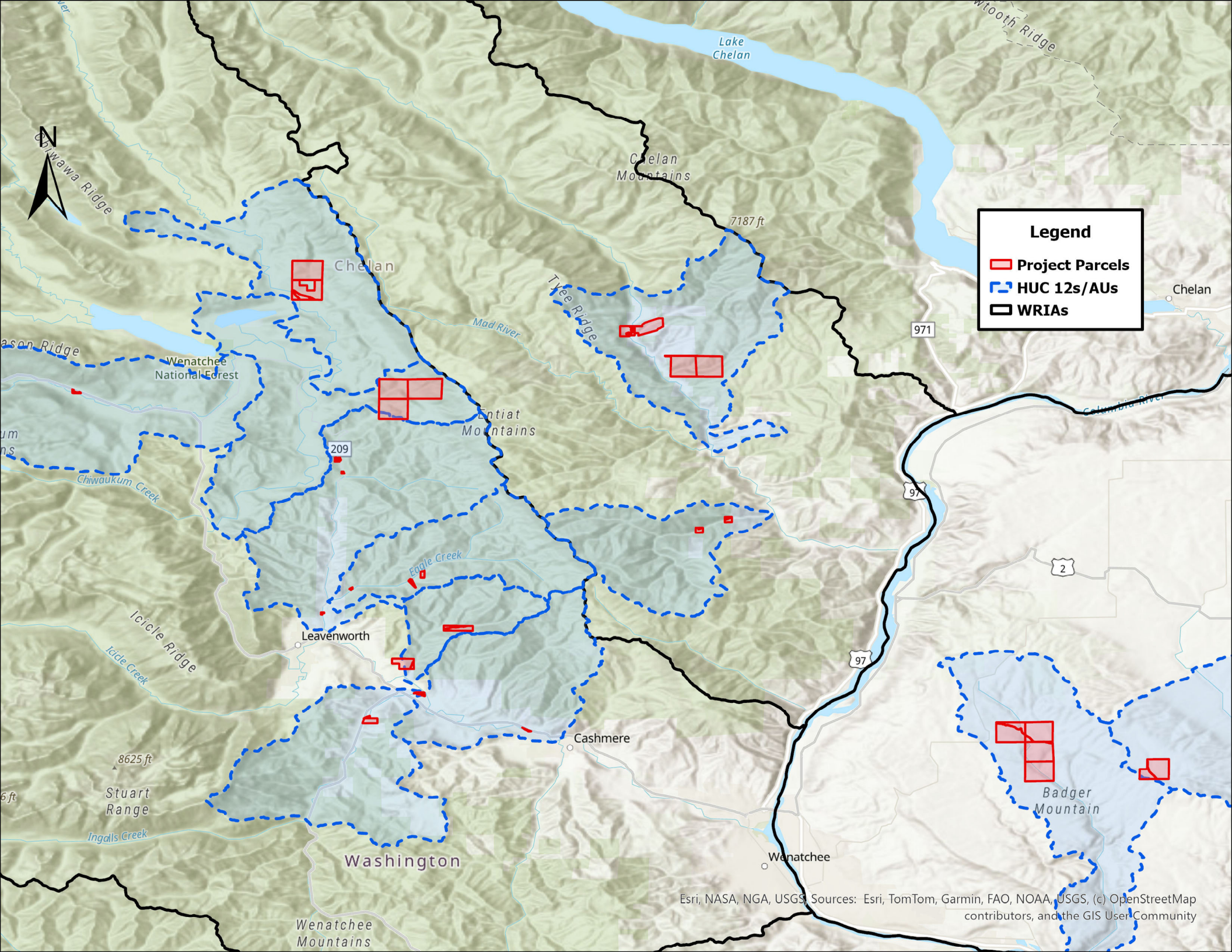
AA&E Budget Check		Totals	**$ 820,000**	**$ 620,000**	**$ -**	**$ -**
A&E maximum allowed in PRISM	*$ 154,200.00*			**PRISM Project Total**	$ 620,000	
A&E validation	48,200			**RCO Percentage**	**Match Percentage**	
				100.000000%	**0.000000%**	

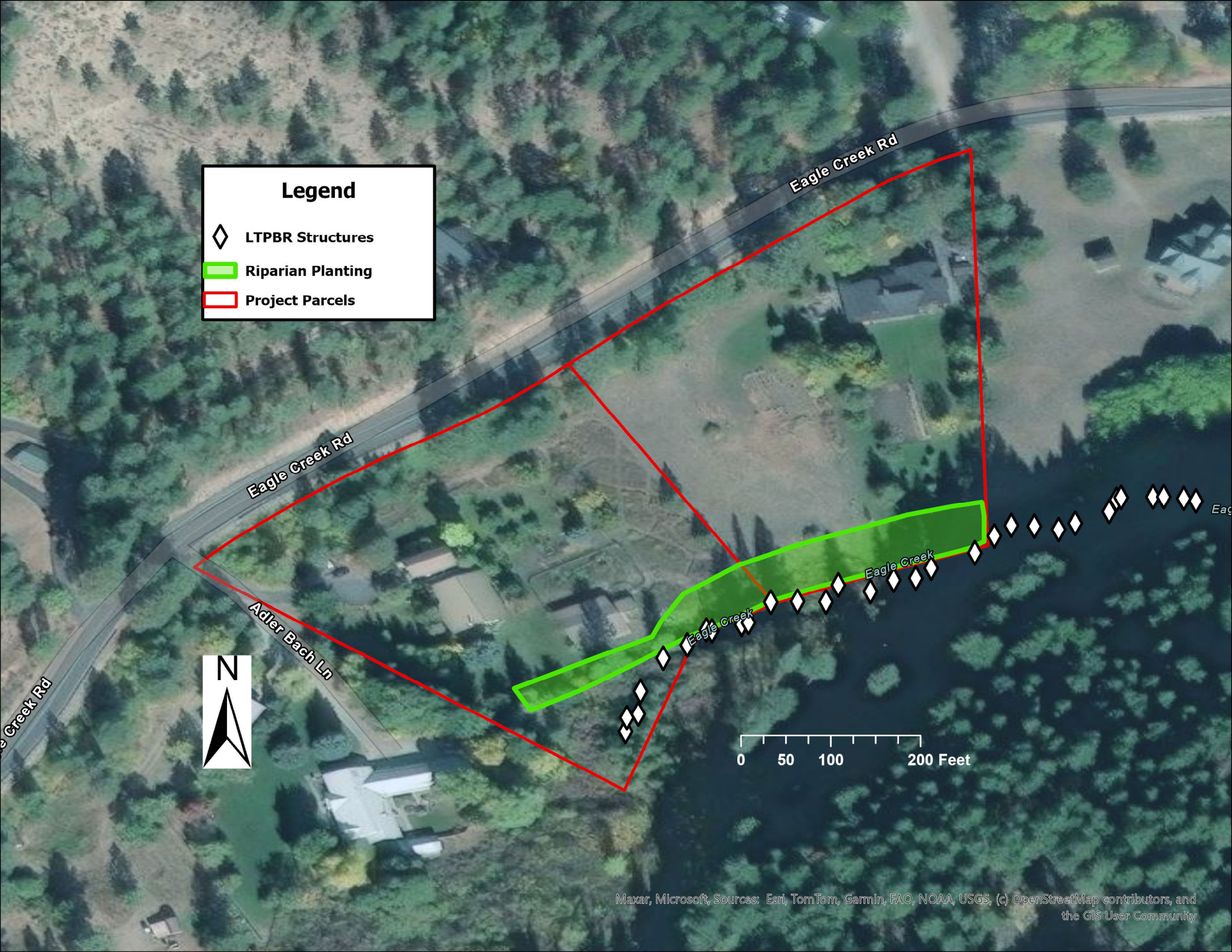
CUMULATIVE TOTALS

This sheet contains automatic calculations

Project Name	CRM Riparain Stewardship Package
SRFB #	25-1217
Sponsor	Cascade Col Fish Enhance Group

	OVERALL PROJECT Cost	GRANT REQUEST Amount	PRISM MATCH Amount	MATCH NOT IN PRISM Amount	*Budget Check*
Sheet #1 Acquisition					
Property Costs	$ -	$ -	$ -	$ -	0
Incidental Costs	$ -	$ -	$ -	$ -	0
Administrative Costs	$ -	$ -	$ -	$ -	0
Indirect Costs	$ -	$ -	$ -	$ -	
STotal	$ -	$ -	$ -	$ -	0
Sheet #2 Design					
Design Costs	$ -	$ -	$ -	$ -	
Indirect Costs	$ -	$ -	$ -	$ -	
STotal	$ -	$ -	$ -	$ -	0
Sheet #3 Restoration					
Construction Costs	$ 680,040	$ 514,000	$ -	$ -	166,040
AA&E	$ 139,960	$ 106,000	$ -	$ -	33,960
Indirect Costs	$ -	$ -	$ -	$ -	
STotal	$ 820,000	$ 620,000	$ -	$ -	200,000
Totals	$ 820,000	$ 620,000	$ -	$ -	200,000


Legend
Project Parcels
HUC 12s/AUs
WRIAs
N
Lake Chelan
Chelan Mountains
7187 ft
Chelan
Tyee Ridge
Mad River
Wenatchee National Forest
Entiat Mountains
209
Chiwaukum Creek
Eagle Creek
Icicle Ridge
Icicle Creek
Leavenworth
Cashmere
8625 ft
Stuart Range
Ingalls Creek
Washington
Wenatchee Mountains
Wenatchee
Badger Mountain
Columbia River
971
97
2
Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community


Legend
LTPBR Structures
Riparian Planting
Project Parcels
Eagle Creek Rd
Eagle Creek Rd
Adler Bach Ln
Eagle Creek
Eagle Creek
N
0
50
100
200 Feet
Maxar, Microsoft, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community


Potential Relocation Sites in the Wenatchee and Entiat Watersheds
N
Trinity
Rock Creek
Three Creek
NF Entiat
Pope Creek
Silver Creek
Lake Creek
Tommy Creek
Minnow Creek
White River
TwelveMile Creek
Lake Creek
Deep Creek
Maverick Saddle
Billy Creek
Billy Creek
Tyee Ridge
Windy Creek
Potato Creek
Barrett Creek
Mud Creek
Harris Creek
Johnson Creek
Smith Brook
Snowy Creek
Nason Ridge
Nason Creek
Beaver Creek
Hornet Creek
Tillicum Creek
Tillicum Creek
Tillicum Creek
Dry Creek
Upper Roaring Creek
Sunshine Canyon
Mill Creek
Chiwaukum Mountains
Natapoc Ridge
Spromberg Canyon
Spromberg Canyon
Van Creek
Tamarack Creek
Freund Creek
Eagle Creek
Swakane Creek
Upper Icicle
Chatter Creek
Doctor Creek
Trout Creek
Bob Creek
Icicle Creek
Icicle Ridge
Leavenworth
Eightmile Creek
Rat Creek
Mountaineer Creek
Cashmere
Stuart Range
Camas Creek
Ingalls Creek
Ruby Creek
Washington
Wenatchee
Sand Creek
M. Shaser Creek
Tronsen Creek
Wenatchee Mountains
Cle Elum River
Chiwawa Ridge
Wenatchee Ridge
White River
Napeequa River
Entiat River
Lake Chelan
Chelan Mountains
White Mountains
Mad River
10542 ft
7187 ft
8625 ft
9416 ft
97
Wenatchee Potential Relocation Sites
Entiat Potential Relocation Sites
Esri, NASA, NGA, USGS, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS
0 3 6 12 Miles

Cascade Col Fish Enhance Group; CRM Riparian Stewardship Package (#25-1217)

Attachment #666831, Riparian Plant mulching.JPG

Cascade Col Fish Enhance Group; CRM Riparian Stewardship Package (#25-1217)

Attachment #666829, Beaver Relocation pic.jpg

Cascade Col Fish Enhance Group; CRM Riparian Stewardship Package (#25-1217)

Attachment #666828, Beaver Acclimation Facility.jpg

Cascade Col Fish Enhance Group; CRM Riparian Stewardship Package (#25-1217)

Attachment #666838, Site irrigation- 2.jpg

Cascade Col Fish Enhance Group; CRM Riparian Stewardship Package (#25-1217)

Attachment #666835, Riparian Planting Pic-4.jpg

Cascade Col Fish Enhance Group; CRM Riparian Stewardship Package (#25-1217)

Attachment #666833, Riparian Planting Pic-2.JPG

Alder Creek Riparian Enhancement Plan

Alder Creek is a tributary to the Chiwawa River located primarily on U.S. Forest Service property in Chelan County, WA. The Alder Creek watershed is primarily comprised of USFS public lands, with some private lands approximately 0.75 miles from the mouth. Occurring within the Upper Wenatchee Pilot project area, this area provides valuable habitat for Upper Columbia steelhead and spring chinook.

Table of Contents

1. Existing Conditions Assessment

Overview:

Reaches 1 and 2 of Alder Creek are located primarily on U.S. Forest Service property with some private parcels in Chelan County, WA. This project is located entirely on USFS property to the north and south of the private parcels and the project area has a 6.2 acre riparian zone. Occurring within the Upper Wenatchee Pilot Project area, this stream has been identified as having limited large wood inputs, off-channel-side-channels, and floodplain connectivity resulting in a need for channel complexity restoration, channel modification, and riparian restoration and management. Low-tech process-based restoration was implemented in 2022 with goals of increasing habitat diversity and complexity, pool habitat, floodplain access, water retention and baseflows, and channel length through meander formation and braiding.

Target species: The species of concern in the Alder Creek basin are Endangered Species Act listed Threatened Upper Columbia summer steelhead and ESA listed Endangered spring chinook. Washington Department of Fish and Wildlife Statewide Washington Integrated Fish Distribution data shows documented steelhead spawning and rearing. Juvenile Spring Chinook were reported in Alder Creek in the Upper Wenatchee Pilot Project: Aquatic Habitat Assessment and Restoration Strategy Report prepared by Cramer Fish Sciences in 2019.

Environmental Setting:

The site is dominated by Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) alder, vine maple, and big leaf maple. Chiwawa River tributaries have been degraded by development, clear cut logging, road construction, stand replacing wildfire, and removal of beaver populations. These impacts have resulted in loss of large woody debris inputs, loss of stream habitat diversity and complexity, loss of historic beaver pond complexes, disconnected floodplains and wet meadows, and head cutting.

Land use:

Most of the watershed is within USFS boundaries, with a few private parcels. There are numerous road crossings and forest roads that run in close proximity throughout much of the lower portion of the stream. No passage barriers are mapped for Alder Creek on the Upper Columbia Fish Passage Barrier Removal Prioritization map.

Soils: U.S. Department of Agriculture (1989) mapped soils as Choralmont cindery sandy loam, 3-30% slopes and Bigcreek gravelly sandy loam, 0-8% slopes through this section of Alder Creek floodplain. Choralmont cindery sandy loam is well drained volcanic ash and pumice over till and in a few places residuum. Bigcreek gravelly sandy loam is well drained volcanic ash and pumice over glaciofluvial deposits.

Hydrology/Water Quality:

Alder Creek is a snow melt dominated watershed. The sponsor has measured average summer water depths since project installation at 22". The floodplain portion of the site is subject to occasional brief periods of flooding from November through April.

Alder Creek is not on the 303 (d) list, but the reach of the Chiwawa River immediately downstream does have a 303 (d) listing for temperature. High stream temperatures detrimentally impact spawning, rearing and migration, potentially affect prey availability, and hold less dissolved oxygen than colder water, which can lead to respiratory stress and reduced growth rates.

Site Constraints: The primary enhancement challenges include preserving native plants during the dry summers, and trying to improve species diversity, especially including species preferred by beavers – Willow, aspen, alder, cottonwood. Long term stewardship will increase available groundwater and spread water on the floodplain to aid vegetation establishment and self-sustaining riparian communities.

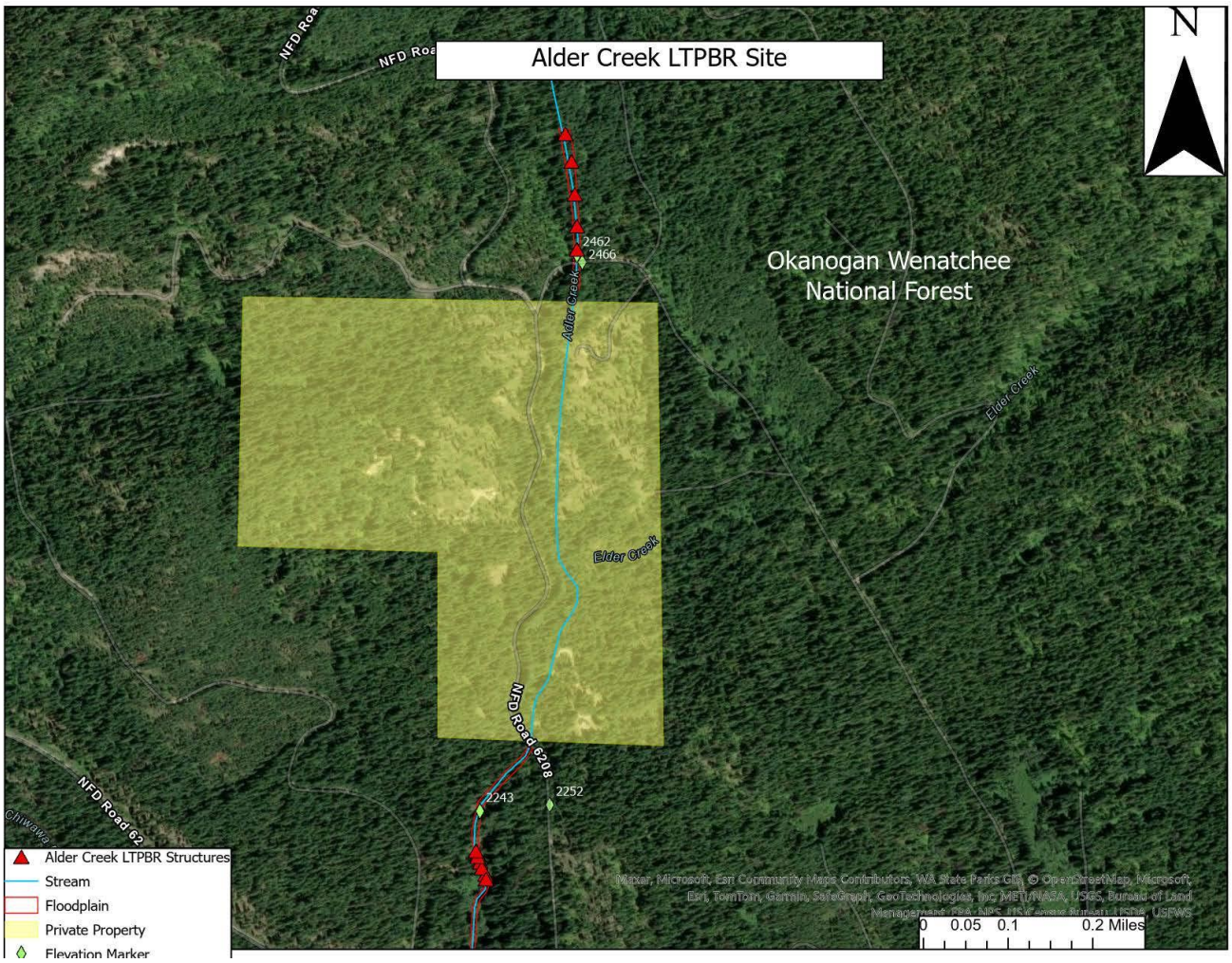
2. Restoration Objectives

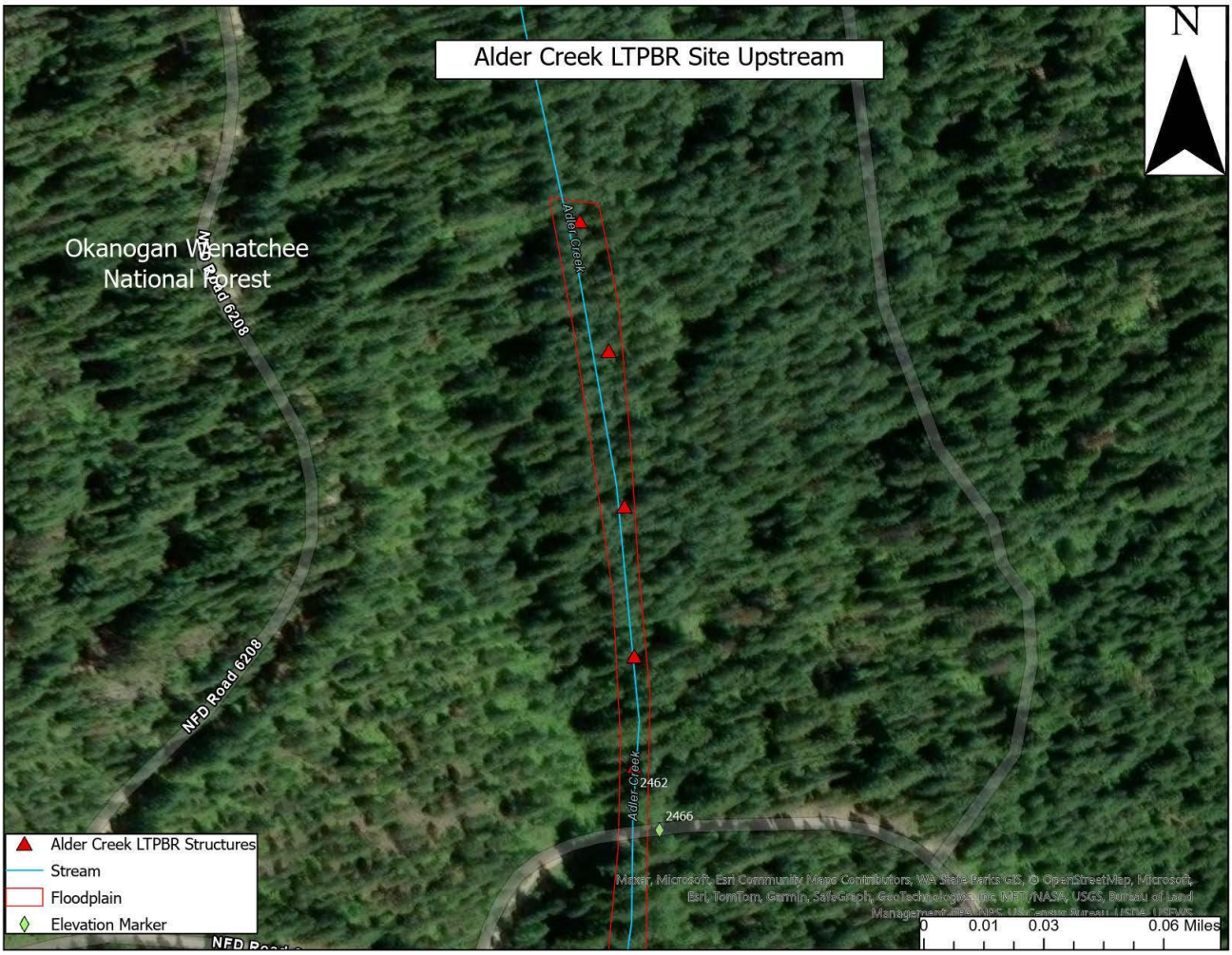
The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act listed Threatened Upper Columbia summer steelhead and ESA listed Endangered spring chinook.

The objective is to improve Alder Creek juvenile steelhead and chinook rearing habitat conditions, specifically by maintaining installed LTPBR structures to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. The specific objectives of this project include:

1. Maintain installed LTPBR structures on an annual basis to continue accruing original project benefits.
    a. Obtain weave material through nearby forest thinning projects if possible.
    b. Plug holes in structures and establish a strong seal to ensure water only flows over the top of the structure, creating the largest possible pools, while maintaining fish passage and accruing sediment to correct incision.
2. Adaptively manage the project site
    a. Identify developing site conditions through regular monitoring.
    b. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit adult steelhead and chinook spawning and passage.
    c. Add structures as needed.
    d. Encourage side channel formation.
3. Encourage beaver reintroduction or relocate beavers to the site if possible.
    a. Beavers can maintain and enhance site conditions much more quickly than humans, and often build on LTPBR structures, effectively providing free maintenance.
    b. If the site can provide adequate habitat and beavers are available, relocate them to the project site.
4. Track performance of enhancement efforts through monitoring in years one, three, five, seven, and ten as outlined in monitoring plan found in section 6.

3. Plan Maps


Alder Creek LTPBR Site
N
Okanogan Wenatchee
National Forest
2462
2466
Alder Creek
Elder Creek
Elder Creek
NFD Road 6208
2243
2252
NFD Road 62
Alder Creek LTPBR Structures
Stream
Floodplain
Private Property
Elevation Marker
0 0.05 0.1 0.2 Miles


Alder Creek LTPBR Site Upstream
N
Okanogan Wenatchee
National Forest
NFD Road 6208
NFD Road 6208
Alder Creek
Alder Creek
2462
2466
Alder Creek LTPBR Structures
Stream
Floodplain
Elevation Marker
Maxar, Microsoft, Esri Community Maps Contributors, WA State Parks GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, USDA FSA, USGS, Census Bureau, USDA, USFWS
0 0.01 0.03 0.06 Miles


Alder Creek LTPBR Site Downstream
N
Okanogan Wenatchee
National Forest
Alder Creek
NFD Road 6208
2252
2243
Alder Creek LTPBR Structures
Stream
Floodplain
Elevation Marker
Maxar, Microsoft, Esri Community Maps Contributors, WA State Parks GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
0 0.01 0.02 0.04 Miles

4. Site Preparation Methods

The sponsor will secure funding and hire, supervise, and work with field crews to complete site preparation work. The sponsor will secure any permits and licenses needed to complete work.

Site preparation for maintenance and monitoring of the LTPBR project involves obtaining weave material, ideally from nearby forest thinning projects, but may need to be cut or purchased.

5. Riparian Planting Methods

No planting is proposed at this time.

Derby Creek- DNR Site- Riparian Enhancement Plan

Site: DNR Parcel

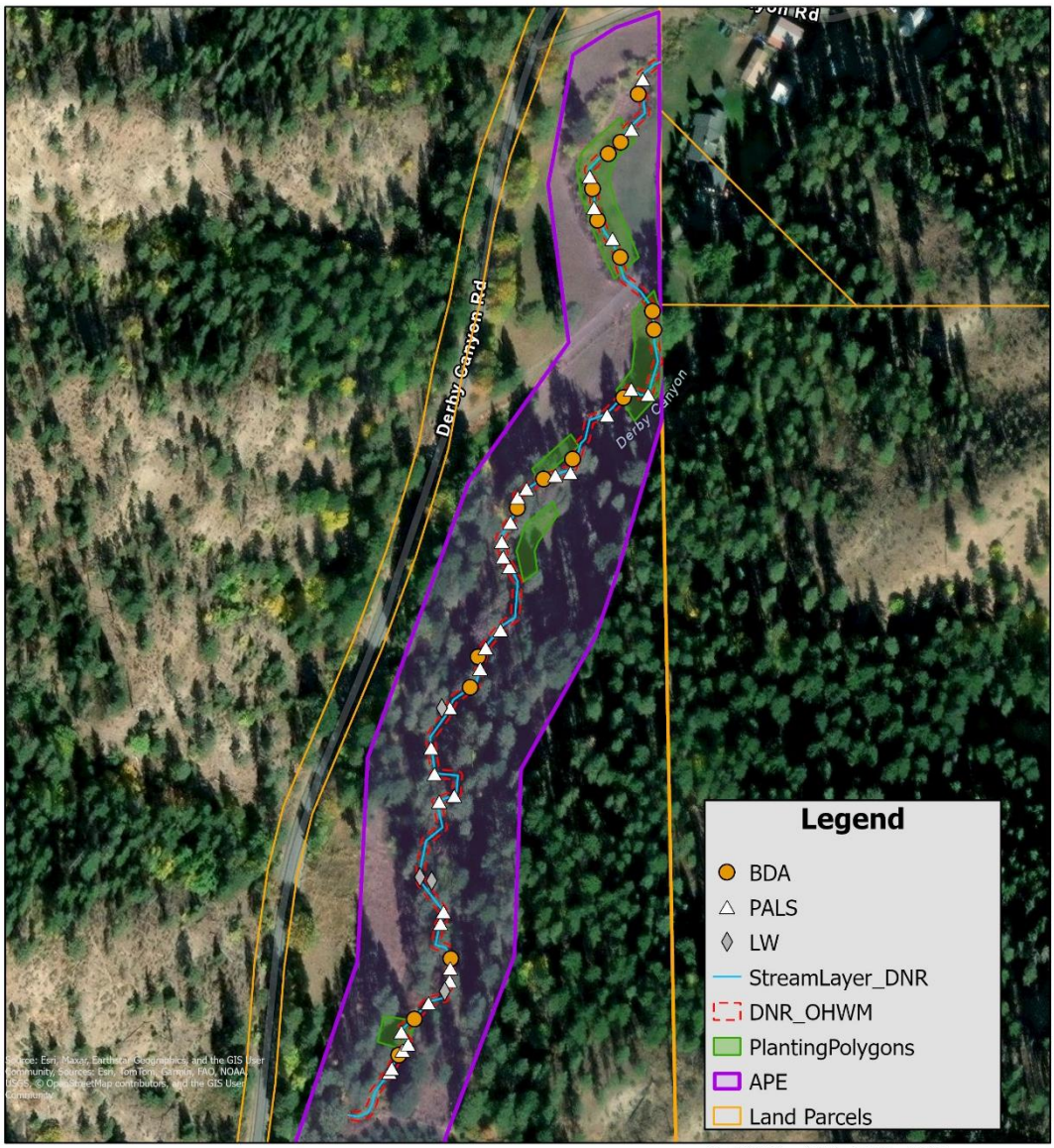
1. **Existing Conditions Assessment**
    a. **Overview**: This public land parcel, owned by the WA Department of Natural Resources, includes 0.6 riparian acres to be planted (2025) along 2000 ft of Derby Creek. Both sides of the creek will be planted with native riparian vegetation in specific locations; primarily bare banks that have little to no existing understory vegetation cover. The property is grazed by ~3 heads of cattle annually, so stream banks have been cleared for cattle access to the creek and for increased areas of grass forage. Planted riparian vegetation will be fenced for the first 2-4 years during establishment, to exclude grazing of cattle and other wildlife.
    b. **Target Species:** The species of concern in Derby Creek is the migratory and resident forms of *Oncorhynchus mykiss* (Steelhead and Rainbow Trout). The Upper Columbia Summer Steelhead population is listed as threatened, and has been observed in Derby Creek for juvenile rearing.
    c. **Environmental Setting:** The Derby Creek watershed is located within a Ponderosa Pine zone, a region characterized by semi-arid conditions and a high incidence of fire. The mouth of Derby Creek is crossed by the BNSF Railway, altering the hydro-geomorphology between the creek and the Wenatchee River. The lower 2 miles of the creek are heavily influenced by anthropogenic alterations, as the creek winds between residential properties, orchards, and the Derby Canyon Rd. Due to historic disturbance (e.g. fire, flood, logging, agriculture, grazing, infrastructure, etc.) and current water withdrawals (irrigation), Derby Creek seasonally runs dry from the mouth to River Mile 1.5 in the summer/fall.
    d. **Land Use:** This site is near river mile 0.5 on Derby Creek. Land use below the site to the confluence with the Wenatchee River is primarily rural residential development and small orchards. Above the site is also primarily in rural residential development and small orchards with a few small farm developments. Above river mile 2.0 on Derby Creek, the landownership is predominantly United States Forest Service and are managed as forest lands. At the current site, the land is managed by the WA Department of Natural Resources, and is leased to an adjacent landowner as a grazing allotment to ~3 head of cattle each year. No infrastructure exists or is planned for development on this property.

e. **Soils:** Project site consists of Burch fine sandy loam. These soils are well drained, have a high capacity to transmit water, have a high available water supply, and are indicated as farmland of statewide and unique importance.
f. **Hydrology/Water Quality:** Derby Creek is a snow melt dominated watershed, that drains an area of 8500 acres. The Stream Stats report for the entire Derby Creek watershed indicates an mean annual precipitation of 25.4 inches for the basin, with a 2-year peak-flow prediction of 100cfs. The project site is outside of the FEMA 100-year floodplain and is not within WA DNR state-owned aquatic lands.

   Derby Creek is not listed on the 303(d) list for temperature, nor does it have an established TMDL. However, water use/withdrawals, warming climate conditions, and sections of stream without riparian canopy cover can lead to warming in-stream temperatures, which can detrimentally impact juvenile *O. mykiss* populations.
g. **Site Constraints:** The primary enhancement challenges include preserving native plants during the dry summers, and excluding grazing from cattle and wildlife using fencing. Irrigation and mulching are needed for initial establishment in the first 2-3 years of plant growth. Longer term stewardship will assist the establishment of trees and shrubs, to create healthy riparian communities that are self-sustaining.

2. **Restoration Objectives**
   a. The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. In-stream habitat structures installed will also help create more complexity in the stream for various fish life stages. Specific objectives include:
      i. Establish native riparian plant composition on the site to better provide thermal protection of the stream to reduce summer heating.
      ii. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit salmon spawning and passage, as well as improving on-site hydrology by improving groundwater retention and raising the water table. This is accomplished by installing instream structures- a mix of BDAs, PALS, and pulling in large wood from onsite.

3. Plan Maps



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4. Site Prep Methods

a. Site preparation includes mechanical control of dense vegetation as necessary to plant more diverse species within the existing vegetation. Currently the stream banks where the majority of the planting is taking place is mowed or other vegetation has been removed to maximize grazing forage (grasses) so little to no site prep is needed at this time.

5. **Riparian Planting Methods**
    a. Planting consists of container, livestakes, and bareroot stock. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall. Planting polygons will be fenced to prevent grazing from wildlife and cattle while plants establish, and fences will be removed once plants are passed grazing pressure (3-5 years).

Derby Creek- Stroud Site- Riparian Enhancement Plan

Site: Stroud property

1. **Existing Conditions Assessment**
    a. **Overview**: This private land parcel includes 2100 ft of Derby Creek that will be opportunistically livestaked. Both sides of the creek will be staked with native riparian vegetation plant stakes as necessary; primarily on bare banks that have little to no existing understory vegetation cover or that do not have a riparian community with a diverse species composition that is characteristic of the area. The property's forest has been selectively logged by the landowner in the past two decades.
    b. **Target Species:** The species of concern in Derby Creek is the migratory and resident forms of *Oncorhynchus mykiss* (Steelhead and Rainbow Trout). The Upper Columbia Summer Steelhead population is listed as threatened, and has been observed in Derby Creek for juvenile rearing.
    c. **Environmental Setting:** The Derby Creek watershed is located within a Ponderosa Pine zone, a region characterized by semi-arid conditions and a high incidence of fire. The mouth of Derby Creek is crossed by the BNSF Railway, altering the hydro-geomorphology between the creek and the Wenatchee River. The lower 2 miles of the creek are heavily influenced by anthropogenic alterations, as the creek winds between residential properties, orchards, and the Derby Canyon Rd. Due to historic disturbance (e.g. fire, flood, logging, agriculture, grazing, infrastructure, etc.) and current water withdrawals (irrigation), Derby Creek seasonally runs dry from the mouth to River Mile 1.5 in the summer/fall.
    d. **Land Use:** This site is near river mile 4.0 on Derby Creek. Land use below the site, from the confluence with the Wenatchee River to River Mile 2.0, is primarily rural residential development, with small orchards and few small farm developments. Above river mile 2.0 on Derby Creek, the landownership is predominantly United States Forest Service and are managed as forest lands. At the current site, the land is owned and managed by a private landowner, who has performed selective logging practices on the land within the last two decades. There is no existing infrastructure on the property, except for a small stream crossing (bridge).
    e. **Soils:** Project site consists of Billyridge gravelly sandy loam, and Nard sandy loam. These soils are well drained, have a high capacity to transmit water,

and have a moderate-high available water supply. These soils are indicated as not prime farmland.

f. **Hydrology/Water Quality:** Derby Creek is a snow melt dominated watershed, that drains an area of 8500 acres. The Stream Stats report for the entire Derby Creek watershed indicates an mean annual precipitation of 25.4 inches for the basin, with a 2-year peak-flow prediction of 100cfs. The project site is outside of the FEMA 100-year floodplain and is not within WA DNR state-owned aquatic lands.

   Derby Creek is not listed on the 303(d) list for temperature, nor does it have an established TMDL. However, water use/withdrawals, warming climate conditions, and sections of stream without riparian canopy cover can lead to warming in-stream temperatures, which can detrimentally impact juvenile *O. mykiss* populations.

g. **Site Constraints:** The primary enhancement challenges include preserving native plants during the dry summers, and trying to improve species diversity on a site with somewhat established riparian communities. Additional live staking at the site may be necessary in subsequent years if plants do not establish successfully. Longer term stewardship will assist the establishment of trees and shrubs, to create healthy riparian communities that are self-sustaining.

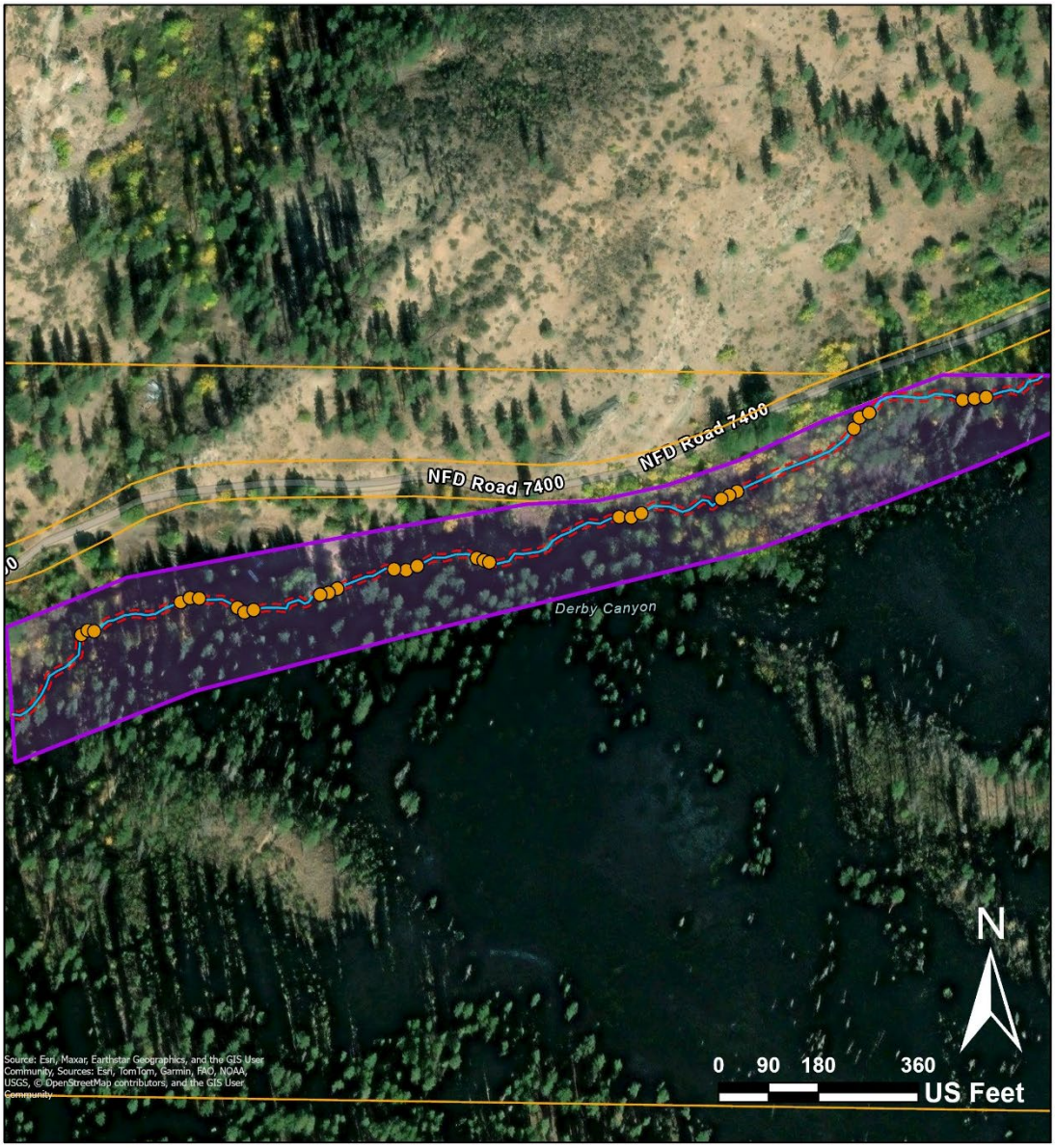
2. **Restoration Objectives**

   a. The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. In-stream habitat structures installed will also help create more complexity in the stream for various fish life stages. Specific objectives include:

      i. Establish native riparian plant composition on the site to better provide thermal protection of the stream to reduce summer heating.

      ii. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit salmon spawning and passage, as well as improving on-site hydrology by increasing groundwater retention and raising the water table. This is accomplished by installing instream structures- a mix of BDAs, PALS, and pulling in large wood from onsite.

3. Plan Maps



CASCADE FISHERIES

Stroud Property- LTPBR Concept Map 2025

Legend

- Stroud-BDA/PALS
- StreamLayer_Stroud
- APE
- Land Parcels
- Stroud_OHWM

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4. Site Prep Methods

a. Site preparation includes mechanical control of dense vegetation as necessary to plant more diverse species within the existing vegetation.

5. **Riparian Planting Methods**
    a. Planting consists of livestakes stock, which will be planted using dibblers. Planting takes place in fall.

Duffy Creek Riparian Enhancement Plan

Duffy Creek is a tributary to Douglas Creek which is a tributary to the Columbia River located primarily on Bureau of Land Management property in Douglas County, WA. The Duffy Creek watershed is in the sage steppe ecosystem with leased grazing and provides important habitat for rainbow trout and greater sage-grouse.

Table of Contents

1. Existing Conditions Assessment

Overview:

Duffy Creek is a tributary to Douglas Creek which is a tributary to the Columbia River located primarily on Bureau of Land Management property in Douglas County, WA. The Duffy Creek watershed is in the sage steppe ecosystem with leased grazing and provides important habitat for rainbow trout and greater sage-grouse. The uppermost reach of Duffy Creek is undergoing Stage Zero restoration in 2025 with plans to reconnect the floodplain over 10 acres. Goals include increasing habitat diversity and complexity, riparian vegetation, floodplain access, water retention and baseflows, and channel length through meander formation and braiding.

Target species: The species of concern in Duffy Creek are rainbow trout (*O. mykiss*) and greater sage grouse (*Centrocercus urophasianus*).

Environmental Setting:

The site is dominated by sage brush (*Artemisia sp.*) and native and nonnative grasses with some ponderosa pine (*Pinus ponderosa*). The creek is incised and eroded from years of grazing and what appears to be intense anthropogenic floodplain modification. This has led to loss of stream habitat diversity and complexity, and disconnected floodplains and wet meadows.

Land use:

Most of the watershed is within Bureau of Land Management ownership, with a small portion of private land. This land is primarily used for recreation and cattle ranching activity on a regulated cycle throughout the season. BLM works with the ranchers that graze these parcels to optimize grazing routines for habitat and the lessee has expressed they will discontinue grazing on this site post restoration.

Soils:

U.S. Department of Agriculture (1989) mapped soils as Haploxerolls and Grinrod-Ralls-Argabak complex through the Duffy Creek floodplain. Haploxerolls are moderately well drained, and nearly level to gently sloping. Grinrod-Ralls-Argabak complex, 8 to 50 percent slopes are well drained colluvium and residuum weathered from basalt.

Hydrology/Water Quality:

Duffy Creek is a spring fed watershed with multiple springs occurring on the project site. It appears that humans have heavily manipulated the hydrology. Site has been in agriculture and grazing for over 50 years. Site has been channelized; channel moved to edge of valley. May not have had channel historically. Channel is downcut with heavy incision. Non-native seeded grasses dominate valley. Two springs are present. These springs are damaged by grazing and become hyporheic immediately downslope/downstream. Stage Zero restoration and LTPBR structures are

reconnecting the floodplain and restoring wetland habitat.

Duffy Creek does not have any 303(d) listings, but water quality likely suffers from grazing impacts. It is a tributary to Douglas creek, which has a 303 (d) listing for high pH and temperature. High stream temperatures detrimentally impact fish spawning, rearing and migration, potentially affect prey availability, and hold less dissolved oxygen than colder water, which can lead to respiratory stress and reduced growth rates. High pH can be particularly detrimental to fish eggs and juveniles, leading to increased mortality.

Site Constraints:

The primary enhancement challenges include preserving native plants during the dry summers, and trying to improve species diversity, especially including sedges and rushes, as well as species preferred by beavers – willow, aspen, alder, cottonwood. Long term stewardship will increase available groundwater and spread water on the floodplain to aid vegetation establishment and self-sustaining riparian communities.

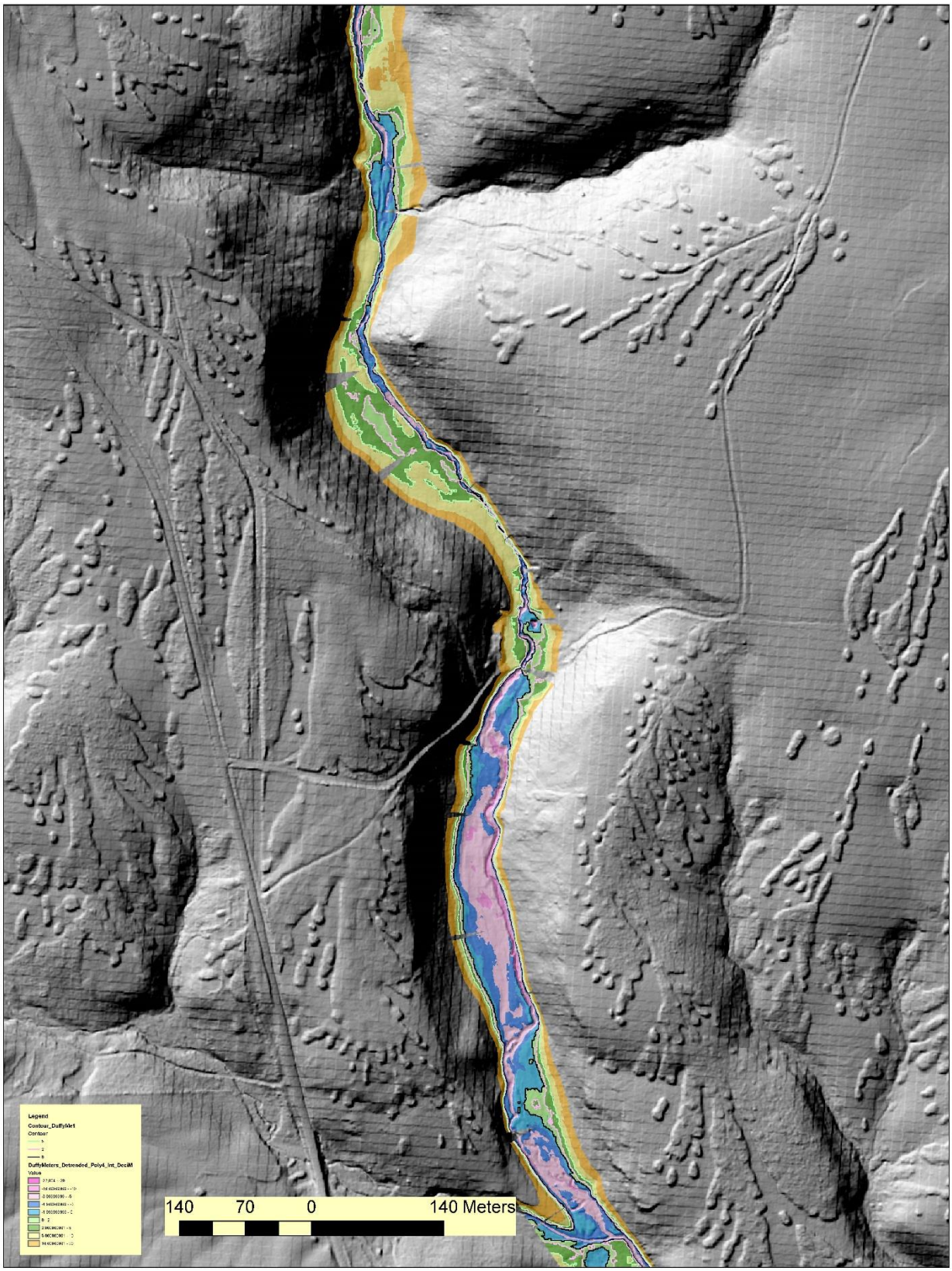
2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act listed Threatened Upper Columbia summer steelhead.

The objective is to improve habitat for rainbow trout (*O. mykiss*), specifically by maintaining stage zero restoration project and installed LTPBR structures to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. The specific objectives of this project include:

1. Maintain installed LTPBR structures on an annual basis to continue accruing original project benefits.
    a. Obtain weave material through nearby forest thinning projects if possible.
    b. Plug holes in structures and establish a strong seal to ensure water only flows over the top of the structure, creating the largest possible pools, while maintaining fish passage and accruing sediment to correct incision.
2. Adaptively manage the project site
    a. Identify developing site conditions through regular monitoring.
    b. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit adult steelhead and chinook spawning and passage.
    c. Add structures as needed.
    d. Encourage side channel formation.
3. Encourage beaver reintroduction or relocate beavers to the site if possible.
    a. Beavers can maintain and enhance site conditions much more quickly than humans, and often build on LTPBR structures, effectively providing free maintenance.
    b. If the site can provide adequate habitat and beavers are available, relocate them to the project site.
4. Track performance of enhancement efforts through monitoring in years one, three, five, seven, and ten as outlined in monitoring plan found in section 6.

3. Plan Maps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4. Site Preparation Methods

The sponsor will secure funding and hire, supervise, and work with field crews to complete site preparation work. The sponsor will secure any permits and licenses needed to complete work.

Site preparation for maintenance and monitoring of the stage zero and LTPBR project involves obtaining weave material, ideally from nearby forest thinning projects, but may need to be cut or purchased.

5. Riparian Planting Methods

BLM is conducting planting and seeding to replace plants that are removed during restoration project and to prevent weed incursion. At this time, Trout Unlimited is not involved with the planting component of the project.

6. Implementation Monitoring

To evaluate if the enhancement activities meet the restoration objectives (section 2), the sponsor will perform implementation monitoring in years one, three, five, seven, and ten after installation and potentially year fifteen and twenty if funding and capacity exist. Percent survival of tree stock will be based on quantitative counts from year one through five. Naturally regenerating species will be included in this count. Starting at year five and beyond, counts will be replaced with percent cover using a minimum of four fixed transects, with percent cover of native and nonnative species determined using the point-intercept method as described by Merritt, et al. 2017. The National Riparian Core Protocol.[1] Alternatively, the sponsor may substitute high resolution drone imagery to determine the percentage of canopy cover of trees, possibly other species, using an off-the-shelf analysis software.

- Percent survival of tree and shrub species (quantitative), years one through five
- Percent canopy cover of native and nonnative vegetation (quantitative), year seven and beyond. Includes planted and naturally regenerating species.
- Vigor and health assessment of species (qualitative)

Monitoring results will allow sponsor to assess the need for adaptive management of the restoration site. Monitoring likely will occur between May and July, to target growing season and correspond with annual maintenance activities. As part of quantitative and qualitative monitoring efforts, the sponsor will take a minimum of three photos at six established photo stations. Drone imagery of the entire site also may be captured. The sponsor will provide a summary of data to RCO in the final report and as part of future stewardship grant requests.

7. Post-Implementation Maintenance

Table B: Maintenance Schedule

Work	Timing
Chemical spot treatment of invasive nonnative plants	Years 1-5 in spring and fall Years 6-10, and 15 in spring only
Replant native species to maintain survival/cover objectives	Years 1-10 in winter
Replace herbivory protection	Years 1-5 in spring
Mulch as needed	Years 1, 3, and 5 in spring
Irrigation	Years 1-3 in summer
Remove herbivory protection	Year 10 in summer
Thin trees to maintain healthy density	Years 10, 15, and 20 in summer

[1]Merritt, David M.; Manning, Mary E.; Hough-Snee, Nate, eds. 2017. The National Riparian Core Protocol: A riparian vegetation monitoring protocol for wadeable streams of the conterminous United States. Gen. Tech. Rep. RMRS-GTR-367. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 37 p.

Maintenance will occur until plants reach a stage where natural suppression of invasive species and forest succession appear to be self-sustaining. Control methods of most invasive vegetation will include chemical spot treatment with possible mechanical mowing (hand-held brush cutter) or grubbing as needed. Irrigation will occur via tank mounted truck system, weekly or biweekly depending on precipitation conditions, between July and September.

In addition to sponsor maintenance, the landowner agreed to perform a visual inspection of a portion of the planting area annually for ten years to inform the sponsor of potential challenges including beaver browse, flood damage, plant mortality, or significant site disturbances. The visual inspection may occur any time throughout the year as the landowner is available, although the growing season (March to October) is the best time to inspect plants for mortality. The landowner inspection is intended to be qualitative and limited in nature and will supplement the annual implementation monitoring completed by the sponsor. The landowner may request copies of vegetation monitoring data and reports.

8. Adaptive Management

Ungulate, rodent, flooding, and poor stock source mortality is expected at this site. Replanting from these impacts will occur to maintain survival and cover performance metrics. Under heavier loss conditions, the following adaptive management will be considered.

Ungulate: if grazing pressures cause more than 25 percent mortality and/or significant defoliation of plants, the sponsor will consider use of a spray deterrent. If grazing pressures cause more than 50 percent mortality and/or significant defoliation of plants, the sponsor will consider metal cage protection of highest value species (conifers).

Rodent: if beaver activity causes more than 10 percent mortality of conifers and/or deciduous trees, chicken wire will be applied to tree bases in a to-be determined area from the shoreline and extend further as needed.

Flooding: if any single flood causes more than 25 percent mortality, additional stakes may be added directly to the upstream side of plants in the impact zone.

Irrigation: irrigation will be considered if there are drought conditions after year three or drought conditions during critical normal precipitation seasons (spring) in the growing season during years one through three.

Poor or inappropriate stock: if there is more than 50 percent mortality of a single species from other than the causes listed above, the sponsor will assess plant stock type and source when considering whether to replant or replace if a more suitable species appears warranted.

9. As-Built Documentations

Update the riparian enhancement plan if implementation resulted in significant changes from what was proposed. Be sure to update design drawings, maps, site preparation, planting method, and monitoring elements of the plan as necessary.

No example provided.

10. Stewardship Activity Report

This is a written report that documents activities implemented as part of the stewardship project. If adaptive management was a significant factor, document the changes implemented on site. Provide implementation monitoring results to show how the site is achieving restoration objectives.

No example provided.

Riparian Enhancement Plan - Goodwin

1. **Existing Conditions Assessment**
    a. **Overview:** Project area is publicly owned by WSDOT. A floodplain restoration project will be implemented in the summer of 2026 at this site with the goal improving habitat for juvenile Chinook, steelhead, and bull trout, and improving floodplain connectivity and watershed function. The specific design objectives are to: (1) improve rearing habitat in the side channel by increasing connection to groundwater; (2) enhance the floodplain and side channel habitat functions with the river while taking advantage of the benefits provided by groundwater inflow; (3) promote native woody vegetation cover throughout the floodplain by planting where current non-native, invasive reed canary grass patches exist and preserve existing mature native riparian forest; and (4) increase large woody material cover and habitat complexity. As part of this effort, a total of 3.9 acres will be planted with riparian and floodplain vegetation. An additional 2.0 acres of upland vegetation will be planted to contribute to the buffer width and provide habitat functions. At least 6,0000 plants will be installed initially as part of this effort.
    b. **Target Species:** The target species are steelhead, bull trout, spring chinook, summer chinook, and coho.
    c. **Environmental Setting:** The Wenatchee River watershed lies on the eastern flank of the Northern Cascades and has a complex geologic history that formed the valley as a depositional basin composed of erosive alluvial sediments bordered by mountains composed of less erosive igneous, metamorphic, and sedimentary rocks (Haugerud and Tabor 2009). The valley lies within the structural setting of the Chiwaukum Graben—a down-dropped block of bedrock bounded by faults that formed approximately 30 to 50 million years ago (Johnson 1984).

        During the Pleistocene epoch, alpine glaciers extended from the Cascade Mountains into the valley. The glaciers episodically retreated during the late Pleistocene and early Holocene epochs; the retreating glaciers left behind large moraine deposits near Leavenworth (Haugerud and Tabor 2009). Coincident with this period were the glacial outbursts of the Missoula Floods that inundated much of the Columbia Basin (Bretz 1969, O'Connor et al. 2020). These megafloods created a backwater effect up into the Wenatchee Valley that deposited vast amounts of sediment. For the past 10,000 years or so, the Wenatchee River has eroded through the glacial deposits, with

discrete downcutting events forming remnant terrace surfaces that now lie some 100 to 200-feet above the present-day river course.

Geologic mapping in the Wenatchee Valley shows the active river corridor and the Project area consists of alluvium composed of moderately sorted sands, gravels, and cobbles (Whetten and Waitt 1978, Whetten 1980, Tabor et al. 2006, WGS 2022) (Figure 3). The mapping shows the alluvium layer is underlain by continental sedimentary bedrock of the Chumstick Formation, which is composed of sandstone, shale, and conglomerate materials.

The lower Wenatchee River has adjusted to influences from the last ice age by downcutting through massive deposits of alpine glacier sediments originating from the Cascade Mountains and glacial-outwash deposits from the Missoula Floods. Currently, the river corridor exhibits an entrenched morphology inset within the valley floor and bordered by relic high terraces. The "Lower Wenatchee River Reach Assessment" conducted for Yakama Nation Fisheries (2017) described the river reach within which the Project site is located—Reach 5 spanning RMs 10.8–13.25—as follows (see Table 2 for reach characteristics):

"Most of Reach 5 is naturally confined by bedrock outcrops and high terraces. The BNSF Railway and U.S. Highway 2 [Highway 97], which both parallel the river in parts of the reach, further confine the channel. The amount of armored banks is relatively high in this reach. Side channels and off-channel habitat are relatively limited in Reach 5 including previous restoration actions. There are no islands in Reach 5 and sediment storage in bars is relatively limited. Floodplain connectivity in Reach 5 is less than in adjacent upstream and downstream reaches. Exposed bedrock on the channel bed is more abundant in this reach than downstream reaches and floodplain areas are limited to isolated pockets in Reach 5 and are small relative to downstream reaches."

The lower Wenatchee River is still responding to legacy effects from historical timber harvesting of upland and valley forests (Beckham 1995). W2r's field surveys in 2022 and 2023 confirmed findings from past surveys (see Table 2) that the lower river contains very few large wood pieces and almost no jams. At the Project site, there are several small wood jams along the existing side channel. The wood jam in the inlet to the side channel effectively diminishes inflow from the river during the spring freshet. Other

local wood appears to be sourced from the mature conifer and deciduous trees onsite.

d. **Land Use:** Land uses in the immediate vicinity of the Project area include transportation (e.g., highways, surface streets, and railways), agriculture (e.g., row crops and grazing), and urban development (e.g., low-density housing and commercial facilities). Boating recreation is popular along the lower river, which includes rafting, kayaking, and tube-floating by the general public, as well as commercial rafting companies. The "Turkey Shoot" river feature used seasonally by recreational boaters is located on river left approximately 1,000 feet upstream of the Project area (Elliot Consulting 2024)
e. **Soils:** Project site consists of Beverly very gravely loamy fine sand soil. The soil is well drained, has a high capacity to transmit water, and has a low available water supply.
f. **Hydrology/Water Quality:** Based on review of the long-term streamflow data, peak runoff is driven by spring snowmelt and rain occurring in April through July with the greatest occurring in May and June (i.e., the "spring freshet"). The long-term average of daily mean flows at the Monitor gage has been approximately 3,200 cfs during the last half century. Overall, for 50 percent of this period, daily mean flows have been less than 1,810 cfs. The river discharge of 8,000 cfs at which the side channel presently connects with the river, as observed by Cascade Fisheries, occurs for approximately 10% of a given water year (i.e., ~36 days per year). Since the mid-1900s, annual peak flows in the lower river have ranged from approximately 9,000 cfs (in WY 1977) to 47,500 cfs (in WY 1995).

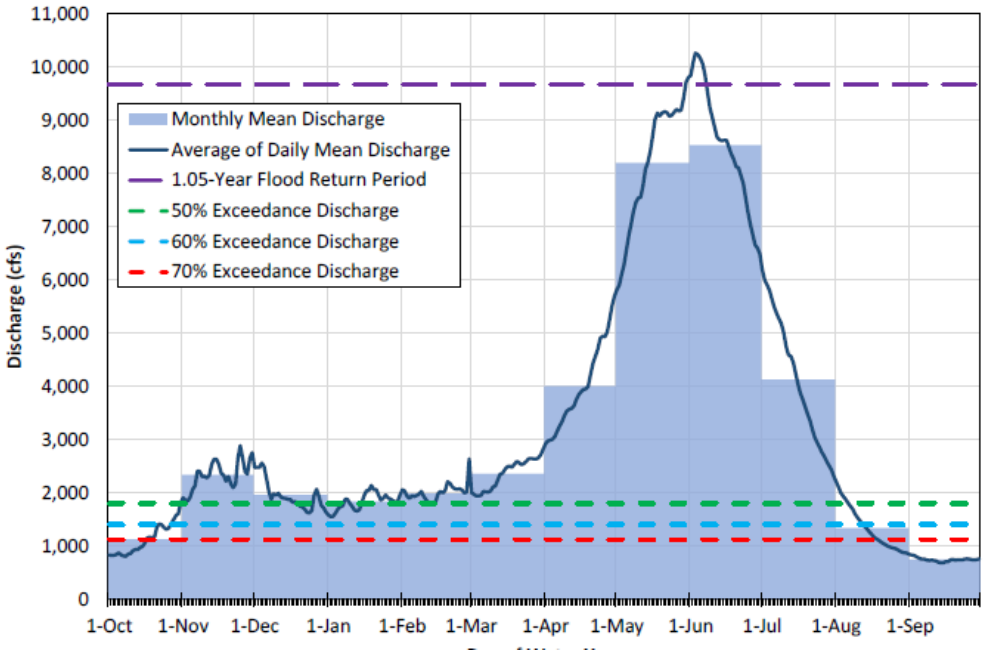


Figure 1. Monthly mean discharge, long-term average of daily mean discharge, 1.05-year flood recurrence discharge, and 50%–70% daily mean exceedance discharges for the USGS gage on the Wenatchee River at Monitor during WY 1963–2023.

g. Site Constraints: The primary constraints to the site is access. The only access if off of HWY2. Following project implementation, this access will be removed, and the only way to access the site will be to walk 0.5 miles down the highway. Other constraints include the hot dry summer and noxious weeds. Floodplain vegetation will be planted at an elevation that will be inundated regularly during the spring, but this also precludes the installation of irrigation infrastructure. Upland plants will be irrigated if feasable. Large cobbles and boulder will make some planting methods difficult.

2. Restoration Objectives

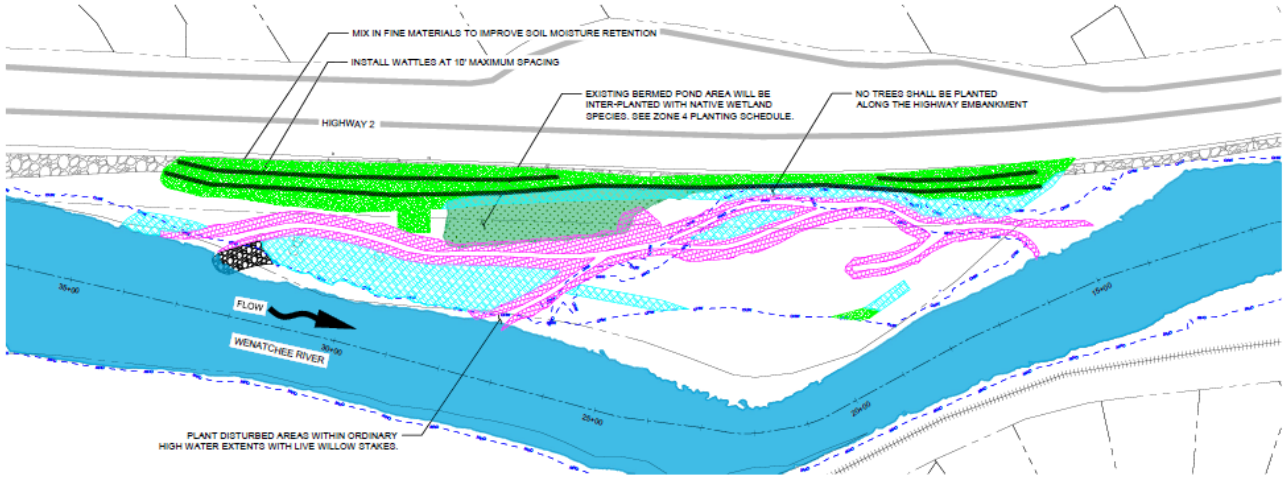
The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. Specific objectives include:

- Eradicate or suppress on-site noxious weeds through mechanical and chemical control to reduce competition of planted and naturally recruited floodplain

vegetation. Weed control will take place wherever soil was disturbed by the restoration project, covering approximately 6 acres.

- Establish self-sustaining native riparian/floodplain plant community with diverse composition on the site within the minimum 100 ft buffer to better provide thermal protection of stream to reduce summer heating. If needed, additional plants will be installed to increase cover or species diversity.

3. Plan Maps



60% DESIGN
SEPTEMBER 2024

NOTES:

1. EXISTING TOPOGRAPHY DERIVED FROM 2022 TOPOBATHY LIDAR DEVELOPED BY USBR.
2. FLOODWAY AND FLOODPLAIN LINEWORK DOWNLOADED FROM FEMA FLOOD MAP SERVICE CENTER.
3. RAILROAD, ROADWAY, AND TAXLOT LINEWORK DOWNLOADED FROM CHELAN COUNTY GIS.
4. EXISTING WETLAND EXTENTS APPROXIMATELY DELINEATED BY W2R IN 2023.
5. WATER EXTENTS SHOWN ARE FROM THE EXISTING CONDITIONS HYDRAULIC MODEL FOR THE 50% DURATION EXCEEDENCE FLOW (1,810 CFS).
6. ORDINARY HIGH WATER EXTENTS SHOWN ARE DERIVED FROM FIELD SURVEY DATA AND DESKTOP DELINEATION ANALYSIS PERFORMED BY W2R IN 2023.

LEGEND:

- ORDINARY HIGH WATER EXTENT
- MODELED WATER EXTENT (1,810 CFS)
- TAXLOTS
- EXISTING WETLANDS
- EXISTING RAILROAD
- EXISTING ROADWAY
- EXISTING RIP RAP
- EXISTING PONDEROSA PINE
- EXISTING CATCH BASIN

SCALE
100 0 50 100 200
SCALE FEET

SITE RESTORATION AND PLANTING PLAN

SCALE: 1"=100'

ZONE 1 - CHANNEL BANK PLANT SCHEDULE (1.7 AC)

STOCK TYPE	SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION	QUANTITY	NOTES
TREE	*SALIX ANYGDALOIDES*	PEACHLEAF WILLOW	10%	116	8' TYP. SPACING
	POPULUS TRICHOCARPA	BLACK COTTONWOOD	20%	231	8' TYP. SPACING
SHRUB	*SALIX EXIGUA*	COYOTE WILLOW	25%	741	5' TYP. SPACING
	SALIX LASIANDRA	PACIFIC WILOW	25%	741	5' TYP. SPACING
	SALIX PROLIXA	MACKENZIE WILLOW	20%	592	5' TYP. SPACING
WETLAND SOD	*CAREX NEBRASCENSIS*	NEBRASKA SEDGE	WETLAND SOD COMPOSITION SEPARATE FROM TREE AND SHRUB PLANTING COMPOSITION. WETLAND SOD COMPOSITION TO BE FINALIZED AT FUTURE DESIGN PHASE.		
	JUNCUS ARCTICUS	ARCTIC RUSH			
	CAREX UTRICULATA	BEAKED SEDGE			

ZONE 2 - RIPARIAN PLANT SCHEDULE (1.8 AC)

STOCK TYPE	SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION	QUANTITY	NOTES
TREE	*POPULUS TRICHOCARPA*	BLACK COTTONWOOD	15%	111	10' TYP. SPACING
	SALIX ANYGDALOIDES	PEACHLEAF WILLOW	5%	37	10' TYP. SPACING
SHRUB	*ROSA WOODSII*	WOOD'S ROSE	15%	227	7' TYP. SPACING
	PHILADELPHUS LEWISII	MOCKORANGE	15%	227	7' TYP. SPACING
	SALIX PROLIXA	MACKENZIE WILLOW	10%	151	7' TYP. SPACING
	ROSA NUTKANA	NOOTKA ROSE	10%	151	7' TYP. SPACING
	PRUNUS VIRGINIANA	CHOKECHERRY	15%	227	7' TYP. SPACING
	CORNUS SOLONIFERA	REDOSIER DOGWOOD	15%	227	7' TYP. SPACING
SEED	*BROMUS SITCHENSIS VAR. MARGINATUS*	MOUNTAIN BROME	15%	SEED MIX COMPOSITION SEPARATE FROM TREE AND SHRUB PLANTING COMPOSITION.	
	DESCHAMPSIA ELONGATA	SLENDER HAIRGRASS	25%		
	ELYMUS CANADENSIS	CANADA WILDRYE	20%		
	ELYMUS GLAUCUS	BLUE WILDRYE	25%		
	BLYCERIA STRIATA	FOWL MANAGRASS	15%		

ZONE 3 - UPLAND PLANT SCHEDULE (2.0 AC)

STOCK TYPE	SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION	QUANTITY	NOTES
TREE	*PINUS PONDEROSA*	PONDEROSA PINE	5%	19	15' TYP. SPACING
SHRUB	*MAHONIA AQUIFOLIUM*	TALL OREGON GRAPE	15%	523	5' TYP. SPACING
	PURSHIA TRIDENTATA	BITTERBRUSH	5%	174	5' TYP. SPACING
	ROSA WOODSII	WOODS ROSE	15%	363	6' TYP. SPACING
	PHILADELPHUS LEWISII	MOCKORANGE	20%	272	8' TYP. SPACING
	RIBES CEREUM	WAX CURRANT	10%	136	8' TYP. SPACING
	RHUS GLABRA	SMOOTH SUMAC	20%	272	8' TYP. SPACING
	ERICAMERIA NAUSEOSA	GRAY RABBITBRUSH	10%	348	5' TYP. SPACING
SEED	*BROMUS SITCHENSIS VAR. MARGINATUS*	MOUNTAIN BROME	2%	SEED MIX COMPOSITION SEPARATE FROM TREE AND SHRUB PLANTING COMPOSITION.	
	PSUEDOROEGNERIA SPICATA	BLUEBUNCH WHEATGRASS	20%		
	FESTUCA IDAHOENSIS	IDAHO FESCUE	20%		
	KOELERIA MACRANTHA	PRAIRIE JUNEGRASS	10%		
	POA SECUNDA	SANDBERG BLUEGRASS	10%		
	ELYMUS GLAUCUS	BLUE WILDRYE	20%		

ZONE 4 - BERMED POND INFILL PLANT SCHEDULE (0.4 AC)

STOCK TYPE	SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION	QUANTITY	NOTES
TREE	*SALIX ANYGDALOIDES*	PEACHLEAF WILLOW	10%	14	15' TYP. SPACING
	POPULUS TRICHOCARPA	BLACK COTTONWOOD	30%	41	15' TYP. SPACING
SHRUB	*CORNUS SOLONIFERA*	REDOSIER DOGWOOD	25%	76	10' TYP. SPACING
	SALIX PROLIXA	MACKENZIE WILLOW	20%	61	10' TYP. SPACING
	SALIX BEBBIANA	BEBB'S WILLOW	25%	76	10' TYP. SPACING

CASCADE FISHERIES
GOODWIN SIDE CHANNEL
CHELAN COUNTY, WA

SITE RESTORATION AND PLANTING PLAN

REVISION NUMBER

No	Date	Revision

Date: 9/26/2024 Designed by: SR, GL
Drawn by: BB Checked by: AJ

JOB NO. 20220043

SHEET NO. C6.1

21 OF 21

4. **Site Prep Methods**
   Site preparation for stewardship activities includes treatment of noxious weeds as needed prior to planting.

5. **Riparian Planting Methods**

   Plants consists of container and/or livestakes. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall. Upland plants will be provided supplemental irrigation for 2 years if feasible due to access constraints.

Riparian Enhancement Plan- Lower Peshastin

1. **Existing Conditions Assessment**
    a. **Overview:** Project area is publicly owned by the WDFW and managed as a water access site. A floodplain restoration project will be implemented in the summer of 2025 at this site with the goal improving habitat for juvenile Chinook, steelhead, and bull trout. A summary of project elements and their benefits are provided below. As part of this effort, a total of 2.3 acres and 1800 LF will be planted with riparian and floodplain vegetation. An additional 3 acres of upland vegetation will be planted to contribute to the buffer width and provide habitat functions. About 8,000 plants will be installed initially as part of this effort.

PROJECT ELEMENT	LOW FLOW BENEFIT CRITERIA	HIGH FLOW BENEFIT CRITERIA
Primary Channel and Floodplain Creation	• Increase depth of flow in thalweg • Increase pool frequency with wood for cover	• Increase area of low velocity for refugia • Increase frequency and area of floodplain inundation • Increase retention of streambed gravels through shear stress partitioning
Secondary Channel Creation	• Increase hyporheic flow to support riparian vegetation • Increase potential side channel length	• Increase area of low velocity for refugia • Reduce sediment transport capacity by bifurcating flows and decrease the channel's median grain size
ELJ and habitat structures	• Increase flow depths • Increase pool frequency with wood for cover • Increased channel complexity	• Increase channel roughness and hydraulic complexity • Increase pool frequency with wood for cover • Influence reach-scale bed aggradation to retain gravel and increase subsurface flow for riparian structure • Reduce floodplain velocities and improve organic matter retention and plant survival.
Riparian Restoration	• Increase shade and future supply of wood to the channel	• Increased supply of wood recruitment • Increased floodplain roughness to attenuate flood waters

    b. **Target Species:** The target species are steelhead, bull trout and spring chinook.
    c. **Environmental Setting:** The stream channel through the project reach is an artificially confined, straight, single-thread, plane-bed channel of moderately steep (1.6% average) gradient. Figure 3 illustrates the main channel, where currently all flow is contained, even at large flood events. The project reach lies within an alluvial corridor of Pleistocene and Holocene alluvial deposits consisting of moderately-to-poorly sorted sands, gravels, cobbles, and boulders. Figure 4 presents the surface geology of the project area. The current stream corridor is bounded by high terraces on both sides of the valley consisting of Holocene talus deposits, remnants of Peshastin Creek's

alluvial fan created from the deposition of glacial outwash deposits over time during a period when the Wenatchee River was believed to have been obstructed during glacial times in present-day Leavenworth (as interpreted by Lillquist (2017)). Peshastin Creek began incising into the alluvial fan surface as the Wenatchee River began to flow more like its contemporary course and was able to establish a base-level control on Peshastin Creek's profile. Currently, the main channel is confined along the northern edge of the alluvial surface mapped in Figure 4 by geologic processes as summarized above and by human actions summarized in Section 2.1. A review of historic photographs shows that the channel has not laterally migrated at all since its realignment in 1975. The lack of channel dynamism is attributable to human actions such as bank armoring and floodplain leveeing as well as the of lack of in channel roughness such as large wood which naturally obstructs the main flow triggering bank erosion and subsequent channel form changes. No large wood was observed in various field visits between 2016 and 2020 and very little to none been reported in previous assessments. Roads and logging have likely interrupted watershed inputs of large trees to Peshastin Creek thus limiting the supply to the project reach. The current straight, uniform and confined nature of the project reach also makes accumulating stable large wood more difficult than would have been historically expected. Large wood in the channel and floodplain are evident in 1955 aerials, but this era is not an indicator of historical conditions considering the extent of watershed impairment that had already occurred by this time.

Virtually no pools exist in the project reach, other than those small low-velocity pockets created by protruding boulders at low to moderate flows. The lack of gravel retention, a consistently scour resistant coarse bed, and lack of large wood or other roughness that influences pool formation are limiting factors of pool development in the Project Reach.

d. **Land Use:** The site is managed as a water access site by WDFW. It is a popular access point to the Wenatchee River by whitewater recreationists. The site is also frequented by dog walkers.
e. **Soils:** Project site consists of Beverly gravelly fine sandy loam soil. It has an alluvium parent material and is well drained. Large to very large boulders are abundant on the site.
f. **Hydrology/Water Quality:** Peshastin Creek drains a total area of approximately 135 square miles beginning at high elevations within the east-slope of the Cascade Mountains and drains generally to the northeast to its confluence with the Wenatchee River at approximately RM 17 (Figure 9). The

headwaters originate in the high-elevation peaks (>8,000 feet NAVD88) of the Stuart Range which form Ingalls Creek, the primary tributary to Peshastin Creek, and at the moderate elevations (>4,000 feet) near Blewett Pass, where Peshastin Creek begins. Landcover in the upper watershed is mostly coniferous forest, but also includes alpine shrubland, montane grassland, bedrock and talus slopes, and riparian woodlands. Most of Ingalls Creek lies within protected wilderness and thus less susceptible to human alteration, suggesting that runoff patterns in Ingalls Creek are relatively undisturbed. Much of the lower watershed below the confluence of Ingalls Creek has been developed into residential lots and cleared for agriculture where irrigation withdrawals, stormwater infrastructure, and river and floodplain modifications have likely altered baseflow conditions and storm-event hydrographs. The basin receives an average of 36-inches of precipitation per year in the form of rain during warmer months and snow during winter months. The seasonal flow regime is characterized by a rainfall dominated period during fall, a snowfall dominated period during winter which can also produce rain on snow events, a snowmelt runoff during spring and early summer, and a period of low streamflow as snowmelt recedes in August and September. Peak flows occur with spring/summer snowmelt during most years. Extreme flood events; however, tend to occur in fall or winter in response to atmospheric river storm events that are associated with relatively warm temperatures that raise freezing levels and heavy rainfall that combines with melting snow to produce large amounts of runoff. The three largest floods recorded for the Wenatchee Basin in recent decades (Nov. 1990, Nov. 1995, and Nov. 2006) all were caused by large atmospheric river storms with substantial rain-on-snow contributions.

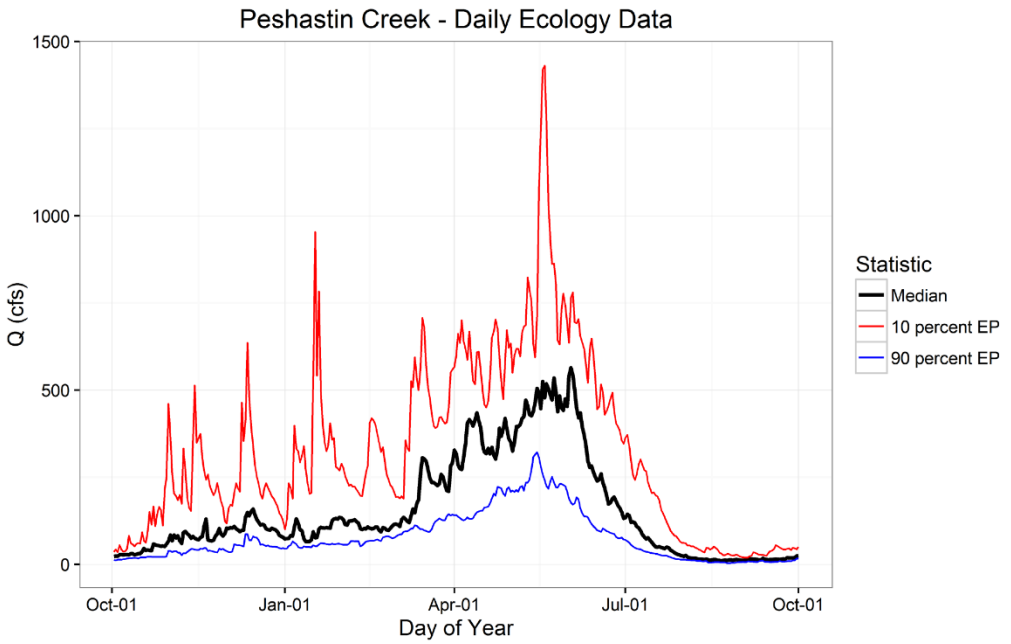


Figure 1. Peshastin Creek stream gage average daily historical record

g. Site Constraints: The primary constraints include the hot dry summer and noxious weeds. Floodplain vegetation will be planted at an elevation that will be inundated regularly during the spring, but this also precludes the installation of irrigation infrastructure. Upland plants will be irrigated. Large cobbles and boulder will make some planting methods difficult.

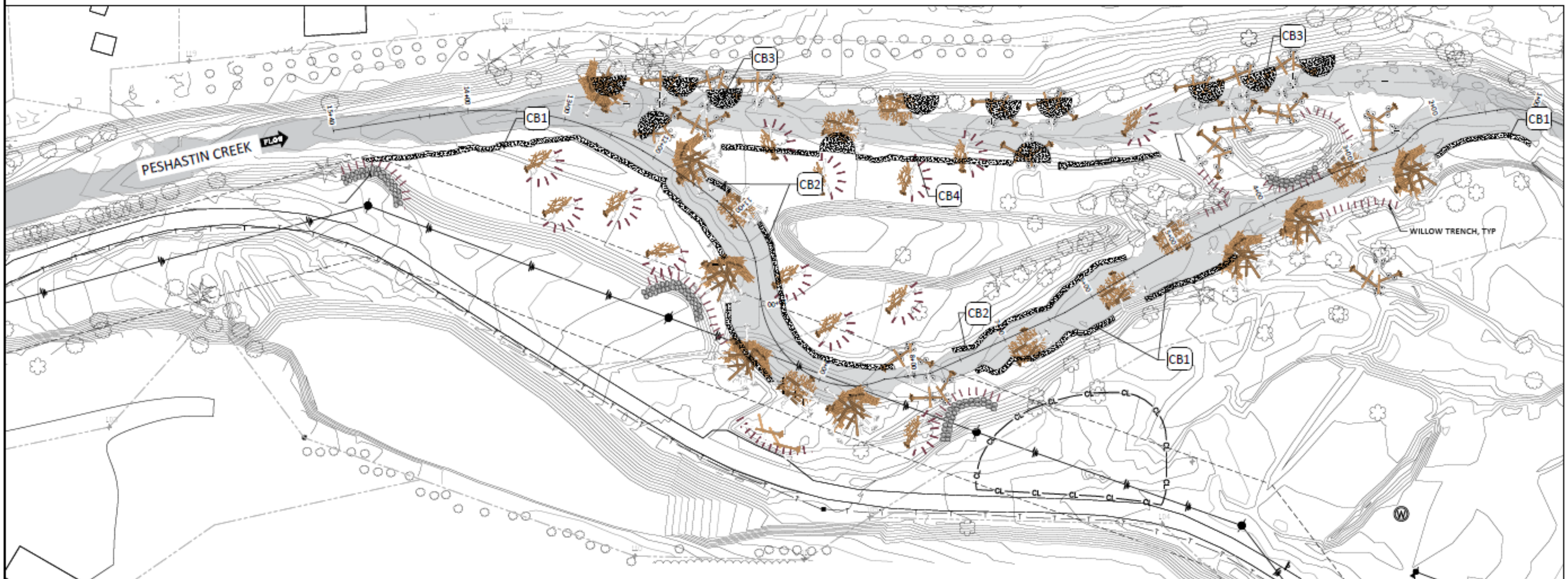
2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. Specific objectives include:

- Eradicate or suppress on-site noxious weeds through mechanical and chemical control to reduce competition of planted and naturally recruited floodplain vegetation. Weed control will take place wherever soil was disturbed by the restoration project, covering approximately 6 acres.
- Establish self-sustaining native riparian/floodplain plant community with diverse composition on the site within the minimum 100 ft buffer to better provide

thermal protection of stream to reduce summer heating. If needed, additional plants will be installed to increase cover or species diversity.

3. Plan Maps



NOTES

1. WILLOW TRENCH LOCATIONS AND PLANTING BOUNDARIES SHOWN THIS SHEET REFLECT THE EXPECTED LIMITS OF DISTURBANCE FOLLOWING EARTHWORK AND STRUCTURE INSTALLATION. WILLOW TRENCH INSTALLATION LOCATIONS AND PLANTING BOUNDARIES SHALL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO COMMENCEMENT OF WORK.
2. CHANNEL BANK PLANTING AREAS EXTEND APPROXIMATELY 5' FROM FINISHED CHANNEL TOP OF BANK.
3. PLANTING AREA CB1 ENCOMPASSES ALL RIGHT BANK PRIMARY CHANNEL CB PLANTING.
4. PLANTING AREA CB2 ENCOMPASSES ALL LEFT BANK PRIMARY CHANNEL CB PLANTING.
3. PLANTING AREA CB3 ENCOMPASSES ALL SECONDARY CHANNEL STRUCTURE PLANTING; 12 LOCATIONS TOTAL. SEE SHEET 29 FOR INSTALLATION DETAILS.
5. PLANTING AREA CB4 ENCOMPASSES ALL RIGHT BANK SECONDARY CHANNEL CB PLANTING.
6. SEE SHEET 21 FOR WILLOW TRENCH INSTALLATION DETAIL. SEE SHEET 29 FOR SPECIES, SIZE, AND QUANTITY OF PLANTS FOR EACH PLANTING AREA.
7. FOLLOWING COMPLETION OF EARTH-DISTURBING ACTIVITIES, CERTIFIED WEED-FREE STRAW MULCH SHALL BE APPLIED AT A RATE OF 2,500 LBS/ACRE TO ALL DISTURBED GROUND ABOVE FINISHED CHANNEL TOP OF BANK.

NOT FOR CONSTRUCTION

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

CASCADE FISHERIES

Natural Systems Design

NAME OR INITIALS AND DATE	
DESIGNED	ED,TA
CHECKED	TA, JS
DRAWN	ED, JS, LZ
CHECKED	JS

GEOGRAPHIC INFORMATION	
LATITUDE	47°33'25"N
LONGITUDE	120°34'35"W
TWS/RG	24N/22/18E
COUNTY	CHELAN (WA)

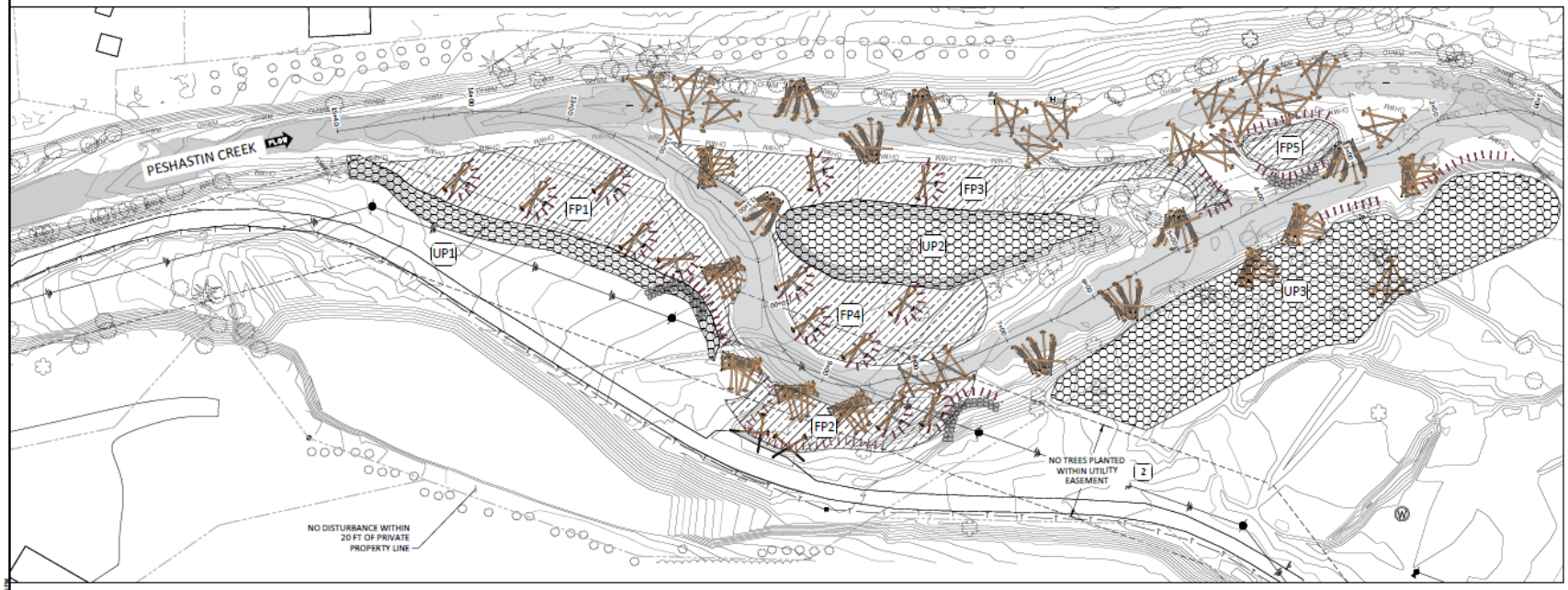
LOWER PESHASTIN CREEK RESTORATION

CHANNEL BANK PLANTING PLAN

28

SHEET 28 OF 29

Mar 20, 2025 CONSTRUCTION PLANS - REVISION #1



NOTES

1. REVEGETATION BOUNDARIES AND LAYOUT SHALL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO COMMENCEMENT OF WORK.
2. TREES SHALL NOT BE PLANTED WITHIN UTILITY EASEMENT.
3. SEE SHEET R2 FOR MATERIAL SCHEDULES AND INSTALLATION DETAILS FOR EACH PLANTING TYPE.

REVEGETATION LEGEND

FLOODPLAIN PLANTING AREA (FP)

UPLAND PLANTING AREA (UP)

N

50' 25' 0 50' 100'

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

CASCADE FISHERIES

Natural Systems Design

NAME OR INITIALS AND DATE	
DESIGNED	SD,TA
CHECKED	TA, JB
DRAWN	SD, JB, LZ
CHECKED	JB

GEOGRAPHIC INFORMATION	
LATITUDE	47°33'25"N
LONGITUDE	120°34'38"W
TWSC/RG	24N/22/19E
COUNTY	CHELAN (WA)

LOWER PESHASTIN CREEK RESTORATION

REVEGETATION PLAN

R1

SHEET R1 OF 2

Nov 08, 2022 DRAFT 90% DESIGN - NOT FOR CONSTRUCTION

4. **Site Prep Methods**
   Site preparation for stewardship activities includes treatment of noxious weeds as needed prior to planting.

5. **Riparian Planting Methods**

   Plants consists of container and/or livestakes. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall. Upland plants will be provided supplemental irrigation for 2 years.

Riparian Enhancement Plan- Peshastin RM 2.5 – 3.0

1. **Existing Conditions Assessment**
    a. **Overview:** Project area is publicly and privately owned. The public landowner is the WSDOT. A floodplain restoration project will be implemented in the summer of 2026 at this site with the goal improving habitat for juvenile Chinook, steelhead, and bull trout, and improving floodplain connectivity and watershed function. A summary of project elements and their benefits are provided below. As part of this effort, a total of 2.25 acres will be planted with riparian and floodplain vegetation. An additional 2.5 acres of upland vegetation will be planted to contribute to the buffer width and provide habitat functions. About 5,800 plants will be installed initially as part of this effort.

        - Goal: Increase late summer Spring Chinook adult holding habitat.
            - Objective: Install large wood structures to develop scour pools and improve cover.
            - Objective: Install large wood structures and increase stable wood loading and provide for retention of mobile wood in the reach.
        - Goal: Increase summer and winter Spring Chinook and steelhead juvenile rearing habitat.
            - Objective: Install large wood structures to develop scour pools and improve cover and length of edge habitat.
            - Objective: Increase off-channel habitat access during winter months to provide velocity refugia for juveniles.
        - Goal: Reduce late summer stream temperature impacts by promoting stream shading and to reduce solar loading.
            - Objective: Maintain and expand existing forested riparian vegetation communities to promote long-term stream shading.
        - Goal: Improve floodplain connectivity to increase water storage and improve riparian health.
            - Objective: Excavate pilot and side channels to increase connectivity of mainstem flows to off-channel and floodplain habitats during the fall, winter, and spring season.

    b. **Target Species:** The target species are steelhead, bull trout and spring chinook.

c. **Environmental Setting:** The Peshastin Creek project reach is located between RM 2.5 and 3.0 upstream of the creek's confluence with the Wenatchee River (Figure). The project reach crosses multiple parcels owned privately and is bordered by WSDOT right of way along SR 97 which parallels the creek to the north along the left bank. To the southwest, a high geologic terrace bounds the creek valley and slows its lateral movement. A vehicle bridge at Maxfield Canyon Road is present immediately upstream of the project area (approximately RM 3.0) which is used for private landowner access to river right. Irrigation diversions are present upstream and downstream of the project reach which are operated by the Peshastin Irrigation District.

Peshastin Creek drains a total area of approximately 135 square miles beginning at high elevations within the east-slope of the Cascade Mountains and drains generally to the northeast to its confluence with the Wenatchee River at approximately RM 17 (Figure). The headwaters originate in the high-elevation peaks (>8,000 ft NAVD88) of the Stuart Range which form Ingalls Creek, the primary tributary to Peshastin Creek, and at the moderate elevations (>4,000 ft) near Blewett Pass, where Peshastin Creek begins. Landcover in the upper watershed is mostly coniferous forest, but also includes alpine shrubland, montane grassland, bedrock and talus slopes, and riparian woodlands. The vast majority of Ingalls Creek lies within protected wilderness and is thus less susceptible to human alteration, suggesting that runoff patterns are relatively "natural." Much of the lower watershed below the confluence of Ingalls Creek has been developed into residential lots and cleared for agriculture where irrigation withdrawals and river and floodplain modifications have likely altered baseflow conditions and storm-event hydrographs.

The basin receives an average of 36-inches of precipitation per year in the form of rain during warmer months and snow during winter months. The seasonal flow regime is characterized by a rainfall-dominated period during fall, a snowfall dominated period during winter which can also produce rain on snow events, a snowmelt runoff during spring and early summer, and a period of low streamflow as snowmelt from the high-elevation Stuart Range recedes in August and September. Peak flows occur with spring/summer snowmelt during most years. Extreme flood events, however, tend to occur in fall or winter in response to atmospheric river storm events that are associated with relatively warm temperatures that raise freezing levels and heavy rainfall that combines with melting snow to produce large amounts of

runoff. The three largest floods recorded for the Wenatchee Basin in recent decades (Nov. 1990, Nov. 1995, and Nov. 2006) all were caused by large atmospheric river storms with substantial rain-on-snow contributions.

d. **Land Use:** The site is primarily privately owned. The terrace is undeveloped and was formerly an orchard. WSDOT manages HWY97 which runs along river left of the project area.
e. **Soils:** Project site consists of Mippon very gravelly loamy fine sand soil. It is moderately well drained, has a high capacity to transmit water, and has a very low available water supply.
f. **Hydrology/Water Quality:** Peshastin Creek drains a total area of approximately 135 square miles beginning at high elevations within the east-slope of the Cascade Mountains and drains generally to the northeast to its confluence with the Wenatchee River at approximately RM 17 (Figure 9). The headwaters originate in the high-elevation peaks (>8,000 feet NAVD88) of the Stuart Range which form Ingalls Creek, the primary tributary to Peshastin Creek, and at the moderate elevations (>4,000 feet) near Blewett Pass, where Peshastin Creek begins. Landcover in the upper watershed is mostly coniferous forest, but also includes alpine shrubland, montane grassland, bedrock and talus slopes, and riparian woodlands. Most of Ingalls Creek lies within protected wilderness and thus less susceptible to human alteration, suggesting that runoff patterns in Ingalls Creek are relatively undisturbed. Much of the lower watershed below the confluence of Ingalls Creek has been developed into residential lots and cleared for agriculture where irrigation withdrawals, stormwater infrastructure, and river and floodplain modifications have likely altered baseflow conditions and storm-event hydrographs. The basin receives an average of 36-inches of precipitation per year in the form of rain during warmer months and snow during winter months. The seasonal flow regime is characterized by a rainfall dominated period during fall, a snowfall dominated period during winter which can also produce rain on snow events, a snowmelt runoff during spring and early summer, and a period of low streamflow as snowmelt recedes in August and September. Peak flows occur with spring/summer snowmelt during most years. Extreme flood events; however, tend to occur in fall or winter in response to atmospheric river storm events that are associated with relatively warm temperatures that raise freezing levels and heavy rainfall that combines with melting snow to produce large amounts of runoff. The three largest floods recorded for the Wenatchee Basin in recent decades (Nov.

1990, Nov. 1995, and Nov. 2006) all were caused by large atmospheric river storms with substantial rain-on-snow contributions.

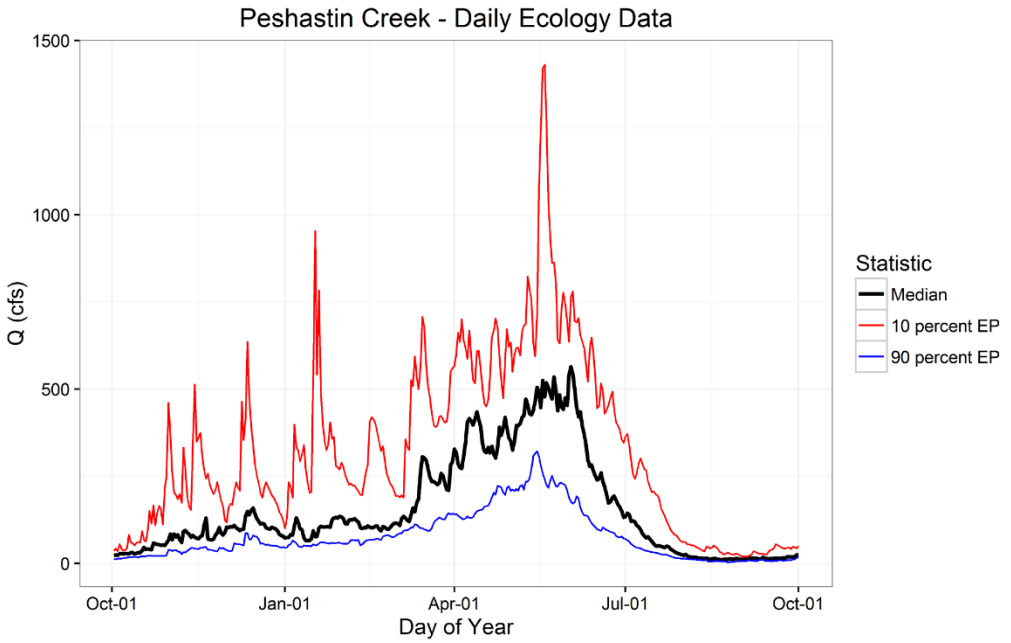


Figure 1. Peshastin Creek stream gage average daily historical record

g. Site Constraints: The primary constraints include the hot dry summer and noxious weeds. Floodplain vegetation will be planted at an elevation that will be inundated regularly during the spring, but this also precludes the installation of irrigation infrastructure. Upland plants will be irrigated. Large cobbles and boulder will make some planting methods difficult.

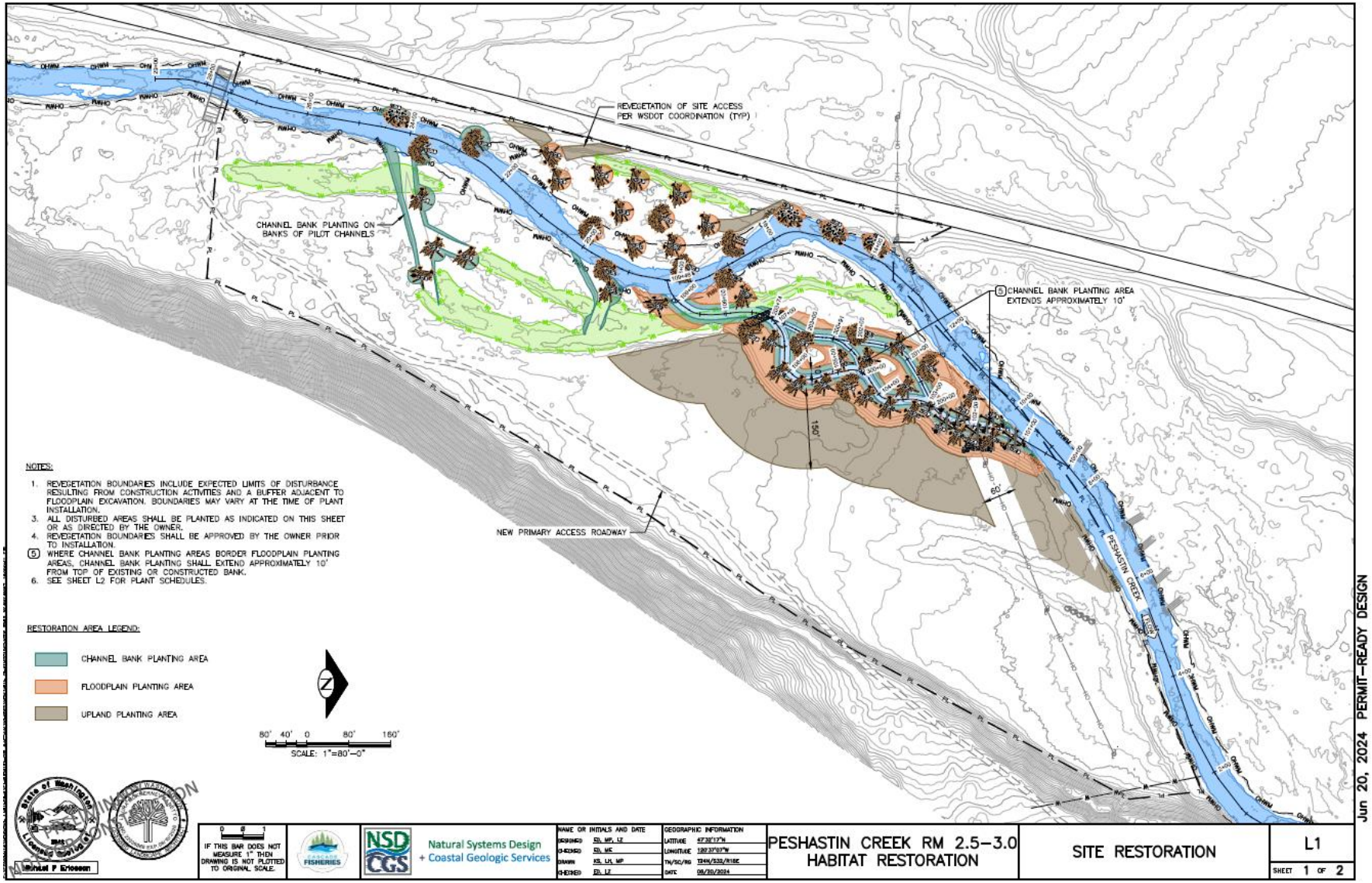
2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. Specific objectives include:

- Eradicate or suppress on-site noxious weeds through mechanical and chemical control to reduce competition of planted and naturally recruited floodplain vegetation. Weed control will take place wherever soil was disturbed by the restoration project, covering approximately 6 acres.

- Establish self-sustaining native riparian/floodplain plant community with diverse composition on the site within the minimum 100 ft buffer to better provide thermal protection of stream to reduce summer heating. If needed, additional plants will be installed to increase cover or species diversity.

3. Plan Maps


REVEGETATION OF SITE ACCESS PER WSDOT COORDINATION (TYP)
CHANNEL BANK PLANTING ON BANKS OF PILOT CHANNELS
5 CHANNEL BANK PLANTING AREA EXTENDS APPROXIMATELY 10'
NEW PRIMARY ACCESS ROADWAY
PESHASTIN CREEK
150'
60'
NOTES:
1. REVEGETATION BOUNDARIES INCLUDE EXPECTED LIMITS OF DISTURBANCE RESULTING FROM CONSTRUCTION ACTIVITIES AND A BUFFER ADJACENT TO FLOODPLAIN EXCAVATION. BOUNDARIES MAY VARY AT THE TIME OF PLANT INSTALLATION.
3. ALL DISTURBED AREAS SHALL BE PLANTED AS INDICATED ON THIS SHEET OR AS DIRECTED BY THE OWNER.
4. REVEGETATION BOUNDARIES SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.
5 WHERE CHANNEL BANK PLANTING AREAS BORDER FLOODPLAIN PLANTING AREAS, CHANNEL BANK PLANTING SHALL EXTEND APPROXIMATELY 10' FROM TOP OF EXISTING OR CONSTRUCTED BANK.
6. SEE SHEET L2 FOR PLANT SCHEDULES.
RESTORATION AREA LEGEND:
CHANNEL BANK PLANTING AREA
FLOODPLAIN PLANTING AREA
UPLAND PLANTING AREA
N
80' 40' 0 80' 160'
SCALE: 1"=80'-0"
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.
Natural Systems Design + Coastal Geologic Services
NAME OR INITIALS AND DATE
DESIGNED ED, MP, LZ
DRAWN KS, LH, MP
CHECKED ED, LZ
GEOGRAPHIC INFORMATION
LATITUDE 47°35'17"N
LONGITUDE 120°37'07"W
TWN/SC/RG T24N/S33/R18E
DATE 06/20/2024
PESHASTIN CREEK RM 2.5–3.0 HABITAT RESTORATION
SITE RESTORATION
L1
SHEET 1 OF 2
Jun 20, 2024 PERMIT-READY DESIGN

4. **Site Prep Methods**
   Site preparation for stewardship activities includes treatment of noxious weeds as needed prior to planting.

5. **Riparian Planting Methods**

   Plants consists of container and/or livestakes. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall. Upland plants will be provided supplemental irrigation for 2 years.

Potato Creek Riparian Enhancement Plan

Potato Creek is a tributary to the Entiat River located on U.S. Forest Service property in Chelan County, WA. The Potato Creek watershed is primarily comprised of USFS public lands, with some private lands around the mouth of Potato Creek. This area provides valuable habitat for rainbow trout and Upper Columbia steelhead. This stream has been identified as having limited large wood inputs and the reason for the focus of this restoration project.

Table of Contents

1. Existing Conditions Assessment

Overview:

Reaches 1 and 2 of Potato Creek are located primarily on U.S. Forest Service property with some private parcels in Chelan County, WA. This project is located entirely on USFS property upstream of the private parcels. The site has a 26-acre riparian zone.

This stream has been identified as having limited large wood inputs and the reason for the focus of this restoration project.

Target species: The species of concern in Potato Creek basin is Endangered Species Act listed Threatened Upper Columbia summer steelhead spawning and rearing. After the first phase of restoration on Potato Creek, an adult steelhead was observed within the project area. *O. mykiss* rearing habitat exists throughout the project area.

Environmental Setting:

The Potato Creek watershed is in the Ponderosa Pine Zone bordering the eastern Washington steppe. Ponderosa pine forms climax stands that border native grasslands and is a common member in many other forested communities. It is a drought tolerant tree that usually occupies the transition zone between grassland and forest (source WDFW.gov). Ponderosa pine is more vulnerable to fire at more mesic sites where other conifers as Douglas-fir and Grand fir form dense understories that can carry fire upward to the overstory. Ponderosa pine seedlings germinate more rapidly when a fire has cleared the grass and the forest floor of litter, leaving only mineral rich soil (ibid). Species consistent with the floodplain soils (Burnscreek stony sandy loam) besides ponderosa pine are bitterbrush (*Purshia tridentata*) and bluebunch wheatgrass (*Pseudoroegneria* spicata). Other observed species noted as common in the middle reach of the project area are red osier dogwood (*Cornus stolonifera*), mountain alder (*Alnus incana*), black cottonwood (*Populus trichocarpa*), blue elderberry (*Sambucus cerulea*), horsetail (*Equisetum arvense*), and willow *(Salix* spp.).

Land use:

The site is river miles 1 and 2 of Potato Creek. Land use along the lower three miles of the watershed to Potato Creek's confluence with the Entiat River is entirely riparian and some upland species. Forest roads that run in close proximity throughout much of the stream. There are signs of occasional dispersed camping pullout locations and unpermitted shooting ranges along the road adjacent to the treatment area.

Soils: U.S. Department of Agriculture (1989) mapped soils as burnscreek stony sandy loam through this section of the Potato Creek floodplain. Stony, sandy loam consists of deep, well-drained soils formed in mixed alluvium. Burnscreek soils are found on floodplains and low terraces with slopes of 3 to 30 percent. They are well drained, with slow runoff and high permeability.

Hydrology/Water Quality:

Potato Creek is a snow dominated sub-watershed, with primarily snowmelt feeding Entiat River from higher elevations. The project will significantly reduce the depth to groundwater throughout the treated project area. The floodplain portion of the site is subject to occasional brief periods of flooding from November through April, however this is limited to the middle reach (upper and lower reaches experience little if any flooding (see map).

The Entiat River is listed on the 303 (d) list for temperature, however it is a category 4, and progress is managed through the Entiat Watershed Management Plan (not through a Total Maximum Daily Load, TMDL).

Site Constraints:

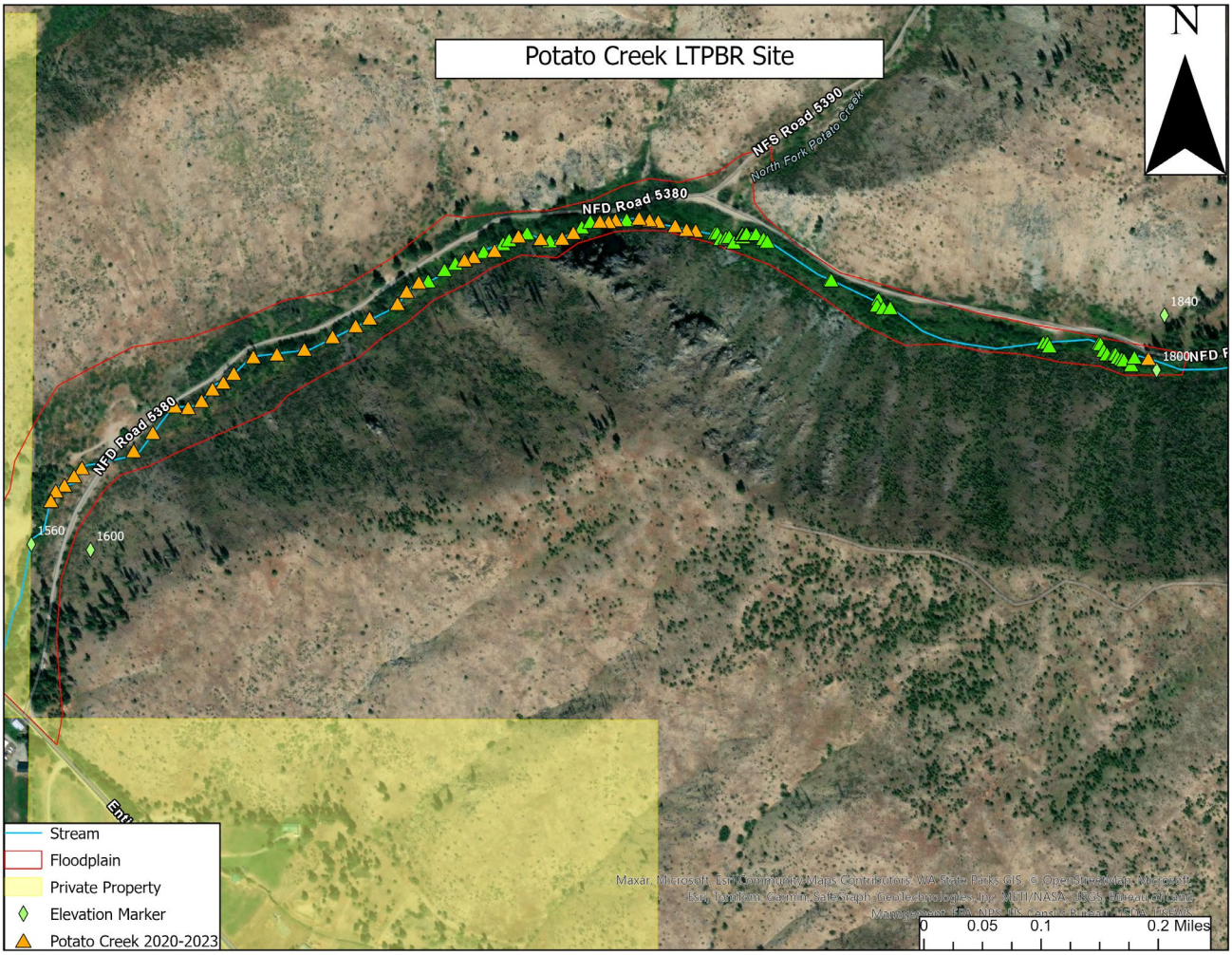
The primary enhancement challenges include restoring groundwater levels to support historical vegetation in the riparian zone as evidenced by legacy live and dead cottonwood in the elevated and disconnected floodplain. Increasing the dispersal and recruitment of forbs in and along the newly inundated areas of the project area is an important riparian goal. Beaver presence has been documented as active in reach 2. While this may appear to initially cause some short term damage to riparian plants, preferred vegetation actually benefits from coppicing. Beaver also aid in the dispersal of species such as willow and dogwood through their dam building and they increase water availability to riparian vegetation (dispersal and soil moisture advantages).

2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed summer steelhead. The objective is to improve juvenile steelhead conditions, specifically by maintaining installed LTPBR structures to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. The specific objectives of this project include:

1. Maintain installed LTPBR structures on an annual basis to continue accruing original project benefits.
    a. Obtain weave material through nearby forest thinning projects if possible.
    b. Plug holes in structures and establish a strong seal to ensure water only flows over the top of the structure, creating the largest possible pools, while maintaining fish passage and accruing sediment to correct incision.
2. Adaptively manage the project site
    a. Identify developing site conditions through regular monitoring.
    b. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit adult steelhead and chinook spawning and passage.
    c. Add structures as needed.
    d. Encourage side channel formation.
3. Encourage beaver reintroduction or relocate beavers to the site if possible.
    a. Beavers can maintain and enhance site conditions much more quickly than humans, and often build on LTPBR structures, effectively providing free maintenance.
    b. If the site can provide adequate habitat and beavers are available, relocate them to the project site.
4. Track performance of enhancement efforts through monitoring in years one, three, five, seven, and ten as outlined in monitoring plan found in section 6.

3. Plan Map


Potato Creek LTPBR Site
N
NFS Road 5390
North Fork Potato Creek
NFD Road 5380
NFD Road 5380
1840
1800
1560
1600
Stream
Floodplain
Private Property
Elevation Marker
Potato Creek 2020-2023
0
0.05
0.1
0.2 Miles

4. Site Preparation Methods

The sponsor will secure funding and hire, supervise, and work with field crews to complete site preparation work. The sponsor will secure any permits and licenses needed to complete work.

Site preparation for maintenance and monitoring of the LTPBR project involves obtaining weave material, ideally from nearby forest thinning projects, but may need to be cut or purchased.

5. Riparian Planting Methods

No planting is proposed at this time.

6. Implementation Monitoring

To evaluate if the enhancement activities meet the restoration objectives (section 2), the sponsor will perform implementation monitoring in years one, three, five, seven, and ten after installation and potentially year fifteen and twenty if funding and capacity exist. Percent survival of tree stock will be based on quantitative counts from year one through five. Naturally regenerating species will be included in this count. Starting at year five and beyond, counts will be replaced with percent cover using a minimum of four fixed transects, with percent cover of native and nonnative species determined using the point-intercept method as described by Merritt, et al. 2017. The National Riparian Core Protocol.[1] Alternatively, the sponsor may substitute high resolution drone imagery to determine the percentage of canopy cover of trees, possibly other species, using an off-the-shelf analysis software.

- Percent survival of tree and shrub species (quantitative), years one through five
- Percent canopy cover of native and nonnative vegetation (quantitative), year seven and beyond. Includes planted and naturally regenerating species.
- Vigor and health assessment of species (qualitative)

Monitoring results will allow sponsor to assess the need for adaptive management of the restoration site. Monitoring likely will occur between May and July, to target growing season and correspond with annual maintenance activities. As part of quantitative and qualitative monitoring efforts, the sponsor will take a minimum of three photos at six established photo stations. Drone imagery of the entire site also may be captured. The sponsor will provide a summary of data to RCO in the final report and as part of future stewardship grant requests.

7. Post-Implementation Maintenance

Table B: Maintenance Schedule

Work	Timing
Chemical spot treatment of invasive nonnative plants	Years 1-5 in spring and fall Years 6-10, and 15 in spring only
Replant native species to maintain survival/cover objectives	Years 1-10 in winter
Replace herbivory protection	Years 1-5 in spring
Mulch as needed	Years 1, 3, and 5 in spring
Irrigation	Years 1-3 in summer
Remove herbivory protection	Year 10 in summer
Thin trees to maintain healthy density	Years 10, 15, and 20 in summer

[1]Merritt, David M.; Manning, Mary E.; Hough-Snee, Nate, eds. 2017. The National Riparian Core Protocol: A riparian vegetation monitoring protocol for wadeable streams of the conterminous United States. Gen. Tech. Rep. RMRS-GTR-367. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 37 p.

Maintenance will occur until plants reach a stage where natural suppression of invasive species and forest succession appear to be self-sustaining. Control methods of most invasive vegetation will include chemical spot treatment with possible mechanical mowing (hand-held brush cutter) or grubbing as needed. Irrigation will occur via tank mounted truck system, weekly or biweekly depending on precipitation conditions, between July and September.

In addition to sponsor maintenance, the landowner agreed to perform a visual inspection of a portion of the planting area annually for ten years to inform the sponsor of potential challenges including beaver browse, flood damage, plant mortality, or significant site disturbances. The visual inspection may occur any time throughout the year as the landowner is available, although the growing season (March to October) is the best time to inspect plants for mortality. The landowner inspection is intended to be qualitative and limited in nature and will supplement the annual implementation monitoring completed by the sponsor. The landowner may request copies of vegetation monitoring data and reports.

8. Adaptive Management

Ungulate, rodent, flooding, and poor stock source mortality is expected at this site. Replanting from these impacts will occur to maintain survival and cover performance metrics. Under heavier loss conditions, the following adaptive management will be considered.

Ungulate: if grazing pressures cause more than 25 percent mortality and/or significant defoliation of plants, the sponsor will consider use of a spray deterrent. If grazing pressures cause more than 50 percent mortality and/or significant defoliation of plants, the sponsor will consider metal cage protection of highest value species (conifers).

Rodent: if beaver activity causes more than 10 percent mortality of conifers and/or deciduous trees, chicken wire will be applied to tree bases in a to-be determined area from the shoreline and extend further as needed.

Flooding: if any single flood causes more than 25 percent mortality, additional stakes may be added directly to the upstream side of plants in the impact zone.

Irrigation: irrigation will be considered if there are drought conditions after year three or drought conditions during critical normal precipitation seasons (spring) in the growing season during years one through three.

Poor or inappropriate stock: if there is more than 50 percent mortality of a single species from other than the causes listed above, the sponsor will assess plant stock type and source when considering whether to replant or replace if a more suitable species appears warranted.

9. As-Built Documentations

Update the riparian enhancement plan if implementation resulted in significant changes from what was proposed. Be sure to update design drawings, maps, site preparation, planting method, and monitoring elements of the plan as necessary.

No example provided.

10. Stewardship Activity Report

This is a written report that documents activities implemented as part of the stewardship project. If adaptive management was a significant factor, document the changes implemented on site. Provide implementation monitoring results to show how the site is achieving restoration objectives.

No example provided.

Roaring Creek Riparian Enhancement Plan

Roaring Creek is a tributary to the Entiat River located primarily on U.S. Forest Service property in Chelan County, WA. The Roaring Creek watershed is primarily comprised of USFS public lands, with private lands occurring within the lower 1.5 miles. Roaring Creek provides important habitat for summer steelhead.

Table of Contents

1. Existing Conditions Assessment

Overview:

Roaring Creek is located primarily on U.S. Forest Service property with some private parcels in Chelan County, WA. This project is located entirely on USFS property and the project area includes 7.6 acres of riparian zone that averages 50 feet wide each side of the stream and the treated area of the project extends approximately 1.4 miles from river mile 1.4 to 2.8. The left bank is on the west side of the stream and is sparsely vegetated, providing little functional afternoon shade to the stream.

Roaring Creek has been identified as having limited large wood inputs, off-channel-side-channels, and floodplain connectivity resulting in a need for channel complexity restoration, channel modification, and riparian restoration and management. Low-tech process-based restoration was implemented in 2023 with goals of increasing habitat diversity and complexity, pool habitat, floodplain access, water retention and baseflows, and channel length through meander formation and braiding.

Target species: The species of concern in Roaring Creek basin is Endangered Species Act listed Threatened Upper Columbia summer steelhead (O. Mykiss). Washington Department of Fish and Wildlife Statewide Washington Integrated Fish Distribution data shows documented steelhead spawning and rearing. Washington Department of Fish and Wildlife Statewide Washington Integrated Fish Distribution data show documented steelhead spawning occurs from river mile zero to 1.9, while recent department PIT array at RM 0.2 shows an average of 10-20 spawning pairs return to the stream annually (hatchery and wild origin). UCSRB steelhead intrinsic potential indicates steelhead presence at additional life stages (i.e. juvenile rearing) is rated as high potential as far upstream as RM 3.4.

Environmental Setting:

The Roaring Creek watershed is in the Ponderosa Pine Zone bordering the eastern Washington steppe. Douglas-fir and grand fir species consistent with the floodplain soils (Burnscreek stony sandy loam) are bitterbrush (*Purshia tridentata*) and bluebunch wheatgrass (*Pseudoroegneria* spicata). Other observed species noted as common in the middle reach of the project area are red osier dogwood (*Cornus stolonifera*), mountain alder (*Alnus incana*), black cottonwood (*Populus trichocarpa*), blue elderberry (*Sambucus cerulea*), horsetail (*Equisetum arvense*), and willow *(Salix* spp.).

Land use:

Most of the watershed is within USFS boundaries, with a few private parcels. There are numerous road crossings and forest roads that run in close proximity throughout much of the lower portion of the stream. Land use along the lower three miles of the watershed to Roaring Creek's confluence with the Entiat River is entirely riparian and some upland species. There are signs of occasional dispersed camping pullout locations in the lower quarter mile of the treatment area (RM 1.4 to 1.6). The rural residential land use is primarily from RM zero to RM 0.75. These water users and one small orchard were converted to groundwater wells

through a Trout Unlimited led water right conversion project completed in 2018 (reference #13-1337; 1.5 CFS estimated in-stream water savings).

Soils: U.S. Department of Agriculture (1989) mapped soils as burnscreek stony sandy loam through this section of the Roaring Creek floodplain. Stony, sandy loam consists of deep, well-drained soils formed in mixed alluvium. Burnscreek soils are found on floodplains and low terraces with slopes of 3 to 30 percent. They are well drained, with slow runoff and high permeability. The sponsor surveyed eight, eighteen-inch deep, randomly located pits on April 25, 2023. Textures were consistent throughout the soil profile. Our experience is that survivorship is high in silty loams.

Hydrology/Water Quality:

Roaring Creek is a snow dominated sub-watershed, with primarily snowmelt feeding Entiat River from higher elevations. On the project site, the depth to the water table measured in the summer is greater than forty inches. The project will significantly reduce the depth to groundwater throughout the treated project area. The floodplain portion of the site is subject to occasional brief periods of flooding from November through April, however this is limited to the middle reach (upper and lower reaches experience little if any flooding (see map). There is a permanent WA Department of Ecology stream gauge at approximate river mile 0.8. There is an ephemeral portion that is dry most years between roughly river mile 0.8 to 1.1.

The Entiat River is listed on the 303 (d) list for temperature, however it is a category 4, and progress is managed through the Entiat Watershed Management Plan (not through a Total Maximum Daily Load, TMDL). There is a documented cold water patch (thermal anomaly) at the confluence of Roaring Creek entering the Entiat River. This suggests Roaring Creek provides a unique cold water holding habitat for juvenile salmonids and steelhead in the lower Entiat River during warm weather months (Thermal IR survey, August 2023, Cascadia CD).

Site Constraints: The primary enhancement challenges include preserving native plants during the dry summers, and trying to improve species diversity, especially including species preferred by beavers – Willow, aspen, alder, cottonwood. Long term stewardship will increase available groundwater and spread water on the floodplain to aid vegetation establishment and self-sustaining riparian communities.

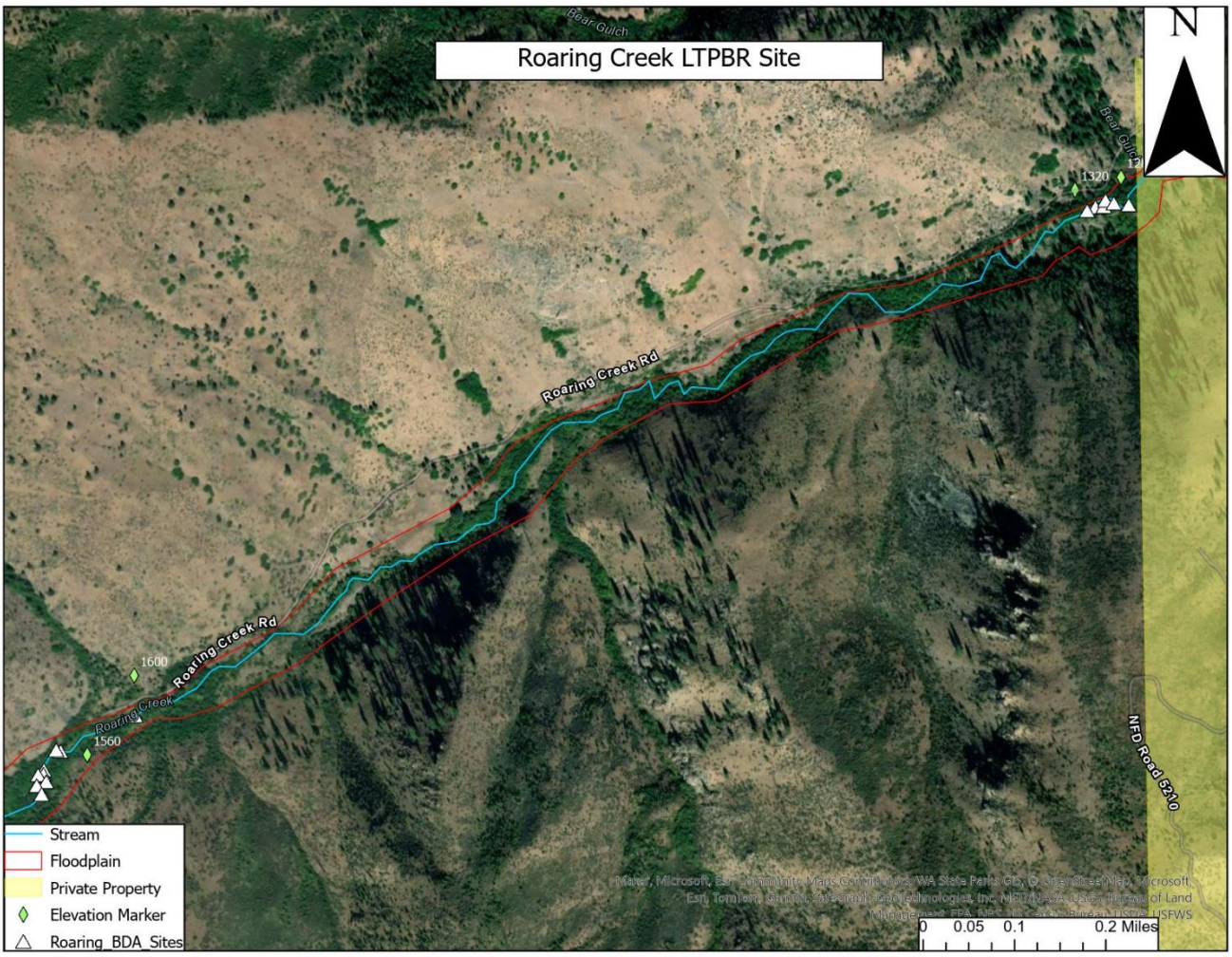
2. Restoration Objectives

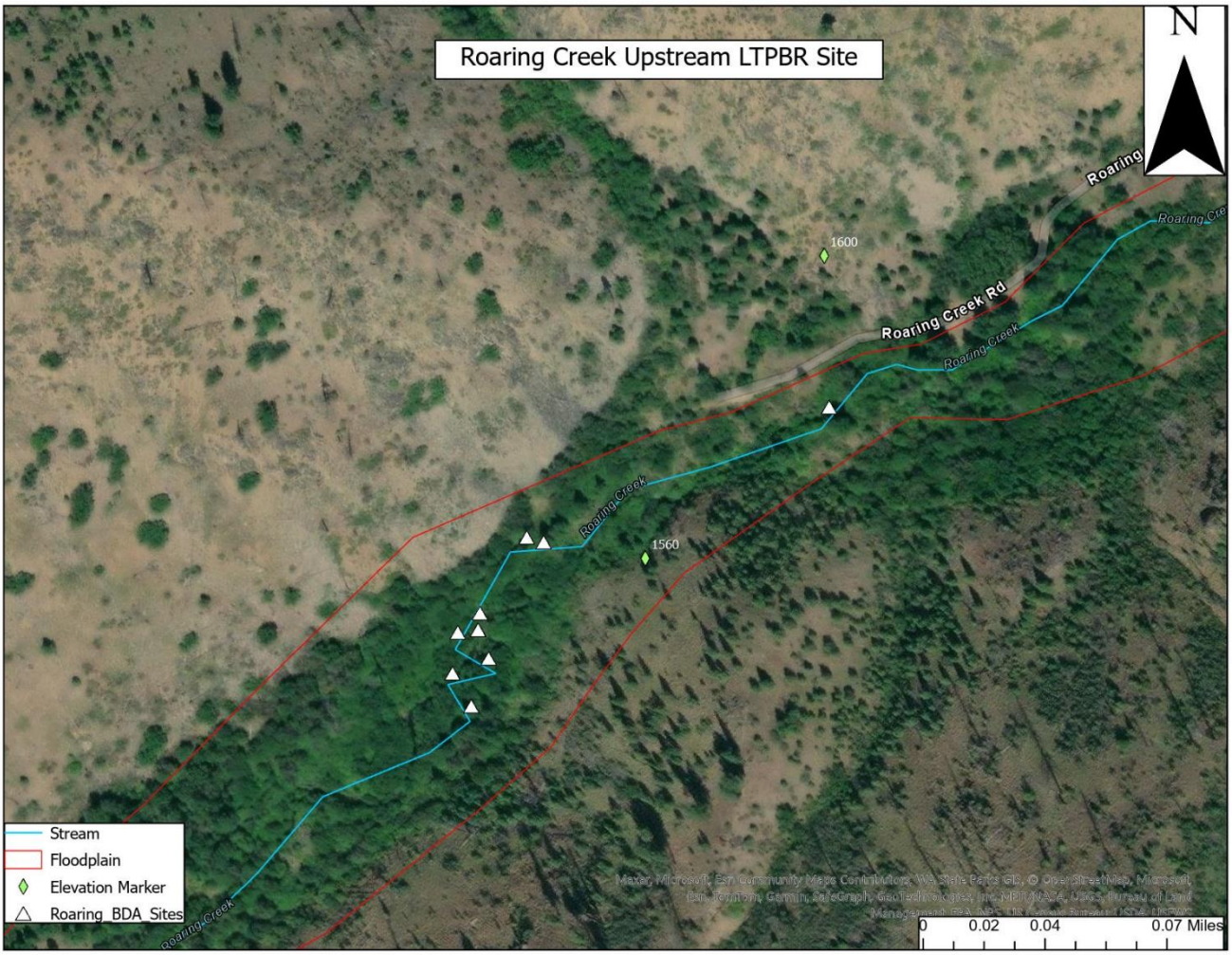
The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act listed Threatened Upper Columbia summer steelhead.

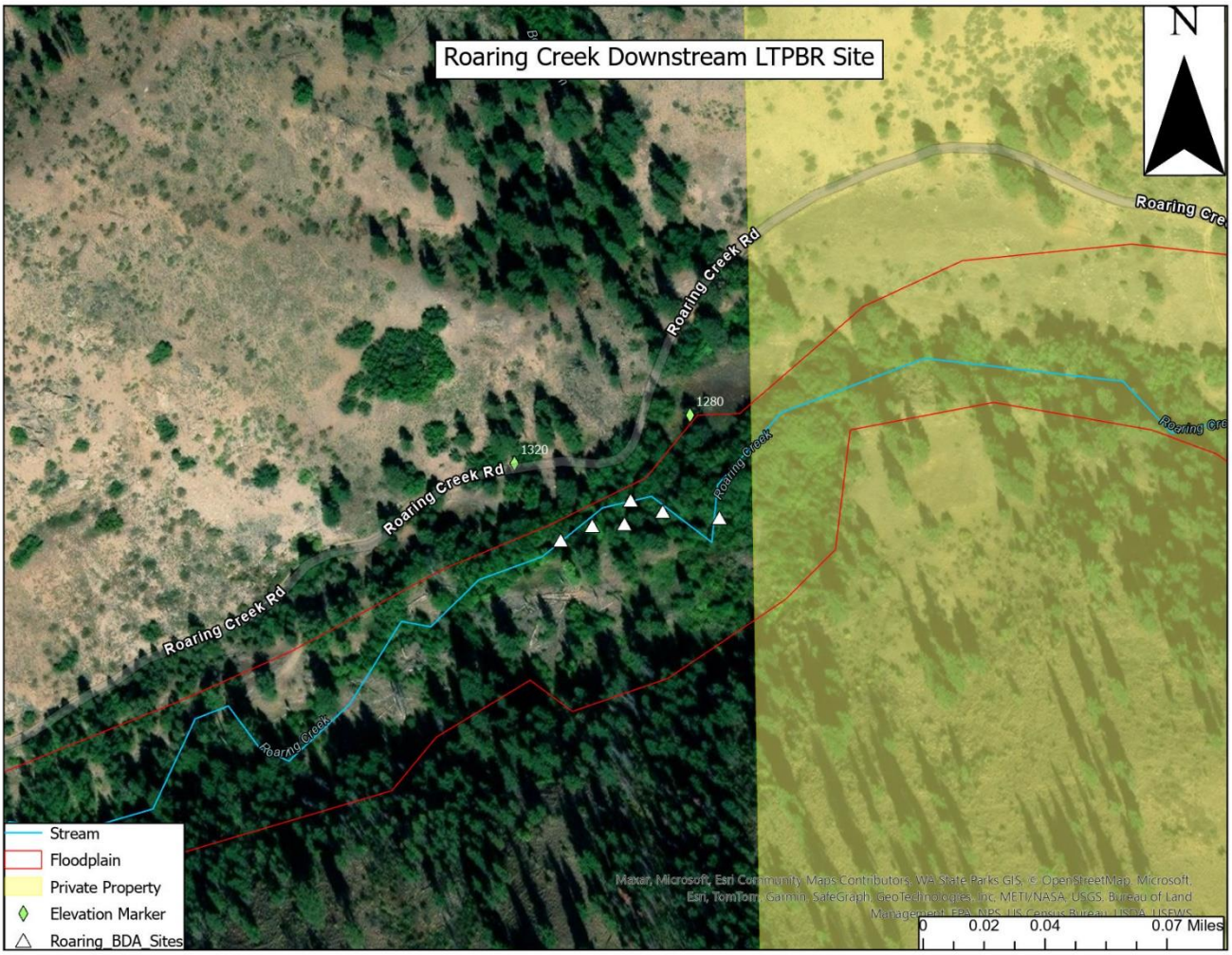
The objective is to improve Roaring Creek juvenile steelhead and chinook rearing habitat conditions, specifically by maintaining installed LTPBR structures to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. The specific objectives of this project include:

1. Maintain installed LTPBR structures on an annual basis to continue accruing original project benefits.
    a. Obtain weave material through nearby forest thinning projects if possible.
    b. Plug holes in structures and establish a strong seal to ensure water only flows over the top of the structure, creating the largest possible pools, while maintaining fish passage and accruing sediment to correct incision.
2. Adaptively manage the project site
    a. Identify developing site conditions through regular monitoring.
    b. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit adult steelhead and chinook spawning and passage.
    c. Add structures as needed.
    d. Encourage side channel formation.
3. Encourage beaver reintroduction or relocate beavers to the site if possible.
    a. Beavers can maintain and enhance site conditions much more quickly than humans, and often build on LTPBR structures, effectively providing free maintenance.
    b. If the site can provide adequate habitat and beavers are available, relocate them to the project site.
4. Track performance of enhancement efforts through monitoring in years one, three, five, seven, and ten as outlined in monitoring plan found in section 6.

3. Plan Maps


Roaring Creek LTPBR Site
N
Bear Gulch
Roaring Creek Rd
Roaring Creek
1320
1600
1560
NFD Road 9210
Stream
Floodplain
Private Property
Elevation Marker
Roaring_BDA_Sites
0 0.05 0.1 0.2 Miles


Roaring Creek Upstream LTPBR Site
N
Roaring
Roaring Creek Rd
Roaring Creek
1600
1560
Stream
Floodplain
Elevation Marker
Roaring_BDA_Sites
0
0.02
0.04
0.07 Miles


Roaring Creek Downstream LTPBR Site
N
Roaring Creek Rd
Roaring Creek Rd
Roaring Creek Rd
Roaring Creek
Roaring Creek
1280
1320
Stream
Floodplain
Private Property
Elevation Marker
Roaring_BDA_Sites
0 0.02 0.04 0.07 Miles

4. Site Preparation Methods

The sponsor will secure funding and hire, supervise, and work with field crews to complete site preparation work. The sponsor will secure any permits and licenses needed to complete work.

Site preparation for maintenance and monitoring of the LTPBR project involves obtaining weave material, ideally from nearby forest thinning projects, but may need to be cut or purchased.

5. Riparian Planting Methods

No planting is proposed at this time.

Rock Island Creek Riparian Enhancement Plan

Rock Island Creek is a tributary to the Columbia River located primarily on private property in Douglas County, WA. The Rock Island Creek watershed is primarily comprised of private ranching and dryland farmlands, with isolated United States Bureau of Land Management and Washington Department of Natural Resources parcels disbursed throughout.

Table of Contents

1. Existing Conditions Assessment

Overview:

Rock Island Creek is a tributary to the Wenatchee River located in Douglas County, WA. The Rock Island Creek watershed is primarily comprised of private lands that support agriculture and cattle ranching activities. Phases 1, 2, and 3 of this project were accomplished on private property. Phase 4 is planned on private property and on a stretch of land owned by the Washington Department of Natural Resources. This total project encompasses over 23 acres of riparian zone. Low-tech process-based restoration has been implemented in 2021, 2023, and 2024 with plans to continue implementations every year for at least 2025-2028. Goals include increasing habitat diversity and complexity, pool habitat, floodplain access, water retention and baseflows, and channel length through meander formation and braiding.

Target species: The species of concern in Rock Island Creek basin is Endangered Species Act listed Threatened Upper Columbia summer steelhead/red band rainbow trout (*O. mykiss*) and greater sage grouse (*Centrocercus urophasianus*). In 2004, as part of the Watershed Plan for Moses Coulee and Foster Creek Watersheds, the Foster Creek Conservation District (FCCD) worked with WDFW to conduct spawning and snorkel surveys that discovered the use of Rock Island Creek by juvenile chinook (*O. tshawytscha*), juvenile coho (*O. kisutch*), as well as juvenile steelhead (*O. mykiss*). UCSRB steelhead intrinsic potential indicates steelhead presence is rated low throughout the creek.

Environmental Setting:

The site is dominated by sage brush (*Artemisia sp*.), alder (*Alnus sp*.), willow (*Salix sp*.), and red osier dogwood (*Cornus stolonifera*) with some ponderosa pine (*Pinus ponderosa*). The creek is incised and eroded from heavy ranching activity and removal of beavers. This has led to loss of stream habitat diversity and complexity, loss of historic beaver pond complexes, disconnected floodplains and wet meadows, and head cutting.

Land use:

Most of the watershed is within Private land, with a small portion owned by Washington Department of Natural Resources. This land is primarily used for agriculture and cattle ranching activity on a regulated cycle throughout the season. Natural Resource Conservation Service works with the ranchers that own these parcels to optimize grazing routines for habitat and the landowners have a strong desire to re-establish beavers in the watershed.

Soils:

U.S. Department of Agriculture (1989) mapped soils as Aquolls and Argabak-camas patch-badge complex through the Rock Island Creek floodplain. Based off the mapping provided by the USDA 48% of this drainage is nearly level, while the other major component of this drainage is a mixture of Argabak-camas patch-badge complex soils with a 30-65% slope.

Hydrology/Water Quality:

Rock Island Creek is a ground water dominated watershed. Towards the mouth of the creek, it tends to become hyporheic. There is little complexity due to the incisions and eroded stream banks from cattle usage and removal of beaver. LTPBR structures are reconnecting the floodplain and restoring groundwater storage.

Rock Island Creek has a 303 (d) listing for temperature. High stream temperatures detrimentally impact spawning, rearing and migration, potentially affect prey availability, and hold less dissolved oxygen than colder water, which can lead to respiratory stress and reduced growth rates. These samples were taken near the mouth of the creek near the Columbia River. Rock Island creek also has a 303 (d) listing for Fecal coliform. This impairment also affects stream suitability for spawning and rearing of the target species of the creek.

Site Constraints:

The primary enhancement challenges include preserving native plants during the dry summers, and trying to improve species diversity, especially including species preferred by beavers – Willow, aspen, alder, cottonwood. Long term stewardship will increase available groundwater and spread water on the floodplain to aid vegetation establishment and self-sustaining riparian communities.

2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act listed Threatened Upper Columbia summer steelhead.

The objective is to improve habitat for Endangered Species Act listed Threatened Upper Columbia summer steelhead/red band rainbow trout (*O. mykiss*), specifically by maintaining installed LTPBR structures to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. The specific objectives of this project include:

1. Maintain installed LTPBR structures on an annual basis to continue accruing original project benefits.

    a. Obtain weave material through nearby forest thinning projects if possible.

    b. Plug holes in structures and establish a strong seal to ensure water only flows over the top of the structure, creating the largest possible pools, while maintaining fish passage and accruing sediment to correct incision.

2. Adaptively manage the project site

    a. Identify developing site conditions through regular monitoring.

    b. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit adult steelhead and chinook spawning and passage.

    c. Add structures as needed.

    d. Encourage side channel formation.

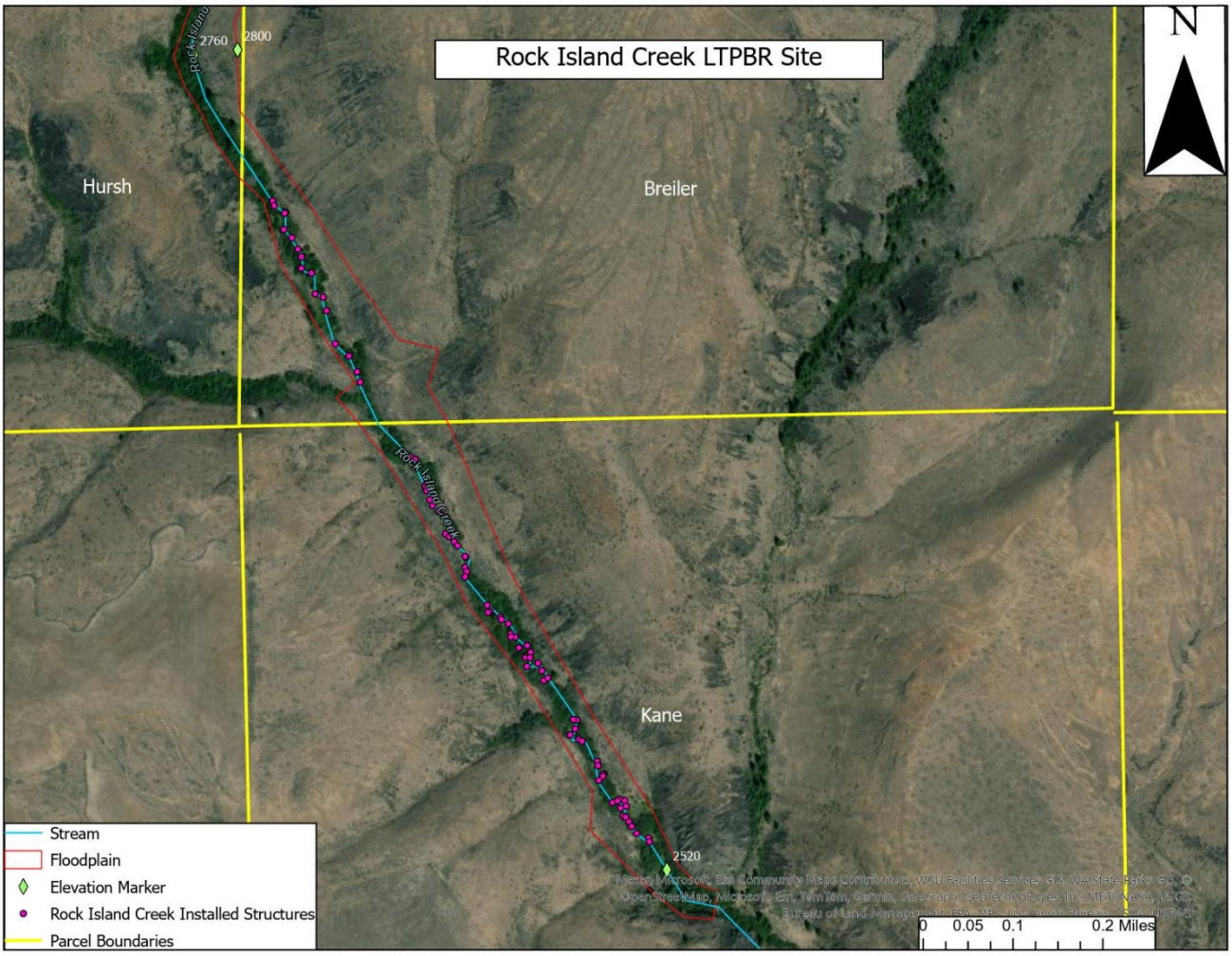
3. Encourage beaver reintroduction or relocate beavers to the site if possible.

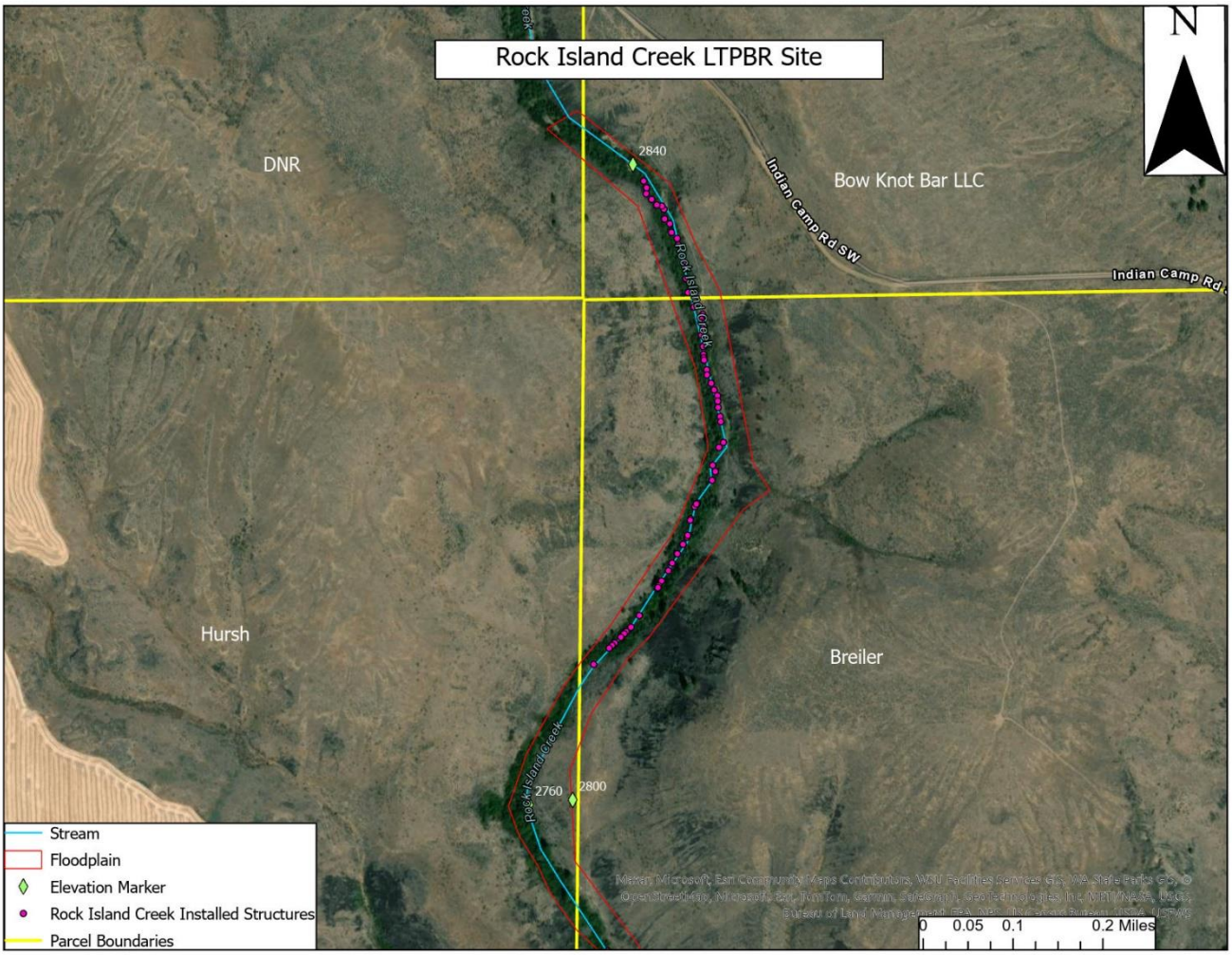
    a. Beavers can maintain and enhance site conditions much more quickly than humans, and often build on LTPBR structures, effectively providing free maintenance.

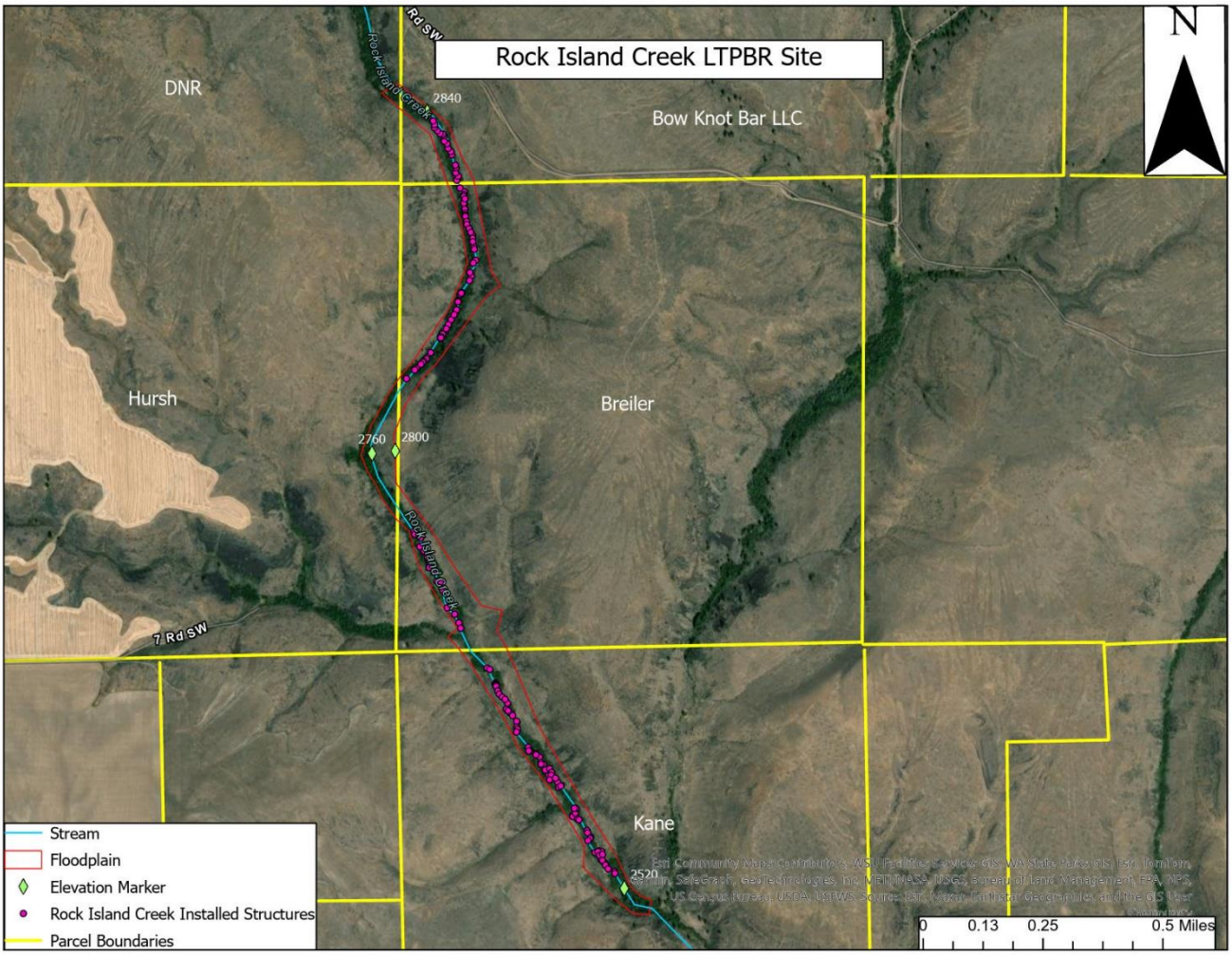
    b. If the site can provide adequate habitat and beavers are available, relocate them to the project site.

4. Track performance of enhancement efforts through monitoring in years one, three, five, seven, and ten as outlined in monitoring plan found in section 6.

3. Plan Maps


Rock Island Creek LTPBR Site
N
2760
2800
2520
Hursh
Breiler
Kane
Rock Island Creek
Stream
Floodplain
Elevation Marker
Rock Island Creek Installed Structures
Parcel Boundaries
0 0.05 0.1 0.2 Miles


Rock Island Creek LTPBR Site
N
DNR
Bow Knot Bar LLC
Indian Camp Rd SW
Indian Camp Rd
Rock Island Creek
2840
Hursh
Breiler
Rock Island Creek
2760
2800
Stream
Floodplain
Elevation Marker
Rock Island Creek Installed Structures
Parcel Boundaries
0 0.05 0.1 0.2 Miles


Rock Island Creek LTPBR Site
N
DNR
Bow Knot Bar LLC
Hursh
Breiler
Kane
2840
2760
2800
2520
Rock Island Creek
Rock Island Creek
Rd SW
7 Rd SW
Stream
Floodplain
Elevation Marker
Rock Island Creek Installed Structures
Parcel Boundaries
0
0.13
0.25
0.5 Miles

4. Site Preparation Methods

The sponsor will secure funding and hire, supervise, and work with field crews to complete site preparation work. The sponsor will secure any permits and licenses needed to complete work.

Site preparation for maintenance and monitoring of the LTPBR project involves obtaining weave material, ideally from nearby forest thinning projects, but may need to be cut or purchased.

5. Riparian Planting Methods

No planting is proposed at this time, but may be considered in the future in combination with cattle exclusion fencing.

South Fork Beaver Creek- Riparian Enhancement Plan

Site: SF Beaver Creek

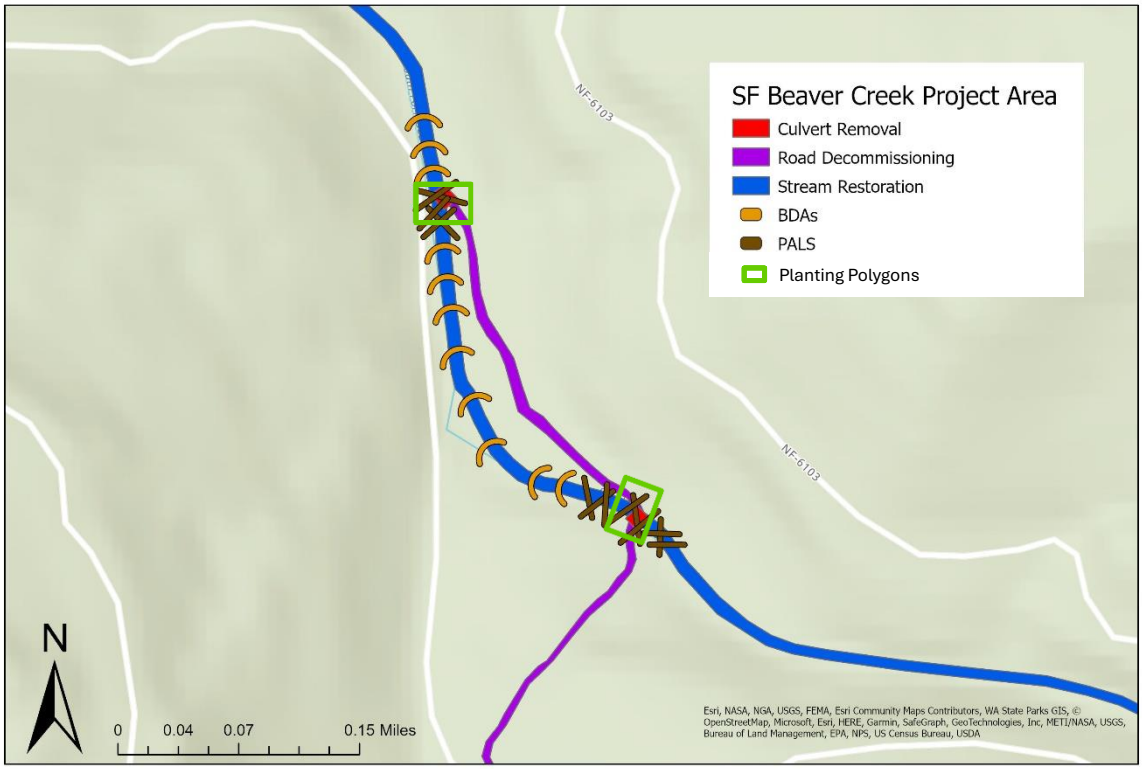
1. **Existing Conditions Assessment**
    a. **Overview**: This public land parcel, owned by the United States Forest Service, includes 0.07 riparian acres that were planted along 100 ft of South Fork Beaver Creek. Both sides of the creek were planted with native riparian vegetation after a fish passage correction project in 2024. This project removed and abandoned two culverts along a historic Forest Service road, restored the stream channel in these areas and along the reach, and planted riparian vegetation along the restored stream banks and on parts of the historic road surface.
    b. **Target Species:** The species of concern in South Fork Beaver Creek is the migratory and resident forms of *Oncorhynchus mykiss* (Steelhead and Rainbow Trout). The Upper Columbia Summer Steelhead population is listed as threatened, and has been observed in South Fork Beaver Creek for juvenile rearing.
    c. **Environmental Setting:** The SF Beaver Creek watershed is located within a Ponderosa Pine zone, a region characterized by semi-arid conditions and a high incidence of fire. The entire SF Beaver Creek watershed, a tributary to the Beaver Creek watershed, is on USFS lands. Both watersheds are dominated by second growth forest stands from historical harvest practices.
    d. **Land Use:** This site is between river miles 0.15 and 0.35 on SF Beaver Creek. The entire SF Beaver Creek watershed is National Forest lands, operated by the Okanogan-Wenatchee NF. Historically, the site and the surrounding watershed was harvested for timber, and gravel roads were created to navigate through the watershed. The stream crossings (culverts x 2) on this road were removed and the stream crossings were abandoned in 2024. No infrastructure exists or is planned for development on this property.
    e. **Soils:** Project site consists of Nard sandy loam. These soils are well drained, have a moderately-high capacity to transmit water, have a high available water supply, and are indicated as farmland of statewide and unique importance.
    f. **Hydrology/Water Quality:** South Fork Beaver Creek is a snow melt dominated watershed, that drains an area of 1700 acres. The Stream Stats report for the entire SF Beaver Creek watershed indicates a mean annual precipitation of 36 inches for the basin, with a 2-year peak-flow prediction of

18cfs. The project site is outside of the FEMA 100-year floodplain, and is not within WA DNR state-owned aquatic lands.
SF Beaver Creek is listed on the 303(d) list for temperature. Warming climate conditions have led to higher in-stream temperatures, which can detrimentally impact juvenile *O. mykiss* populations.

g. **Site Constraints:** The primary enhancement challenges include preserving native plants during the dry summers. Long term stewardship will assist the establishment of trees and shrubs, to create healthy riparian communities that are self-sustaining.

2. **Restoration Objectives**
    a. The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. In-stream habitat structures installed will also help create more complexity in the stream for various fish life stages. Specific objectives include:
        i. Establish native riparian plant composition on the site to better provide thermal protection of the stream to reduce summer heating.
        ii. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit salmon spawning and passage, as well as improving on-site hydrology by improving groundwater retention and raising the water table. This is accomplished by installing instream structures- a mix of BDAs, PALS, and pulling in large wood from onsite.

3. **Plan Maps**



CASCADE FISHERIES

South Fork Beaver Creek proposed Low-Tech structures

DISCLAIMER: While every precaution was taken in preparing this map, the publisher disclaims any warranty of fitness or accuracy of the data. The map is approximate in nature, based on compilation of data from multiple sources, and should not be relied upon or referenced in legal documents, including property deeds, title reports, and contract documents, nor substituted for appropriate survey and\or engineering analysis. The user of the map acknowledges its limitations, assumes all responsibility for its use, and agrees to hold the publisher harmless for any damages that may result from the use of this map. This map is subject to change without notice.

4. **Site Prep Methods**
    a. Site preparation was already performed during the initial project that removed the fish passage barrier culverts; clearing the road prism of dense vegetation and re-grading the stream banks, restoring them to historic alignment.

5. **Riparian Planting Methods**
    a. Planting consists of container, livestakes, and bareroot stock. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall.

Stormy Creek Riparian Enhancement Plan

Stormy Creek is a tributary to the Entiat River located on private and U.S. Forest Service property in Chelan County, WA. The Stormy Creek watershed is primarily comprised of USFS public lands, with some private lands from the mouth up to around RM 2. This area provides valuable habitat for rainbow trout and Upper Columbia steelhead. This stream has been identified as being heavily incised and having limited large wood inputs and the reason for the focus of this restoration project.

Table of Contents

1. Existing Conditions Assessment

Overview:

Reaches 1 and 2 of Stormy Creek are located on primary private but also some U.S. Forest Service property in Chelan County, WA. This project is located primarily on private parcels. The site has a 16 acre riparian zone.

This stream has been identified as being incised and having limited large wood inputs and the reason for the focus of this restoration project.

Target species: The species of concern in Stormy Creek basin is Endangered Species Act listed Threatened Upper Columbia summer steelhead spawning and rearing. After the first phase of restoration on Stormy Creek, a private fish survey crew documented hundreds of juvenile chinook near the mouth, dozens of juvenile *O. mykiss,* and a small number of coho and lamprey. This project is quantitatively and qualitatively improving spawning and rearing habitat throughout the project treated extent.

Environmental Setting:

The Stormy Creek watershed is in the Ponderosa Pine Zone bordering the eastern Washington steppe. Ponderosa pine forms climax stands that border native grasslands and is a common member in many other forested communities. It is a drought tolerant tree that usually occupies the transition zone between grassland and forest (source WDFW.gov). Ponderosa pine is more vulnerable to fire at more mesic sites where other conifers as Douglas-fir and Grand fir form dense understories that can carry fire upward to the overstory. Ponderosa pine seedlings germinate more rapidly when a fire has cleared the grass and the forest floor of litter, leaving only mineral rich soil (ibid). Species consistent with the floodplain soils (Burnscreek stony sandy loam) besides ponderosa pine are bitterbrush (*Purshia tridentata*) and bluebunch wheatgrass (*Pseudoroegneria* spicata). Other observed species noted as common in the middle reach of the project area are red osier dogwood (*Cornus stolonifera*), mountain alder (*Alnus incana*), black cottonwood (*Populus trichocarpa*), blue elderberry (*Sambucus cerulea*), horsetail (*Equisetum arvense*), and willow *(Salix* spp.). Red Western Cedar, both alive and also killed by the 1994 fire, are present in narrower, semi-constrained segments around RM 2.

Land use:

Land use along the lowest mile of the watershed to Stormy Creek's confluence with the Entiat River is entirely riparian and some upland species. Forest roads that run in reatlively close proximity throughout much of the stream. There is no public access to the stream, that is limited recreation, since all but the Stormy Preserve (CDLT) portion is privately held or behind a permanently locked gate on the forest service road.

Soils: U.S. Department of Agriculture (1989) mapped soils as ramparter stony sandy loam, till substratum, for the Stormy Creek floodplain. They are well drained soils.

Hydrology/Water Quality:

Stormy Creek is a snow dominated sub-watershed, with primarily snowmelt feeding Entiat River from higher elevations. The project will significantly reduce the depth to groundwater throughout the treated project area. The floodplain portion of the site is subject to occasional brief periods of flooding from November through April, however this is limited to the middle reach (upper and lower reaches experience little if any flooding (see map).

The Entiat River is listed on the 303 (d) list for temperature, however it is a category 4, and progress is managed through the Entiat Watershed Management Plan (not through a Total Maximum Daily Load, TMDL).

Site Constraints:

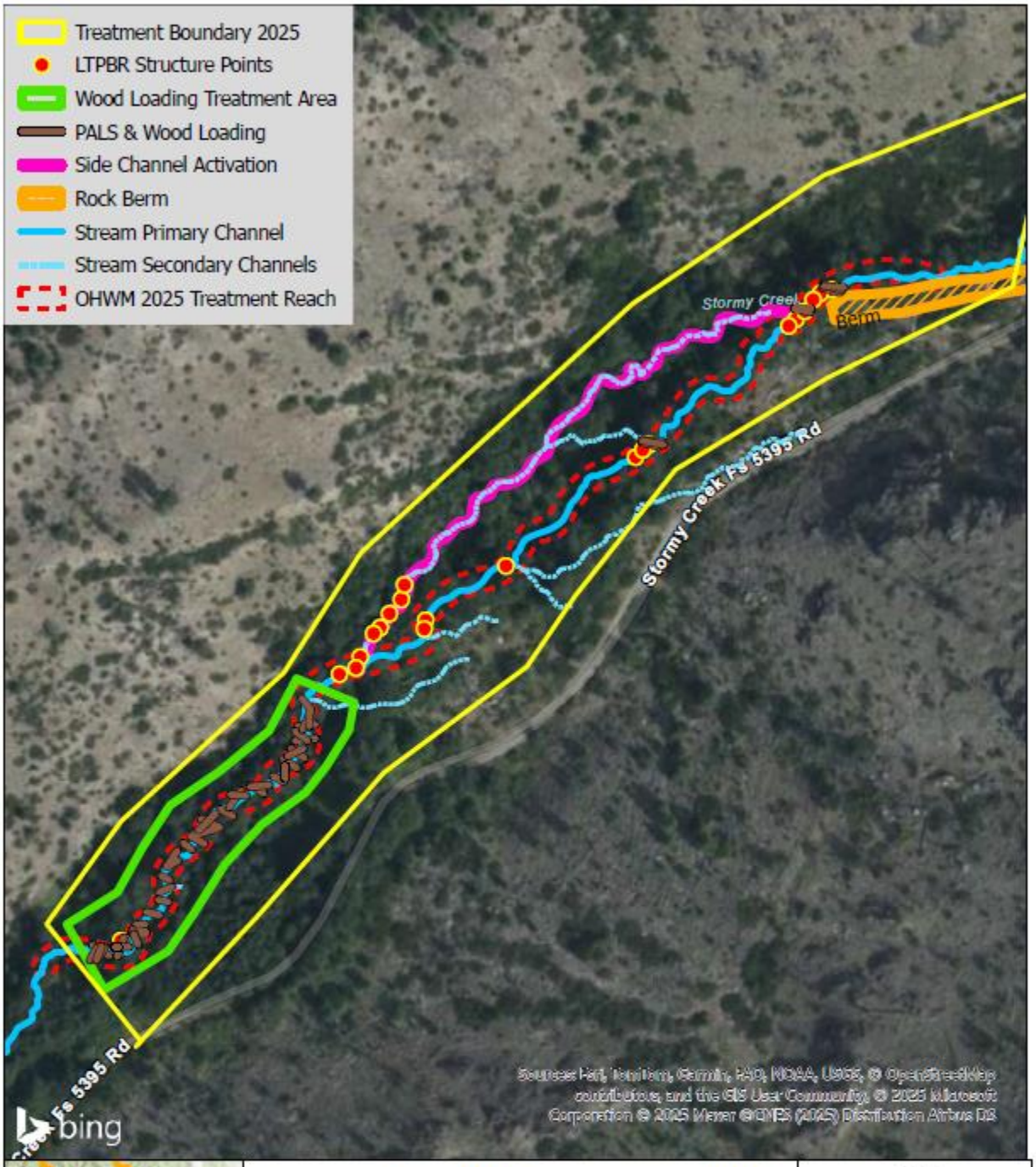
The primary enhancement challenges include restoring groundwater levels to support historical vegetation in the riparian zone as evidenced by legacy live and dead cottonwood in the elevated and disconnected floodplain. Increasing the dispersal and recruitment of forbs in and along the newly inundated areas of the project area is an important riparian goal. Beaver presence has been documented as active in reach 2. While this may appear to initially cause some short term damage to riparian plants, preferred vegetation actually benefits from coppicing. Beaver also aid in the dispersal of species such as willow and dogwood through their dam building and they increase water availability to riparian vegetation (dispersal and soil moisture advantages).

2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed summer steelhead. The objective is to improve juvenile steelhead conditions, specifically by maintaining installed LTPBR structures to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. The specific objectives of this project include:

1. Maintain installed LTPBR structures on an annual basis to continue accruing original project benefits.
    a. Obtain weave material through nearby forest thinning projects if possible.
    b. Plug holes in structures and establish a strong seal to ensure water only flows over the top of the structure, creating the largest possible pools, while maintaining fish passage and accruing sediment to correct incision.
2. Adaptively manage the project site
    a. Identify developing site conditions through regular monitoring.
    b. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit adult steelhead and chinook spawning and passage.
    c. Add structures as needed.
    d. Encourage side channel formation.
3. Encourage beaver reintroduction or relocate beavers to the site if possible.
    a. Beavers can maintain and enhance site conditions much more quickly than humans, and often build on LTPBR structures, effectively providing free maintenance.
    b. If the site can provide adequate habitat and beavers are available, relocate them to the project site.
4. Track performance of enhancement efforts through monitoring in years one, three, five, seven, and ten as outlined in monitoring plan found in section 6.

3. Plan Map



Stormy Creek Restoration 2025 Upper Parcel

CASCADIA CONSERVATION DISTRICT

2025

0 150 300 600 US Feet

N

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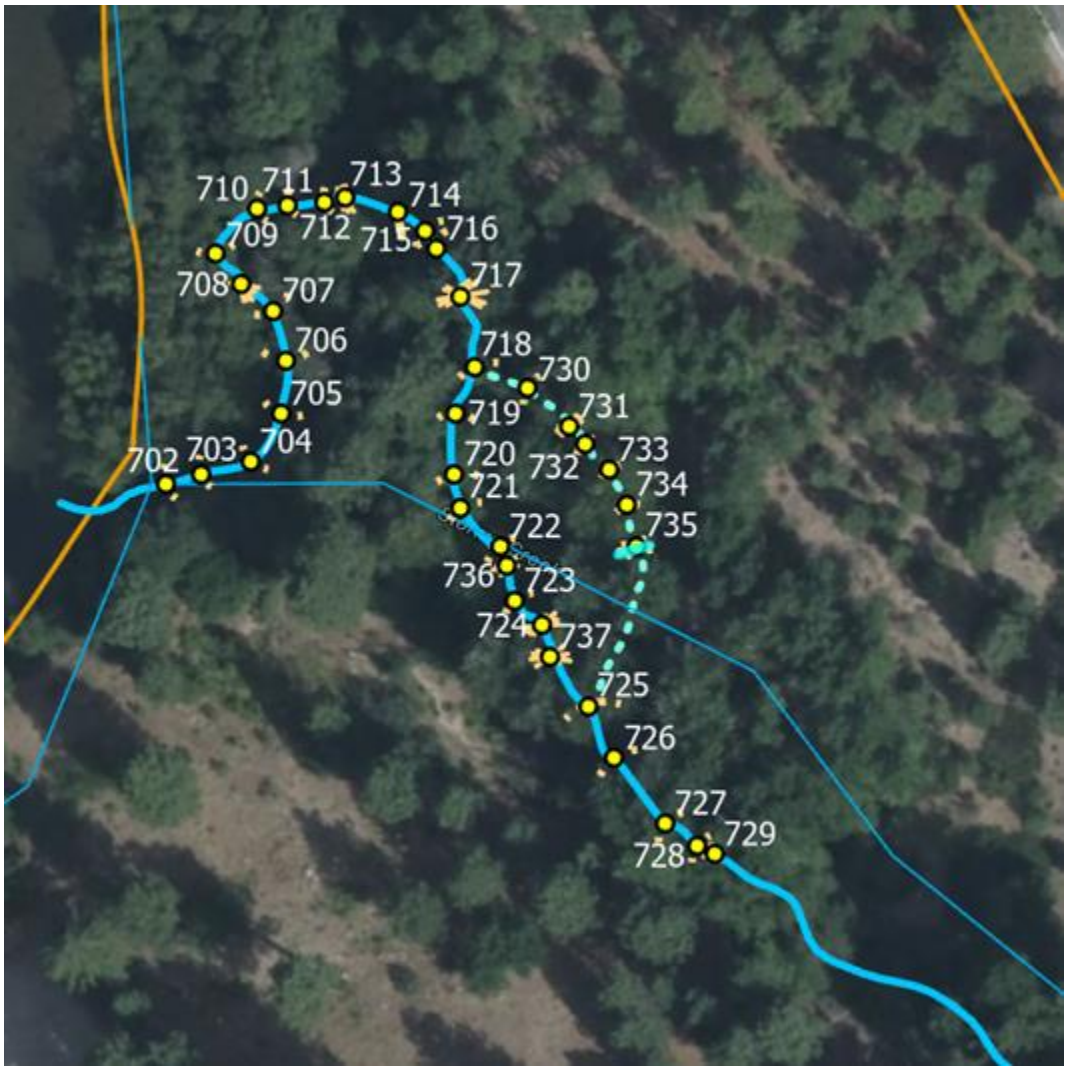
Cartographer: Mark1

As Built Structure Locations at Stormy Preserve (CLDT Owned, Stormy Creek confluence with Entiat River)



4. Site Preparation Methods

The sponsor will secure funding and hire, supervise, and work with field crews to complete site preparation work. The sponsor will secure any permits and licenses needed to complete work.

Site preparation for maintenance and monitoring of the LTPBR project involves obtaining weave material, ideally from nearby forest thinning projects, but may need to be cut or purchased.

5. Riparian Planting Methods

No planting is proposed at this time.

6. Implementation Monitoring

To evaluate if the enhancement activities meet the restoration objectives (section 2), the sponsor will perform implementation monitoring in years one, three, five, seven, and ten after installation and potentially year fifteen and twenty if funding and capacity exist. Percent survival of tree stock will be based on quantitative counts from year one through five. Naturally regenerating species will be included in this count. Starting at year five and beyond, counts will be replaced with percent cover using a minimum of four fixed transects, with percent cover of native and nonnative species determined using the point-intercept method as described by Merritt, et al. 2017. The National Riparian Core Protocol.[1] Alternatively, the sponsor may substitute high resolution drone imagery to determine the percentage of canopy cover of trees, possibly other species, using an off-the-shelf analysis software.

- Percent survival of tree and shrub species (quantitative), years one through five
- Percent canopy cover of native and nonnative vegetation (quantitative), year seven and beyond. Includes planted and naturally regenerating species.
- Vigor and health assessment of species (qualitative)

Monitoring results will allow sponsor to assess the need for adaptive management of the restoration site. Monitoring likely will occur between May and July, to target growing season and correspond with annual maintenance activities. As part of quantitative and qualitative monitoring efforts, the sponsor will take a minimum of three photos at six established photo stations. Drone imagery of the entire site also may be captured. The sponsor will provide a summary of data to RCO in the final report and as part of future stewardship grant requests.

7. Post-Implementation Maintenance

Table B: Maintenance Schedule

Work	Timing
Chemical spot treatment of invasive nonnative plants	Years 1-5 in spring and fall Years 6-10, and 15 in spring only
Replant native species to maintain survival/cover objectives	Years 1-10 in winter
Replace herbivory protection	Years 1-5 in spring
Mulch as needed	Years 1, 3, and 5 in spring
Irrigation	Years 1-3 in summer
Remove herbivory protection	Year 10 in summer
Thin trees to maintain healthy density	Years 10, 15, and 20 in summer

[1]Merritt, David M.; Manning, Mary E.; Hough-Snee, Nate, eds. 2017. The National Riparian Core Protocol: A riparian vegetation monitoring protocol for wadeable streams of the conterminous United States. Gen. Tech. Rep. RMRS-GTR-367. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 37 p.

Maintenance will occur until plants reach a stage where natural suppression of invasive species and forest succession appear to be self-sustaining. Control methods of most invasive vegetation will include chemical spot treatment with possible mechanical mowing (hand-held brush cutter) or grubbing as needed. Irrigation will occur via tank mounted truck system, weekly or biweekly depending on precipitation conditions, between July and September.

In addition to sponsor maintenance, the landowner agreed to perform a visual inspection of a portion of the planting area annually for ten years to inform the sponsor of potential challenges including beaver browse, flood damage, plant mortality, or significant site disturbances. The visual inspection may occur any time throughout the year as the landowner is available, although the growing season (March to October) is the best time to inspect plants for mortality. The landowner inspection is intended to be qualitative and limited in nature and will supplement the annual implementation monitoring completed by the sponsor. The landowner may request copies of vegetation monitoring data and reports.

8. Adaptive Management

Ungulate, rodent, flooding, and poor stock source mortality is expected at this site. Replanting from these impacts will occur to maintain survival and cover performance metrics. Under heavier loss conditions, the following adaptive management will be considered.

Ungulate: if grazing pressures cause more than 25 percent mortality and/or significant defoliation of plants, the sponsor will consider use of a spray deterrent. If grazing pressures cause more than 50 percent mortality and/or significant defoliation of plants, the sponsor will consider metal cage protection of highest value species (conifers).

Rodent: if beaver activity causes more than 10 percent mortality of conifers and/or deciduous trees, chicken wire will be applied to tree bases in a to-be determined area from the shoreline and extend further as needed.

Flooding: if any single flood causes more than 25 percent mortality, additional stakes may be added directly to the upstream side of plants in the impact zone.

Irrigation: irrigation will be considered if there are drought conditions after year three or drought conditions during critical normal precipitation seasons (spring) in the growing season during years one through three.

Poor or inappropriate stock: if there is more than 50 percent mortality of a single species from other than the causes listed above, the sponsor will assess plant stock type and source when considering whether to replant or replace if a more suitable species appears warranted.

9. As-Built Documentations

Update the riparian enhancement plan if implementation resulted in significant changes from what was proposed. Be sure to update design drawings, maps, site preparation, planting method, and monitoring elements of the plan as necessary.

No example provided.

10. Stewardship Activity Report

This is a written report that documents activities implemented as part of the stewardship project. If adaptive management was a significant factor, document the changes implemented on site. Provide implementation monitoring results to show how the site is achieving restoration objectives.

No example provided.

Riparian Enhancement Plan- Chumstick Creek

Site: Jones

1. **Existing Conditions Assessment**
    a. Overview: Privately owned residential acres includes .5 riparian acres that have been planted along 280 linear ft of Chumstick Creek, both sides of the creek. The left bank is on the east side of the stream that has a much smaller and incised riparian buffer that is adjacent to a 5 acre field and the railroad line.
    b. Target Species: The species of concern is Steelhead and Spring Chinook.
    c. Environmental Setting: The Chumstick watershed is located within a Ponderosa Pine zone, a region characterized by semi-arid conditions and a high incidence of fire. Chumstick Creek is sandwiched between the Chumstick HWY, rural housing, and the BNSF Railway for the lower 8 miles of creek. Due to the presence of reed canarygrass, incision of the creek and development the likelihood of natural establishment of native riparian species typical of this watershed is highly unlikely without substantial site preparation and enhancement.
    d. Land Use: The Site is near river mile one of Chumstick Creek main stem. Land use along the lower mile to the confluence with the Wenatchee River is rural residential development and small orchards. Above mile one is primarily rural residential development with a few small farms development. At the current site the landowner is developing the 5 acre adjacent field on the east side of the creek to be an orchard and has a small hobby farm on the west side of the creek.
    e. Soils: Burch fine sandy loam, are deep, well drained soils classified as fine farmland if irrigated.
    f. Hydrology/Water Quality: Chumstick Creek is a snow melt dominated watershed. The project site is within the FEMA 100 year flood plain. Chumstick is on the 303 (d) list for temperature and TMDLs including category 4A for dissolved oxygen, Bacteria- fecal coliform; A category 1 for Chloride and Ammonia-N; And a Category 4C for instream flow.
    g. Site Constraints: The primary enhancement challenges include preserving native plants during the dry summers. Irrigation is needed for initial establishment in the first 2-3 years of plant growth on the incised east side of the creek.
2. **Restoration Objectives**

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Specifically by planting native trees on the east bank to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. In-stream structures installed will also help create more complexity in the stream for various fish life cycle The specific objectives of this project include:

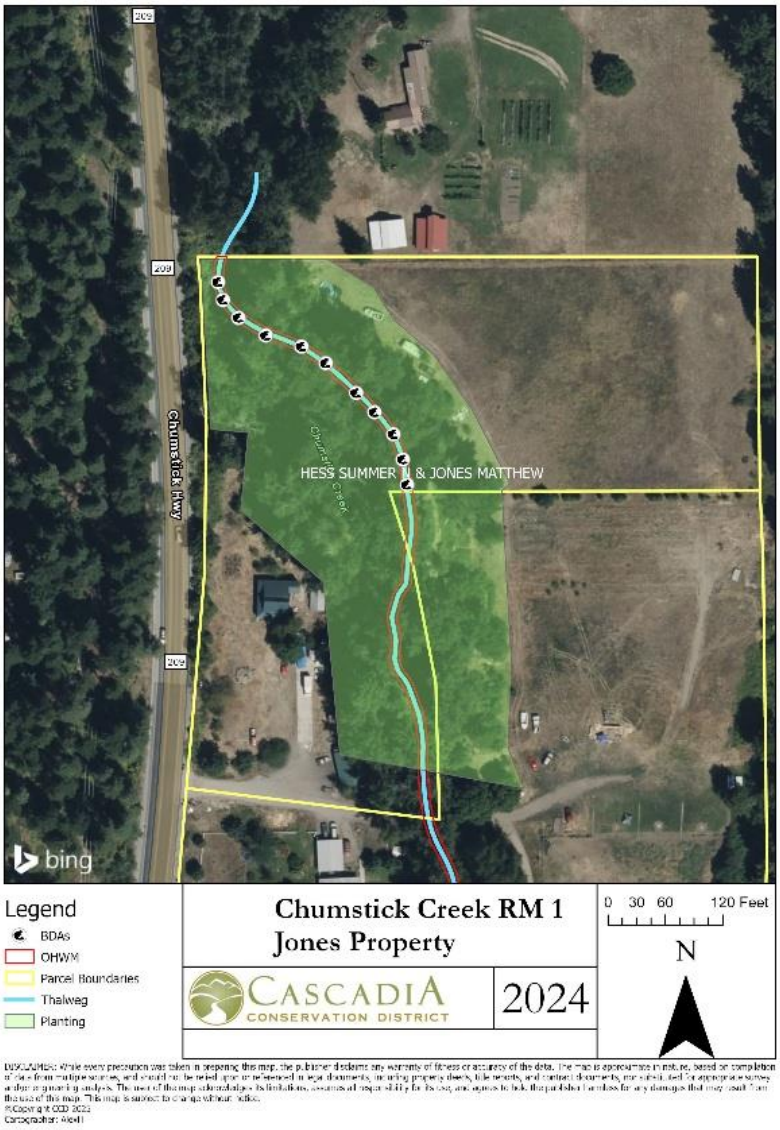
1. Eradicate or suppress on-site invasive weeds across the site through mechanical and chemical control.

a. Before planting native species, treat all the site populated with nonnative plants to aid with native plant installation.

2. Establish native riparian plant composition on the site within the minimum 50 ft buffer to better provide thermal protection of stream to reduce summer rearing mortality of salmon thermal input protection over the course of its maturation.

3. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit salmon spawning and passage. This is accomplished by installing instream structures- a mix of BDAs, PALS, and pulling in large wood from onsite.

3. Plan Maps



4. **Site Prep Methods**

   Site preparation includes mechanical control of dense vegetation as necessary to plant more diverse species within the existing vegetation. Currrently the field adjacent to the stream on the east side where the majority of the planting is taking place is mowed so little to now site prep is needed at this time.

5. **Riparian Planting Methods**

   Planting consists of container, livestakes, and bareroot stock. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall and as needed in early spring. Supplemental watering is

expected throughout the first 2-3 seasons post implementation for plants to be established.

Riparian Enhancement Plan- Eagle Creek

Sites: Youkey, Bosket, Hedeen, Headrick

1. **Existing Conditions Assessment**
    a. Overview: Four privately owned residential properties on Eagle Creek. These properties total 1.4 riparian acres that have been planted along 1545 linear ft of Eagle Creek, both sides of the creek as needed. The right bank is on the north side of the stream that has a much smaller and incised riparian buffer due to development and landuse that is adjacent to a steep slope on most of the properties except Hedeen which turns into Upland habitat and public USFS property.
    b. Target Species: The species of concern is Steelhead and Spring Chinook.
    c. Environmental Setting: The Chumstick watershed is located within a Ponderosa Pine zone, a region characterized by semi-arid conditions and a high incidence of fire. Eagle Creek is a tributary of Chumstick Creek with residential properties. Eagle Creek confluences with Chumstick Creek and then flows 2.5 miles down to confluence with the Wenatchee River. Due to the presence of non-native reed canarygrass, incision of the creek and development the likelihood of natural establishment of native riparian species typical of this watershed is highly unlikely without substantial site preparation and enhancement.
    d. Land Use: The Sites are near river mile 1.5, mile 4 and mile 4.5 of Eagle Creek. Land use along the majority of the creek to the confluence with the Wenatchee River is rural residential development and small orchards.
    e. Soils: Billyridge Gravelly, sandy loam, are deep, well drained soils classified as Mesic Xeric Foothills and Mountain Slopes.
    f. Hydrology/Water Quality: Eagle Creek is a snow melt dominated watershed. Eagle Creek is on the 303 (d) list for temperature and TMDLs including category 4A for dissolved oxygen, Bacteria- fecal coliform, and a category 1 for Chloride and Ammonia-N.
    g. Site Constraints: The primary enhancement challenges include preserving native plants during the dry summers. Irrigation is needed for initial establishment in the first 2-3 years of plant growth on the due to the incision of the creek.
2. **Restoration Objectives**
    The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Specifically by planting native trees on the banks to

reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. In-stream structures installed will also help create more complexity in the stream for various fish life cycle The specific objectives of this project include:

1. Eradicate or suppress on-site invasive weeds across the site through mechanical and chemical control.

a. Before planting native species, treat all the site populated with nonnative plants to aid with native plant installation.

2. Establish native riparian plant composition on the site within the minimum 50 ft buffer to better provide thermal protection of stream to reduce summer rearing mortality of salmon thermal input protection over the course of its maturation.

3. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit salmon spawning and passage. This is accomplished by installing instream structures- a mix of BDAs, PALS, and pulling in large wood from onsite.

3. Plan Maps

Legend

Parcel Layer
BDAs
Creek
Planting

N

0 40 80 160 Feet

Hedeen Concept Map
Eagle Creek Restoration
Cascadia Conservation District

0 37.5 75 150 Feet

N

Headrick Property Concept Map

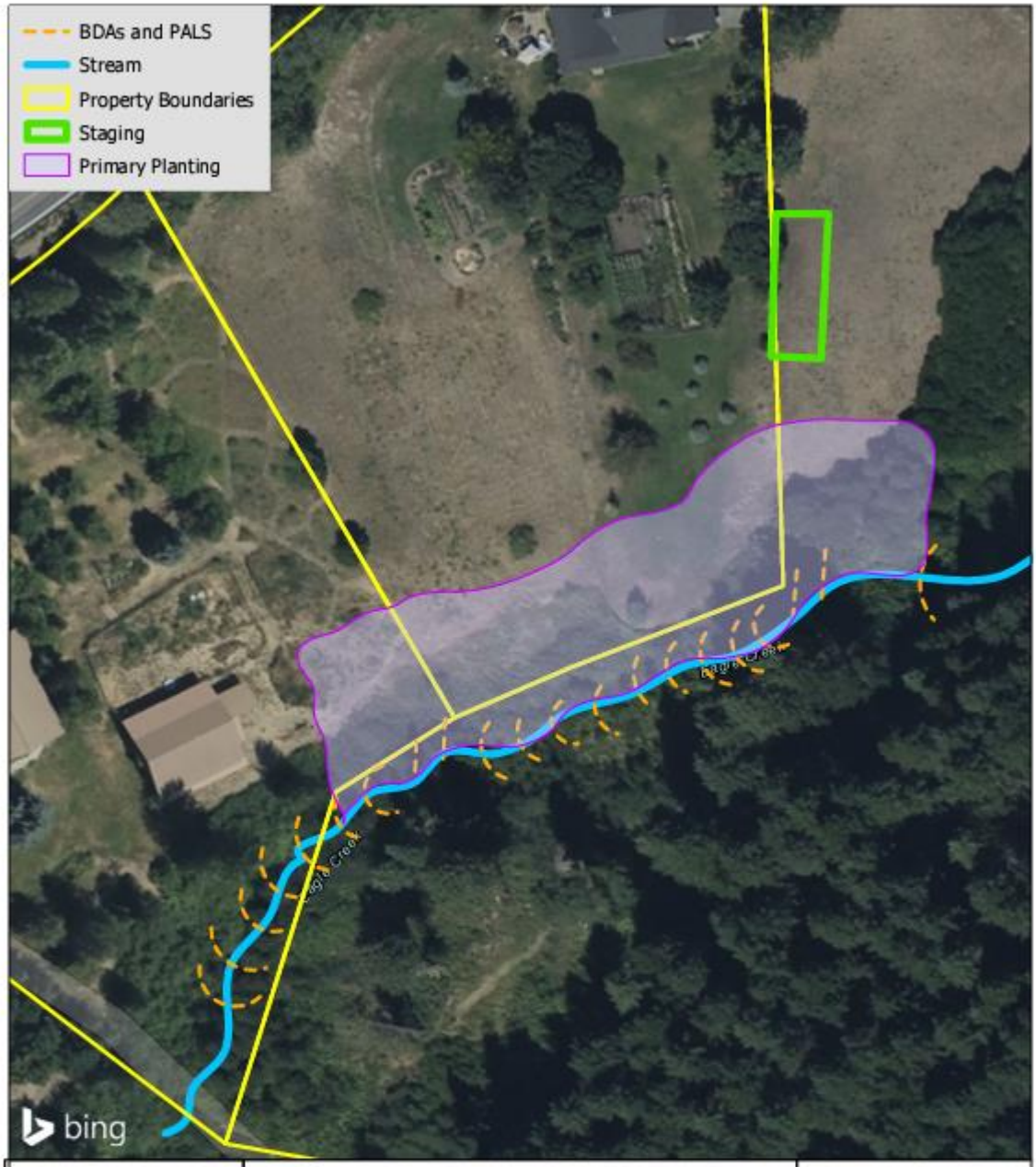
CASCADIA CONSERVATION DISTRICT

2024

Legend

- BDA
- Eagle Creek
- Planting area
- Parcels

Cartographer: AlexH



Lower Eagle Creek Restoration Phase 1

CASCADIA CONSERVATION DISTRICT

2023

0 55 110 220 US Feet

N

Cartographer: MarkI

4. **Site Prep Methods**

   Site preparation includes mechanical control of dense vegetation as necessary to plant more diverse species within the existing vegetation. Currently the field adjacent to the stream on the north side where the majority of the planting is taking place is mowed so little to no site prep is needed at this time. At Headricks there is dense Reed Canary Grass (RCG) in the wetland area as well as growing in the remnant beaver dam. Site prep at this site includes mechanical and chemical control of the RCG prior to planting.

5. **Riparian Planting Methods**

   Planting consists of container, livestakes, and bareroot stock. We also planted trays of sedges in the wetland where we removed existing RCG. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall and as needed in early spring. Supplemental watering is expected throughout the first 2-3 seasons post implementation for plants to be established.

Riparian Enhancement Plan- Little Chumstick Creek

Sites: Conkle, Oneill, Holte, Drew

1. **Existing Conditions Assessment**
    a. Overview: Privately owned residential acres includes 2.2 riparian acres that have been planted along 1580 linear ft of Little Chumstick Creek, both sides of the creek. This section of Little Chumstick Creek typically goes dry in July/August.
    b. Target Species: The species of concern is Steelhead and Spring Chinook. While there are likely no fish in this section of Little Chumstick due to barriers below we are only .5 miles above the confluence with Chumstick Creek where we know to be fish. The water quality of Little Chumstick Creek has direct impacts on Chumstick Creek.
    c. Environmental Setting: The Chumstick watershed is located within a Ponderosa Pine zone, a region characterized by semi-arid conditions and a high incidence of fire. Little Chumstick Creek is sandwiched between the Chumstick HWY, and rural housing. Due to the presence of reed canarygrass, incision of the creek and development the likelihood of natural establishment of native riparian species typical of this watershed is highly unlikely without substantial site preparation and enhancement.
    d. Land Use: The Site is near river mile .5 of Little Chumstick Creek. Land use along the lower mile to the confluence with the mainstem Chumstick Creekr is rural residential development. Above mile one is primarily rural residential development with a few small hobby farms development.
    e. Soils: Brief gravelly sandy loam, are deep, well drained soils classified as fine farmland if irrigated.
    f. Hydrology/Water Quality: Little Chumstick Creek is a snow melt dominated sub-watershed. Little Chumstick is on the 303 (d) list for temperature and TMDLs including category 4A for dissolved oxygen, Bacteria- fecal coliform, and temperature.
    g. Site Constraints: The primary enhancement challenges include preserving native plants during the dry summers. Irrigation is needed for initial establishment in the first 2-3 years of plant growth due to the incised nature of the creek.
2. **Restoration Objectives**
    The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Specifically by planting native trees and shrubs to

reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. In-stream structures installed will also help create more complexity in the stream as well as slow and spread the water across the landscape. This has the added benefit of providing additional water for plants and wildlife for longer in the summer before the creek goes dry. The specific objectives of this project include:

1. Eradicate or suppress on-site invasive weeds across the site through mechanical and chemical control.

a. Before planting native species, treat all the site populated with nonnative plants to aid with native plant installation.

2. Establish native riparian plant composition on the site within the minimum 50 ft buffer to better provide thermal protection of stream to reduce summer rearing mortality of salmon thermal input protection over the course of its maturation.

3. Provide a source of large woody materials from dying or flood-recruited trees on site that will add to in-stream habitat complexity along or downstream of this reach, to benefit salmon spawning and passage. This is accomplished by installing instream structures- a mix of BDAs, PALS, and pulling in large wood from onsite.

3. Plan Maps

BDA and Planting Project
Conkle

0 0.010.01 0.03 Miles

CASCADIA CONSERVATION DISTRICT

2022

- Little Chumstick Creek
- Conkle Parcel
- BDAs
- Riparian Buffer
- opening

Cartographer: AlexH

BDA and Planting Project
Holte

0 0.010.01 0.03 Miles

CASCADIA CONSERVATION DISTRICT

2022

Streams_CCNRD
Holte
Riparian Planting
BDAs

Cartographer: AlexH

Drew project map

DISCLAIMER: While every precaution was taken in preparing this map, the publisher disclaims any warranty of fitness or accuracy of the data. The map is approximate in nature, based on compilation of data from multiple sources, and should not be relied upon or referenced in legal documents, including property deeds, title reports, and contract documents, nor substituted for appropriate survey and\or engineering analysis. The user of the map acknowledges its limitations, assumes all responsibility for its use, and agrees to hold the publisher harmless for any damages that may result from the use of this map. This map is subject to change without notice.

Cartographer: AlexH

4. Site Prep Methods

Site preparation includes mechanical control of dense grass and native vegetation as necessary to plant more diverse species within the existing vegetation. An example of this is that at Holte site a dense layer of snowberry exists along the creek, but there is no tree recruitment as the snowberry has created a dense buffer. Pockets were cut into the snowberry and then planted with aspen and cottonwood to increase habitat diversity at the site and tree cover.

5. **Riparian Planting Methods**

Planting consists of container, livestakes, and bareroot stock. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall and as needed in early spring. Supplemental watering is expected throughout the first 2-3 seasons post implementation for plants to be established.

Riparian Enhancement Plan- Merritt Oxbow

1. **Existing Conditions Assessment**
    a. **Overview:** Project area is a mixture or privately owned (land trust) and publicly owned (USFS) land. A floodplain restoration project was implemented in the summer of 2022 at this site with the goal of providing year-round rearing habitat for juvenile Chinook (winter and summer). As part of this effort, about 1.6 acres and 1000 LF were planted with riparian and floodplain vegetation. About 2,000 plants were installed initially and around 100 more have been installed in 2023/2024 as infill planting.
    b. **Target Species:** The target species are steelhead, bull trout and spring chinook.
    c. **Environmental Setting:** The existing channel geometry within the lower White Pine reach and the project site in particular has been significantly altered by human actions – the stream has been straightened and large portions of the floodplain cut off to accommodate a railroad. Additionally, powerlines, U.S. Route 2, and land clearing, along with LWD removal and bank hardening (riprap), have impacted large portions of the reach. These human actions have resulted in a channel that is relatively straight, steep, and confined with poor floodplain connection, relatively high velocity flows, poor instream hydraulic and habitat complexity, and areas of bank instability associated with poor riparian vegetation and excessive hydraulic forces.
    d. **Land Use:** The site is used for conservation. Powerlines, the railroad, and rural development surround the site.
    e. **Soils:** Project site consists of Aeric Fluvaquents, which are silt and sandy loam.
    f. **Hydrology/Water Quality:** Nason Creek drains 69,000 acres from the Cascade Crest at Stevens Pass to its confluence with the Wenatchee River at river mile 53.6, slightly downstream of the Lake Wenatchee outlet. For the proposed design, important hydrologic conditions include peak flood flow frequencies to assess channel, floodplain, constructed riffle, and wood habitat structure stability. Hydrology was developed for the project site having a drainage area of 73 square miles and average precipitation of 73 inches based on StreamStats (USGS, 2016). The watershed's stream network is dominated by rainfall and snowmelt processes resulting in the majority of peak runoff events in winter months (October and November) and again in spring months (May and June). Downstream of the project area, Nason Creek and the Wenatchee River have 303d listings for temperature.

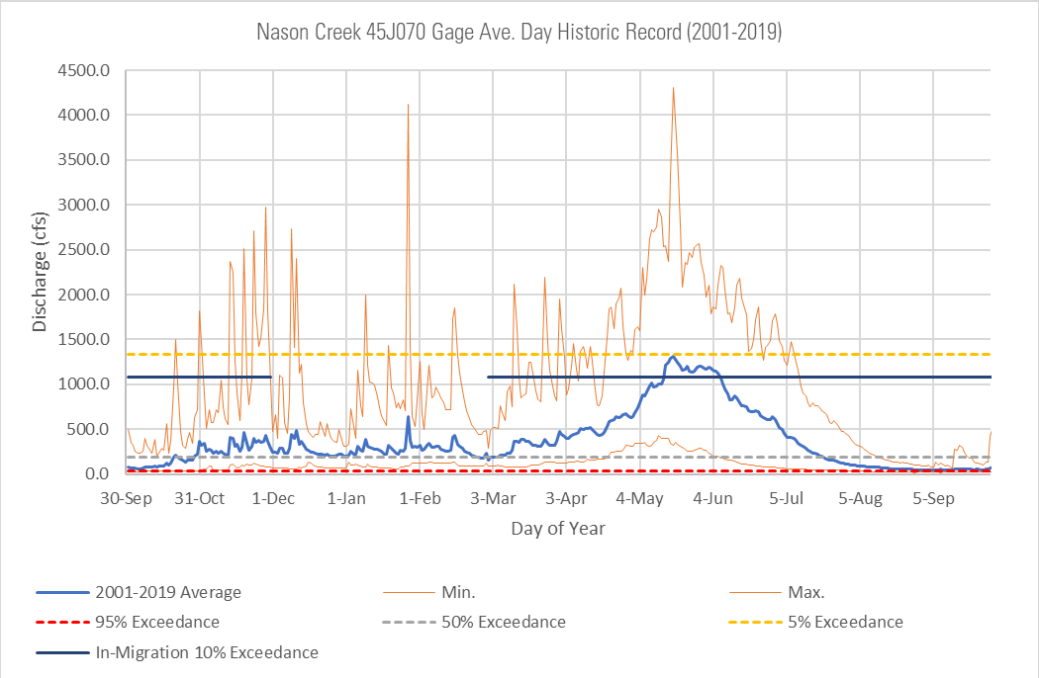


Figure 1. Nason Creek stream gage average daily historical record

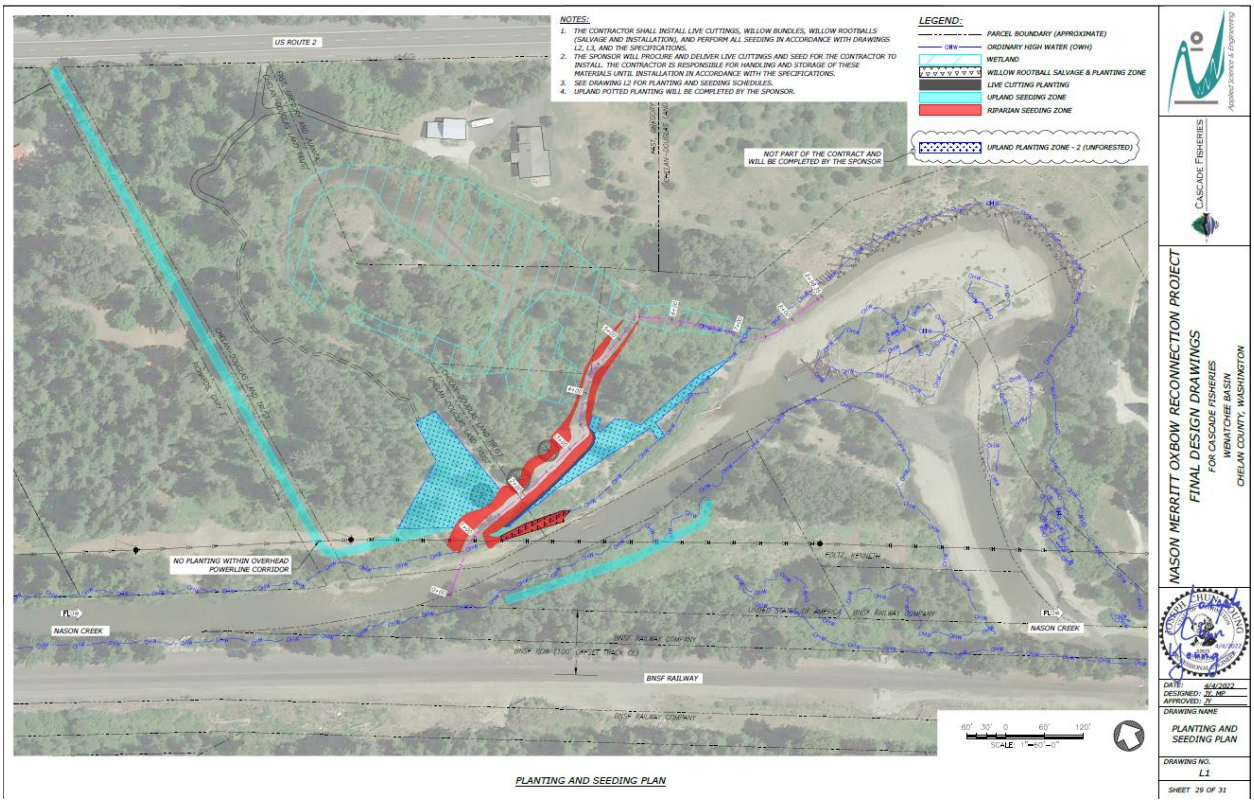
g. Site Constraints: The primary enhancement challenges include preserving native plants during the dry summers and combating noxious weeds.

2. Restoration Objectives

The goal of this restoration plan is to enhance and restore self-sustaining functioning riparian habitat that supports Endangered Species Act-listed Steelhead salmon and spring Chinook. Planting native trees and shrubs in floodplain zones will help to reduce summer stream temperatures and to recruit trees for large wood complexity that will increase in-stream habitat. Specific objectives include:

- Eradicate or suppress on-site noxious weeds through mechanical and chemical control to reduce competition of planted and naturally recruited floodplain vegetation. Weed control will take place wherever soil was disturbed by the restoration project, covering approximately 2 acres.
- Establish self-sustaining native riparian/floodplain plant community with diverse composition on the site within the minimum 100 ft buffer to better provide thermal protection of stream to reduce summer heating. If needed, additional plants will be installed to increase cover or species diversity.

3. Plan Maps


NOTES:
1. THE CONTRACTOR SHALL INSTALL LIVE CUTTINGS, WILLOW BUNDLES, WILLOW ROOTBALLS (SALVAGE AND INSTALLATION), AND PERFORM ALL SEEDING IN ACCORDANCE WITH DRAWINGS L2, L3, AND THE SPECIFICATIONS.
2. THE SPONSOR WILL PROCURE AND DELIVER LIVE CUTTINGS AND SEED FOR THE CONTRACTOR TO INSTALL. THE CONTRACTOR IS RESPONSIBLE FOR HANDLING AND STORAGE OF THESE MATERIALS UNTIL INSTALLATION IN ACCORDANCE WITH THE SPECIFICATIONS.
3. SEE DRAWING L2 FOR PLANTING AND SEEDING SCHEDULES.
4. UPLAND POTTED PLANTING WILL BE COMPLETED BY THE SPONSOR.
LEGEND:
PARCEL BOUNDARY (APPROXIMATE)
ORDINARY HIGH WATER (OHW)
WETLAND
WILLOW ROOTBALL SALVAGE & PLANTING ZONE
LIVE CUTTING PLANTING
UPLAND SEEDING ZONE
RIPARIAN SEEDING ZONE
UPLAND PLANTING ZONE - 2 (UNFORESTED)
US ROUTE 2
NOT PART OF THE CONTRACT AND WILL BE COMPLETED BY THE SPONSOR
NO PLANTING WITHIN OVERHEAD POWERLINE CORRIDOR
NASON CREEK
NASON CREEK
BNSF RAILWAY
BNSF RAILWAY COMPANY
SCALE: 1" = 60'-0"
PLANTING AND SEEDING PLAN
NASON MERRITT OXBOW RECONNECTION PROJECT
FINAL DESIGN DRAWINGS
FOR CASCADE FISHERIES
WENATCHEE BASIN
CHELAN COUNTY, WASHINGTON
CASCADE FISHERIES
DATE: 4/4/2022
DESIGNED: ZV, ME
APPROVED: ZV
DRAWING NAME
PLANTING AND SEEDING PLAN
DRAWING NO.
L1
SHEET 29 OF 31

4. **Site Prep Methods**
   Site preparation includes treatment of noxious weeds as needed prior to planting.

5. **Riparian Planting Methods**

   Plants consists of container and/or livestakes. Plant stock will be installed with a power auger, shovels and dibbler as appropriate to the stock. Planting takes place in fall. Minimal additional planting is expected at this site.

Worksite #	Property #	Site Name	Stream	County	WRIA	Subbasin	HUC12	AU	Reach	Reach Rank	River Miles	Stream Length Affected (Ft)	Latitude	Longitude	Site Ownership Type	Landowner	Site Address	Parcel #	Implementation Year(s)
1	1	Alder- DS	Alder Creek	Chelan	45	Wenatchee River	170200110308	Lower Chiwawa River	Alder Creek 01	1	0.29-0.91	3274	47.853775	-120.659304	Public	USFS	128 ALDER CREEK TIE FS 6200-200 RD LAKE WENATCHEE, WA 98826	27371200000	2022
	2	Alder- US	Alder Creek	Chelan	45	Wenatchee River	170200110308	Lower Chiwawa River	Alder Creek 02	unranked	1.55-1.8	1320	47.862329	-120.657312	Public	USFS	UNASSIGNED LAKE WENATCHEE, WA 98826	27370200000	2022
2	3	Beaver Ck	Beaver Creek	Chelan	45	Wenatchee River	170200110701	Wenatchee River- Beaver Creek	undefined	unranked	3.22-3.66	2323	47.781495	-120.595298	Public	USFS	UNASSIGNED LEAVENWORTH, WA 98826	26180400000	2023
	4	SF Beaver Ck	South Fork Beaver Creek	Chelan	45	Wenatchee River	170200110701	Wenatchee River- Beaver Creek	undefined	unranked		3500	47.772594	-120.605793	Public	USFS	UNASSIGNED LEAVENWORTH, WA 98826	26180400000, 26180900000	2024
3	5	Merrit Oxbow	Nason Creek	Chelan	45	Wenatchee River	170200110203	Lower Nason Creek	Nason Creek Lower 10	1	10.7-11	1584	47.77801	-120.832675	Private	CHELAN-DOUGLAS LAND TRUST	18675 US HWY 2 LAKE WENATCHEE, WA 98826	26160342000	2022
4	6	Jones	Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	Chumstick Creek 02	2	1.2-1.25	280	47.616348	-120.649949	Private	HESS SUMMER N & JONES MATTHEW	25 SYLVESTER MEADOWS LN LEAVENWORTH, WA 98826	25181313203	2024
5	7	Youkey	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		240	47.633609	-120.628361	Private	YOUKEY DONALD & GAIL	15 ADLER BACH LN LEAVENWORTH, WA 98826	25182930022	2023
	8	Bosket	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		170	47.634024	-120.627688	Private	BOSKET VINCENT N ETAL	11025 EAGLE CREEK RD LEAVENWORTH, WA 98826	25182930023	2023
	9	Hedeen	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		600	47.640496	-120.585148	Private	HEDEEN PAUL F & KNAPP ROSEMARY	9425 EAGLE CREEK RD LEAVENWORTH, WA 98826	25182754070, 25182754065, 25182754502	2025
	10	Headrick	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		535	47.645816	-120.576859	Private	HEADRICK TODD R & JENNIFER L TRUST	9247 EAGLE CREEK RD LEAVENWORTH, WA 98826	25182430100	2024
6	11	Conkle	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		600	47.719425	-120.633968	Private	CONKLE MICHAEL H & KAREN D MATAYA	16520 CHUMSTICK HWY LEAVENWORTH, WA 98826	26183044080I, 26183040060	2023
	12	O'Neill	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		300	47.728024	-120.637019	Private	O NEILL JULIA A	16970 CHUMSTICK HWY LEAVENWORTH, WA 98826	26183012005O	2023
	13	Holte	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		350	47.728857	-120.637282	Private	HARWELL ALEXANDRA & KEVIN HOLTE	16982 CHUMSTICK HWY LEAVENWORTH, WA 98826	26183010026S	2023
	14	Drew	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		300	47.729788	-120.637607	Private	DREW DOUGLAS R & KATHRYN A REV TRT	41 STARGAZER LN LEAVENWORTH, WA 98826	26183010031O	2023
7	15	Stroud	Derby Creek	Chelan	45	Wenatchee River	170200110706	Wenatchee River- Derby Canyon	undefined	unranked	3.49-4.43	2500	47.605288	-120.549595	Private	STROUD III WILLIAM G	6905 DERBY CANYON RD PESHASTIN, WA 98847	24180200005O	2019, 2025
	16	DNR-Derby Ck	Derby Creek	Chelan	45	Wenatchee River	170200110706	Wenatchee River- Derby Canyon	Derby Canyon 01	unranked	0.48-0.86	2034	47.577349	-120.583215	Public	DNR	UNASSIGNED PESHASTIN, WA 98847	24181610000	2025
8	17	Lower Peshastin	Peshastin Creek	Chelan	45	Wenatchee River	170200110503	Lower Peshastin Creek	Peshastin Creek Lower 01	1	0-0.5	2640	47.557168	-120.577467	Public	WDFW	UNASSIGNED DRYDEN, WA 98821	24182274600G, 24182310100, 24182274500G	2025
	18	Peshastin 2.5	Peshastin Creek	Chelan	45	Wenatchee River	170200110503	Lower Peshastin Creek	Peshastin Creek Lower 03	2	2.5-3	2640	47.538797	-120.617775	Private	MOUNTAIN VALLEY ACRES LLC	UNASSIGNED PESHASTIN, WA 98847	24183221000I, 24182934020	2026
9	19	Goodwin Side Channel	Wenatchee River	Chelan	45	Wenatchee River	170200110707	Wenatchee River- Ollala Canyon	Wenatchee River Ollala 01	3	11-11.5	2640	47.528268	-120.491682	Private	WA-DOT	UNASSIGNED CASHMERE, WA 98815	24193234060O	2026
10	20	Roaring Ck-DS	Roaring Creek	Chelan	46	Entiat River	170200100208	Roaring Creek	Roaring Creek Entiat 03	2	1.45-1.51	317	47.685875	-120.349269	Public	USFS	UNASSIGNED ENTIAT, WA 98822	25200810000	2020
	21	Roaring Ck-US	Roaring Creek	Chelan	46	Entiat River	170200100209	Roaring Creek	Roaring Creek Entiat 04	unranked	2.65-2.91	1373	47.67664	-120.374218	Public	USFS	UNASSIGNED ENTIAT, WA 98822	25200741000O	2023
11	22	Potato Ck	Potato Creek	Chelan	46	Entiat River	170200100207	Entiat River- Potato Creek	Potato Creek 02-03-04	unranked	0.17-1.3	5966	47.796104	-120.380376	Public	USFS	UNASSIGNED ENTIAT, WA 98822	27193600005O, 27203100000O	2020, 2022, 2023, 2024
12	23	Stormy Ck	Stormy Creek	Chelan	46	Entiat River	170200100207	Entiat River- Potato Creek	Stormy Creek 01	3	0-0.15	775	47.821637	-120.421286	Private	CHELAN-DOUGLAS LAND TRUST	UNASSIGNED ENTIAT, WA 98822	27192354480	2023
13	24	Rock Island Ck	Rock Island Creek	Douglas	44	Columbia Tributary	17020010	undefined	undefined	unranked	0-15	4300	47.50891	-120.130666	Private	BREILER, DUANE KEITH	UNASSIGNED EAST WENATCHEE, WA 98802	23220610001	2022-2028
	25											1250	47.522868	-120.130921	Private	BOW KNOT BAR HOMESTEAD LLC	UNASSIGNED EAST WENATCHEE, WA 98802	24223100000	2023
	26											14000	47.504343	-120.127477	Private	KANE, SCOTT M & SHEILA G	UNASSIGNED EAST WENATCHEE, WA 98802	23220700000	2024-2025
	27											3000	47.524712	-120.134111	Public	DNR	UNASSIGNED EAST WENATCHEE, WA 98802	24213600000	2025
14	28	Duffy Creek	Douglas Creek	Douglas	44	Columbia Tributary	17020012	undefined	undefined	unranked		500	47.50096	-120.04178	Public	BLM	UNASSIGNED	23221110000	2025

Priority List

Ranking #	Property #	Site Name	Stream	County	WRIA	Subbasin	AU	Reach	Reach Rank	Site Ownership Type	Implementation Year(s)	River Miles	Stream Length Affected (Ft)	Riparian Acres	BDAs	Riparian Planting Stewardship?	LTPBR Maintenance and Adaptive Management?
1	17	Lower Peshastin	Peshastin Creek	Chelan	45	Wenatchee River	Lower Peshastin Creek	Peshastin Creek Lower 01	**1**	Public	2025	0-0.5	2640	4	-	**Yes**	No
2	5	Merrit Oxbow	Nason Creek	Chelan	45	Wenatchee River	Lower Nason Creek	Nason Creek Lower 10	**1**	Private	2022	10.7-11	1584	1.75	-	**Yes**	No
3	1	Alder- DS	Alder Creek	Chelan	45	Wenatchee River	Lower Chiwawa River	Alder Creek 01	1	Public	2022	0.29-0.91	3274	-	8	No	**Yes**
4	2	Alder- US	Alder Creek	Chelan	45	Wenatchee River	Lower Chiwawa River	Alder Creek 02	unranked	Public	2022	1.55-1.8	1320	-		No	**Yes**
5	18	Peshastin 2.5	Peshastin Creek	Chelan	45	Wenatchee River	Lower Peshastin Creek	Peshastin Creek Lower 03	**2**	Private	2026	2.5-3	2640	5	-	**Yes**	No
6	6	Jones	Chumstick Creek	Chelan	45	Wenatchee River	Chumstick Creek	Chumstick Creek 02	**2**	Private	2024	1.2-1.25	280	0.5	12	**Yes**	**Yes**
7	20	Roaring Ck-DS	Roaring Creek	Chelan	46	Entiat River	Roaring Creek	Roaring Creek Entiat 03	**2**	Public	2020	1.45-1.51	317	-	14	No	**Yes**
8	21	Roaring Ck-US	Roaring Creek	Chelan	46	Entiat River	Roaring Creek	Roaring Creek Entiat 04	unranked	Public	2023	2.65-2.91	1373	-		No	**Yes**
9	19	Goodwin Side Channel	Wenatchee River	Chelan	45	Wenatchee River	Wenatchee River- Ollala Canyon	Wenatchee River Ollala 01	**3**	Private	2026	11-11.5	2640	5.8	-	**Yes**	**Yes**
10	23	Stormy Ck	Stormy Creek	Chelan	46	Entiat River	Entiat River- Potato Creek	Stormy Creek 01	**3**	Private	2023	0-0.15	775	-	42	No	**Yes**
11	22	Potato Ck	Potato Creek	Chelan	46	Entiat River	Entiat River- Potato Creek	Potato Creek 02-03-04	unranked	Public	2020, 2022, 2023, 2024	0.17-1.3	5966	1.1	114	**Yes**	**Yes**
12	16	DNR-Derby Ck	Derby Creek	Chelan	45	Wenatchee River	Wenatchee River- Derby Canyon	Derby Canyon 01	unranked	Public	2025	0.48-0.86	2034	0.6	17	**Yes**	**Yes**
13	7	Youkey	Eagle Creek	Chelan	45	Wenatchee River	Eagle Creek (Wenatchee)	undefined	unranked	Private	2023		240	0.25	10	**Yes**	**Yes**
14	8	Bosket	Eagle Creek	Chelan	45	Wenatchee River	Eagle Creek (Wenatchee)	undefined	unranked	Private	2023		170	0.25	19	**Yes**	**Yes**
15	9	Hedeen	Eagle Creek	Chelan	45	Wenatchee River	Eagle Creek (Wenatchee)	undefined	unranked	Private	2025		600	0.4	10	**Yes**	**Yes**
16	10	Headrick	Eagle Creek	Chelan	45	Wenatchee River	Eagle Creek (Wenatchee)	undefined	unranked	Private	2024		535	0.5	5	**Yes**	**Yes**
17	11	Conkle	Little Chumstick Creek	Chelan	45	Wenatchee River	Chumstick Creek	undefined	unranked	Private	2023		600	0.4	17	**Yes**	**Yes**
18	12	O'Neill	Little Chumstick Creek	Chelan	45	Wenatchee River	Chumstick Creek	undefined	unranked	Private	2023		300	0.4	7	**Yes**	**Yes**
19	13	Holte	Little Chumstick Creek	Chelan	45	Wenatchee River	Chumstick Creek	undefined	unranked	Private	2023		350	0.35	9	**Yes**	**Yes**
20	14	Drew	Little Chumstick Creek	Chelan	45	Wenatchee River	Chumstick Creek	undefined	unranked	Private	2023		300	0.5	6	**Yes**	**Yes**
21	4	SF Beaver Ck	South Fork Beaver Creek	Chelan	45	Wenatchee River	Wenatchee River- Beaver Creek	undefined	unranked	Public	2024		3500	0.07	18	**Yes**	**Yes**
22	3	Beaver Ck	Beaver Creek	Chelan	45	Wenatchee River	Wenatchee River- Beaver Creek	undefined	unranked	Public	2023	3.22-3.66	2323	-	29	No	**Yes**
23	15	Stroud	Derby Creek	Chelan	45	Wenatchee River	Wenatchee River- Derby Canyon	undefined	unranked	Private	2019, 2025	3.49-4.43	2500	-	35	No	**Yes**
24	24									Private	2022-2028		4300	-		No	**Yes**
25	25	Rock Island Ck	Rock Island Creek	Douglas	44	Columbia Tributary	undefined	undefined	unranked	Private	2023	11-15	1250	-	161	No	**Yes**
26	26									Private	2024-2025		14000	-		No	**Yes**
27	27									Public	2025		3000	-		No	**Yes**
28	28	Duffy Creek	Douglas Creek	Douglas	44	Columbia Tributary	undefined	undefined	unranked	Public	2025		500	-	5	No	**Yes**