



August 15, 2024

The Honorable Deb Haaland
Secretary
U.S. Department of the Interior
1849 C Street NW
Washington, D.C. 20240

The Honorable Gavin Newsom
Governor
1021 O Street, Suite 9000
Sacramento, CA 95814

The Honorable Gina Raimondo
Secretary
U.S. Department of Commerce
1401 Constitution Avenue NW
Washington, D.C. 20230

The Honorable Tina Kotek
Governor
900 Court Street NE, Suite 254
Salem, OR 97301

The Honorable Tom Vilsack
Secretary
U.S. Department of Agriculture
1400 Independence Avenue SW
Washington, D.C. 20250

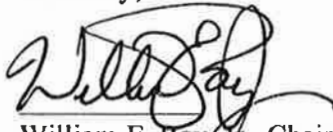
Dear Secretaries Haaland, Raimondo, and Vilsack, and Governors Newsom and Kotek:

We are pleased to write to you today to fulfill one of the commitments we made in the Memorandum of Understanding Regarding Collaboration, Mutual Support, and Restoration Efforts in the Klamath Basin (MOU) announced on February 14, 2024. Pursuant to the MOU, the Parties – the Klamath Tribes, Yurok Tribe, Karuk Tribe, and Klamath Water Users Association – have met several times and have identified and prioritized specific restoration projects in the Klamath Basin that we believe could be initiated and completed within the next one to two years if federal and/or state funding is available. The list of projects is below in Appendix I and we have attached draft statements for each project, as agreed in the MOU, in Appendix II.

These projects, for which we are seeking a total of \$105.5 million in funding, are the immediate –term shared priorities of the Parties. Additionally, we agree that these projects warrant consideration for expedited environmental compliance and other administrative reviews. We respectfully request to discuss support for these projects and approaches with the appropriate senior officials in your departments and administrations, and look forward to setting meetings as soon as possible.

In the meantime, we will continue collaborating to identify, define, and prioritize longer-term restoration work and water supply measures and approaches as described in the MOU. Thank you for your continued partnership in restoring the Klamath Basin for the benefit of the Tribal, agricultural, and natural communities that call it home.

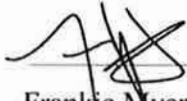
Sincerely,



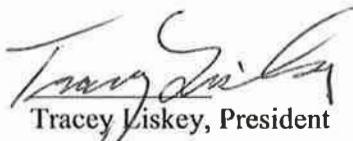
William E. Ray, Jr., Chairman
Klamath Tribes



Russell "Buster" Attebery, Chairman
Karuk Tribe



Frankie Myers, Vice Chair
For Joseph James, Chair
Yurok Tribe



Tracey Liskey, President
Klamath Water Users Association

Appendix I: Year 1-2 Priority Project List

Project Title	Project Proponent (MOU Party)	Funding Amount Requested
Climate Change Resilience Stream Restoration	Klamath Tribes	\$2,107,382
Agency-Barnes Wetland Restoration	Klamath Tribes	\$11,256,325
Klamath Marsh Restoration (Phase I)	Klamath Tribes	\$3,500,000
Lower Klamath Reconnection	KWUA	\$4,135,000
Surface Water Management and Efficiency Enhancement	KWUA	\$295,000
Tule Lake Flow Through	KWUA	\$2,540,000
Upper Shasta River Salmon Habitat Restoration	Karuk Tribe	2,886,291
Upper Scott River Salmon Habitat Restoration	Karuk Tribe	7,414,416
Middle Klamath River Salmon Habitat Restoration	Karuk Tribe	1,150,000
Scott River Hydro and Salmon Habitat Modeling	Karuk Tribe	872,500
Klamath River Canyon and Copco Valley Salmon Utilization Studies	Karuk Tribe	4,027,799
Scott River Habitat Restoration - Strengthening Resilience of Farms and Fish	Yurok Tribe	\$1,850,000
Klamath Basin Climate Resilience and Geospatial Mapping Project	Yurok Tribe	\$5,000,000
Upper Klamath Basin - Post Dam Removal Tributary Restoration Project	Yurok Tribe	\$20,000,000
Klamath River - Post Dam Removal Baseline Survey and Hydraulic Model	Yurok Tribe	\$2,200,000
McKinney Post-Fire Upslope Fish Habitat Restoration	Yurok Tribe	\$1,500,000
Yurok Ancestral Lands Forest Inventory Project	Yurok Tribe	\$850,000
Weaver Creek Habitat Restoration	Yurok Tribe	\$4,642,000
Blue Creek Comprehensive Watershed Restoration (four tasks)	Yurok Tribe	29,266,297
19 Projects		\$105,493,010

Appendix II: Year 1-2 Priority Project Statements

Project Title:

Climate Change Resiliency Stream Restoration Project

Project Proponent and Collaborators:

The Klamath Tribes (collaborators – US Forest Service, Green Diamond Resource Company, The Nature Conservancy)

Project Type:

Poor land and water management in the Upper Klamath Basin over the last century has resulted in degradation of wetland, upland, riparian and aquatic habitats. Specifically, loading of nutrients into waterways, damage to riparian corridors, channelization of streams and rivers, disconnection of river channels and floodplains, insufficient stream flows, impediments to fish migrations, draining of wetlands and other ecosystem damage have profoundly impacted natural resources important to the Tribes. Treaty-guaranteed fisheries have declined or been lost including the endangered C’waam, Koptu (Shortnose Sucker), redband trout, and salmon. Many non-aquatic resources greatly valued by the Tribes (water quality, wocus, and other species) have declined.

These ecosystem problems have caused the Tribes great harm, but the community as a whole has suffered as well. Water shutoffs to agriculture, fisheries shutdowns for commercial fishermen, massive die-offs of important tribal fish species, and basin-wide conflicts centered on water and fisheries are inevitable consequences of the damage to aquatic ecosystems in the upper basin. Further, climate change and high-severity wildfires are adding additional pressure to this already fragile system. Rehabilitating the aquatic ecosystems in the Klamath Basin is essential to not only meet tribal needs, but also to meet the needs of the other residents.

The proposed project includes elements of surveying, project design, environmental compliance, and on-the-ground implementation. It will allow the Tribes to increase its capacity to restore important streams, riparian areas, wetlands, and meadows in our ancestral lands, and provide ecological uplift to improve water quality and quantity, stabilize declining C’waam and Koptu populations, and provide climate change resiliency. The Tribes currently have funding through the Bi-Partisan Infrastructure Legislation (BIL) to support a 7-person Stream Restoration Crew which has been performing restoration work in the Upper Klamath Basin on federal and private lands. The additional capacity support will lead to the development of a second stream restoration crew.

Task Summary:

1. Survey and develop design plans for proposed restoration activities.
2. Environmental compliance/permitting
3. Use heavy equipment and manual labor to place approximately 600 Beaver Dam Analog (BDAs), Post Assisted Log Structures (PALS), and other types of instream structures in 20 streams in the Sprague River watershed
4. Install approximately 20 miles of buck and pole riparian fencing to protect restored stream sections
5. Remove encroached lodgepole pine from meadow complexes in the Upper Klamath watershed

Project Schedule:

- Survey, design/engineering plan schedule – 10/1/24 to 6/30/25
- Environmental compliance/permitting timeline – 10/1/24 to 6/30/25
- On-the-ground schedule – 7/1/25 to 9/30/26

Estimated Budget: \$2,107,382

	Year 1	Year 2
Personnel	\$404,404	\$404,404
Fringe Benefits	\$181,871	\$181,871
Travel	\$20,000	\$20,000
Capital Equipment	\$60,000	\$60,000
Supplies	\$20,000	\$20,000
Contractual	\$50,000	\$50,000
Other	\$65,000	\$65,000
Total Direct Charges	\$761,275	\$761,275
Indirect Charges (30.29%)	\$212,415	\$212,415
TOTAL	\$1,013,691	\$1,013,691

Additional Information:

In 2021, the Bootleg Fire burned over 400,000 acres of forestlands in the Upper Klamath Lake watershed within the Klamath Tribes homeland. This fire left a large area within the watershed highly vulnerable to erosion and sedimentation, stream channel and riparian habitat degradation and nutrient loading into Upper Klamath Lake. This project will help protect and repair the fire damaged landscape.

Project Title:**Wetland Restoration on UKNWR Barnes and Agency Lake Units and Adjacent Easement Lands - Implementation**Project Proponent and Collaborators:

Ducks Unlimited, Inc (collaborators – The Klamath Tribes, U.S. Fish and Wildlife Service)

Project Type:

Historically, the area which is now known as Upper Klamath National Wildlife Refuge (UKNWR) consisted of lake fringe wetlands and riparian areas along tributaries coming into the lake. Over time, the creeks were channelized, dikes were built, and the area was used for agricultural production. The loss of wetlands and changes to hydrology have resulted in detrimental effects on fish, wildlife, and water quality.

This project will restore 14,356 acres of habitat for waterfowl, and other wetland-associated bird species; for Lost River and shortnose suckers (federally endangered); for Oregon spotted frogs (federally threatened); and for redband trout and potentially Chinook salmon (sensitive species in OR). This project will improve water quality by improving conditions to allow for wetland vegetation establishment to help reduce high levels of phosphorus and other nutrients entering Upper Klamath Lake. These resources are greatly valued by the Klamath Tribes. In addition to the numerous ecological benefits, this project will also provide significant benefits to the public. This project will increase water storage within Upper Klamath Lake by approximately 70,000 feet which can be made available to the Klamath Project to be used by local irrigators for food production to support the American people. In addition, Upper Klamath Lake is the headwaters to the Klamath River and additional water can be made available to support downstream users which include Tribes, water districts, and other recreational users. This project will also be important for recreational opportunities by improving public access to allow for improved hunting, fishing, bird watching, and boating.

Work on this project has been phased with Phase 1 focused on the Barnes and Agency Lake Units of UKNWR, Phase 2 focused on the Eisenberg Tract of UKNWR, and Phase 3 focused on the adjacent private lands. Funding for planning including design-engineering-permitting for all phases has been secured from the U.S. Fish and Wildlife Service. A portion of implementation funding for Phase 1 has been secured from the U.S. Fish and Wildlife Service, this request is seeking the remaining funding to implement Phase 1 (\$5.5 million, \$4 million of which has been set aside by FWS already) during summer/fall 2024 as well as implementation funding for Phases 2 & 3 (\$11,256,325) during fall/winter 2025.

Task Summary:

Task 1. Construction – Barnes and Agency Units (Year 1). Year 1 construction will include mobilization, site preparation, site access improvements, demolition of existing infrastructure, and earthmoving, construction of overflow weirs and exterior level breaches.

Task 2. Construction & Construction Management – Eisenberg Tract (Year 2). DU will provide construction management services including hiring a sub-contractor. Eisenberg Tract construction will include mobilization, site preparation, site access improvements, and earthmoving. DU may hire subcontractors for additional hydraulic and geotechnical analysis, as needed.

Task 3. Construction & Construction Management – Adjacent Private Lands (Year 2). DU will provide construction management services including hiring a sub-contractor. Private Lands construction will include mobilization, site preparation, site access improvements, re-establishing historic creek channels, and construction of in-channel habitat and fish passage structures, as needed.

Project Schedule:

Task 1. Barnes and Agency Units, Year 1: April 1, 2024 – October 31, 2024

Task 2. Eisenberg Tract: August 1, 2025 – December 31, 2025

Task 3. Adjacent Private Lands: August 1, 2025 – December 31, 2025

Estimated Budget:

Object Class Category	Task 1	Tasks 2 & 3
Personnel	\$ 69,217	\$ 150,000
Travel	\$ 10,506	\$ 15,500
Supplies	\$ 1,000	\$ 1,000
Construction	\$ 5,164,491	\$ 11,000,000
Contractual	\$ 200,000	\$ 45,000
Total Direct Charges	\$ 5,445,214	\$ 11,211,500
Indirect*	\$ 54,786	\$ 44,825
TOTAL	\$ 5,500,000	\$ 11,256,325

*DU's currently Negotiated Indirect Cost Agreement is 14.39%

Additional Information:

DU has already received \$4M from US Fish and Wildlife Service for Task 1 meaning \$1.5M is needed to complete Task 1.

Project Title:

Klamath Marsh Restoration Project (Phase 2)

Project Proponent and Collaborators:

The Klamath Tribes (Collaborator – US Fish and Wildlife Service Klamath Marsh National Wildlife Refuge)

Project Type:

The Klamath Marsh Restoration Project will provide fish passage to access over 26 miles of the upper Williamson River and reconnect several thousand acres of adjacent wetlands and riparian habitats within the Refuge Project area. Existing irrigation infrastructure and hydrologic modifications, including delivery ditches, drains, and levees, currently limit fish passage and floodplain connectivity, alter the timing and duration of flooding, hinder volitional movement of native fish species, and restrain the bank storage capacity of the Klamath Marsh. Two million dollars were secured in 2024 from US Fish and Wildlife BIL funding for initiation of Phase I. Funds secured to date will allow removal of TPC, Middle, and House Bridges and installation of roughened channels for grade control and fish passage. Additionally, the Cholo Diversion will be demolished and replaced with a fish screen and headgate structure. New funds are needed for removal of Ball Dam and construction of a roughened channel, installation of a new flow monitoring station, and engineering design development for 10 miles of the upper Williamson River between Ball Dam and Military Crossing. This project includes: on-the-ground implementation/construction and design-engineering-permitting. This is part of a larger project to restore the entire Upper Williamson River and Klamath Marsh about the Kirk reef. It will improve ecological function and resiliency by reconnecting floodplains and wetlands and increase seasonal flows below the Klamath Marsh and late season base flows in the Williamson River.

Task Summary:

1. Removal of Ball Dam and construction of a roughened riffle.
2. Installation of a new flow monitoring station on the Williamson River at the upper end of the Klamath Marsh National Wildlife Refuge
3. Engineering design and permitting for Klamath Marsh Restoration - Phase 2 which includes the Upper Williamson River from Ball Dam to Military Road Crossing.

Project Schedule:

- Removal of Ball Dam and construction of a roughened riffle on the Upper Williamson River – 10/1/24 to 12/30/25
- Installation of a new flow monitoring station on the Upper Williamson River - 10/1/24 to 12/31/25
- Engineering design (30, 60, 90, and final) and permitting for Klamath Marsh Restoration (Phase 2) – 6/1/25 to 9/30/26

Estimated Budget:

- Contractor costs to remove Ball Dam and construct a roughen riffle -\$1.5M
- Installation of a new flow monitoring station with telemetry - \$250K
- Engineering design and permitting (\$1.75M)

Additional Information:

The Klamath Marsh is a critical landscape in the Upper Klamath Basin that has been highly altered. Restoration of this marsh will improve drought resiliency, ecological function, and important habitat for many fish, waterbirds, and other species. Restoration of the marsh will increase baseflows in the Williamson River and add humic substances which inhibit cyanobacteria blooms in Upper Klamath Lake. There is significant riparian and river restoration work occurring throughout the Upper Williamson River above the Klamath Marsh. Phase I is funded and will be completed this year.

Project Title:**Lower Klamath Reconnection**Project Proponent and Collaborators:

Proponent: Klamath Drainage District (KDD)

Collaborators: U.S. Fish and Wildlife Service (USFWS); Modoc Nation; Yurok Tribe; Klamath Tribes; Ducks Unlimited (DU); South Suburban Sanitary District (SSSD); Klamath Watershed Partnership; Intermountain West Joint Venture; Family Water Alliance; Klamath Water Users Association (KWUA)

Project Type:

This project encompasses a suite of infrastructural improvements and operational changes to restore the ecological functionality of Lower Klamath Lake, including Lower Klamath National Wildlife Refuge (LKNWR) and lands owned and administered by the Modoc Nation, for threatened and endangered fish, migratory wildlife, water quality, instream thermal refugia, micro-climate and other ecosystem benefits.

Task Summary:

- Klamath Straits Drain Outlet Channel Reconfiguration – repair existing dike breach; reconfigure channel outlet for wetland treatment within Tule Smoke.
- Land Leveling Program – perform land-leveling on private and federal lands for improved water management and reduced sediment and nutrient nonpoint sources.
- Westside Pump Upgrade – modernize pumping plant for improved drainage water recycling into LKNWR for subsequent wetland treatment.

Project Schedule:

- Klamath Straits Drain Outlet Channel Reconfiguration – appraisal-level study (2024); feasibility study/NEPA (2026); construction (2027).
- Land Leveling Program – applications/contracting (2024); construction (2025).
- Westside Pump Upgrade – engineering planning (2024); construction (2025).

Estimated Budget:

- Klamath Straits Drain Outlet Channel Reconfiguration – \$2.6 million
- Land Leveling Program – \$850,000
- Westside Pump Upgrade – \$685,000

Additional Information:

At the inception of the Klamath Project in 1905, Lower Klamath Lake naturally comprised of an open water area of approximately 40,000 acres, surrounded by an equivalent area of marshes. The lake also constituted a terminal basin, supplied primarily from natural overflow of the Klamath River through a channel, the Klamath Straits, which extended roughly 11 miles through the marshes to Lower Klamath Lake. The lake's water surface elevation varied seasonally, as water drained into and out of the lake and marshes, matching water levels in the Klamath River. At its southern end, the lake was over 15 feet deep.

In addition to the surface water connection to the river, evidence indicates that the lake is hydrologically connected to the springs in the Klamath River Canyon, which are anticipated to provide critical thermal refugia for anadromous salmonids following hydroelectric dam removal.

Project Title:**Surface Water Management and Efficiency Enhancement**Project Proponent and Collaborators:

Proponents: Klamath Irrigation District (KID), Tulelake Irrigation District (TID), and Klamath Drainage District (KDD)

Collaborators: U.S. Bureau of Reclamation (Reclamation); Farmers Conservation Alliance (FCA); Klamath Water Users Association (KWUA)

Project Type:

This project encompasses necessary infrastructure improvements to allow safe, reliable, and integrated management of water within the Klamath Project. Largely constructed between 1906 and 1957, the Klamath Project encompasses one hundred eighty-five miles of main canals, 680 miles of lateral canals, and 728 miles of drainage ditches. These facilities are primarily operated and maintained by KID, TID, and KDD.

Over the past several years, these districts have been engaged with FCA on modernizing and increasing the efficiency of existing irrigation infrastructure. FCA planning for each of the districts is being done in accordance with Public Law (P.L.) 83-566, in anticipation of funding being made available through the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS).

Additionally, FCA has been awarded a grant by Reclamation to identify, plan, design, and install equipment within the Klamath Project to allow for supervisory control and data acquisition (SCADA). FCA is currently coordinating with the districts about the implementation of this grant.

KID is also currently partnering with a private company to evaluate opportunities for developing low-head hydropower generation on existing irrigation infrastructure.

Task Summary:

- C Siphon Spill Structure – new outlet on the C Siphon to allow controlled and measured discharge of water into the Lost River Diversion Channel.

Project Schedule:

- Planning/NEPA – 2024
- Construction – 2024-2025.

Estimated Budget: \$295,000

Additional Information:

Safe, reliable, and integrated water management within the Klamath Project is necessary to the overall sustainable use of water within the Klamath Basin. By ensuring that irrigation infrastructure can safely and efficiently deliver water to agriculture, refuges, and other beneficial uses, this project supports basin-wide efforts to restore the environment and recover threatened and endangered fish and other species.

Project Title:

Tule Lake Flow Through

Project Proponent and Collaborators:

Proponent: Tulelake Irrigation District (TID)

Collaborators: U.S. Fish and Wildlife Service (USFWS); Ducks Unlimited (DU); Farmers Conservation Alliance (FCA); Modoc Nation; Klamath Water Users Association (KWUA)

Project Type:

This project encompasses a suite of infrastructural improvements and operational changes to allow Tule Lake and Lower Klamath, including the respective National Wildlife Refuges, to provide the natural ecosystem services with respect to water quality in the Klamath Basin, by flowing water through wetlands before returning it to the Klamath River. Tule Lake serves as the heart of this system, pumping water received (directly and indirectly) from Upper Klamath Lake through the Tule Lake Tunnel to Lower Klamath, for continued flow through wetlands in Lower Klamath before being returned to the Klamath River via the Klamath Straits Drain.

In addition to water quality benefits for the Klamath River, this project would provide habitat for threatened and endangered fish, support migratory wildlife, recharge groundwater, and provide other ecosystem benefits. Along with both National Wildlife Refuges, Modoc Nation lands would also be benefited.

Task Summary:

- Anderson-Rose In-Channel Spawning Habitat Design – engineering design of in-channel spawning habitat restoration.
- Pumping Plant D Modernization Study – engineering study to upgrade pumps, motors and associated electrical equipment for efficient and low-cost year-round operation to support flow through.
- Pumping Plants EE and FF Modernization Study – engineering study to upgrade pumps, motors and associated electrical equipment for efficient and low-cost year-round operation to support flow through.
- Pumping Plant S Upgrade – rehabilitate historical pumping site that allows water recirculation within Tule Lake Sump 1B.
- Water Quality Monitoring – system for sampling and testing water quality throughout the Klamath Project as necessary to support and validate flow through benefits.

Project Schedule:

- Anderson-Rose In-Channel Spawning Habitat Design – planning/NEPA (2024-2025)
- Pumping Plant D Modernization Study – feasibility study/NEPA (2024-26)
- Pumping Plant EE and FF Modernization Study – feasibility study/NEPA (2024-26)
- Pumping Plant S Upgrade – engineering planning (2024); construction (2025).
- Water Quality Monitoring – design and pilot program (2024); implementation (2025-26).

Estimated Budget:

- Anderson-Rose In-Channel Spawning Habitat Design - \$950,000
- Pumping Plant D Modernization – [Reclamation funding]
- Pumping Plant EE and FF Modernization Study – [Reclamation funding]
- Pumping Plant S Upgrade – \$565,000
- Water Quality Monitoring Program – \$485,000

Additional Information:

At the inception of the Klamath Project in 1905, Tule Lake naturally comprised the terminal basin for the Lost River. Historically, prior to locally sponsored levee work and during times of high flows, Tule Lake also received water from the Klamath River. Due to the highly variable nature of runoff in the Lost River watershed and resulting inflow to Tule Lake, water levels rose and fell dramatically. In 1846, the lake covered 55,000 acres and was only seven feet deep at its southern end. Half a century later, after rising and falling over the decades, a wet winter extended the lake to 110,000 acres, with a maximum depth of over 30 feet. Geologic evidence indicates even higher levels during human history.

In 2009, in anticipation of the establishment of total maximum daily loads (TMDLs) for designated waterbodies in the Klamath Basin, the Oregon Department of Environmental Quality, the North Coast Regional Water Quality Control Board and the U.S. Environmental Protection Agency agreed to “work jointly with Reclamation, KWUA, and the wildlife refuge managers to develop a cohesive water management system in the Klamath Irrigation Project area,” including potentially “centralized treatment options such as treatment wetlands.”

As part of the 2010 Klamath Hydroelectric Settlement Agreement, PacifiCorp was obligated to provide funding for continued water quality monitoring and improvements, including a 2012 workshop to evaluate large-scale approaches to improving water quality in the Upper Klamath Basin. That workshop resulted in a 2013 report, *Water Quality Improvement Techniques for the Upper Klamath Basin*, which identified treatment wetlands as a long-term solution and recognized that “tens of thousands of acres of treatment wetlands would be necessary to reduce phosphorus and nitrogen concentrations” in the water being released from Upper Klamath Lake to levels necessary to meet federal water quality standards.

These prior efforts led to a modelling study, funded by the North Coast Regional Water Quality Board, evaluating the extent to which existing wetland units within Lower Klamath National Wildlife Refuge might function as treatment wetlands to assimilate nutrients from water diverted from Upper Klamath Lake and the Klamath River and conveyed, via multiple delivery systems, through the Klamath Project. A 2023 technical report resulting from this study, prepared by Stillwater Sciences, found that phosphorous and nitrogen reductions upwards of 60 and 80 percent respectively were theoretically possible for large volumes of water (95,300-117,700 acre-feet) conveyed through treatment wetlands in Lower Klamath National Wildlife Refuge.

Project Title:**Upper Shasta River Salmon Habitat Restoration Projects: Middle Parks Creek and Big Springs Creek Complex**Project Proponent and Collaborators:

The Karuk Tribe – proponent; California Trout, Yurok Tribe, The Nature Conservancy, NOAA, CDFW

Project Type:

The Karuk Tribe, Yurok Tribe, CalTrout and The Nature Conservancy (TNC) are collectively developing plans for large scale salmon habitat restoration projects on ranches located in the upper Shasta River Valley. Stream reaches on Parks Creek, Big Springs Creek and Hole in the Ground Creek are prioritized for habitat improvement projects and include enhancement of cold water springs, spawning habitat and fish passage. Cal Trout is evaluating upper Shasta River ranches included in the Shasta Safe Harbor Agreement and working with Stillwater Sciences to identify habitat enhancement opportunities in 2023 and 2024. The Karuk Tribe is evaluating salmon habitat enhancement alternatives within the Big Spring Ranch that is owned by the California Department of Fish and Wildlife and seeks additional funding for implementation of habitat enhancement on the ranch. This work will develop final designs permitting and implementation at the geomorphic reach scale for improvement of spawning and rearing habitat restoration including irrigation efficiency projects, floodplain restoration and coldwater refuge enhancements. This proposal will support current habitat restoration planning efforts and support implementation of reach scale salmon habitat restoration in the Upper Shasta River Valley.

Projects scheduled for implementation in 2025 include fish passage into Little Springs Creek Lake and low tech BDA's and wood structures in Big Springs Creek. Habitat restoration planning and project engineering and design for Parks Creek. This work includes, hydro modeling, engineered designs floodplain habitat and utilization of the Yurok Tribes Geo/Spatial data collaborative for mapping. Within the two-year performance period 2024 and 2025, we will progress designs from 30% conceptual designs including alternatives analysis, 65% level of final design for permitting and 100% final construction designs, complete all environmental permitting across the entire project area, and implement restoration across two construction seasons in Little Springs Creek fish passage.

Task Summary:**Task 1: Project Management and Administration**

Task 2: Habitat Assessments, Engineering and Design –On the ground habitat assessments of up to 7 miles of Parks Creek and 3 miles of Big Springs/Little Springs Creek. 100% designs, Final Cost Estimates, Technical specifications, Basis of Design Documents

Task 3: Permitting and Agency Coordination- We will submit all environmental permits, survey and monitoring forms prior to and during construction as applicable.

Task 4: Construction- We anticipate construction will take two in-water work seasons (2025 and 2026) for the fish passage component of the project in Little Spring Creek. Work will include implementation of a “nature based channel” connecting Little Springs Creek to Little Spring Creek Lake, large wood installation, riparian planting and BDA installation in select reaches in the Big Springs Creek Complex.

Task 5. Post Construction Monitoring- Topographic surveys, photo points, groundwater well, discharge, temperature, and fish utilization monitoring.

Task 6. Education/Outreach- We will promote inclusion of tribal and underserved communities through education, job opportunities, outreach, and partnership.

Task 7. Water Management- Development of a fish screen maintenance plan, water rotation plan, and flow accounting analysis that will build on existing in-stream flow dedication work by TNC that is funded separately through California Water Conservation Board.

Project Schedule: Performance Period: September 30, 2024- September 30, 2026

Task	Timeline
1. Project Management	Sept 2024- Sept 2026
2. 30% designs and 65% level of final design for all project components & alternatives	Sept 2024- April 2025
3. Environmental Permitting	Sept 2024- April 2025
4. 100% Final Design and Implementation (2 years)	(June-Oct) 2025, 2026
5. Post Implementation Monitoring	Oct 2025- Sept 2026
6. Education/Outreach	Sept 2024- Sept 2026

Estimated Budget:

Task	Year 1	Year 2	Total
Project management & coordination –Task1	\$350,500	\$350,000	\$700,500
Engineering/Design/Monitoring-Task 2	\$556,000	\$647,000	\$1,203,000
Permitting-Task 3	\$185,448	\$54,222	\$239,670
Construction: BDA's and Nature Based Channel-Task 4	\$75,000	\$550,000	\$625,000
Education/Outreach-Task 5	\$49,000	\$69,121	\$118,121
Total	\$1,215,948	\$1,670,343	\$2,886,291

In 2023, Karuk Tribe was awarded \$1,500,000 from the CDFW to implement geological and hydro assessments, project planning and a fish passage construction of a “nature based fish passage channel” that connects Little Springs Creek to Little Springs Lake. This work includes collaboration with the Yurok Tribe and CDFW. Additionally, in 2023 Cal Trout was funded to begin large scale habitat restoration designs for upper Shasta River ranches included in the Shasta Safe Harbor Permit process. The TNC is working on land purchases utilizing California’s Wildlife Conservation Board funding.

Project Title:**Upper Scott River Salmon Habitat Restoration: Transforming the Beaver Valley Headwaters Preserve - a Holistic, Community Based Approach to Restoring a Klamath River Salmon Stronghold**Project Proponent and Collaborators:

The Karuk Tribe – proponent; California Trout; North Coast Regional Water Quality Control Board, CalTrans, NOAA, CDFW

Project Type:

Our team will take a holistic and landscape scale approach to transforming aquatic resources on a large ranch in the headwaters of the Scott River. [The Beaver Valley Headwaters Preserve \(Preserve\)](#), purchased by The Wildlands Conservancy (TWC) in 2021, is a 6,084 acre ranch on the East Fork Scott River that encompasses 7 miles of aquatic habitat for federally listed species. Historic land use, development, beaver depredation, and climate change have all resulted in degraded aquatic habitat on the property. Through this project, we will incorporate large wood structures to enhance side channel activation, regrade floodplains, and construct off-channel habitat along the East Fork Scott River. We will also incorporate riparian planting with native species to reduce bank erosion as well as provide shade. Our team will assess two points of diversion on the property and design appropriate fish protection measures, such as on-channel fish screens. We also plan to design and build a series of Beaver Dam Analogs (BDAs) along Noyes Valley Creek, one of the largest tributaries to the East Fork Scott River, slowing and storing water to promote groundwater recharge. Additionally, we are working closely with the Siskiyou County Office of Education, The Karuk Tribe, and the Quartz Valley Indian Reservation (QVIR) to incorporate community engagement and youth programs, enhancing local interaction with the ecosystems and the history of the Preserve.

Within the two-year performance period, we will progress designs from 65% to 100%, complete all environmental permitting across the entire project area, and implement restoration across two construction seasons. When the project is complete, we will have transformed the landscape of the East Fork Scott River and enhanced community and ecosystem resilience to climate change.

Task Summary:**Task 1: Project Management and Administration**

Task 2: Engineering and Design – 100% designs, Final Cost Estimates, Technical specifications, Basis of Design Documents

Task 3: Permitting and Agency Coordination- We will submit all environmental permits, survey and monitoring forms prior to and during construction as applicable.

Task 4: Construction- We anticipate construction will take two in-water work seasons (2025 and 2026) for the channel restoration component of the project. Work will include floodplain and off-channel habitat excavation, large wood installation, riparian planting and fencing, stockwater installation, diversion piping and fish screening, and BDA installation.

Task 5. Post Construction Monitoring- Topographic surveys, photo points, groundwater well, discharge, temperature, and fish utilization monitoring.

Task 6. Education/Outreach- We will promote inclusion of tribal and underserved communities through education, job opportunities, outreach, and partnership.

Task 7. Water Management- Development of a fish screen maintenance plan, water rotation plan, and flow accounting analysis that will build on existing instream flow dedication work funded separately through WCB.

Project Schedule: Performance Period: September 30, 2024- September 30, 2026

Task	Timeline
1. Project Management	Sept 2024- Sept 2026
2. 100% designs for all project components	Sept 2024- April 2025
3. Environmental Permitting	Sept 2024- April 2025
4. Implementation (2 years)	(June-Oct) 2025, 2026
5. Post Implementation Monitoring	Oct 2025- Sept 2026
6. Education/Outreach	Sept 2024- Sept 2026
7. Water Management	Sept 2024- Sept 2026

Estimated Budget:

Task	Year 1	Year 2	Total
Project management & coordination	\$470,606	\$429,984	\$900,590
Engineering/Design/Monitoring	\$407,995	\$644,268	\$1,052,263
Permitting	\$185,448	\$54,222	\$239,670
Construction	\$2,715,901	\$2,357,750	\$5,073,651
Education/Outreach	\$79,121	\$69,121	\$148,242
Total	\$3,859,071	\$3,555,345	\$7,414,416

In 2022, CalTrout was awarded \$1,163,900 in design and assessment funds through Caltrans. The Wildlands Conservancy received a WCB grant for \$200,000 for instream flow dedications. Other matching funders include USFWS for adjacent riparian fencing and uplands work.

Additional Information:

The two-year project described above is part of a larger project on the Preserve- the total cost of the whole project would be \$10,850,769 with a total project timeline of 3-4 years. Remaining costs not requested here are \$3,436,351. Project components that are not included in a 2-year timeline would include the remaining 0.5 miles of East Fork restoration, and one POD improvement, in-channel restoration, and stream simulation channel work for the fish passage barrier removal component on Big Mill Creek. Stream simulation funding would act as match for potential funding from CalTrans to replace the current barrier (culvert) with a channel spanning bridge (est. cost \$20 million for the bridge).

Restoration efforts in the Scott River watershed are critical to the success of the Klamath River dam removal efforts and build upon decades of prior restoration throughout the basin. Through this project, every mile of degraded aquatic habitat within the Preserve will be restored, addressing longstanding issues with concrete and timely solutions. Our actions will have a transformative impact on the recovery and conservation of federally threatened coho salmon and their critical habitat. This project will create direct and measurable benefits for other native fish including Chinook salmon, steelhead, and Pacific lamprey by improving habitat quality and proving additional resilience throughout a range of water year types, temperature regimes and future conditions expected under climate change.

Project Title

Middle Klamath River Habitat Projects

Project Proponent and Collaborators:

Karuk Tribe, Mid-Klamath Watershed Council, private landowners

Project 1

Title: China Cr Helicopter Wood Loading

The overriding goal of the project is to increase the viability and production of the mid- and upper-Klamath River population of coho salmon by increasing the availability of suitable habitat for natal and non-natal salmon within the project area. The objectives to accomplish this goal are to increase habitat availability and improve instream habitat conditions by installing large wood structures that will slow water velocity, increase habitat complexity, retain and sort spawning gravel, provide cover, provide substrate for fish prey, and re-connect the channel to historic off-channels habitats on the adjacent floodplain.

The project reach on China Creek is from the culvert under China Grade Road to nearly the confluence with the Klamath River. The project reach was surveyed for beneficial locations to install instream wood structures to achieve these objectives. All logs for the structures will be installed via helicopter to minimize ground disturbance and avoid disturbance to adjacent archaeological/heritage sites. Helicopter placement will take no more than two days. Ground crews will use Griphoists to re-position logs after helicopter placement. The total project area is approximately 32 acres.

Thirty-six structure sites will be located within the 0.64-mile project reach. Each structure will consist of 3-4 logs, including two key pieces with minimum dbh of 24” inches. A total of approximately 100 to 120 logs will be used for the structures. Logs will range in length from 30 to 45 feet with 16 to 40-inch dbh. The logs will be from private sources not from National Forest lands. Small riparian trees and brush will be cleared as necessary to allow the helicopter pilot to see where to drop logs. Smaller organic material cleared for visibility will be incorporated in log structures. Hazard trees will be felled to ensure the safety of ground crews during helicopter placement of logs.

Request: \$350,000

Project Proponents and Collaborators: Karuk Tribe and Mid Klamath Watershed Council

Task Summary:

Task 1: Project Management and Administration

Task 2: Final Design – 100% designs, Final Cost Estimates, Technical specifications, Basis of Design Documents

Task 3: Permitting and Agency Coordination- We will submit all environmental permits, survey and monitoring forms prior to and during construction as applicable.

Task 4: Construction- We anticipate construction will take 2 days in the Fall of 2025.

Task 5. Monitoring- As-built surveys, pre and post photos

Project Schedule:

Task	Timeline
1. Project Management	Sept 2024 – Sept 2026
2. Final Design	Sept 2024 – Sept 2026
3. Permitting	Sept 2024 – Sept 2026
4. Construction	Sept – Oct 2025
5. Monitoring	Sept 2024 – Sept 2026

Project 2

Title: West Fork Beaver Helicopter Wood Loading (public land)

The West Fork Beaver Creek Fisheries Restoration Project is being proposed by the Mid Klamath Watershed Council and the Karuk Tribe. The project is located in the Klamath National Forest in Siskiyou County, on West Fork Beaver Creek, in Sections 2 and 12 of T47N, R9W. The project will add logs with root wads attached to 4,000 feet of the stream, within 18 acres. The logs will be added using a helicopter. The purpose of adding the logs to the stream is to create spawning and rearing habitat for Klamath Basin fish.

Before the helicopter adds the logs to the stream, a ground crew will selectively remove some riparian vegetation with chainsaws, so that the helicopter pilot can see where to place the logs. Additionally, hazardous trees will be felled with a chainsaw near the wood structure sites if it is determined that they will pose a safety risk to the ground crew during flight operations. All of this felled vegetation material will be added to the stream to improve fish habitat.

Traffic will be controlled during flight operations for public safety.

The logs will be brought in to pullouts along Forest Service road 47N01 by logging trucks. The helicopter will place the logs into the stream as directed by a ground crew.

A minimum of 40 key log pieces of wood with root wads will be added to the 4,000 feet of stream.

Request: \$300,000

Project Proponents and Collaborators: Karuk and Mid Klamath Watershed Council

Task Summary:

Task 1: Project Management and Administration

Task 2: Final Design – 100% designs, Final Cost Estimates, Technical specifications, Basis of Design Documents

Task 3: Permitting and Agency Coordination- We will submit all environmental permits, survey and monitoring forms prior to and during construction as applicable.

Task 4: Construction- We anticipate construction will take 2 days in the Fall of 2025.

Task 5. Monitoring- As-built surveys, pre and post photos

Project Schedule:

Task	Timeline
1. Project Management	Sept 2024 – Sept 2026
2. Final Design	Sept 2024 – Sept 2026
3. Permitting	Sept 2024 – Sept 2026
4. Construction	Sept – Oct 2025
5. Monitoring	Sept 2024 – Sept 2026

Project 3

Title: Middle Creek and Buckhorn Creek Coho Habitat Restoration: restoring stream channel and floodplain form and function, providing off-channel rearing habitat, and increasing groundwater storage.

Request: \$325,000.00

Project Proponent and Collaborators: The Mid Klamath Watershed Council (MKWC), the Karuk Tribe, and landowners Dennis Lang and Donna Strong.

Project Description: This project will develop final designs and implement construction of two projects on Middle Creek and Buckhorn Creek, both small Coho bearing tributaries of Horse Creek within the Upper Mid Klamath Subbasin. These two tributaries represent the highest density of Coho spawning in the Klamath River basin. Together, these projects will restore channel form and function to approximately 1,000 linear feet of Middle and Buckhorn Creeks, provide approximately 9,000 square feet of off-channel rearing habitat, and restore riparian floodplains through grading and native plant revegetation and invasive species removal. This project is part of a highly successful restoration effort within the Horse Creek watershed that MKWC and the Karuk Tribe began in 2013.

Task Summary:

Task 1: Project Management and Administration

Task 2: Engineering and Design – 100% designs, Final Cost Estimates, Technical specifications, Basis of Design Documents

Task 3: Permitting and Agency Coordination- We will submit all environmental permits, survey and monitoring forms prior to and during construction as applicable.

Task 4: Construction- We anticipate construction will take two work seasons (2025 (Strong Property) and 2026 (Lang property)).

Task 5. Post Construction Monitoring- As-built surveys, photo points, groundwater well, discharge, temperature, and fish utilization monitoring.

Project Schedule: Performance Period: September 30, 2024- September 30, 2026

Task	Timeline
1. Project Management	Sept 2024- Sept 2026
2. 100% designs for all project components	Sept 2024- April 2025
3. Environmental Permitting	Sept 2024- April 2025
4. Implementation (2 years)	(June-Oct) 2025, 2026
5. Post Implementation Monitoring	Oct 2025- Sept 2026
6. Education/Outreach	Sept 2024- Sept 2026
7. Water Management	Sept 2024- Sept 2026

Project 4

Title: The Lower Thompson Creek Aquatic Habitat Restoration Project: restoring stream channel and floodplain form and function, providing off-channel rearing habitat.

Request: \$175,000.00

Project Proponent and Collaborators: The Mid Klamath Watershed Council (MKWC), the Karuk Tribe, and landowners Glenn Blakesely and Tina Bohn.

Project Description: This project will address a lack of spawning and rearing habitat of Southern Oregon/Northern California Coho Salmon, Klamath Mountains Province Steelhead Trout, Upper Klamath/Trinity Rivers Chinook Salmon, Pacific Lamprey, and Klamath River Lamprey. This restoration project is based on designs developed with funding provided by the Wildlife Conservation Board. Restoration of the site involves constructing a ground water fed off-channel rearing pond, adding a minimum of 2 in-stream wood structures, and revegetating the construction affected riparian areas with an appropriate native diversity of plants. This project will restore channel form and function to approximately 200 linear feet of Thompson Creek, provide approximately 2,000 square feet of off-channel rearing habitat, and restore riparian floodplain through native plant re-vegetation and invasive species removal. This project additionally involves the installation of a Passive Integrated Transponder (PIT) tag antennae array at the outlet of the pond to better track migration of juvenile and adult Coho Salmon within Thompson Creek and throughout the greater Klamath River basin.

Task Summary:

Task 1: Project Management and Administration

Task 2: Permitting and Agency Coordination- We will submit all environmental permits, survey and monitoring forms prior to and during construction as applicable.

Task 3: Construction- We anticipate construction will take one work season (2025). Work will include floodplain and off-channel habitat excavation, large wood installation, riparian planting and installation of Passive Integrated Transponder (PIT) tag antennae array.

Task 4. Post Construction Monitoring- As-built surveys, photo points, groundwater well, discharge, temperature, dissolved oxygen, and fish utilization monitoring.

Project Schedule: Performance Period: September 30, 2024- September 30, 2026

Task	Timeline
1. Project Management	Sept 2024- Sept 2027
2. 100% designs for all project components	Sept 2024- December 2024
3. Environmental Permitting	Sept 2024- April 2025
4. Implementation (1 year)	(June-Oct) 2025
5. Post Implementation Monitoring	August 2025- Sept 2026

Project Summary

- China Cr Helicopter Wood Loading-\$350,000
- West Fork Beaver Helicopter Wood Loading-\$300,000
- Middle Creek and Buckhorn Creek Coho Habitat Restoration-\$325,000
- The Lower Thompson Creek Aquatic Habitat Restoration Project-\$175,000

Total Request \$ 1,150,000

Project Title:

Scott River Hydro and Salmon Habitat/EDT Modeling

Project Proponent and Collaborators:

The Karuk Tribe (Collaborators – Scott River Watershed Council, Siskiyou Farm Bureau)

Project Type:

The Karuk Tribe has implemented groundwater modeling and salmon habitat production modeling on the Scott River. A groundwater model was developed in 2016 and followed by a salmon habitat production model or Ecosystem Diagnostics and Treatment (EDT) model in 2017. We propose to use the two models to better understand flow needs, habitat needs, and identify and prioritize restoration actions.

The modeling exercise will include workshops with local stakeholders including the Siskiyou Farm Bureau, Scott Watershed Council, Cal Trout, the Nature Conservancy, Quartz Valley Indian Rancheria, and Yurok Tribe.

Task Summary:

4. Identify and hire modeling consultant.
5. Project management and administration
6. Convene workshops with stakeholders to develop model scenarios.
7. Work with consultants to model and refine scenarios.
8. Publish report of findings and recommendations.

Project Schedule:

- Identify and hire consultants – 10/1/24 to 12/30/24
- Convene stakeholder meetings to develop model scenarios - 12/30/24 to 06/30/25
- Run scenarios with some iterative refinements 6/30/25 to 12/30/24
- Write and release report with recommendations– 1/1/25 to 6/30/25

Estimated Budget:

Task	Year 1	Year 2	Year 3	Year 4	Total
1. Project management & coordination	\$35,500	\$37,000			
2. Modeling	\$50,000	\$300,000			

3. Stakeholder meetings	\$120,000	\$120,000	\$60,000		
4. Reporting and recommendations	\$45,000	\$55,000	\$50,000		
Total	\$250,500	\$512,000	\$110,000		\$872,500

Additional Information:

The Scott River remains the most productive coho stream in the Klamath Basin. Restoring Scott River flows and habitat is identified as a key action the Recovery Plan for ESA list Southern Oregon Northern California Coho. Other important species such as Chinook, steelhead, and Pacific Lamprey utilized the Scott River sub basin as well. The Karuk Tribe is working to develop a detailed and comprehensive approach for Scott River restoration that considers the need for adequate stream flows along with restoration of various habitat features. We seek to work with partners to develop a range of restoration options that can be evaluated using existing habitat and flow models to inform decision making.

Project Title:**Klamath River Post-Dam Removal Salmon Utilization Studies: Evaluating the Effectiveness of Dam Removal on the Klamath River using SONAR and Radio Telemetry and Spawning Surveys and Thermal Refugia Studies.**

Project Proponent and Collaborators: The Karuk Tribe – proponent; The Klamath Tribes; Yurok Tribe; California Trout; NOAA; ODFW; CDFW; Cal Poly Humboldt - collaborators.

Project Type: With the removal of four mainstem dams, the Klamath River is poised to reconnect over 400 miles of habitat that has been blocked for over a century. This is the largest river restoration project in the world and a significant step toward environmental justice for the six Native American tribes that have relied on the river to survive for millennia. Dam removal will directly benefit a suite of anadromous fish species including state and federally ESA listed Coho Salmon, fall-run Chinook Salmon and steelhead Rainbow Trout. State ESA listed spring-run Chinook Salmon – extirpated by loss of access -may re-occupy the upper Klamath River. With one dam removed in 2023, and the other three to be removed in 2024, it is imperative to move monitoring plans into implementation as early as possible in 2024 - to assess the effectiveness of this monumental restoration effort. The findings from this project will build our understanding of dam removal, how fish repopulate newly opened habitats, population response to landscape level restoration projects, and where to focus future restoration efforts.

Task Summary:

Task 1. Project management and coordination: subcontracting, invoicing, grant administration, regular team meetings, database development, data management and reporting, by CalTrout and Karuk Tribe.

Task 2. SONAR: purchasing and installing equipment, running the station, trap netting, development, and execution of species-specific population estimates.

Task 3. Telemetry: purchasing and installing the equipment necessary for fixed receivers, mobile tracking, tags, and other supplies. Also includes the tagging of fish captured during trap netting and regular mobile tracking during migrations, and the organization and analysis of telemetry data.

Task 4. Mainstem Spawning Surveys: purchasing survey equipment necessary for spawning surveys, cata rafts, safety gear and survey tablets equipped with GPS.

Task 5. Thermal Refugia Surveys: utilize telemetry data and spawning surveys to locate tributary and spring fed cold water refugia, evaluate salmon utilization, spatial and temporal distribution of refugia and coldwater sources.

Project Schedule: A custom ARIS 1800 multi-beam imaging SONAR and radio telemetry equipment with all necessary electrical, tagging and computing infrastructure will be purchased and installed. Project launch will bring all project partners together to advance shared vision, review plan, protocols and schedule. Project staff will be hired and trained.

7/1/2024 – at least 4/1/2025

For the first season, SONAR installation and continuous fish passage recording will begin, in August. Weekly tangle net sampling and radio tagging will occur when water temperatures are below 18°C SONAR and tagging operation will continue after April 1, 2025, if net sampling indicates that anadromous fish are still actively migrating past the SONAR site.

9/1/2024 – 11/1/2024

Data reviewer training and full-time data review. All SONAR data will be reviewed within three months of its recording and telemetry data within 6 months. Seasonal operation reports will be completed within 2 months of the end of data recording each season and species-specific passage estimates complete with Confidence Intervals will be completed and reported on within 6 months of the end of SONAR operations each season.

This seasonal schedule will repeat itself for the 2025-2026, 2026-2027, and 2027-2028 seasons. Final project report detailing all operations and trends in salmon populations passed the SONAR site and telemetry migration histories. 12/31/2028

Implement Spawning Surveys and Thermal Refugia Studies in 2025-2028.

Estimated Budget:

Task	Year 1	Year 2	Year 3	Year 4	Total
1. Project management & coordination	\$266,646	\$208,807	\$217,836	\$217,296	\$910,584
2. SONAR	\$378,483	\$197,013	\$147,013	\$100,500	\$823,009
3. Telemetry	\$494,265	\$283,953	\$285,012	\$153,315	\$1,216,546
4. Spawning surveys	\$255,000	\$185,500	\$192,000	\$212,560	\$845,060
5. Thermal Refugia surveys	\$75,000	\$55,000	\$57,000	\$45,600	\$232,600
Total	\$1,469,394	\$930,273	\$898,861	\$729,271	\$4,027,799

The total cost of the project is the highest in year 1 due to equipment purchases and initiation costs and then decreases each year. We budgeted the purchase of more radio tags in the first year then decreasing tag purchases in the subsequent years to ensure proper supplies while spreading project costs through time. We budgeted for additional receivers to minimize down-time in the case of a mid-season failure as well as provide the ability to add additional receivers through the project if additional information is needed in certain locations. Leveraged funds were secured from 6 distinct sources in support of this project. These sources include private foundation funds secured through CalTrout, 50k from USFWS, committed staff time from CDFW, ODFW and the Klamath Tribes, and RES for SONAR station access, security, and maintenance.

Additional Information: This project will result in abundance estimates of salmon and steelhead entering the reach previously blocked by dams and follow their migrations to spawning grounds. These metrics will provide a foundation for assessment of stock status and trends while guiding future restoration efforts in the newly accessible habitats, providing a toolset to support prioritization of future restoration and monitoring in the Klamath River as well as other dam removals around the world. This project will also provide much needed capacity for three of the six tribes on the Klamath River, allowing them to track the return of these culturally significant species after a century of exclusion while providing tribal scientists monitoring skills and employment opportunities working on this monumental project.

Project Title:**Scott River Habitat Restoration – Strengthening Resiliency of Farms and Fish**Project Proponent and Collaborators:

Yurok Tribe in partnership with Karuk Tribe, Caltrout, Farmers Ditch Company, Scott River Water Trust, and other basin partners

Project Type:

Planning, Design, and Implementation (Design-Build). This project is fully scalable; Planning and Design Funding is highest priority to start gaining momentum toward implementation actions.

Task Summary:

Overview/Background

The Scott and Shasta rivers are critically important tributaries to the Klamath River, the second largest river system in California. In the past decade, these tributaries experienced one of the most severe droughts on record. Both these watersheds are crucial source of water for Siskiyou County and have immense economic, ecological, and cultural importance. Siskiyou County is home to 43,500 people. The Scott and Shasta watersheds provide water for agriculture, domestic users, the environment, fire protection, municipalities, Tribal Nations, and recreation. As the region's drought situation worsens, local and state governments and community members are collaborating to address water shortages. The Klamath River is facing severe declines of both Coho and Chinook Salmon runs with coast-wide ocean closures likely this year and zero or nearly zero fishing opportunities for the Yurok, Karuk, and Hoopa Valley Tribes. The Scott River supports the largest cohort of state and federally threatened wild SONCC Coho Salmon in California. However, seasonally low stream flows through the upper reach of the mainstem Scott River prevent access to vital headwater tributaries. According to the National Marine Fisheries Service 2014 Final Recovery Plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (NMFS, 2014), "The limiting stresses for the Scott River coho salmon population are the degraded riparian habitat conditions and altered hydrologic function that are occurring throughout the basin. These stresses are limiting the fitness and survival of juvenile coho salmon throughout the Scott River basin by decreasing access to off-channel rearing habitat, creating stressful and lethal water quality conditions, decreasing water quantity and spawning habitat (Cramer Fish Sciences et al. 2010), and disconnecting floodplains and other off channel rearing habitat. The juvenile life stage is currently the limiting freshwater life stage for continued viability and success of the Scott River coho salmon population (CDFG 2004b, SRWC 2005). Recovery activities that enhance and extend surface flow connectivity to ensure sufficient instream flows should be given priority, along with efforts to increase summer and winter rearing habitat, and reduce lethal stream

temperatures and fine sediment mobilization (NMFS,2014).” (Note: this proposal is scalable and funding will be used to increase total reach length of the overall restoration actions on the Scott River.)

Task List:

1. Project Management and Coordination
 - a. Tribally Lead
2. Project Planning, Design, and Analysis
3. Environmental Compliance/Permitting
4. Construction Operations

Project Schedule:

Task	Start	End
Project Management and Coordination	9/30/2024	9/30/2006
Project Planning, Design and Analysis Phase	10/15/2024	2/15/2026
Environmental Compliance/Permitting Phase	1/15/2025	4/15/2026
Construction/Implementation Operations Phase	4/15/2026	9/30/2026

Estimated Budget:

Budget is scalable.

- **Total Budget = \$1,850,000.00**
 - Project Management and Coordination: \$200,000
 - Project Planning Design and Analysis: \$400,000
 - Environmental Compliance/Permitting: \$150,000
 - Construction Operations: \$1,100,000

Project Title:**Klamath Basin Geospatial Mapping and Climate Resiliency Project**Project Proponent and Collaborators:

Yurok Tribe and technical advisory team made up of basin partners.

Project Type:

Data collection to support basin wide restoration projects for planning, design, and implementation actions. This is implementation ready project that is scalable.

Task Summary:

Overview/Background

This proposal is to seek funding for a basin-wide geospatial mapping project that is a completely implementation ready to support basin partners to detect and track climate change dynamics and to better plan and prepare for large scale ecosystem restoration initiatives. The Klamath Basin has been impacted by decades of anthropogenic manipulation combined with natural disasters from a changing climate regime, that has left our landscape vulnerable and out of balance. Wildfires, floods, debris flows, and earthquakes plague our watershed, creating a need for robust geospatial data to better prepare for a more stable and resilient future.

This basin-wide geospatial data collection project will support government agencies, Native American Tribes, and Non-Governmental Organizations throughout all phases of project implementation including planning, management, design, analysis, modeling, and construction. The project will collect high resolution LiDAR, aerial imagery, and thermal data using fixed-wing manned aircraft equipment integrated with the latest technology and sensors. The data will provide topographic point clouds and 4-band imagery to fully represent the earth surface and terrain features. The Yurok Tribe has invested in the development of an aviation program and aircraft infrastructure to support Klamath Basin initiatives. Our team has the ability and capacity to respond and deploy quickly to support our partners and projects across the watershed including emergency response. Having this local resource and technology operated by the Tribal community allows for hands-on and meaningful stewardship of the ecosystem.

Task List:

1. Plan Data Collection: Convene team of technical advisory team across the basin to provide recommendations on target areas and data specifications to identify the type of data needed in specific locations. Strategic target areas in key locations including Shasta, Scott, and upper Klamath. Deliverables: Map of collection areas for various data types: high resolution LiDAR, aerial imagery, and thermal data.

2. Collect Data: Tribe's Condor Aviation will operate the fixed-wing manned aircraft equipment over the collection areas, accompanied by Fisheries Dept. staff. This includes ongoing data review to ensure quality control. Deliverables: Raw data for each data type: high resolution LiDAR, aerial imagery, and thermal using industry standard formats (e.g., .LAZ, .LAS, .TIFF).
3. Data processing: Review and analyze data to produce topographic point clouds and 4-band imagery to fully represent the earth surface and terrain features. Deliverables: Finished data sets with metadata for each data type: high resolution LiDAR, aerial imagery, and thermal using industry standard formats.
4. Share data with partners: Data made available, and presented and demonstrated via webinar, to project partners (e.g., government agencies, Native American Tribes, and Non-Governmental Organizations) and interested parties.

Project Schedule:

Task	Start	End
Plan Data Collection	9/30/2024	12/15/2024
Collect Data	12/15/2024	12/15/2025
Data Processing	12/15/2025	8/15/2026
Share Data with Partners	8/15/2025	9/30/2026

Estimated Budget:

Budget is scalable.

- **Total Budget = \$5,000,000.00**
 - Data Collection Operations: 1.3 million.
 - Data Processing Operations: 1.9 million.
 - Operational costs include travel.
 - Equipment (Bathymetric Sensor): 1.8 million.
 - Costs listed above include tribal indirect.

Additional Information:

Investment funding for this proposal is fully scalable and can range from 500K to 10 million with a target value of \$5,000,000. Geospatial data has a 10:1 economic investment factor, every dollar spent has an order of magnitude of impact for the resource. The data collected through the work proposed in this task will support restoration planning and resulting implementation across a wide variety of physical and biological objectives. The proposed datasets have innumerable applications and are valuable in all phases of project development including planning, management, design, analysis, modeling, and construction. Data can be used to: improve compliance with environmental regulations; enhance the evaluation of project sites; provide input to hydrologic and hydraulic modeling to improve the structure design (bridges, culverts);

and expedite project review and reduce costs when integrated with geologic and engineering data. Across multiple disciplines, use of this type of data reduces the time required for project planning, resulting in cost savings. The work supports many of the main objectives of the Klamath Basin Integrated Fisheries Restoration and Monitoring Plan including " Increase channel and floodplain dynamics and interconnectivity.

All processed data and associated derived products would be provided to basin partners as fully open-sourced information. Our proposal would also establish a technical framework that would determine the spatial extent, and timing of each collection. The decision framework would consist of technical specialists across the basin that would make recommendations on area of need, collection location, and data specifications. Basin-wide collaboration and investment in high value geospatial data is an innovative approach to build better climate resiliency, plan for future ecosystem restoration, and give organizations the data needed today to make informed decisions about tomorrow.

Project Title:**Upper Klamath Basin - Post Dam Removal Tributary Restoration Project**Project Proponent and Collaborators:

Yurok Tribe in partnership with Karuk Tribe, Shasta Indian Nation, Klamath Tribes, Modoc Nation, Ridges to Riffles, and Trout Unlimited.

Project Type:

Planning, Design, and Implementation (Design-Build). This project is fully scalable; Planning and Design Funding is highest priority to start gaining momentum toward implementation actions.

Task Summary:

Overview/Background

The focus of this project is on the planning and design for salmonid habitat restoration work in key cold water tributary watersheds that are currently cut off from anadromous populations by Iron Gate, Copco 1 & 2, and JC Boyle dams. The removal of these four Klamath dams is a historic and massive undertaking that presents ample opportunities for restoration of the currently disconnected tributaries. The project is proposed to occur immediately following removal of the dams, creating ideal timing for this unprecedented opportunity for restoration. The Klamath River watershed and its tributaries are sacred to the tribal communities of the Klamath Basin. The watersheds and fisheries they support – including federally and state threatened coho salmon – are integral to the cultural identity, livelihoods, and economies of several tribes from the mouth of the Klamath at the Pacific Ocean, where the Yurok Tribe is headquartered, all the way up to the headwaters. The Yurok Tribe has been working with local tribes including the Shasta Indian Nation, Klamath Tribes, Modoc Nation, and the Karuk Tribe as well as Ridges to Riffles Indigenous Conservation Group (R2R) and Trout Unlimited to identify high priority sites with sufficient landowner cooperation to facilitate a broad range of restoration work. Yurok Tribe and partners have also coordinated with several agencies including Bureau of Land Management, California and Oregon state Departments of Fish & Wildlife, and US Forest Service to build upon existing restoration and monitoring efforts. Restoration of tributaries in the Upper Klamath River that are currently cut off to anadromous fish is of utmost importance following the historical removal of four dams in those watersheds, which is already underway. The proposed project features design-build as well as planning and design components in several tributaries that stem largely from the Klamath Reservoir Reach Restoration Plan (K3RP), a plan that has been thoroughly researched and developed over many years in preparation for the largest dam removal and river restoration project in history. The sub-watersheds of focus include Shovel, Spencer, Jenny, Long Prairie, and Fall creeks. The proposed scope of work includes feasibility studies, design development, geospatial data acquisition and

analysis, and implementation of nature-based restoration treatments. Targeted restoration work includes approximately 64 acres of floodplain restoration, access to approximately 16 miles of habitat for fish passage, approximately 20 acres of side channel enhancements, and approximately 20 acres of new instream habitat features. Restoration implementation is focused on fish passage improvements, floodplain reconnection, side channel enhancements, and creation of new instream habitat features. This is a design-build project that includes meaningful engagement with a variety of project partners from design development to construction and project implementation monitoring. Therefore, partner recommendations, particularly from local tribes where work is proposed, will be carefully considered throughout the design process and will influence how the initial recommended K3RP actions will be translated into a final set of proposed treatments. Additionally, the project is intended to be responsive to on the ground conditions and emerging needs and opportunities.

Task List:

- 5. Project Management and Coordination
 - a. Tribally Lead
- 6. Project Planning, Design, and Analysis
- 7. Environmental Compliance/Permitting
- 8. Construction Operations

Project Schedule:

Task	Start	End
Project Management and Coordination	9/30/2024	9/30/2026
Project Planning, Design and Analysis Phase	10/15/2024	2/15/2026
Environmental Compliance/Permitting Phase	1/15/2025	4/15/2026
Construction/Implementation Operations Phase	4/15/2026	9/30/2026

Estimated Budget:

Budget is scalable.

- **Total Budget = \$20,000,000.00**
 - Project Management and Coordination: 2.5 million
 - Project Planning Design and Analysis: 3 million
 - Environmental Compliance/Permitting: 1.5 million
 - Construction Operations: 13 million

Additional Information:

This project will complement other restoration efforts throughout the Klamath Basin that altogether will increase the resilience of the anadromous fisheries and the coastal and inland communities that rely on them. The proposed project also includes meaningful collaboration with and capacity support for several partner tribes. Funding for this proposal would allow tribal partners to: 1) participate as a member of the Inter-Tribal Planning and Advisory Committee that provides oversight, direction, and review of technical/planning documents; 2) develop tribal capacity and workforce development and 3) provide other technical support services. This tribal collaboration paradigm will facilitate the integration of Indigenous Knowledge and Traditional Ecological Knowledge into the proposed restoration designs and implementation.

Project Title:

Klamath River – Post Dam Removal Baseline Survey and Updated Hydraulic Model

Project Proponent and Collaborators:

Yurok Tribe in partnership other basin partners and the Bureau of Reclamation Denver Technical Services Center

Project Type:

Data Collection and Analysis.

Task Summary:

Overview/Background

The Yurok Tribe in partnership with various federal agencies and basin partners, developed a Digital Terrain Model (DTM) and associated numerical hydraulic model of the Klamath River from Iron Gate Dam to the Pacific Ocean. The hydraulic model was built using Reclamation’s SRH-2D (Sedimentation and River Hydraulics, 2-dimensional) model framework. The DTM was developed in 2018 from topographic surveys of the rivers bathymetry and terrestrial topography using high resolution LiDAR technology and multi-beam sonar data. The integration of the terrestrial and hydraulic models has allowed river practitioners to predict the hydraulics (water depth, velocity, etc.) and document the pre-dam removal condition of the river. With evolving conditions on the Klamath River due to dam removal, there is a need to have a new updated DTM and hydraulic model to evaluate and document sediment transport, geomorphic evolution, and change in habitat conditions. These new conditions on the Klamath have created a need for this model to be updated. There are a number of ways that the model could be updated, but the most important is a revised DTM surface based on Post-Dam removal conditions.

Task List:

- 9. Project Management and Coordination
- 10. Data Collection Phase
- 11. Data Processing Phase
- 12. Hydraulic Model Development Phase

Project Schedule:

Task	Start	End
Project Management and Coordination	9/30/2024	9/30/2026
Data Collection Phase	10/15/2024	7/15/2025
Data Processing Phase	7/15/2025	2/15/2026

Hydraulic Model Development Phase	2/15/2026	9/30/2026
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Estimated Budget:

Budget is scalable.

- **Total Budget = \$2,200,000.00**
 - Project Management and Coordination: \$400,000
 - Data Collection Phase: \$850,000
 - Data Processing Phase: \$650,000
 - Construction Operations: \$300,000

Additional Information:

Additional model enhancements include extending the model upstream to Keno Dam after dam through the restoration reach after removal is complete, developing new versions of the model based on new topographic survey, including side channels and major tributary junctions in the model, developing a better understanding of basin hydrology and how river discharge changes in the downstream direction, adding additional tributaries to the model, and collecting additional calibration and validation data. These enhancements could enable novel applications of the model results to include new habitat metrics such as water temperature and food availability in addition to the typical hydraulic variables. Each of the model enhancements described above requires similar and overlapping sets of tasks and data. Broadly speaking, these include: 1) Creating a DTM surface that represents the elevations of the river channel and surrounding areas subject to inundation, such as floodplains; 2) Developing flow scenarios that describe how the mainstem river flow changes both spatially (as tributaries contribute water to the mainstem) and temporally (seasonally and inter-annually); and 3) Calibrating and validating the model with hydraulic observations collected at a range of flows over large portions of the river. We propose to collect these data necessary to enhance the Klamath River hydraulic model for better informed management needs throughout the basin.

Project Title:**McKinney Post-Fire Upslope Fish Habitat Restoration**Project Proponent and Collaborators:

Yurok Tribe in partnership with Karuk Tribe, Mid-Klamath Watershed Council, Watershed Research and Training Center

Project Type:

Planning, Design, and Implementation (Design-Build). This project is fully scalable.

Task Summary:

Overview/Background

We propose a collaborative post-McKinney wildfire emergency response strategy and restoration implementation through a partnership between the Yurok Tribe, Karuk Tribe, Mid-Klamath Watershed Council (MKWK), and Watershed Research and Training Center (WRTC) team. We have prioritized areas of fisheries restoration using high-resolution aerial imagery and digital terrain models, along with ground truthing and field assessments. Collection of high-resolution aerial imagery throughout the McKinney Fire footprint was performed while the McKinney Fire was still active by the Yurok Tribe over a three-day period between August 19th to the 21st 2022 using a fixed-wing manned aircraft system. Total area of collection was over 90,000 acres resulting in a data collection of approximately 9,000 images using a 4-band aerial imagery system consisting of normal RGB and Near InfraRed (NIR) photos. Initial data processing into georeferenced models, 3D Point Clouds, and ortho imagery was used to help develop prioritization and site maps. The US Forest Service Burned Area Emergency Response (BAER) program estimates that about 57 miles of Coho Critical Habitat and 76 miles of fish habitat were affected by the McKinney Fire, including habitat in the mainstem Klamath River and tributaries. Klamath River tributaries most affected by the McKinney Fire occur on the south side of CA State Highway 96. McKinney Creek is second largest drainage area (67 km²) of those burned tributaries and contains areas of important Coho Salmon habitat. About 23% of McKinney Creek's perennial streams have Intrinsic Potential habitat for Coho Salmon, which largely includes low gradient, unconfined valley settings. McKinney Creek watershed experienced high soil burn severity (SBS) from the McKinney Fire in its headwaters that resulted in large sediment inputs from an extreme rain event on August 3, 2022. The high fisheries values associated with McKinney Creek combined with areas of high SBS and high risk for erosion and flooding make this watershed a top priority for instream fish habitat restoration in upslope tributaries. We propose to design, permit, implement, and monitor upslope fish habitat restoration in select reaches of the McKinney Creek watershed area. Tasks for this project include: Landowner Outreach and Agency Communication; Rapid On-site Field Assessment and Design Development; Implementation Progress Monitoring; Heavy Equipment Restoration Operations;

Low-Tech Restoration Operations (tree felling and installation of BDAs or PALS); Revegetation and Stabilization; and Monitoring and Maintenance.

Task List:

- 13. Project Management and Coordination
 - a. Tribally Lead
- 14. Project Planning, Design, and Analysis
- 15. Environmental Compliance/Permitting
- 16. Construction Operations

Project Schedule:

Task	Start	End
Project Management and Coordination	9/30/2024	9/30/2026
Project Planning, Design and Analysis Phase	10/15/2024	2/15/2026
Environmental Compliance/Permitting Phase	1/15/2025	4/15/2026
Construction/Implementation Operations Phase	4/15/2026	9/30/2026

Estimated Budget:

Budget is scalable.

- **Total Budget = \$1,500,000.00**
 - Project Management and Coordination: \$200,000
 - Project Planning Design and Analysis: \$400,000
 - Environmental Compliance/Permitting: \$150,000
 - Construction Operations: \$750,000

Project Title:**Yurok Tribe Ancestral Lands Forestry Inventory Project**Project Proponent and Collaborators:

Yurok Tribe in partnership with USFS, Northwest Management Inc., and other partners

Project Type:

Data Collection and Analysis

Task Summary:

Overview/Background

The Yurok Reservation Forest Inventory Project proposes to utilize LiDAR data, collected by Condor Aviation, to complete a landscape-scale resources assessment (including road layers, streams, riparian management zones, wildlife habitat (thermal cover), and fire risk mapping) and a tree-level forest inventory census encompassing the entire Yurok Reservation in an effort to identify locations where environmental conditions can be improved and habitat restoration can be pursued to protect waterfowl, native fish and wildlife species on the Yurok Reservation. We propose to partner with Northwest Management, Inc. (NMI), a natural resource management organization specializing in all aspects of natural resource management and creation of Lidar-based products. The inventory would support priorities identified in the science-based restoration strategy of the Yurok Traditional Land Management Plan, Blue Creek Management Plan, or other similar over-arching planning documents for the Yurok Reservation. Through confirmation of location and disposition of natural resources on the landscape ascertained in the inventory, the Yurok Tribe will be positioned to formulate a comprehensive forest management plan for the Yurok Reservation that will manage resources to reduce wildfire risk; improve fish and wildlife habitats; maintain or improve water quality; mitigate invasive plants, insects, and disease; and measure the ecological and economic benefits of air quality and soil quality productivity. Following Lidar acquisition and processing, NMI will use the data to designate locations for field-validation plots that will then be established and measured by field staff. Following fieldwork, analysis would result in a complete assessment and mapping of natural resources as well as a single-tree forest inventory census of forested areas. Geospatial products available through NMI's process include digital elevation models (DEM), digital surface models (DSM), canopy height models (CHM), roads, streams, riparian areas, canopy cover/density, seral-stage forest mapping, wildlife habitat, fire risk mapping, forest structure, stocking, volume, and species attribution.

Task List:

17. Project Management and Coordination

- 18. Data Collection Phase
- 19. Data Processing Phase
- 20. Field Assessment and Validation Phase

Project Schedule:

Task	Start	End
Project Management and Coordination	9/30/2024	9/30/2026
Data Collection Phase	10/15/2024	7/15/2025
Data Processing Phase	7/15/2025	2/15/2026
Field Assessment and Validation Phase	2/15/2026	9/30/2026

Estimated Budget:

Budget is scalable.

- **Total Budget = \$850,000.00**
 - Project Management and Coordination: \$100,000
 - Data Collection Phase: \$200,000
 - Data Processing Phase: \$200,000
 - Field Assessment and Validation Phase: \$350,000

Project Title:**Weaver Creek Restoration Project**Project Proponent and Collaborators:

Yurok Tribe in partnership with Nor-Rel-Muk Wintu Nation and other basin partners.

Project Type:

Planning, Design, and Implementation (Design-Build). This project is fully scalable.

Task Summary:

Overview/Background

The Weaver Creek Habitat Restoration Implementation Project will create instream habitat and new floodplain areas along a one mile section of Weaver Creek to: significantly increase the amount of instream habitat for coho salmon that are listed as federally and state threatened; improve riparian habitat while controlling the spread of invasive plant species; and ensure a single threaded wet channel during summertime baseflow conditions so that water is likely to remain available instead of going subsurface or evaporating. Weaver Creek is a tributary to the Trinity River in Weaverville, Trinity County, CA that is recognized in the state of California and NMFS recovery plans as having high intrinsic potential for coho salmon habitat and is considered Critical Habitat. The proposed work would result in construction of numerous new habitat features including approximately 5.12 acres of floodplain, 1.23 acres of overflow channel, 0.82 acre of constructed riffle, 0.40 acre of channel fill, and 0.36 acre of low flow channel. Project designs are currently at a 60% design level and are actively being developed by the Yurok Tribe Fisheries Department Design and Technical Services Program team in partnership with representatives of the Nor Rel Muk Wintu Nation, a local tribe. The design process will proceed to 90% by July 2024 with existing funds. This 60 to 90% design level process has been based on direct input and comments from the project team as well as external agency peer review and public presentations during the environmental compliance phase of the project. The purpose of the proposed Weaver Creek Habitat Restoration Implementation project is to complete the design and environmental compliance process for a fish habitat restoration project to address degraded stream conditions.

Task List:

21. Project Management and Coordination
 - a. Tribally Lead
22. Project Planning, Design, and Analysis
23. Environmental Compliance/Permitting
24. Construction Operations

Project Schedule:

Task	Start	End
Project Management and Coordination	9/30/2024	9/30/2026
Project Planning, Design and Analysis Phase	10/15/2024	2/15/2026
Environmental Compliance/Permitting Phase	1/15/2025	4/15/2026
Construction/Implementation Operations Phase	4/15/2026	9/30/2026

Estimated Budget:

Budget is scalable.

- **Total Budget = \$4,642,000.00**
 - Project Management and Coordination: \$250,000
 - Project Planning Design and Analysis: \$750,000
 - Environmental Compliance/Permitting: \$342,000
 - Construction Operations: \$3,300,000

Additional Information:

This proposed project consists of three separate phases:

Phase I includes refinement of the project design. Although the design, currently just past the 60% level, is being actively developed to a 90% level (along with environmental compliance and permitting) under separate funding, this proposal includes a task to allow for final review of the 90% design to account for any changes that may result in the 2024-2025 winter as well as any other unanticipated changes that may arise.

Phase II involves any necessary revisions to the state and federal environmental analysis for the Project based on Phase I final design refinements, along with any associated local community outreach and education efforts as well as obtaining all local, state, and federal environmental permits to facilitate implementation.

Phase III includes construction and implementation monitoring.

The design objective to greatly increase the frequency and areal extent of floodplain inundation is achieved through a combination of terrace lowering and a series of hydraulic controls, constructed riffles, that increase water surface elevations and help promote overbank flooding at discharges that are attained throughout much of the winter wet season. The design also includes a short section of realigned baseflow channel, overflow channels, and a network of floodplain swales.

The Yurok Tribe has engaged landowners and managers of the project area (BLM and the Weaverville Sanitary District), adjacent private landowners, local interest groups (Weaverville Community Forest, Trinity River Watershed Council), and local natural resource management agencies (Trinity County RCD, US Forest Service, Trinity County Planning Department, Trinity County Board of Supervisors).

Project Title:**Ecological Restoration and Stewardship of the Yurok Tribe Blue Creek Sanctuary**Project Proponent and Collaborators:

Yurok Tribe: Yurok Tribe's Fisheries Department, Watershed Restoration & Roads Program, Wildlife Department, Forestry Department, & Environmental Department

Other Partners: Er'-Nerr' Land Fund & Western Rivers Conservancy

Project Type:

The Yurok Tribe's Natural Resources Departments are proposing to conduct vital fisheries and watershed restoration planning, design, and implementation within the Blue Creek Sanctuary and adjacent conservation areas. Blue Creek is a significantly important native fish and wildlife stronghold and a sacred area for the Yurok Tribe. Blue Creek provides over 20 miles of anadromous fish habitat for spawning runs of Chinook and Coho salmon, steelhead, coastal cutthroat trout, and multiple lamprey species. Additionally, the watershed offers critically vital rearing habitat and thermal refuge for anadromous fish from throughout the entire Klamath Basin. The Yurok Tribe recently partnered with Western Rivers Conservancy (WRC) to re-acquire over 14,000 acres of lower Blue Creek to establish a native fish and wildlife sanctuary and help vitalize Yurok culture and ecological stewardship. There is a critical need to address legacy impacts resulting from non-tribal management of these lands for industrial timber operations and to substantially boost ecological function and climate resiliency. The project is part of the Yurok Tribe's on-going management of the Blue Creek Sanctuary and will support the following priority needs: Task 1) Fisheries and Riparian Habitat Restoration; Task 2) Replace Blue Creek Bridge; Task 3) Reduce Road Related Impacts; and Task 4) Enhance Forest Health.

The primary objective of the proposed project is to increase the Yurok Tribe's ability to plan and implement meaningful restoration and stewardship of a vitally important coastal watershed and tribally managed forest and salmon sanctuary. Restoration actions proposed for this project are intended to reinitiate and promote once prevalent beneficial physical and biological processes that facilitate formation and maintenance of productive watershed habitats and improved ecological resilience to climate hazards. The project also intends to develop a new bridge crossing in the Blue Creek Sanctuary to 1) provide immediate and long-term hydraulic, geomorphic, and ecological function improvements; 2) significantly increase the resiliency of this key management travel way to extreme weather events and flooding; and 3) allow comprehensive riverine restoration upstream of the crossing by significantly reducing the threat of structural failure due to racking of fluvial transported wood onto the structure.

Task Summary:

Task 1 Fisheries and Riparian Habitat Restoration: This task will support continued design and implementation of fisheries restoration within the lower ~five miles of Blue Creek.

Implementation will involve **1)** installation of habitat structures to increase habitat complexity and promote physical processes necessary for formation and maintenance of productive habitats and ecological services (e.g. increase surface & ground water & fluvial wood retention and floodplain connectivity, sort/store spawning gravels & riparian soils, provide quality low velocity habitat/thermal refuge); **2)** creation and expansion of off-channel wetlands and secondary channels; **3)** improvement of riparian habitat (invasive species management, native vegetation planting, bioengineering, boosting water tables to support native plants).

Task 2) Replace Blue Creek Bridge

A critical limiting factor to actualizing comprehensive fisheries restoration within the Blue Creek watershed is the existing Blue Creek bridge that is located at ~river mile 2.0. This task will replace the existing bridge with a more ecologically sound and climate resilient structure.

Task 3) Reduce Road Related Impacts

Former non-tribal management of Blue Creek Sanctuary lands has resulted in an extensive and highly impactful active and abandoned road and skid trail network. This task will significantly reduce these impacts through comprehensive treatments and design/construction/stewardship of a more ecologically sound road and trail network for the Blue Creek Sanctuary. The team will refine a Prioritized Blue Creek Sanctuary Road Assessment and Decommissioning Plan and implement a suite of priority actions to reduce existing impacts, increase watershed resiliency, and support safe access to key management areas.

Task 4) Enhance Forest Health

This task will allow for comprehensive forest health planning, design, and implementation within the Sanctuary. There is a critical need to conduct forest thinning, prairie restoration, and rehabilitation of upslope habitats to greatly increase ecological health and resiliency on a watershed scale. This work will also include rehabilitation of mountain streams to increase recharge of the mountain aquifers to promote improved base flow conditions in Blue Creek.

Project Schedule:

Anticipated Schedule	Start Date	End Date
Task 1 Lower Blue Creek Design & Implementation	10/01/24	09/30/26
Design & Regulatory Compliance - Fisheries Restoration	10/01/24	05/31/25
Restoration Implementation		
Lower Blue Creek Restoration - Year 1	07/09/25	10/31/25
Lower Blue Creek Restoration - Year 2	07/09/26	09/30/26
Monitoring/Reporting/Outreach	10/01/23	09/30/26
Task 2. Blue Creek Bridge Replacement	10/01/24	09/30/26
Design & Regulatory Compliance	10/01/24	05/31/26
Bridge Replacement	06/01/26	09/30/26
Task 3. Road Related Impact Reductions	10/01/24	09/30/26
Design & Regulatory Compliance - Road Improvements	10/01/24	05/31/24
Road Upgrades & Deccomissionig, Brush Management	06/01/24	09/30/26
Refine Road Inventory & Deccommissioning Plan	10/01/24	09/30/26
Monitoring/Reporting/Outreach	10/01/23	09/30/26
Task 4. Forest Health Improvements	10/01/24	09/30/26
Design & Regulatory Compliance - Forest Health	10/01/24	05/31/25
Implementation Forest Health - Year 1	07/09/25	10/31/25
Implementation Forest Health - Year 2	07/09/26	09/30/26

Estimated Budget: \$39,380,619

Category	Year 1	Year 2
Personnel	\$1,655,280.00	\$4,965,840.00
Fringe Benefits (31%)	\$513,137.00	\$1,539,411.00
Travel	\$80,442.00	\$80,442.00
Equipment	\$0.00	\$0.00
Supplies	\$1,259,012.00	\$3,147,530.00
Contractual	\$5,335,900.00	\$16,007,700.00
Construction	\$0.00	\$0.00
Total Direct Charges	\$8,843,771.00	\$25,740,923.00
Indirect Rate (NICRA 36.22%)	\$1,270,551.00	\$3,525,374.00
TOTAL	\$10,114,322.00	\$29,266,297.00