

COASTAL CONSERVANCY

Staff Recommendation
March 14, 2019

INDIAN VALLEY CREEK AND MEADOW RESTORATION: DESIGN

Project No. 18-049-01
Project Manager: Michael Bowen

RECOMMENDED ACTION: Authorization to disburse up to \$54,716 to the Watershed Research and Training Center for the preparation of designs, permit applications, and environmental analyses of a creek and meadow restoration project on Indian Valley Creek, a tributary to the South Fork Trinity River, in Trinity County.

LOCATION: Indian Valley, South Fork Trinity River watershed near Hyampom, Trinity County. (Exhibit 1)

PROGRAM CATEGORY: Resource Enhancement

EXHIBITS

Exhibit 1: [Project Map and Graphics](#)

Exhibit 2: [Support Letter](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31251 through 31270 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of up to fifty-four thousand seven hundred and sixteen dollars (\$54,716) to the Watershed Research and Training Center (“Center”) to prepare designs, permit applications, and environmental analyses for a creek and meadow restoration project on Indian Valley Creek, subject to the condition that prior to the disbursement of Conservancy funds, the Center shall submit for review and approval by the Executive Officer of the Conservancy a work program, including a schedule and budget, and the names and qualifications of all contractors to be retained.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with the current Project Selection Criteria and Guidelines.

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2. The proposed authorization is consistent with the purposes and objectives of Chapter 6 of Division 21 of the Public Resources Code, regarding resource enhancement.
3. The Watershed Research and Training Center is a nonprofit organization organized under section 501(c)(3) of the Internal Revenue Service, and its purposes are consistent with Division 21 of the Public Resources Code.”

PROJECT SUMMARY:

Staff recommends the Conservancy authorize the disbursement of up to \$54,716 to the Watershed Research and Training (“Center”) for the preparation of designs, permit applications, and environmental analyses for the Indian Valley Creek and Meadow Restoration Project in Trinity County (see Exhibit 1 for project location). This authorization will enable the Center to design and prepare for implementation an innovative habitat and water quality improvement project at a site in the Trinity River watershed that has eroded and degraded steadily for decades. The project will reverse the downcutting and erosion of Indian Valley Creek and enable better groundwater recharge of the aquifer. This recharge will result in the input of cooler water to downstream areas utilized by salmon for spawning and rearing. The Trinity River plays an important role as a clean, cold-water refuge within the Klamath River system. This role will become increasingly important for salmonids in light of anticipated climate change and warming water temperatures. In addition, four Klamath River dams may be removed in the next five years, making the Trinity River a critical refuge for resident salmonid populations.

Like many rivers, the Trinity suffers from a repeated pattern of resource extraction beginning with gravel mining, shifting to grazing and logging, and now culminating in a high water-dependent cannabis industry. Yet the Trinity River remains a highly important producer of salmon and steelhead.

The groundwater recharge and resulting metered discharge of cold water through the year anticipated from the project will provide substantial benefit to aquatic life in this portion of the Trinity River watershed. By restoring original creek and valley elevations through a variety of techniques, the project will improve the natural water storage capacity of the Indian Valley Creek and meadows (aquifer) thus improving streamflow and cold water refugia in the immediate area and far downstream of the project area. The project goals are to improve water sustainability and climate change resiliency by recharging groundwater resources, increasing groundwater storage capacity, and improving water quality by decreasing instream temperatures, increasing instream habitat capacity, and lowering turbidity from decreased sediment loads. All of these results are beneficial for a variety of aquatic and terrestrial species, particularly Pacific salmon that within this watershed still retain important sport, commercial and tribal sustenance value. Once implemented, the project improvements will be assessed and quantified by the Center.

The Center will design a project that uses a combination of restoration techniques including; beaver dam analog installations intended to mimic the hydraulic performance of actual beaver ponds, “stage zero” incision fill to raise the channel elevation to just below surrounding meadow elevation, and/or large wood jam installation into the channel. These methods have proven effective for restoring wet meadows with benefits for salmonids. Using heavy machinery, the incised stream channel will be filled with gravelly-loam soil substrate using native soil resources

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surrounding the project area. This approach is sometimes referred to as a “stage zero” restoration approach because it attempts to return a restoration site to its historic topography and configuration. Filling the incised channel will result in decreased stream flow velocities and lateral movement of water from the stream channel to the floodplain, thereby encouraging water to be stored throughout the surrounding loamy soil substrate over longer periods and discouraging water from rapidly running off downstream. Post-project effects on physical, hydrologic, and biological conditions will be measured, compared to pre-project measurements, and analyzed.

The proposed authorization is to fund preparation of all necessary site characterization and monitoring work, integration of that data into a hydrologic model, preparation of designs and verification of design ideas through modeling, preparation of permit applications, and assisting the Forest Service with preparing environmental analyses for NEPA and CEQA compliance. In addition to work performed under this grant, the Forest Service and Center intend to assess roads and road crossings within and near the project area to upgrade and/or decommission/reroute roads if necessary and feasible in order to remove incision points that contribute to further erosion and improve hydrologic flow and function within the proposed project area.

Qualifications of the Grantee:

The Center is qualified to advance this restoration design effort. Informed by in-house geospatial services, monitoring, a strong partnership network, and extensive knowledge of the land, the Center has created numerous planning documents that have guided implementation and restoration priorities and helped to inform long-range, landscape-scale planning and adaptive management throughout Trinity County. This includes the development of Trinity County’s Climate Adaptation Plan. The Center was founded in 1993 to re-train loggers and mill workers in ecosystem management and restoration following the closure of the Hayfork mill. Their efforts include job training, fire management, ecosystem restoration projects. The Center is qualified and competent to conduct this work.

Site Description:

The project is located on Indian Valley Creek, a tributary to the South Fork Trinity River in Trinity County, California, which is tributary to the Klamath River. The land is owned and managed by the United States Department of Agriculture Forest Service (USFS). It was previously managed for cattle grazing but is currently managed for multiple uses (i.e., wood, water, recreation, wildlife and fisheries). The site is located off US Forest Service Road 02N10, which can be accessed most easily from Tule Creek Road in Hayfork, CA.

The Indian Valley Creek is made up of a montane-meadow ecosystem, with native grasses, rushes (*Juncus* spp.), sedges (*Carex* spp.), herbaceous plants, and willows (*Salix* spp.). Portions of the creek and riparian zone are currently invaded with a non-native hawthorne shrub/tree species whose population grows denser in downstream areas of the restoration site. Other deciduous tree species including cottonwood, alder and flowering dogwood are present but limited and scattered. The upland area surrounding the creek is comprised of a ponderosa-pine dominated forest. Indian Valley Creek also supports populations of resident rainbow trout and possibly even some native steelhead trout. The meadow and creek contribute drainage and sediment inputs to downstream anadromous fish habitat for steelhead trout, coho salmon, spring- and fall-run Chinook salmon, and Pacific lamprey (*Entosphenus tridentatus*).

Project History:

Indian Valley has historic and continuing livestock use which has affected the river’s water quality. Timber harvesting has also adversely effected river water quality. Concentrated flows from roads as well as undersized pipes at stream crossings have increased disturbance levels and increased surface flows and runoff rates. The ecological function of meadows requires shallow, braided channel morphology with low stream power so that the sponge-like soil can support native vegetation and remain wet via storage of groundwater over large spaces and long periods (Henery et al. 2011). The current condition of the project site on Indian Valley Creek is an incised channel disconnected from its historic floodplain and surrounding meadow system. A USFS report from the 1970s states: “Extensive bank erosion has widened the stream gully from 20-30 feet before 1945 to a present maximum width of 180 feet cutting into an existing meadow. The meadow, which apparently was once perpetually green, is drying up. The gradual disappearance of year-round springs indicates general subsidence of the ground water table.” While the stream has incised to bedrock in many locations it is now evolving to widening and extensive lateral bank erosion is the current expression of the problem. Headcuts (abrupt, stepped banks in the channel profile) are also migrating upstream along numerous tributaries of the valley which will become a major problem for road infrastructure in future years. The design project proposes to solve this problem and improve existing fish passage.

The Conservancy has invested heavily in both the design and implementation of fish passage and water quality improvement projects throughout California, and particularly on the North Coast. Prior grants to the Five Counties Program, also in Trinity County, have resulted in the reopening of more than 100 miles of high-quality salmon and steelhead habitat formerly blocked by poorly constructed road-stream crossings. This, in turn, has resulted in numerous observations of salmon in previously inaccessible areas such as Ryan Creek (Eel River) and Lindsay Creek (Mad River).

PROJECT FINANCING

Coastal Conservancy	\$54,716
U.S. Forest Service	\$40,000
U.S. Bureau of Reclamation	\$10,000
Project Total	\$104,716

The expected source of Conservancy funds for this project is an appropriation to the Conservancy from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (“Proposition 1”, Water Code § 79700 et seq.). Funds appropriated to the Conservancy derive from Chapter 6 of Proposition 1 and may be used “for multi-benefit water quality, water supply, and watershed protection and restoration projects for the watersheds of the state” (§ 79731). Section 79732 identifies specific purposes of Chapter 6 and includes: protect and restore aquatic, wetland and migratory bird ecosystems, including fish and wildlife corridors; protect and restore coastal watersheds, including, bays, marine estuaries, and nearshore ecosystems; and assist in the

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recovery of endangered, threatened or migratory species by improving watershed health, instream flows, fish passage and coastal or inland wetland restoration.

The project is the first step to achieve the above-identified Chapter 6 purposes and could provide multiple benefits. By restoring the historic channel, the restoration project, when implemented, will help elevate the groundwater table, reduce erosion, decrease stream temperatures, increase groundwater storage and stop the continued erosion and deterioration of this mountain meadow. The groundwater recharge and resulting metered discharge of cold water through the year anticipated from the project will provide substantial biological benefit to aquatic life in this portion of the Trinity River watershed.

The proposed project was submitted to the Coastal Conservancy via the 2015 Spring Proposition 1 solicitation. The project received a favorable review and was recommended for possible funding. The project meets each of the evaluation criteria in the Prop 1 Guidelines as described in detail in this “Project Financing” section, the “Project Summary” section and in the “Consistency with Conservancy’s Project Selection Criteria & Guidelines” section of this report.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The proposed authorization is consistent with Chapter 6 of Division 21 of the Public Resources Code, commencing with Section 31251, as follows:

Pursuant to Section 31251, the Conservancy may award grants to local public agencies and nonprofit organizations for the purpose of enhancement of coastal resources which, because of human-induced events, or incompatible land uses, have suffered loss of natural and scenic values. Consistent with this section, the proposed authorization provides funds to the Center to design a project that will enhance coastal fishery resources disturbed by incompatible land uses, such as inappropriate culvert installation or legacy erosion events resulting from historic timber and grazing operations.

Pursuant to Section 31251.2(a), “In order to enhance the natural or scenic character of coastal resources within the coastal zone, the Conservancy may undertake a project or award a grant . . . to enhance a watershed resource that is partly outside of the coastal zone. . . .”. The will fund habitat enhancement in Trinity County well outside the coastal zone. The request for this project was made in part by the District Ranger of the U.S. Forest Service, the public agency nearest to the project area and with sole jurisdiction over the federal land on which the project is located. This assistance was sought to implement a priority project intended to enhance and benefit salmon populations known to travel many miles upstream of the coastal zone to fulfill their life history patterns. Indeed, salmon depend on unimpeded access to high-quality habitat both within and outside of the coastal zone in order to survive. If salmon and other highly prized aquatic resources are to be maintained and restored to historic levels, projects to improve salmon habitat must be undertaken both within and outside the coastal zone.

Pursuant to Section 31253, “[t]he Conservancy may provide up to the total of the cost of any coastal resource enhancement project.” Consistent with this section, staff has proposed the funding amount in light of the fiscal resources of the applicant, the urgency of the matter, and the application of other factors relevant to project eligibility, as detailed in the “Consistency with Conservancy’s Project Selection Criteria & Guidelines” section, below.

CONSISTENCY WITH CONSERVANCY'S 2018 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 6, Objective A** of the Conservancy's 2018-2022 Strategic Plan, the proposed authorization will support the development of a plan to restore an important anadromous fish-bearing watershed.

Consistent with **Goal 8, Objective B** of the Conservancy's 2018-2022 Strategic Plan, the proposed authorization will help plan and design one climate adaptation project that will increase resilience to climate change impacts by 1) restoring a higher groundwater table and 2) allowing the surrounding landscape to capture and store groundwater. This specific project will also amplify the Center's earlier completed Climate Adaptation Plan for Trinity County. The groundwater recharge and resulting metered discharge of cold water through the year anticipated from the project will provide substantial biological benefit to aquatic life in this portion of the Trinity River watershed, consistent with the Center's climate change adaptation planning efforts. This planning will benefit both residents of the North Coast, as well as the aquatic species increasingly dependent upon cold water refugia in an increasingly unpredictable climate.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed authorization is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on September 29, 2016, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Promotion and implementation of state plans and policies:** The proposed project is consistent with the following state plans and policies concerning restoration of riparian habitat and increasing natural production of the coastal salmon populations that depend upon that habitat for certain life history stages.
 - a. The proposed project is consistent with the themes for habitat restoration identified in the *Steelhead Restoration and Management Plan for California*. Specifically, that plan advises that "(h)abitat improvement projects should be focused on the many areas throughout the State where steelhead habitat is severely degraded and restoration work is sorely needed" (p. 74). Providing improved streamflow and cooler water temperatures to support the growth and survival of juvenile salmonids is one of the highest priority habitat improvement actions known.
 - b. More recently, and more specifically, the proposed project is consistent with the California Fish and Wildlife issued *Recovery Strategy For California Coho Salmon* in that the Hyampon hydrologic unit, which historically supported Coho and chinook salmon (spring and fall run) suffers from "sediment load, unstable stream banks, low flows...and lack of high-quality rearing habitat, and a

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substantial change in channel morphology.” (6.16). The report recommends “continued implementation of habitat restoration, including measures to stabilize upslope areas, enhance riparian zones....” (TR-HY-04, 9.48).

- c. The federal National Marine Fisheries Service 2014, *Final Recovery Plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (Oncorhynchus kisutch)* describes the SFRT population of Coho as being at high risk of extinction due to “altered hydrologic function and impaired water quality” as key stresses to aquatic species. The South Fork Trinity River (SFTR) basin, located within the coastal Klamath River Basin, is also an area identified in that plan as having a high to medium intrinsic potential for Coho salmon. The plan specifically calls for improving water quality as a high priority (pg. 40-1, SONCC-LTR.5.1.36)
 - d. Finally, the project is consistent with the California Water Action Plan, a collaborative effort of the California Natural Resources Agency, the California Environmental Protection Agency, and the California Department of Food and Agriculture. This plan was developed to meet three broad objectives: more reliable water supplies, the restoration of species and habitat, and a more resilient, sustainably managed water resources system. It lays out the state’s challenges, goals and actions needed to put California’s water resources on a safer, more sustainable path. The plan identifies ten overarching strategies to protect our resources, include two particular to this project that the Conservancy can help implement: 4) *Protect and restore important ecosystems (restore coastal watersheds and strategic coastal estuaries to restore ecological health and nature system connectivity to benefit local water systems and help defend against sea level rise, eliminate barriers to fish migration);* and 7) *Increase flood protection (encourage flood projects that plan for climate change and achieve multiple benefits)*. By designing a project that increases groundwater recharge and restored hydrologic function, the project is consistent with this report.
3. **Consistency with purposes of the funding source:** See the “Project Financing” section above.
 4. **Support of the public:** The proposed project enjoys the support of the U.S. Forest Service, landowner and land-manager for the project area (See Exhibit 2).
 5. **Location:** The project site is outside the coastal zone, but improvement of the groundwater resources there and resulting increases in instream flows will benefit numerous coastal resources by providing coastal salmon populations with access to suitably cold and clean water year-round within the South Fork Trinity watershed.
 6. **Need:** Without this grant funding, the Center could not proceed with the project.
 7. **Greater-than-local interest:** The project helps fulfill the objectives of state and federal species recovery plans, and is therefore of greater-than-local interest.
 8. **Sea level rise vulnerability:** Located well outside the coastal zone, the proposed project suffers no vulnerability from sea level rise.

9. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
10. **Consistency with purposes of the funding source:** See the "Project Financing" section above.

Additional Criteria

11. **Urgency:** Last year the Karuk Tribe and Salmon River Restoration Center petitioned the National Marine Fisheries Service to list the Upper Klamath-Trinity River chinook as threatened or endangered. NOAA is going through a yearlong process to evaluate whether to list the species or create a new Evolutionarily Significant Unit to describe spring chinook. Salmon populations in the SFTR are imperiled and warrant rapid attention.
12. **Resolution of more than one issue:** The proposed remediation of a longstanding meadow degradation problem will be completed in a manner that improves conditions at the site while also improving downstream water quality.
13. **Leverage:** See the "Project Financing" section above.
14. **Conflict resolution:** The evolution of historic land use in the project area demonstrates the constructive trajectory that the USFS has used to achieve gradual improvement of the landscape. In working with the community to establish a career path for watershed restoration efforts, the Center provides a stable alternative to extractive resources in the region.
15. **Readiness:** The Center retains its ability and desire to commence and complete the project timely.
16. **Realization of prior Conservancy goals:** "See "Project History" above."
17. **Cooperation:** The proposed project includes the cooperation of USFS, the U.S. Bureau of Reclamation, the County of Trinity and the Conservancy.
18. **Vulnerability from climate change impacts other than sea level rise:** The project site has been selected as a priority in part due to its ability to improve conditions within the basin for Pacific salmon populations in an era of climate change. Indian Valley Creek with its currently poor, but potentially cool perennial flow, would offer refuge from hot and dry conditions downstream, thereby enabling juvenile salmonids to relocate to a higher altitude and more hospitable conditions within the watershed as conditions change. Moreover, the restored channel and floodplain will be better able to transport large storm flows and debris torrents that will likely occur periodically due to increased forest fire occurrence and resulting erosion.
19. **Minimization of greenhouse gas emissions:** The proposed project involves final design, and thus is not expected to generate any significant greenhouse gas emissions. During the later project construction phase, it is expected there will be some minor greenhouse gas emissions. The applicant is committed to ensuring that the contractors will employ best management practices (e.g. low idling rates) during project construction to minimize greenhouse gas emissions.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The proposed project is located in the Klamath-Trinity watershed. The species it benefits are primarily located in the Klamath-Trinity River system and estuary. Both the beneficiary species and the waters they depend upon are identified in the LCPs for Del Norte and Humboldt County. The project is consistent with the applicable LCPs as follows:

Del Norte County

The authorization is consistent with the relevant portions of the Del Norte County Local Coastal Program (LCP), which was certified by the Coastal Commission on October 12, 1983. It is due to the diversity in life history patterns of anadromous fish species that the Del Norte LCP acknowledges the importance of coastal streams and riparian vegetation systems as Sensitive Coastal Habitat, necessary to both the aquatic life and the quality of water courses. Under the LCP, Chapter VI, the following provisions are made:

“The County shall maintain all existing species of fish, wildlife, and vegetation for their economic, intrinsic and ecological values as well as providing adequate protection of rare and endangered species.” (App., p. 55)

“The County should establish riparian corridors along local streams, creeks, and sloughs to maintain their aesthetic appeal, wildlife habitat, control of erosion. . . .” (App., p. 56)

“The County encourages programs (e.g., fish hatcheries, habitat rehabilitation) designed to improve the quality of coastal fisheries and other marine resources.” (App., p. 57)

“All surface and subsurface waters shall be maintained at the highest level of quality to insure the safety of public health and the biological productivity of coastal waters.” (App., p. 58)

This recommendation’s goal of improving anadromous fish habitat by improving water quality within historic habitat, thereby maintaining and enhancing the aquatic resources of the county, is consistent with the LCP.

Humboldt County

The authorization is consistent with the relevant portions of the Humboldt Bay Local Coastal Program (LCP), which was certified by the Coastal Commission on October 14, 1982, and which states:

“The biological productivity and the quality of coastal waters, (and) streams . . . appropriate to maintain optimum populations of marine organisms . . . shall be maintained, and, where feasible, restored....” (LCP, 3-55)

“New development within stream channels shall be permitted when there is no less environmentally damaging feasible alternative, where the best feasible mitigation measures have been provided to minimize environmental effects and shall be limited to . . . wetlands, fishery, and wildlife enhancement and restoration projects. . . .” (LCP, 3-56)

The proposed authorization will design a project intended to re-create riparian habitat where it has been lost; restore the natural meander and instream habitat of the project area; improve sediment flushing by restoring natural geomorphologic processes; improve water quality and quantity in a mountain meadow, and; open up previously unavailable habitat; therefore the proposed authorization is consistent with the LCP policies stated above.

COMPLIANCE WITH CEQA:

The authorization will enable the Center to conduct data gathering, planning, constraints and impacts analyses and early design and planning work necessary for the advancement of the environmental review process under the California Environmental Quality Act (CEQA) and is thus statutorily exempt from the provisions of CEQA pursuant to the CEQA Guidelines at California Code of Regulations title 14, section 15262. Section 15262 exempts feasibility and planning studies evaluating future actions that have not yet been approved or funded.

The authorization is also categorically exempt under the Guidelines at Section 15306, which provides that basic data collection, research, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource are categorically exempt from CEQA. The research activities associated with the project will not disturb environmental resources along or in the creek.

Staff will file a Notice of Exemption upon approval.