

COASTAL CONSERVANCY

Staff Recommendation
October 17, 2019

Jacoby Creek Enhancement Study

Project No. 19-024-01
Project Manager: Julia Elkin

RECOMMENDED ACTION: Authorization to disburse up to \$325,000 to Humboldt County to develop a feasibility study for anadromous fish habitat enhancement and flood reduction in the lower Jacoby Creek watershed in Arcata and Bayside, Humboldt County.

LOCATION: Jacoby Creek watershed, Bayside and City of Arcata, Humboldt County

PROGRAM CATEGORY: Integrated Coastal and Marine Resources Protection

EXHIBITS

Exhibit 1: [Project Location Map](#)

Exhibit 2: [Project Letters](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31220 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed three hundred twenty-five thousand dollars (\$325,000.00) to Humboldt County (“the grantee”) to develop a feasibility study for flood reduction and anadromous fish habitat enhancement in the lower Jacoby Creek watershed in Arcata and Bayside.”

Prior to commencement of the project, the grantee shall submit for the review and written approval of the Executive Officer of the Conservancy (Executive Officer) the following:

1. A detailed work program, schedule, and budget.
2. Names and qualifications of any contractors to be retained in carrying out the project.
3. A plan for acknowledgement of Conservancy funding and Proposition 1 as the source of that funding.”

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 5.5 of Division 21 of the Public Resources Code, regarding integrated coastal and marine resources protection.
 2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.”
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PROJECT SUMMARY:

Staff recommends the Conservancy authorize disbursement of up to \$325,000 to Humboldt County to develop the Jacoby Creek Flood Reduction and Anadromous Fish Habitat Enhancement Feasibility Study (the proposed project). A major tributary to Humboldt Bay, Jacoby Creek flows through the community of Bayside along the southern city limits of Arcata. The Jacoby Creek watershed provides habitat for anadromous fish species including coho, Chinook salmon, steelhead and coastal cutthroat trout.

Decades of development have altered physical and ecological processes in the Jacoby Creek watershed, increasing flooding impacts in the lower watershed and degrading aquatic habitats. Primary impacts to aquatic habitat within the project area are loss of floodplain connectivity, simplified channel structure, degraded floodplain aquatic habitat, and reduced riparian corridor width. Sedimentation resulting from upstream development has raised the stream bed and reduced channel capacity, causing the channel to be perched higher than the adjacent floodplain. This creates significant flood risk, and while the banks of Jacoby Creek are lined with natural and constructed berms to protect against such events, breaches and overtopping events are common. Flows from overbank flooding currently route across the floodplain through residential areas and over public roads rather than re-entering the channel. Flooding events lead to fish stranding and create significant safety hazards and property damage.

Downstream of Old Arcata Road, the occurrence of overbank flooding is increasing and threatens to cause major channel avulsions. Although overflow and channel avulsions are natural processes, current land management, development, and drainage infrastructure are incompatible with flooding occurrence. During storm events, large volumes of floodwaters drain from the upper watershed into low-lying downstream areas with limited storage capacity and little or no connectivity back to Jacoby Creek or Humboldt Bay.

Due to the frequency of such flooding events, some landowners have implemented localized flood protection measures. The lack of an organizing framework for stream corridor management and communication gaps between landowners and permitting agencies have resulted in these efforts amounting to individual actions that at times unintentionally further affect the riparian corridor. Community engagement and support is needed to advance from parcel-based restoration approaches to an integrated, landscape-scale approach.

The proposed project will conduct a feasibility study to advance understanding of the geomorphic context of lower Jacoby Creek, channel-floodplain connectivity, the ecological function and value of aquatic habitat elements, and the sensitivity of Jacoby Creek to human-caused disturbance and sea level rise. This information will support the project's development of a Stream Corridor Management Plan to guide stewardship of future in-channel woody debris and riparian restoration projects within the project area and establish measurable goals and objectives for aquatic and wetland habitat and flood management.

The project will also use the feasibility study results to develop three community-supported multi-benefit project concepts that enhance aquatic habitat quality and reduce flooding impacts in the lower Jacoby Creek watershed. These project concepts will be designed to a 15% design level. They will focus on increasing off-channel rearing habitat, enhancing the network of high-flow channels in the floodplain, routing water and sediment to appropriate retention areas, and increasing complexity of in-channel habitat features.

The project approach includes significant engagement and relationship building with private landowners who are critical to future project implementation as well as technical consultation with science experts and natural resource managers in the Humboldt Bay region.

Site Description:

The project area is situated within the coastal plain portion of the Jacoby Creek watershed, adjacent to Humboldt Bay. The primary land use in the lower watershed is rural residential and agricultural while the upper watershed is primarily timberland. The Jacoby Creek watershed, including Gannon Slough and its tributaries, encompasses 20 square miles. The project area encompasses a total of 1.3 square miles (830 acres) and contains approximately three miles of the Jacoby Creek mainstem from Humboldt Bay to the Brookwood Bridge. Ownership within the project area includes public (City of Arcata, County of Humboldt) and land trust (Jacoby Creek Land Trust (JCLT)), but the majority of this area of the Jacoby Creek corridor is private property. The relatively large amount of open space within the project area presents strong opportunities for enhancing the stream corridor, floodplain flow network, and coastal wetlands.

The project area consists of a low-gradient, alluvial channel with narrow riparian canopy transitioning to tidally influenced fresh, brackish, and saltwater slough channels between Old Arcata Road and Highway 101. The lower reach (Humboldt Bay to Old Arcata Road) contains the Jacoby Creek stream-estuary ecotone and agricultural grasslands. The stream-estuary ecotone is very limited as a result of historical diking of former tidelands. The middle reach (Old Arcata Road to Brookwood Bridge) contains the majority of the lower Jacoby Creek valley, including terraces and floodplains bounding the creek. The fill prism of Old Arcata Road is a significant feature affecting floodplain connectivity.

The upper watershed outside of the project area consists primarily of steeper gradient forested land, with significant land ownership by City of Arcata and Humboldt State University. The study

will characterize sediment loading into the project area from the upper watershed and make note of restoration planning efforts underway upstream.

Grantee Qualifications: Humboldt County has the necessary staff capacity to manage a state grant and manage external contractors as needed for the project. The county already engages with private landowners on flooding issues within the Jacoby Creek watershed and has a demonstrated commitment to collaborating on habitat enhancement projects with regional stakeholders including City of Arcata, USFWS, NOAA, and Jacoby Creek Land Trust.

Project History: The Conservancy has supported resource protection and enhancement projects in the Jacoby Creek watershed for over a decade. In December 2004, the Conservancy contributed \$750,000, and the City of Arcata, California Waterfowl Association, and the Wildlife Conservation Board matched with an additional \$750,000 towards acquiring the Arcata Baylands property, which lies within the proposed project area. In 2006, the Conservancy passed through \$928,000 in USFWS National Coastal Wetland Conservation (NCWC) funding for further acquisition, restoration and enhancement of the Arcata Baylands, including 30 acres of restoration in the Jacoby Creek estuary. Since 2011, the Conservancy has supported the City of Arcata’s South Jacoby Creek Restoration Project, also within the proposed project area, through a \$64,260 USFWS Coastal Program planning grant as well as \$375,074 USFWS NCWC funds and \$282,981 in Conservancy Prop 1 funds for project implementation.

PROJECT FINANCING

Coastal Conservancy	\$325,000
Humboldt County	\$30,000
Project Total	\$355,000

The anticipated source of funding for this project is an appropriation from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (“Proposition 1,” Water Code Sections 79700 et seq.). Funds appropriated to the Conservancy derive from Chapter 6 of Division 26.7 of the Water Code (commencing with Section 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.)

The project meets a number of objectives under Proposition 1, including protecting and restoring aquatic ecosystems, including fish and wildlife corridors (Section 79732(a)(4)), and removing barriers to fish passage (Section 79732(a)(6).)

As required by Proposition 1, the proposed project provides multiple benefits. By planning for floodplain and riparian habitat restoration in the Jacoby Creek watershed, the project will benefit depleted native fish populations and other aquatic and avian species that utilize riparian habitat. The project’s efforts to alleviate existing flooding impacts will reduce economic

damages currently incurred from flooding events and further resilience to projected climate change impacts.

In accordance with Section 79707(b) which requires agencies to prioritize “projects that leverage private, federal, or local funding or produce the greatest public benefit”, this project leverages local cash and in-kind contributions as discussed in the last paragraph of this section.

The project was reviewed and subsequently recommended for funding through a competitive grant process under the Conservancy’s Proposition 1 Grant Program Guidelines adopted in September, 2016 (“Prop 1 Guidelines”). (See Section 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 in the “Consistency with Conservancy’s Project Selection Criteria & Guidelines” section of this staff recommendation.

Humboldt County will provide \$30,000 of Humboldt County Road Funds towards the project, as well as \$15,000 of in-kind services. The City of Arcata and Jacoby Creek Land Trust will provide a minimum of \$3,000 and \$2,000, respectively, in in-kind services. National Marine Fisheries Service is offering in-kind services of \$5,000 for participation in the technical working group and supporting other project tasks, and Conor Shea with U.S. Fish & Wildlife Service, lead designer for City of Arcata’s South Jacoby Creek Restoration (implemented in 2018) is offering substantial technical assistance with an in-kind value of \$25,000.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The proposed project is undertaken pursuant to Chapter 5.5 of Division 21 of the Public Resources Code (Section 31220), as follows:

Pursuant to Section 31220(a) and 31220(b)(2), the Conservancy may undertake projects to protect and restore coastal habitats if the project “protects or restores fish and wildlife habitat within coastal and marine waters and coastal watersheds.” Consistent with this section, the proposed project will facilitate planning for the restoration and enhancement of coastal watershed habitat for fish and wildlife, including listed species, in Humboldt Bay.

Pursuant to Section 31220(b)(4), the Conservancy may award grants to protect and restore coastal habitats if the project “contributes to the reestablishment of natural erosion and sediment cycles.” Consistent with this section, the proposed project will conduct studies necessary to address sedimentation issues within the mainstem of Jacoby Creek.

Pursuant to Section 31220(b)(6), the Conservancy may award grants to protect and restore coastal habitats if the project “restores coastal wetlands, riparian areas, floodplains, and other sensitive watershed lands.” Consistent with this section, the proposed project will facilitate planning for the restoration of floodplain areas in the Jacoby Creek watershed.

Section 31220(c) states that “projects funded pursuant to this section shall include a monitoring and evaluation component.” The proposed planning project will produce a Stream Corridor

Management Plan that will describe monitoring protocols, thresholds for action (triggers), best management practices, and communication and coordination framework to be utilized on future related implementation projects.

Consistent with section 31220(a), the Conservancy consulted with the State Water Resources Control Board in the development of this grant to ensure consistency the Water Quality Control Plan for the North Coast Region (Basin Plan). In addition, the project is consistent with the Northcoast Regional Water Quality Control Board Policy in Support of Restoration in the North Coast Region.

In addition to Chapter 5.5 of Division 21 of the Public Resources Code, this project is also consistent with Section 31111, which provides that the Conservancy may “fund and undertake plans and feasibility studies and may award grants to public agencies and nonprofit organizations for these purposes.” Consistent with this section, the project involves funding a public agency to prepare a Stream Corridor Management Plan and several initial project designs for fish habitat and floodplain restoration projects.

This project is also consistent with Section 31113, which provides that the Conservancy may undertake projects and award grants for projects that “reduce greenhouse gas emissions, address extreme weather events, sea level rise, storm surge, beach and bluff erosion, salt water intrusion, flooding and other coastal hazards that threaten coastal communities, infrastructure and natural resources.” This project will facilitate protection of natural resources and built infrastructure in the project area by planning to reduce the impacts of extreme weather event related flooding thru restoration and enhancement projects.

**CONSISTENCY WITH CONSERVANCY’S [2018-2022 STRATEGIC PLAN](#)
GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 6, Objective A** of the Conservancy’s 2018-2022 Strategic Plan, the proposed project will develop a plan to restore and enhance the Jacoby Creek stream corridor.

Consistent with **Goal 6, Objective C** of the Conservancy’s 2018-2022 Strategic Plan, the proposed project will develop a plan to enhance the Jacoby Creek coastal watershed and floodplain, including plans to improve fish passage.

Consistent with **Goal 8, Objective B** of the Conservancy’s 2018-2022 Strategic Plan, the proposed project will plan for and design projects that increase resilience to climate change-exacerbated flooding.

**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 project will help implement two priority actions identified in the 2014 *California Water Action Plan* (CWAP):

Action 4: Protect and Restore Important Ecosystems. The project will implement this action by developing plans for riparian restoration in Jacoby Creek, a coastal watershed, which will provide valuable fish and wildlife habitat.

Action 8: Increase Flood Protection. The CWAP calls for action to address flooding threats due to aging levee infrastructure and sea level rise due to climate change. The project will implement this action by planning for floodplain restoration projects that increase floodplain storage and channel conveyance on Jacoby Creek, reducing damage for pasturelands in the vicinity from flooding and storm damage that will increase with climate change.

4. **Support of the public:** This project includes support and project participation from regional stakeholders including Jacoby Creek Land Trust, NMFS, and USFWS.
5. **Location:** The proposed project is located partially within the coastal zone of Humboldt County. While the mouth of Jacoby Creek is within the Coastal Zone, the project area extends three miles inland from the creek's main mouth and thus out of the Coastal Zone. The project is designed to allow for regional study of watershed dynamics in order to develop future management approaches and project concepts within the lower watershed. This approach will benefit coastal resources (including salmonids who utilize the creek) by ensuring that restoration actions along the Jacoby mainstem work in concert with one another to maximize ecological and social benefits and prevent unintended negative consequences of isolated land management actions.
6. **Need:** The project would not occur without the Conservancy's funding.
7. **Greater-than-local interest:** Jacoby Creek is one of four major tributaries to Humboldt Bay. The project area contains the stream-estuary ecotone for Jacoby Creek which is highly important for natal and non-natal rearing of salmonids. Spawning by coho salmon, steelhead, and coastal cutthroat trout occurs just upstream of the project area. Multiple plans and studies have identified the lack of rearing habitat as a limiting factor for salmon productivity in Jacoby Creek. The City of Arcata and Jacoby Creek Land Trust have implemented restoration projects over the last several years to improve off-channel habitat, but additional work is needed at a coordinated larger scale.

8. **Sea level rise vulnerability:** The western portion of the project area is vulnerable to impacts from flooding hazards and sea level rise, including two regionally significant multi-modal transportation corridors (Highway 101/Humboldt Bay Trail and Old Arcata Road). The feasibility study will further define these vulnerabilities and support adaptation planning.

Additional Criteria

9. **Urgency:** Restoration of the project area is urgently needed to assist in the recovery of threatened Coho salmon. Recovery actions for this species must be pursued in a timely manner in order to avert the danger of further population declines and extinction.
10. **Resolution of more than one issue:** The project will support planning for restoration of anadromous fish habitat as well as planning for reducing flooding impacts in the lower Jacoby Creek valley.
11. **Leverage:** See the “Project Financing” section above.
12. **Innovation:** The project will collect aerial imagery during flood events using drones to support the mapping of the distributary channel network and floodplain flow pathways.
13. **Readiness:** If awarded funds, the grantee is ready and able to complete the proposed project in a timely manner.
14. **Realization of prior Conservancy goals:** The project area includes sites of past and current Coastal Conservancy projects, including the City of Arcata’s Bayview Ranch acquisition (2004) and the South Jacoby Creek Restoration Project. This project provides an opportunity to enhance the benefits from Conservancy previous investments in projects on City of Arcata and JCLT properties by integrating them into a larger, landscape-scale restoration planning effort.
15. **Return to Conservancy:** See the “Project Financing” section above.
16. **Cooperation:** Significant effort has been made by the County over the last two years to engage with landowners and other stakeholders to build consensus on the project approach and secure commitments for a collaborative partnership.
17. **Vulnerability from climate change impacts other than sea level rise:** The project will facilitate floodplain restoration that reduces flooding of agricultural land in the project vicinity from storm events, which are expected to increase in frequency and intensity with climate change.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The proposed project is consistent with the relevant portions of the Coastal Land Use Element of the City of Arcata’s General Plan, prepared in 1979 and last updated March 1987, which, along with the Coastal Land Use and Development Guide, constitutes the City of Arcata’s Local Coastal Program (LCP). The Coastal Commission certified the LCP on October 10, 1989.

Policy III-6 of the LCP recognizes the importance of riparian habitat by designating Riparian Buffer Zones, including the Jacoby Creek corridor (page 10). Consistent with this policy, the project supports future restoration and enhancement of riparian habitat along Jacoby Creek.

**CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/
STATE WATER QUALITY CONTROL PLAN:**

The project is consistent with, and furthers the goals of, the Humboldt Bay Management Plan (HBMP), prepared in May 2007 by the Harbor District. The proposed project is consistent with HBMP Policy CAE-2: “CAE-2: Maintain, restore, and enhance aquatic ecosystem integrity” (HBMP, Pg. 201), in that it supports planning for the restoration of riparian areas. The proposed project is consistent with Policy CAS-3: “Maintain and enhance habitat for sensitive species” (HBMP, p.204), in that it will lead to the restoration of habitat for Coho salmon.

The project is consistent with, and furthers the goals of, the Humboldt Bay Watershed Salmon and Steelhead Conservation (HBSSC) Plan, prepared by the Humboldt Bay Watershed Advisory Committee in March 2005. The HBSSC Plan highlights the importance of restoring floodplain connectivity and riparian habitat to the Bay’s tributaries in supporting salmon populations, as well as diverse communities of fish and wildlife (pg. viii). The project will further the following Baywide goals of the HBSSC Plan (pg. ix):

- Maintain and restore floodplain processes that benefit salmonids.
- Establish access to suitable habitat for both adult and juvenile salmonids.
- Identify and restore degraded riparian habitat where feasible. (HBSSC Plan, p. ix).

The proposed project would further these goals by conducting a feasibility study and developing project concepts to restore floodplain connectivity, access to off-channel wetland habitat, and riparian habitat, as discussed above in the “Project Summary” section.

The proposed project is consistent with the Water Quality Control Plan for the North Coast (adopted by the Regional Water Quality Control Board North Coast Region in 1988 and last updated in 2007) in that it will plan for enhancing habitat for rare, threatened and endangered anadromous fish species and estuarine habitat in Humboldt Bay. The Water Quality Control Plan for the North Coast designates wildlife habitat, rare, threatened, and endangered species habitat, and estuarine habitat as beneficial uses of Humboldt Bay (Water Quality Control Plan for the North Coast, Table 2-1, pp. 2-8 to 2-12).

CEQA COMPLIANCE:

The proposed project is statutorily exempt from the provisions of the California Environmental Quality Act under 14 Cal. Code of Regulations, Chapter 3, Section 15262, because the project will only involve preparation of a feasibility study and conceptual designs for possible future actions which an agency has not yet been approved. The project will consider environmental factors.

Upon approval of the project, Conservancy staff will file a Notice of Exemption.