



## Contact Information

# 2024 Upper Columbia Regional Project Pre-Application

\* Pre-applications due March 11, 2024 (COB)

\*Complete applications due in PRISM April 19, 2024 (COB)

\*Revised proposals due in PRISM May 24, 2024 (COB)

\*Final revised applications due in PRISM June 24, 2024 (noon)

<b>Project Title</b>	Methow at Goat Creek floodplain reconnection
<b>Sponsor</b>	Cascade Fisheries
<b>Primary Contact</b>	Kristen Kirkby
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## Budget Request

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

**Anticipated Request - SRFB (standard round)** 500000

**Anticipated Request - Tributary Committee** 500000

**Anticipated TOTAL Budget** 1000000

## Project Location

**Briefly describe the location of the project** The project will occur on the Methow River from approximately RM65-RM66

**Latitude (decimal degrees)** 48.572312

**Longitude (decimal degrees)** -120.382825

**Project subbasin** Methow

**Methow Assessment Unit(s)**

Methow River-Fawn Creek

**Does the proposed project span multiple assessment units?**

No

**Reach(es) Name**

Methow River Fawn 08 and 09

**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**

Methow River Fawn 08 - Reach Rank 2

Methow River Fawn 09 - Reach Rank 1

## Project Information

**1. 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 seeks to address limiting factors of cover, floodplain connectivity, off-channel habitat, and pool quantity and quality for ESA-listed fish by implementing a restoration design focused on levee removal and the placement of instream mainstem and off-channel wood. The design includes selective excavation to reconnect high-flow channels along 0.5mi of levee, mainstem wood structures along roughly 0.75mi of river, and high-flow channel wood structures. Implementation would occur in 2025 or 2026. These reaches of the Methow are used by spring chinook and steelhead spawning and rearing, and bull trout feeding, migrating, and overwintering.

**2. What species will the project benefit?**

Spring Chinook

Steelhead

Bull Trout

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

Instream Habitat (Includes Floodplain & Off-Channel Reconnection)

**Instream Habitat: Reporting Code**

Total miles of instream habitat treated

Acres of channel/off-channel connected or added

Number of structures placed in channel

Pools created through channel structure placement

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

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

6. What category is the project?

Is the project eligible for Riparian Funding?

## Design and Restoration Proposals

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

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)?

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

10. Which life stages will the proposed project address?

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

This project would improve floodplain connectivity and expand high-flow off-channel habitat through targeted levee removal along 0.6mi of river, improving habitat quality and increasing habitat quantity for rearing juvenile fish and spawning, feeding, and migrating adults. Instream wood placement would create pools, provide cover, increase floodplain connection, and encourage lateral channel migration in both high-flow channels and the mainstem Methow, creating immediate habitat improvement and restoring or encouraging some of the natural processes that can create and maintain habitat in future. These actions would address some of the limiting factors identified for the two project reaches, Methow Fawn 08 and 09, including the following limiting factors that are currently rated as unacceptable in either one or both reaches: floodplain connectivity, off-channel habitat, and cover-wood. These reaches of the Methow are used by nearly all lifestages of spring chinook and steelhead, as well as by subadult and adult bull trout. This AU is ranked 1 for restoration for both steelhead and spring chinook, and the reaches within this project area are ranked 1 and 2 under prioritization.

**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 project will selectively remove areas of a levee that currently blocks floodplain connectivity and inundation of off-channel habitat along over a half-mile of the Methow River. The placement of large wood structures will also promote pool formation, lateral channel migration, and floodplain engagement. These actions will promote and restore natural processes that create and maintain habitat in this reach.

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

1-10 years

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

50+ years

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

No maintenance is planned, but the project will be assessed and monitored after implementation. If project goals are no longer being met, adaptive management will be used to modify the project to ensure habitat gain.

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

The methods for this restoration project will be selective excavation and removal of sections of 0.5mi of existing levees to improve floodplain connectivity and increase off-channel habitat; and placement of large wood structures in roughly 0.75mi of the mainstem Methow and in high-flow channels across the Goat Creek fan to provide cover, create pools, increase floodplain connection, and encourage lateral migration. The current design includes selective excavation at 12 high-flow channels across the floodplain, 3 apex jams, 8 bank-attached jams, 6 4-log structures, 66 single log structures, and 60 whole tree structures.

**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.**

n/a

## Assessment Proposals

## Protection Proposals

## Monitoring Proposals

## Project Risk and Economic Benefits

**1. What is the landownership?**

Private

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

Yes

**Please explain**

The primary landowners for the project, the Foster Homeowners Association, own the majority of the Goat Creek fan where levee removal would take place and are supportive of the current design. Another independent landowner with a conservation easement has also committed support for levee removal

restoration, along with the Methow Conservancy, who holds the CE.

**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**

Methow Trails has an easement for the Methow Community Trail, and CF has been worked actively to identify their needs for a restoration design, which focus on improvements to existing and potential future maintenance challenges. Methow Trails has expressed support for restoration and we anticipate improvements to current trail maintenance challenges during high-flow periods. The project will incorporate several hardened trail segments where appropriate, the trail crossing structure preferred by Methow Trails.

**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, the project should reduce some maintenance challenges on the community trail and otherwise won't impact private landowners or public trail users and will act as an educational opportunity to have a restoration project on display along a heavily used public trail.

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

Methow Trails will continue to be responsible for maintenance of the trail through the project area. CF will work with current and future landowners to address any adaptive management needs from project actions.

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

No

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

We do not anticipate a large risk of failure for this project. Landowners have been supportive of restoration throughout the assessment and design phases. The design addresses risk associated with the placement of mainstem instream wood through the design of structures to withstand a 100-year flood.

The Yakama Nation commissioned an assessment of the potential risk of an avulsion through the Suspension Creek area at the left-hand bend in the river at the bottom of our project reach on river right. Questions came up within the RTT about the project effects on this location. The majority of proposed wood structures are intended to encourage flow to leave the mainstem and disperse across the floodplain through high-flow channels on river left. Selective excavation will also encourage this. We anticipate that this action will reduce some of the velocity and shear stress in the mainstem by reactivating the river left floodplain, which should, if anything, remove some pressure from the area of interest on river right identified in the YN report. Hydraulic modeling does show that the mean and standard deviation of velocity in modeled cells is lower for proposed conditions, and limited reduction in the area of higher velocity is visible in the model results for the outside of that bend. While the project is perhaps unlikely to create a geomorphically significant decrease in the potential for avulsion at this location, an increase is not anticipated.

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

This project has provided CF the opportunity to work with a large homeowners association, and we have made several presentations to this group about native fish status, decline, recovery, and habitat restoration. The location of the project along the Methow Community Trail will also provide opportunity for community education and engagement, possibly through the placement of educational signs.

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

Construction contracts will provide economic benefit to both the contractor and the community. Trail

infrastructure improvements will also benefit Methow Trails, a community nonprofit, and the large trails user group.

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

The USBR has provided both in-kind support in the form of survey and direct financial support for a significant portion of the conceptual and final design of this project. Site assessment and hydraulic model development was supported by the USBR, and they will continue to provide technical support where needed. The Methow Conservancy, which holds a conservation easement within the project area, has also been a strong partner in this project, providing funding (RCO) for the conceptual design of this project.

## **Optional Section - Preparation for PRISM**

The following questions are identical to the questions RCO requires in the PRISM application. If desired, sponsors can complete associated questions early and copy responses into PRISM during the "Complete Application" phase due on April 19, 2024.

**Do you want to review and/or pre-populate PRISM questions?**

Yes

### **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 historical factors important to understand the problems.**

A history of levee building, riparian clearing, and stream cleaning have degraded instream, riparian, and floodplain habitat quality and limited the capacity for natural processes to create and maintain high-quality habitat in these reaches of the Methow River. Push-up levees and spoils piles were built throughout the project area to prevent flood inundation, limiting the river's ability to engage with historical high-flow channels that would spread high flows across the floodplain and constraining lateral migration. Riparian clearing and stream cleaning up through the 1970s reduced instream complexity, resulting in a legacy of homogeneity with long riffles and glides, limited shallow pools, and little cover. These conditions limit not only the current productivity of these reaches, which see several life stages of all three listed fish species, but also restrict future habitat development, as well. This project is needed to restore some of the natural physical processes that will create and maintain improved conditions for salmonids.

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

This project will work in a Tier 1 AU to address several limiting factors identified for these reaches based on Reach-based Ecosystem Indicators. Instream wood structures will provide complexity in the form of direct cover as well as through the creation of pools. Cover - Wood is identified as unacceptable in both Reach 08 and 09. Pool Quantity and Quality is identified as at-risk in both reaches. Selective levee removal will also allow the river to reengage with its floodplain, providing flow refuge, improved water quality, cover, and food resources to rearing juvenile fish. Off-Channel-Floodplain is identified as unacceptable in Reach 08 and at-risk in Reach 09. These reaches of the Methow provide habitat for several life stages of each of our ESA-listed fish species. Spring chinook and steelhead spawn, rear (summer and winter), migrate, and hold in these reaches. Bull trout use these reaches for subadult rearing and adult feeding, migrating, and overwintering. This project should improve conditions for both juvenile and adult fish, creating cover in the form of wood structures and deep pools and improving floodplain access during high flows.

### **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 and future condition. Include which species and life stages will benefit from the outcome, and the time of year the benefits will be realized.**

The goal of this project is to develop a design to address some of the limiting factors identified for the two project reaches, improving habitat conditions for nearly all lifestages of spring chinook and steelhead, as well as for subadult and adult bull trout. This project would improve floodplain connectivity and expand high-flow off-channel habitat through targeted levee removal along 0.6mi of river, improving habitat quality

and increasing habitat quantity for juvenile and adult fish. Instream wood placement would create pools, provide cover, increase floodplain connection, and encourage lateral channel migration in both high-flow channels and the mainstem Methow, creating immediate habitat improvement and restoring or encouraging some of the natural processes that will create and maintain habitat in future.

**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).**

This project will implement a restoration design to restore some natural process and improve instream and floodplain habitat conditions along 0.8mi of the Methow River. The design identifies selective levee removal along 0.6mi of the river as well as the placement of wood jams in the mainstem Methow and high-flow channels in the floodplain. Implementation is anticipated in 2025 or 2026. The current design includes selective excavation at 12 high-flow channels across the floodplain, 3 apex jams, 8 bank-attached jams, 6 4-log structures, 66 single log structures, and 60 whole tree structures.

**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.**

Construction: This design will be implemented in 2025 or 2026. This project will be managed by Cascade Fisheries with construction oversight from Rio Applied Science and Engineering and continued technical assistance from the USBR.

**6. What are the assumptions and physical constraints that could impact whether you achieve your objectives? Assumptions and constraints 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?**

Landowners have been supportive of the project thus far, and although we don't anticipate any roadblocks from landowners, unexpected changes in landownership can always arise. CF and Rio ASE are both experienced designing and implementing projects in the region, and will be dedicated to working with landowners, stakeholders, and regulatory agencies to move this project forward successfully.

**7. How have lessons learned from completed projects or monitoring studies informed this projects?**

CF has successfully managed many design and construction projects in the region. We have developed a good working relationship with landowners and other involved parties such as the Methow Conservancy and Methow Trails. The USBR provided survey and technical assistance that informed the development of this design and will continue to be involved in the project moving forward.

**8. Describe the alternatives considered and why the preferred was chosen.**

The current design was selected and advanced to provide the most proposed benefit. A smaller-scale project of just selective levee removal was also considered; however, landowners have thus far indicated support to move forward with the larger-scale project that includes instream wood structures.

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

The primary landowners for the project, the Foster Homeowners Association, own the majority of the Goat Creek fan where levee removal would take place and, throughout many meetings and presentations, have remained supportive of moving forward with design. Another independent landowner with a conservation easement has also committed support for levee removal restoration, along with the Methow Conservancy, who holds the CE. CF has also reached out to Methow Trails to identify current maintenance issues for the community trail that runs through the project area and ensure that any needs are being met in the design process. Methow Trails is supportive of moving forward with the design, which includes several hardened fords (MT's preferred crossing structure) and work that will reduce current patterns of erosion along one section of trail.

**10. Does your project address or accommodate the anticipated effects of climate change?**

NorWeST models suggest that the Upper Methow will continue to be a stronghold for cold water in the Upper Columbia in the coming decades. Mean August stream temperatures are projected to maintain under 16deg C for these reaches. Beechie and others (2013) found that restoring floodplain connectivity was one of the activities most likely to increase habitat diversity and population resilience to climate change. Re-establishing lateral connectivity can store flood waters, provide thermal and velocity refugia, and may increase the length of hyporheic flow paths, cooling downstream temperatures.

Increasing instream, riparian, and floodplain habitat diversity will provide a broader range of conditions for multiple life stages of salmonids in support of increased resiliency as waters warm and patterns in the hydrograph shift. Wood structures will provide immediate benefits through cover and will support the development of habitat heterogeneity over time. Levee removal will also restore some of the natural physical processes that can create habitat diversity over time.

Beechie T, H Imaki, J Greene, A Wade, H Wu, G Pess, P Roni, J Kimball, J Stanford, P Kiffney, and N Mantua. Restoring Salmon Habitat for a Changing Climate. 2013. River Research and Applications 29:8.

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

CF has developed and implemented a number of restoration projects in our region to improve instream complexity and floodplain engagement and has worked with Rio ASE on several of these.

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

No

## Supporting Documents

[Upper Columbia Process Guide 2024](#)

[SRFB Manual 18 \(2024\)](#)

[RCO Application Resources \(2024\)](#)