Lewis River Aquatic Fund
FULL PROPOSAL FORM

Form Intent

To provide a venue for an applicant to clearly indicate the technical basis and support for proposed project. Specifically, the project's consistency with recovery plans, Settlement Agreement Fund objectives and priorities, technical studies and assessments which support the proposed action and approach.

Full Proposal Format

Please complete the following form for your Full Proposal. Maps, design drawings and other supporting materials may be attached.

The deadline for a Draft Full Proposal Form submission is **October 20, 2024**. Please submit materials to:

Erik Lesko
PacifiCorp
825 NE Multnomah Street, Suite 1800
Portland, OR 97232

Erik.lesko@pacificorp.com

1. Project Title Restoration of Swift Camp Creek for Salmon Habitat

2. Requested Funding Amount $105,847.30

3. Project Manager (name, address, telephone, email)

Shiloh Halsey, Cascade Forest Conservancy
2200 Broadway Street, Suite L
Vancouver, WA 98663
(503)222-0055
shiloh@cascadeforest.org

4. Identification of problem or opportunity to be addressed

Swift Camp Creek is a tributary of the Lewis River that flows through United States Forest Service land into the Swift Reservoir. The 2,840-foot reach of Swift Camp Creek we are proposing to restore is mostly contained to its channel and lacks in-channel structure. Based on our spatial and on-the-ground assessments and conversations with USFS partners, the upstream portion of the reach is an excellent candidate for low-tech, process-based restoration (LTPBR) and the downstream section could be restored through the placement of larger wood. This work will decrease channel confinement, create deep pools, sort substrates, increase aquatic complexity, and improve habitat connectivity both along the channel and laterally with currently disconnected floodplains and side channels. This work will offer habitat benefits for multiple salmonid species.

5. Background

In the North Fork Lewis watershed (as in many watersheds in the lower Columbia basin), human activities including agriculture, rural residential development, and intensive timber harvest practices have altered river tributary streams. According to Washington Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan (LCFRB, May 2010), priorities in the Upper North Fork Lewis include managing forest lands to protect and restore watershed processes. Our proposed project intends to address degradations to a suite of watershed characteristics including floodplain function, instream flows, off-channel and side-channel habitat, riparian condition, and instream habitat structure along Swift Camp Creek (also known as Swift Campground Creek or Forest Camp Creek).

In 2020, Meridian Environmental carried out a rapid assessment to determine restoration potential. They found the creek to be in need of restoration to improve habitat conditions. A snapshot of their report is quoted here:

> The stream channel upstream of the FR-90 culvert is single thread and generally of low gradient (<1.5%). Potential anadromous fish spawning gravel patches are common to abundant. Habitat is substantially more complex than downstream of the FR-90 culvert; pools are much more common with many meanders and undercut banks. However, large wood is scattered.
>
> The wetland channels are relatively small and could potentially be used for anadromous fish rearing. In total, there is approximately 5,300 lineal feet of stream channel from the wetland outlet to the FR-90 culvert that could potentially be used for anadromous fish spawning and rearing if the FR-90 culvert was made passable.

Appendices B and C show a reach map from the assessment work of Meridian Environmental as well as a table outlining their findings.

In 2023 and 2024, CFC staff carried out spatial analyses across parts of the Upper Lewis River watershed to determine potential future project area reaches with high suitability for low-tech, process-based restoration (LTPBR). We then carried out field surveys to validate these analyses and measure restoration suitability. Following site visits to 12 potential restoration locations, we identified Swift Camp Creek as our top-ranking priority for restoration. We then toured the potential restoration area with the Gifford Pinchot National Forest south zone fish biologist and hydrologist to discuss reach-specific restoration opportunities. Through funding from PacifiCorp, we aim to carry out restoration design followed by installation of instream structures to improve habitat for salmonids.

The section of Swift Camp Creek that we propose to restore runs through United States Forest Service (FS) property, and we have received approval from FS partners to carry out this work. The upper parts of this creek are well-suited for low-tech, process-based

restoration with hand-built structures intended to enhance aquatic complexity and initiate floodplain engagement. The lower reach, closer to Pine Creek Information Center, will be restored with large wood placed by an excavator. The wood is already staged nearby. Although the design will determine final restoration logistics, we anticipate that 80 to 100 logs will be used in the lower reach.

Historic records and modeling indicated that the project area can offer habitat for spring Chinook (*Oncorhynchus tshawytscha,* documented), coho (*Oncorhynchus kisutch,* documented), winter and summer steelhead (*Oncorhynchus mykiss*, potential), and cutthroat trout (*Oncorhynchus, clarkii,* documented).

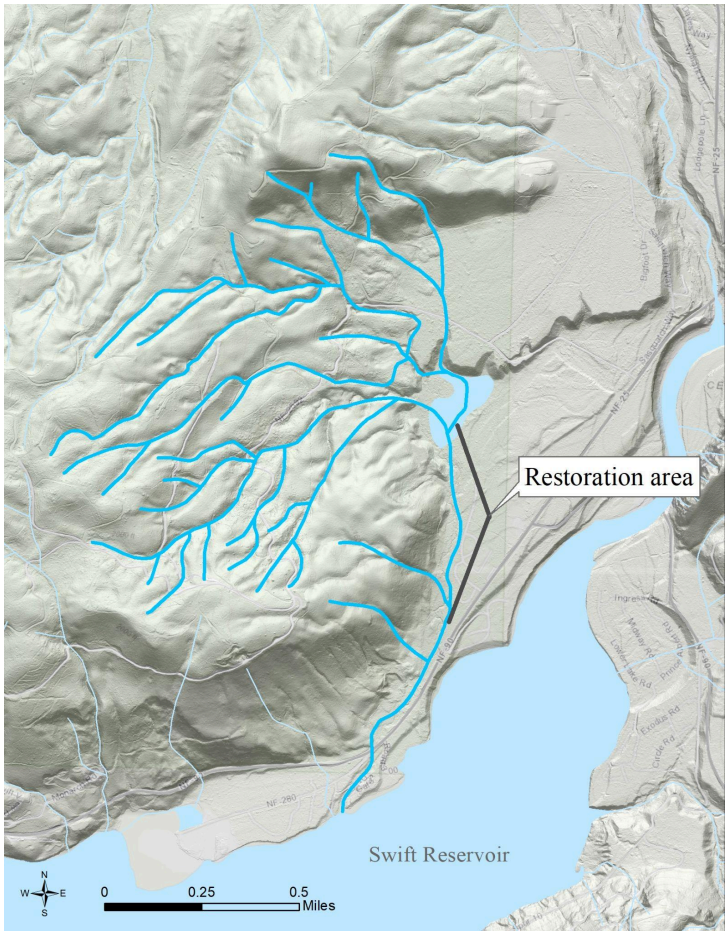

Figure 1. Project area map

According to the *Lewis River Aquatic Fund Priority Reaches* reference document, Swift Camp Creek has Limiting Factor Rank of 6, the highest ranking of waterways upstream of Swift Dam. This is based on the combined species reach potential for Chinook, steelhead, and coho and refers to the potential contribution of the reach to population performance. Given that assessments of Swift Camp Creek show that there is considerable opportunity to create more salmonid habitat, there is reason to believe that improvements to this waterway could have a positive impact on the larger community of salmonids in the North Fork Lewis.

There is currently seasonal connectivity allowing anadromy to the restoration reach. Salmonid access opportunities will be further enhanced by replacement of the culvert under FR-90 that will be completed by the Forest Service over the next couple of years. With improved under-road flow plus the water flow regulation benefits that will come from our restoration efforts, fish will have increased access to various habitats along Swift Camp Creek as needed to support their various life history stages. In addition, a Forest Service fish biologist surveyed the creek on October 17, 2024 and found coastal cutthroat of several age classes. This work would also benefit this species.

6. Project Objective(s)

This project's overall goals are to create and enhance spawning, rearing, and holding habitat over a 2,840-foot stretch of Swift Camp Creek. Our project aims to address several impaired ecological drivers that are present in the creek including the lack of structure to provide habitat within the channel and lack of floodplain connectivity.

The channelization of Swift Camp Creek has created a lack of diverse and accessible habitat for various life stages of coho, steelhead, and spring Chinook. By installing instream structures like beaver dam analogs and large wood pieces, placed to work with the natural hydrologic processes, we expect our project to address four limiting factors - temperature, key habitat quantity, habitat diversity, and sediment.

Temperature - The combination of a channelized stream and the lack of woody debris leads to increased stream temperatures that can disrupt salmonid migration, spawning, and feeding behaviors. High temperatures can negatively affect egg incubation, spawning, and prespawner holding. Increasing the instream structure and reconnecting the floodplain can cool the water and create more thermal refugia for salmonids during the summer.

Key habitat quantity - The lack of instream wood and disconnected floodplain has depleted the available key habitats in the mainstem and off-channel and has caused habitat fragmentation. Portions of Swift Camp Creek lack cover and structure, temporal refugia, and moderation of flows due to the lack of large material in the channel. This lack of key habitat features can affect spring prespawner holding, fry colonization and juvenile rearing.

Habitat diversity - The lack of wood in the channel and the inaccessibility of off-channel habitats has created a simplified stream system. Swift Camp Creek lacks deep pools, instream shade, and protection from high flows. The lack of connection to off-channel habitat prevents fish from moving freely through the aquatic system, thus preventing their ability to reach different types of habitat. Off channel habitat features are particularly important for juvenile rearing habitat.

Sediment - The incised nature of Swift Camp Creek can lead to high velocity flow which increases the amount of sediment that is transported downstream. The higher velocities also cause the channel to become deeper, the banks to become steeper, and the incision to worsen. The fine sediments can smother spawning habitats and affect multiple life stages, egg incubation, fry colonization, and juvenile rearing. According to the *Lewis River Aquatic Fund Priority Reaches* reference document, sediment might be of particular concern for spring Chinook.

7. Tasks

- Create field-fit, permit ready designs for both the LTPBR section and the largewood placement sections of Swift Camp Creek
- Coordinated with USFS staff as they complete required NEPA permitting.
- Complete contracting for both excavator work and low-tech structure building.
- Complete instream restoration
- Complete riparian remediation

8. Methods

Across the restoration reach, CFC staff, USFS staff, and a consultant specializing in river restoration design will identify locations where instream structure would offer benefits to fish.

Before installation of structures, CFC staff or a contracted work crew will collect baseline data to both inform installation and enable us to measure and evaluate post-installation habitat uplift.

There are two project reaches: 1) the LTPBR reach, which is located in the upper portion of the project area and 2) the large wood reach, which is located in the lower portion.

The LTPBR reach will be restored via the creation of at least ten hand-built structures such as beaver dam analogs (BDAs) and post-assisted log structures (PALS). Low-tech, process-based restoration strategies address the severe depletion of the instream structure as well as other habitat issues. This strategic wood placement creates new microhabitats within a channel and also serves to slow peak flows and move water out of incised channels. As water is diverted out of the main channel, floodplains are re-engaged, improving lateral connectivity with side channels and creating pools and refugia for a variety of organisms. This type of instream restoration can also help reduce water temperature, both by increasing groundwater exchange and through the redirection of water into vegetated off-channel areas that provide more shade. By slowing and diverting water flow, some streams and pools can persist later into the warm, dry season—providing extended habitat for aquatic organisms. All these factors interact to improve habitat quantity, quality, connectivity, and complexity for salmon and for many other species. These structures will be built through a combination of staff, volunteers, and hired work crews, most likely with the Washington Conservation Corps.

The large wood placement will accomplish similar habitat improvement objectives in portions of the creek that require more volume and mass of wood in order to slow and redirect water and to create heterogeneity. The wood for this reach is already located in a holding area adjacent to the project site. An excavator will be used to move the wood from the staging area into the project area on roadbeds that have been identified by Forest Service staff. This machine will also be used for the placement of wood structures in the stream, in accordance with design plans and direction from the Forest Service and CFC staff. Instream wood placement of large wood will consist of two different approaches: 1) parallel placement of rootwad logs to create mid-stream channel effects, and 2)

perpendicular placement with 10% to 40% of the log placed within the active channel to create pooling and to assist in the formation of logjams that further diversify flows and habitat structure. There are no downstream infrastructure risks as there are large stretches of the downstream portion (reaches 3 and 4 on map in Appendix B) where low-gradients, slow flows, sinuosity, and riparian trees would prevent any placed logs from moving toward the culvert.

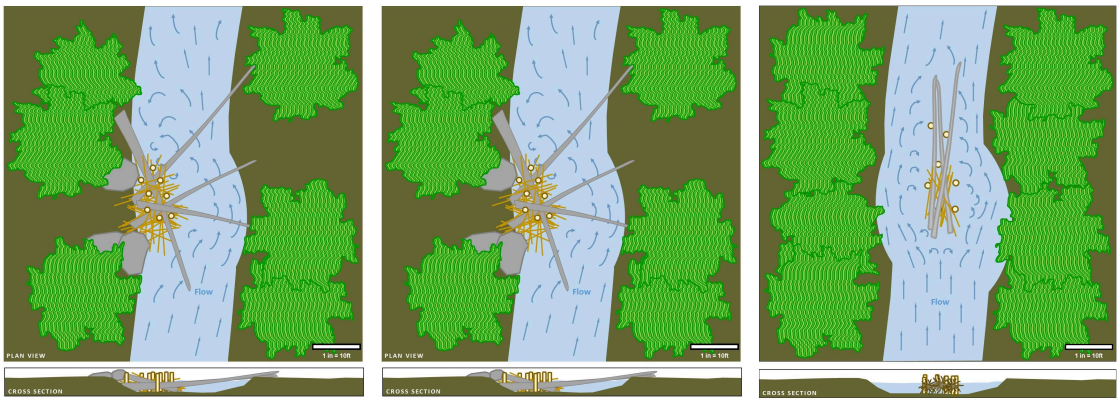

Figure 2. Examples of instream wood placement suitable for waterways with gradient and streamflow patterns similar to that found along Swift Camp Creek

9. Specific Work Products

- Field fit, permit-ready design
- Installation of at least 80 pieces of large wood
- Installation of at least 10 handbuilt structures created with a combination of posts, felled or imported trees, and slash.
- Revegetation of worksite and enhancement of riparian buffer (planting 200 hardwood trees including willows, cottonwoods, and/or bigleaf maples).

10. Project Duration

- Initiation of project - 1/1/2025
- Completion of field-fit, permit ready design - 6/30/2025
- Completion of USFS permitting - 7/15/2025
- Pre-installation, baseline data collection - 8/15/2025
- Completion of instream restoration and riparian management - 11/15/2026
- Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives) - 12/1/2026
- Monitoring and reporting on results - 12/1/2026

11. Permits and Authorizations

The United States Forest Service will handle permitting (including cultural resources) under their 2019 Pacific Northwest Regional Aquatic Restoration Environmental Assessment and Decision Notice. This allows for a streamlined process where this work should be able to be signed off along with a suite of other low-risk projects in time for the work to move forward.

Cascade Forest Conservancy and the United States Forest Service are cosigners on a Challenge Cost Share Agreement that allows CFC to pursue stewardship opportunities, including instream restoration, throughout the Gifford Pinchot National Forest.

12. Matching Funds and In-kind Contributions

Although we are not proposing this for formal match, the large wood used for this project has been acquired from Swift Reservoir with haul costs covered by PacifiCorp and Cascade Forest Conservancy. In addition, the Forest Service has assisted with the planning of this project and plans to assist with permitting and implementation.

13. Peer Review of Proposed Project

We plan to receive and share peer review from US Forest Service partners before the submission of the final proposal.

14. Budget

Project Budget: Restoration of Swift Camp Creek for Salmon Habitat				
Item	Units	Unit cost	Total	
Cascade Forest Conservancy (per hour cost includes salary and benefits)				
Final design - creation of permit-ready design (including field surveys)	108	$47.34	$5,112.72	CFC's Stewardship Manager
Construction - complete contracting	46	$47.34	$2,177.64	CFC's Restoration Manager
Construction - building LTPBR structures	80	$47.34	$3,787.20	Various CFC staff
Construction - supervise haul and placement	100	$61.66	$6,166.00	CFC's Director of Programs
Construction - planting to revegetate access routes	50	$47.34	$2,367.00	Various CFC staff
Project management and admin	45	$47.34	$2,130.30	CFC's Restoration Manager
Contracts				
Final design - Consultation on designs	1	$6,000.00	$6,000.00	
Construction - mobilization of excavators	2	$7,000.00	$14,000.00	
Construction - create haul routes and place wood	100	$350.00	$35,000.00	
Construction - work crew or technicians to install posts and slash	120	$85.00	$10,200.00	
Surveys/monitoring	60	$85.00	$5,100.00	
Equipment and materials				
Post pounder rental	2	$295.00	$590.00	Two-week rental
Posts	160	$2.45	$392.00	
Travel and lodging				
Mileage	1608	0.67	$1,077.36	12 trips to the restoration site
Lodging	15	$141.64	$2,124.60	Lodging in Cougar, WA
DIRECT COST TOTALS			$96,224.82	
Indirect			$9,622.48	
Total request			$105,847.30	

15. Photo Documentation

Photo taken by Shiloh Halsey (Cascade Forest Conservancy)
October 9, 2024 at 10:32 a.m.
Photo taken during a CFC and FS restoration planning trip for Swift Camp Creek
Photo highlights part of the large wood reach of the project area

Photo taken by Shiloh Halsey (Cascade Forest Conservancy)
October 9, 2024 at 10:34 a.m.
Photo taken during a CFC and FS restoration planning trip for Swift Camp Creek
Photo highlights part of the large wood reach of the project area

Photo 11. Potential spawning habitat.

Photo 12. Potential spawning habitat.

Photo 13. Potential rearing habitat.

Photo 14. Potential rearing habitat.

Photo 15. Potential spawning habitat.

Photo 16. Wetland channels to east.

Photo 17. Western Fork typical habitat.

Photo 18. Western Fork ravine.

Photos on previous page were taken by Jason Shappart (Senior Fisheries Scientist, Meridian Environmental)
March 26, 2020, exact time unknown
Part of Meridian Environmental's Forest Camp Creek Rapid Habitat Assessment of Potentially Accessible Anadromous Fish Habitat
Photos of reaches 5 and 6, moving downstream to upstream

16. Insurance

For all project elements, Cascade Forest Conservancy will comply with the required insurance, either through internal insurance, contractor insurance, or a combination of the two.

Appendix A
Insurance Requirements

1. INSURANCE

Without limiting any liabilities or any other obligations of [CONTRACTOR], [CONTRACTOR] shall, prior to commencing the Project, secure and continuously carry with insurers having an A.M. Best Insurance Reports rating of A-:VII or better the following insurance coverage:

1.1 Workers' Compensation. [CONTRACTOR] shall comply with all applicable Workers' Compensation Laws and shall furnish proof thereof satisfactory to PacifiCorp prior to commencing the Project.

All Workers' Compensation policies shall contain provisions that the insurance companies will have no right of recovery or subrogation against PacifiCorp, its parent, divisions, affiliates, subsidiary companies, co-lessees, or co-venturers, agents, directors, officers, employees, servants, and insurers, it being the intention of the parties that the insurance as effected shall protect all parties.

1.2 Employers' Liability. Insurance with a minimum single limit of $1,000,000 each accident, $1,000,000 disease each employee, and $1,000,000 disease policy limit.

1.3 Commercial General Liability. The most recently approved ISO policy, or its equivalent, written on an occurrence basis, with limits not less than $1,000,000 per occurrence/$2,000,000 general aggregate (on a per location and/or per job basis) bodily injury (with no exclusions applicable to injuries sustained by volunteers working or participating in the Project) and property damage, including the following coverages:

a. Premises and operations coverage
b. Independent contractor's coverage
c. Contractual liability
d. Products and completed operations coverage
e. Coverage for explosion, collapse, and underground property damage
f. Broad form property damage liability
g. Personal and advertising injury liability, with the contractual exclusion removed
h. Sudden and accidental pollution liability, if appropriate
i. Watercraft liability, either included or insured under a separate policy

1.4 Business Automobile Liability. The most recently approved ISO policy, or its equivalent, with a minimum single limit of $1,000,000 each accident for bodily injury and property damage including sudden and accidental pollution liability, with respect to [CONTRACTOR]'s vehicles whether owned, hired or non-owned, assigned to or used in the performance of the Project.

1.5 Umbrella Liability. Insurance with a minimum limit of $4,000,000 each occurrence/aggregate where applicable to be provided on a following form basis in excess of the coverages and limits required in Employers' Liability insurance, Commercial General Liability insurance and Business Automobile Liability insurance above. [CONTRACTOR] shall notify PacifiCorp, if at any time their minimum umbrella limit is not available during the term of this Agreement, and will purchase additional limits, if requested by PacifiCorp.

In addition to the requirements stated above any and all parties providing underground locate, engineering, design, or soil sample testing services including [CONTRACTOR], subcontractor and all other independent contractors shall be required to provide the followings insurance:

Professional Liability: [CONTRACTOR] (or its contractors) shall maintain Professional Liability insurance covering damages arising out of negligent acts, errors or omissions committed by [CONTRACTOR] (or its contractors) in the performance of this Agreement, with a liability limit of not less than $1,000,000 each claim. [CONTRACTOR] (or its subcontractors of any tier) shall maintain this policy for a minimum of two (2) years after completion of the work or shall arrange for a two (2) year extended discovery (tail) provision if the policy is not renewed. The intent of this policy is to provide coverage for claims arising out of the performance of work or services contracted or permitted under this Agreement and caused by any error, omission for which the [CONTRACTOR] its subcontractor or other independent contractor is held liable.

Except for Workers' Compensation insurance, the policies required herein shall include provisions or endorsements naming PacifiCorp, its affiliates, officers, directors, agents, and employees as additional insureds.

To the extent of [CONTRACTOR]'s negligent acts or omission, all policies required by this Agreement shall include provisions that such insurance is primary insurance with respect to the interests of PacifiCorp and that any other insurance maintained by PacifiCorp is excess and not contributory insurance with the insurance required hereunder, provisions that the policy contain a cross liability or severability of interest clause or endorsement, and that [CONTRACTOR] shall notify PacifiCorp immediately upon receipt of notice of cancellation, and shall provide proof of replacement insurance prior to the effective date of cancellation. No required insurance policies, except Workers' Compensation, shall contain any provisions prohibiting waivers of subrogation. Unless prohibited by applicable law, all required insurance policies shall contain provisions that the insurer will have no right of recovery or subrogation against PacifiCorp, its parent, affiliates, subsidiary companies, co-lessees, agents, directors, officers, employees, servants, and insurers, it being the intention of the Parties that the insurance as effected shall protect all parties.

A certificate in a form satisfactory to PacifiCorp certifying to the issuance of such

insurance shall be furnished to PacifiCorp prior to commencement of the Project by [CONTRACTOR] or its volunteers or contractors. If requested, [CONTRACTOR] shall provide a copy of each insurance policy, certified as a true copy by an authorized representative of the issuing insurance company, to PacifiCorp.

[CONTRACTOR] shall require subcontractors who perform work at the Project to carry liability insurance (auto, commercial general liability and excess) workers' compensation/ employers' or stop gap liability and professional liability (as required) insurance commensurate with their respective scopes of work. [CONTRACTOR] shall remain responsible for any claims, lawsuits, losses and expenses including defense costs that exceed any of its subcontractors' insurance limits or for uninsured claims or losses.

PacifiCorp does not represent that the insurance coverage's specified herein (whether in scope of coverage or amounts of coverage) are adequate to protect the obligations [CONTRACTOR], and [CONTRACTOR] shall be solely responsible for any deficiencies thereof.

Appendix B. Reach map from the assessment carried out by Meridian Environmental in 2020.

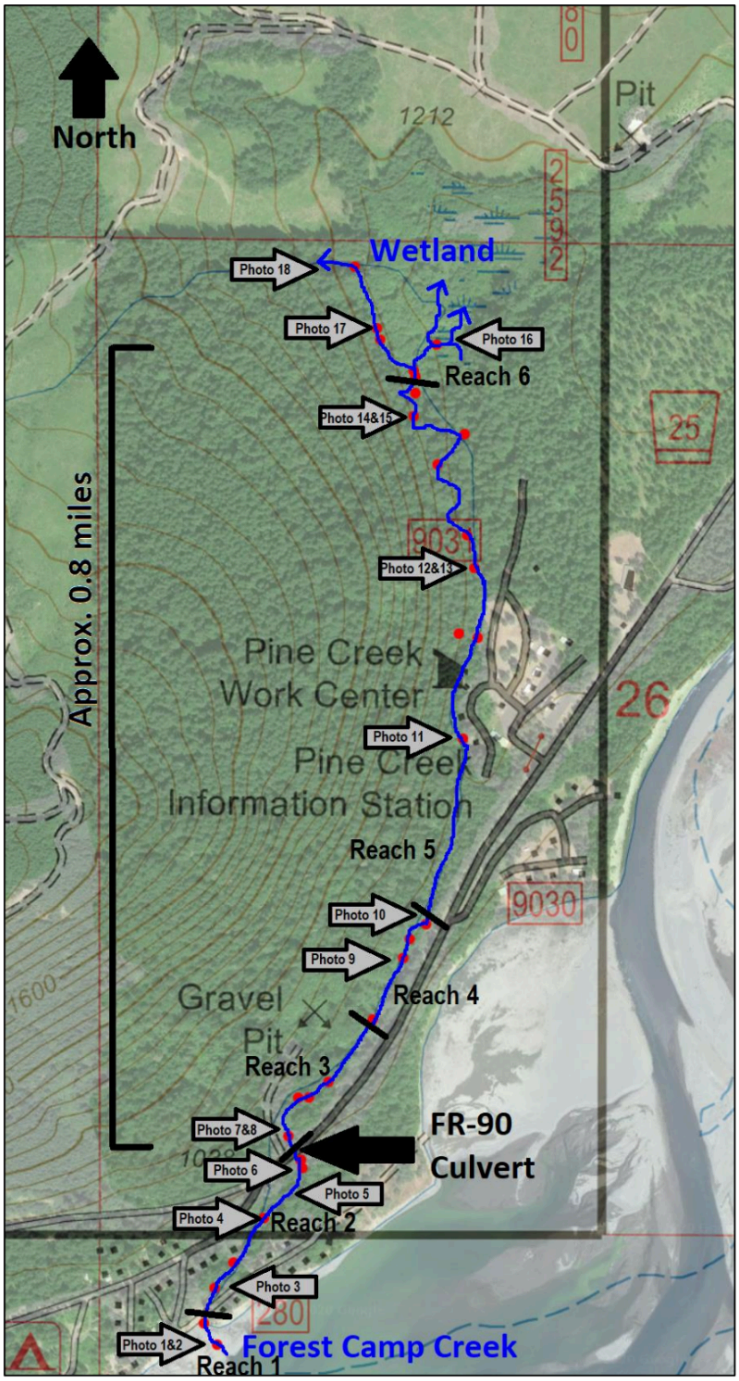

Figure 1. Forest Camp Creek reach and habitat survey photo index.

Appendix C. Table of findings from the assessment carried out by Meridian Environmental in 2020.

Table 1. Forest Camp Creek rapid habitat assessment results (surveyed on March 26, 2020).

Attribute	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6
Currently accessible to anadromous fish	yes	yes	no	no	no	no
Photo numbers	1, 2	3, 4, 5, 6	7, 8	9, 10	11, 12, 13, 14, 15	16, 17, 18
Station start (feet from edge of reservoir full pool)	-300	0	975	1,875	2,675	6,275
Station end (feet from edge of reservoir full pool	0	900	1,875	2,675	6,275	---
Total reach length (feet)	300	900	900	800	3,600	>1,000 feet of small channels in wetland
Average gradient (% slope)	3.5%	2.5%	1.5%	0.5%	1.5%	0.5%
Channel form	single thread	single thread	single thread	single thread	single thread	multiple channels
Valley form	constrained by low terrace	hillslope constrained	constrained by low terrace	unconstrained	constrained by low terrace	unconstrained
Average wetted width (feet)	10	5	6	5	7	2
Average depth (feet)	0.3	0.8	0.7	1.3	0.7	0.5
Average pool maximum depth (feet)	1.0	1.3	1.5	2.0	2.0	1.3
Average active channel width (feet)	12	6.5	7	5.5	9	4
Average flood prone width (feet)	na	7	20	75	30	>100
Dominant habitat type	riffle	riffle	riffle	glide/riffle	riffle	glide/riffle
Subdominant habitat type	rapid	pool	pool	pool	pool	pool
Pool frequency	low	low	low	common	common	low to common
Large wood frequency	scarce	scarce	scarce	low	low	low to common
Dominant substrate	cobble	cobble	gravel	sand	gravel	sand/silt
Subdominant substrate	boulder	gravel	cobble	gravel	sand	gravel
Anadromous fish spawning gravel patch frequency	scarce	low	low to common	common	abundant	low
Undercut bank frequency	none	low	low	common	common	common
Riparian composition	unvegetated	forested through area of cabins	mature forested	wet meadow/ scattered trees	mature forested	wet meadow/ scattered trees
Side/off-channel frequency	none	none	none	none	none	several small channels through wetland

Note. Table values are approximate and based on visual estimates from survey on March 26, 2020.
Note. FR-90 culvert downstream end is at approx. station 900 feet and the upstream end is at station 975 feet from the edge of the reservoir full pool (i.e., culvert is 75 feet long).

Alexander P. Wooding
Fish Biologist
United States Department of Agriculture Forest Service
Mount Adams Ranger District, Gifford Pinchot National Forest
2455 WA-141, Trout Lake WA 98650
Alexander.wooding@usda.gov

Re: Review for Low-Tech Restoration on Swift Camp Creek project proposal from Cascade Forest Conservancy.

To Whom it may concern,

I have reviewed the project proposal from Cascade Forest Conservancy (CFC) regarding instream habitat enhancements on Swift Camp Creek and find it commensurate with Forest Service goals to improve fisheries habitat and benefit ESA listed and sensitive fish species. This project will improve habitat conditions for coastal cutthroat trout (*Oncorhynchus clarkii clarkii*), coho salmon (*Oncorhynchus kisutch*), and spring run chinook salmon (*Oncorhynchus tshawytscha*) by increasing presence of instream large woody debris, improving frequency and quality of pool habitat, and enhancing connectivity to off-channel floodplain habitat. The variety of project components will benefit all above listed species throughout multiple life stages and behaviors including spawning, juvenile rearing, and adult overwintering and holding. Forest Service staff will work with CFC through NEPA permitting, design, and project implementation.

Sincerely,
Alex Wooding
Fish Biologist