

COASTAL CONSERVANCY

Staff Recommendation
September 29, 2016

INDIAN CREEK HABITAT CONNECTIVITY AND RESTORATION PROJECT

Project No. 16-038-01
Project Manager: Peter Jarausch

RECOMMENDED ACTION: Authorization to disburse up to \$187,000 to the Yurok Tribe to implement the Indian Creek Habitat Connectivity and Restoration Project which will restore the connectivity for Coho and Chinook salmon between the upper and lower reaches of Indian Creek, a tributary to the Trinity River in Trinity County.

LOCATION: Indian Creek, Trinity County

PROGRAM CATEGORY: Resource Enhancement

EXHIBITS

- Exhibit 1: [Project Location](#)
Exhibit 2: [Project Letters](#)
Exhibit 3: [Project Maps and Graphics](#)
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RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31251 et seq. of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of up to one hundred eighty seven thousand dollars (\$187,000) to the Yurok Tribe to prepare final designs and implement the Indian Creek Habitat Connectivity and Restoration Project to restore salmonid habitat in Indian Creek, a tributary to the Trinity River, subject to the following conditions:

1. Prior to the disbursement of funds, the Council shall submit for review and approval by the Executive Officer of the Conservancy:
 - a. A work program including a schedule and budget for the project.
 - b. All contractors to be retained for the project.
 - c. Documentation that all funding required for the project has been secured.
2. Prior to the commencement of construction of the project the Yurok Tribe shall submit for review and approval by the Executive Officer:

- a. Evidence that all necessary permits and approvals have been obtained.
- b. Landowner agreements allowing for construction, monitoring and maintenance of the project.

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 Chapter 6 of Division 21 of the Public Resources Code, regarding Coastal Resource Enhancement Projects.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.”

PROJECT SUMMARY:

Staff recommends the Conservancy authorize the disbursement of up to \$187,000 to the Yurok Tribe to prepare final plans, engineering designs and permit applications, and implement the Indian Creek Habitat Connectivity and Restoration Project in Trinity County. This authorization will enable the Yurok Tribe to restore a section of Indian Creek, an important salmonid tributary to the Trinity River, which in turn is a tributary to the Klamath River. The proposed project is innovative because it will address a barrier to fish passage by restoring low flow connectivity through raising the groundwater level in a 1.5-mile-long stretch of the creek. Improving fish passage at this location will benefit salmonids by both improving both adult spawning habitat and juvenile rearing conditions. In addition to improving conditions on the 1.5-mile stretch, the project will open up access to 10 miles of good quality habitat above the barrier.

The project contains four major components. First the Yurok Tribe will prepare final designs and obtain permits for the project. The planning will build off of a BLM restoration plan completed in 1996 and more recent investigations conducted by Phillip Williams and Associates (PWA). In 2010 PWA produced a detailed analysis of the existing and historic conditions (1944-2009) of the stream channel and associated vegetation (see Exhibit 3: Project Maps and Graphics). Second, the construction phase will contain four elements: construction of groundwater retention structures to help force water towards the surface; construction of sediment retention structures to capture and deposit fine sediments in the riparian and floodplain corridor; installation of large wood and hydraulic structures to maintain pools and reduce the water temperature; and riparian plantings. Third, monitoring will be conducted before and after the project to evaluate its effectiveness. And, finally the fourth component is a partnership between the Tribe and the Watershed Research and Training Center (WRTC) to involve the community directly in project design and construction, which will help educate the community about the importance of improving conditions for salmonids. The outreach efforts will build on WRTC’s ongoing program which brings school age students into the field to learn about watershed restoration.

The alterations to Indian Creek will work together to make this stretch suitable for adult and juvenile salmon, which need increases in flows and decreases in water temperature to survive and thrive. The installation of large wood structures will help establish deep pools, while new riparian plantings will, over time, provide shade for those pools and the stream itself. This both

decreases the water temperature and provides places for fish to hide. The most innovative part of the project is its approach to raising the groundwater table through the construction of ground water retention dams and structures that will mimic beaver dams. The ground water retention dams are constructed of low permeable natural material in the valley floor perpendicular to the stream. This will slow the water flow and push it towards the surface. Small retention ponds, intended to mimic beaver dams will be constructed off channel, of natural materials, to capture water during higher flows. This captured water will then slowly drain into the ground near the streambed and increase the groundwater elevation sufficiently that there is flow in the stream during the summer and fall. Adult salmonids benefit by being able to travel through this stretch of Indian Creek and access other parts of the watershed for spawning while juveniles are able to seek out areas of the watershed with sufficient cover, food, and the correct water temperature.

Long term monitoring of the area will be conducted by the Yurok Tribe Fisheries Department in partnership with the Watershed Research and Training Center staff. Together they will conduct pre- and post-construction physical and biological on-site monitoring. This will include snorkel surveys during critical migration periods, water quality monitoring and topographic surveys.

The Yurok Tribe Fisheries Department is well suited to implement this project, as it has a long track record of successfully completing projects in the Klamath Basin with funding from the Environmental Protection Agency, NOAA, and the California Department of Fish and Wildlife. The Tribe has spearheaded numerous projects both in the Klamath Watershed and near the Klamath River Estuary which included the removal of fish passage barriers, habitat restoration to benefit both spawning and off channel rearing, and systematic planning for how to improve the conditions for salmonids throughout the entire estuary.

Site Description: Indian Creek has an approximately 34 square mile watershed and enters the Trinity River just east of the community of Douglas City in Trinity County at river mile 95 (See Exhibit 1). The nearest larger community, Weaverville, is about eight miles to the west. This is also the upper portion of the Trinity River about 15 miles below Lewiston Dam. The Trinity River is part of the larger Klamath Basin and flows into the Klamath River below the community of Hoopa, in Humboldt County.

Indian Creek provides approximately 10 miles of anadromous headwater habitat critical to the development of several life stages of the three native salmonid species found in the Trinity River watershed, Chinook Salmon, endangered Southern Oregon/ Northern California Coho Salmon, and Steelhead. The Trinity River is the most popular sport fishery for steelhead in the state. It also supports two Tribal subsistence fisheries, the only commercial in-river fishery for Chinook Salmon in the state, as well as the commercial Chinook salmon ocean fisheries of the North Coast.

The project stream reach itself is located in a relatively wide alluvial valley bottom much of which is occupied by sparsely vegetated floodplain and higher terraces composed of coarse gravel, cobble, and boulders. The reach is highly disturbed by past land use practices and has undergone significant aggradation in the last century, presumably in response to natural resources extraction activities in the watershed.

The lower portion of the project area is on property owned by the Bureau of Land Management and the upper portion of the project area is on private property. The two private landowners that

have property on Indian Creek have given permission to move forward with the project. Both are long term landowners who have been supportive of previous restoration work on Indian Creek.

Project History:

With the discovery of gold in 1850, and the panning, sluicing, and dredging that followed, large areas of the Trinity River were stripped of vegetation: A legacy of gravel deposits left along many tributaries created permanent changes in floodplain and channel characteristics. Then, completion of the Lewiston and Trinity Dams above the project site in 1964 blocked over 100 miles of headwaters habitat critical to anadromous fish. This makes preserving and restoring the headwater streams below the dams critical to maintaining healthy fisheries in the Trinity River and its tributaries.

This project builds on the work already underway through the Trinity River Restoration Program (TRRP) which has been underway since studies in the 1980s and 1990s revealed that weak flows had significantly altered fisheries habitat in the Trinity River. A 2011 assessment of the Indian Creek Watershed, funded by the TRRP, identified this reach of Indian Creek as a high priority project because it is critical in helping restore fish passage during dry times of year. Indian Creek was once a large perennial stream, but due to the impacts from mining and logging this stretch of the creek only has water intermittently during the summer months. This strands juvenile salmon in pools without adequate cover from rising water temperatures and from predators. The BLM has been actively restoring Indian Creek on its property, just downstream from the proposed project site. The Yurok Tribe developed a partnership with the Watershed Research and Training Center in Hayfork to work with private landowners and address the stretch of creek on their property, which has led to the development of the proposed project.

PROJECT FINANCING

Coastal Conservancy	\$187,000
Federal Watershed Restoration Grant (BLM) Pending	\$157,000
Project Total	\$344,000

The expected source of Conservancy funds for this project is the fiscal year 2015/16 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 (commencing with § 79730) and may be used “for multi-benefit water quality, water supply, and watershed protection and restoration projects for the watersheds of the state” (Section 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, but not limited to bays, marine estuaries, and nearshore ecosystems; and assist in the recovery of endangered, threatened or migratory species by improving watershed health, instream flows, fish passage and coastal or inland wetland restoration. The proposed project will help achieve these purposes of Proposition 1 by restoring aquatic habitat, removing limits to fish passage, and improving watershed health to benefit endangered fish.

As required by Proposition 1, the proposed project provides multiple benefits. By restoring flood plain and channel form and function, the project will restore historic access to spawning and rearing habitat, improving water quality by preventing and reducing erosion and reduce temperatures to levels suitable for aquatic life.

The proposed project was selected through a competitive grant process under the Conservancy's Proposition 1 Grant Program Guidelines adopted in June 2015 ("Prop 1 Guidelines"). (See § 79706(a)). The proposed project meets each of the evaluation criteria in the Prop 1 Guidelines as described in further detail in this "Project Financing" section, the "Project Summary" section and the "Consistency with Conservancy's Project Selection Criteria & Guidelines" section of this report.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The proposed authorization is undertaken pursuant to Chapter 6 of Division 21 of the Public Resources Code, 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 Yurok Tribe to enhance coastal fishery resources disturbed by incompatible land uses, such as intensive mining, timber harvest and other legacy land uses that have disrupted the channel and floodplain processes in the Klamath River watershed.

Section 31251.2(a) provides that "[i]n 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..." Consistent with this section, the Yurok Tribe, which operates inside and outside of the coastal zone, requested Conservancy assistance to implement this habitat restoration project that is located outside the coastal zone. This assistance was sought in order to implement a project intended to enhance and benefit salmon populations known to travel many miles upstream of the coastal zone boundary in order 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. Section 31251.2 also requires the review and approval of the California Department of Fish and Wildlife. The Department is a frequent co-funder of Yurok Tribe projects and supports this project. See Exhibit 2, Project Letters.

Under 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 2013 STRATEGIC PLAN
GOAL(S) & OBJECTIVE(S), AS REVISED JUNE 25, 2015:**

Consistent with **Goal 5, Objective E** of the Conservancy's 2013-2018 Strategic Plan, the proposed authorization will implement one project to improve barriers to fish passage and provide instream habitat and favorable water temperatures.

**CONSISTENCY WITH CONSERVANCY'S
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, 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. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Promotion and implementation of state plans and policies:** The proposed project promotes and implements 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. *Steelhead Restoration and Management Plan for California* (California Department of Fish and Wildlife, 1996). The 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). The proposed project will carry out this purpose by restoring a section of Indian Creek, an important salmonid tributary to the Trinity River.
 - b. *Recovery Strategy for California Coho Salmon* (California Department of Fish and Wildlife, 2004). The proposed project will improve conditions for salmonids in Indian Creek which is specifically listed in the Recovery Strategy as a "key population to maintain or improve."
 - c. *2014 Final Recovery Plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (Oncorhynchus kisutch)* (U. S. National Marine Fisheries Service). Under this Recovery Plan, the Upper Trinity River Coho Salmon populations are considered to be among the best populations to help with recovery in the Trinity River. This project would improve spawning and juvenile habitat in the upper reaches of the river.
 - d. *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, issued in 2014. 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, including one which this project will 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)". Restoring this section of Indian Creek will remove a barrier to fish passage.

4. **Support of the public:** see "Project Letters"
5. **Location:** The project site is outside the coastal zone, but will benefit numerous coastal resources by providing coastal salmon populations with sufficient access throughout a watershed to fulfill their life history patterns.
6. **Need:** Without this grant funding, the Yurok Tribe, will not be able to 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 is not vulnerable to sea level rise.

Additional Criteria

9. **Leverage:** See the "Project Financing" section above.
10. **Innovation:** The proposed project has an innovative approach addressing the partial barrier to fish passage. Typically, a new channel would be constructed with pools and vegetation to reduce water temperatures. This project adds to this basic formula by adding structures which should force the groundwater table to rise and thereby increasing the streamflow.
11. **Readiness:** The Yurok are ready to work on the project and have cooperative partners.
12. **Cooperation:** The Yurok are partnering with the Watershed Research and Training Center, the BLM, as well as the private landowners to undertake this project.
13. **Vulnerability from climate change impacts other than sea level rise:** This project has been selected to extend the season during which fish are able to pass through the area. This will be accomplished by increasing flows as well as reducing the water temperature. This should buffer the populations from future increases in temperature and potential decreases in rainfall. It will also allow juvenile salmonids to relocate to higher altitude and more hospitable conditions within the watershed as conditions change.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The proposed project is located in the Klamath-Trinity watershed, outside the coastal zone. Nonetheless, it addresses a coastal zone resource and comports to the goals and objectives outlined under the LCPs for Del Norte and Humboldt County, in which the watershed is located. 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 (DNLCP), 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 DNLCP, Chapter VI, the following goals and objectives are identified:

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.” (p. 55)

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

The County encourages programs (e.g., fish hatcheries, habitat rehabilitation) designed to improve the quality of coastal fisheries and other marine resources. (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. (p. 58)

The proposed project will improve anadromous fish habitat by removing barriers to fish passage, and providing access to historic habitat, thereby enhancing the aquatic resources of the county, and, thus, is consistent with the DNLCP.

Humboldt County

The authorization is consistent with relevant portions of the Humboldt Bay Local Coastal Program (HBLCP), 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...(HBLCP, 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. . . (HBLCP, 3-56)

The proposed authorization will construct projects designed to re-create riparian habitat where it has been lost; increase streamflow, and open up previously unavailable habitat and, thus, is consistent with the HBLCP.

COMPLIANCE WITH CEQA:

The project is categorically exempt under section 15333 of the California Environmental Quality Act (CEQA) because it is a small habitat restoration project that cumulatively does not exceed five acres in size and involves the maintenance, restoration, enhancement, or protection of habitat for fish plants, or wildlife. The project meets the additional conditions of this categorical exemption in that there would be no significant adverse impact on endangered, rare or threatened

species or their habitat pursuant to CEQA Guidelines section 15065; there are no hazardous materials at or around the site; and the project will not result in significant impacts when viewed in connection with the effects of past, present, or probable future projects. By design and approach this project construction work will not impact the endangered fish species because best management practices identified in the CDFW's Restoration Manual and in permit terms established by NOAA Fisheries and CDFW will be employed. Consistent with 15333(d)(6), the proposed channel rehabilitation, the primary purpose of which is to improve habitat, raise groundwater, and reduce sedimentation, will be undertaken in accordance with these published guidelines and permit terms.

Staff will file a Notice of Exemption upon approval.