

COASTAL CONSERVANCY

Staff Recommendation  
October 18, 2012

**STUART CREEK FISH PASSAGE DESIGN**

Project No. 12-043-01  
Project Manager: Deborah Hirst

**RECOMMENDED ACTION:** Authorization to disburse up to \$162,000 to Sonoma Land Trust to complete final engineered designs, environmental review and permit applications for three priority fish passage improvements on Stuart Creek, and for public access improvements on the Stuart Creek Run property near Glen Ellen, Sonoma County.

**LOCATION:** Glen Ellen, Sonoma County

**PROGRAM CATEGORY:** San Francisco Bay Area Conservancy

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**EXHIBITS**

- Exhibit 1: [Project Location and Site Maps](#)
- Exhibit 2: [Stuart Creek Fish Passage Barrier Photographs](#)
- Exhibit 3: [Stuart Creek in Draft Critical Linkage Map](#)
- Exhibit 4: [Project Letters](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31160-31165 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed one hundred and sixty-two thousand dollars (\$162,000) to Sonoma Land Trust to complete final engineered designs, environmental review and permit applications for three priority fish passage improvements on Stuart Creek, and for public access improvements on the Stuart Creek Run property near Glen Ellen, Sonoma County. Prior to disbursement of funds, Sonoma Land Trust shall submit for the review and approval of the Executive Officer a work program, including a budget and schedule, and the names of any subcontractors to be retained for project work. Prior to project completion, SLT shall provide final designs for the review and approval of the Executive Officer.”

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 project is consistent with the current Project Selection Criteria and Guidelines.
2. The proposed authorization is consistent with the purposes and objectives of Chapter 4.5 (Sections 31160-31165) of Division 21 of the Public Resources Code, regarding the enhancement of natural resources of the San Francisco Bay Area.
3. Sonoma Land Trust is a nonprofit, public benefit organization formed pursuant to the Nonprofit Public Benefit Corporation Law, California Corporations Code section 5000 *et seq.*, and existing under section 501(c) (3) of the U.S. Internal Revenue Service Code, and whose purposes are consistent with Division 21 of the Public Resources Code.”

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### **PROJECT SUMMARY:**

Staff recommends authorization to disburse up to \$162,000 to Sonoma Land Trust (SLT) to complete final engineered designs, environmental review and permit applications for three priority fish passage improvements on Stuart Creek, and for public access improvements on the Stuart Creek Run property near Glen Ellen, Sonoma County (Exhibits 1 and 2).

The Conservancy and its conservation partners have invested in a number of assessments, reports and projects prioritizing the restoration of anadromous fish passage to upper Sonoma Creek, including its tributary Stuart Creek. Steelhead fisheries in the San Francisco Estuary are part of the Central California Coast Evolutionary Significant Unit, which is listed as “threatened” under the Endangered Species Act. The Center for Ecosystem Management and Restoration (CEMAR) identified Sonoma Creek as one of eight “anchor watersheds” where restoration actions will likely have the most powerful effect on conserving and restoring northern California steelhead (2005). Fisheries biologists with National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS), currently drafting the Recovery Plan for steelhead in the Sonoma Creek watershed, found high quality spawning and rearing habitat, excellent water quality and mature riparian habitat in a recent Stuart Creek survey from just past its confluence with Calabazas Creek up to the natural waterfalls on Stuart Creek 2.2 miles upstream.

However, the Sonoma Ecology Center’s *The Sonoma Creek Watershed: Limiting Factors Analysis(2006)* found that 25% of the upper Sonoma Creek watershed is inaccessible to salmonids. *The Fish Passage Barrier Assessment in Sonoma Creek Watershed (Katopthis, et al, 2005)* identified the failing bridge at Stuart Creek Run and the dam at Glen Oaks Ranch as total barriers preventing historic runs of anadromous fish populations from accessing miles of high quality habitat upstream. In addition, the unstable bridge culvert at Stuart Creek Run threatens to release an estimated 275 cubic yards of debris and sediment into Stuart Creek and over 5,000 cubic yards of material from subsequent down-cutting, making the restoration urgent.

Through the proposed project, SLT will complete plans to restore access to 2.2 miles of high quality upstream habitat for steelhead by designing solutions for three barriers on Stuart Creek: a 1800s-era flashboard dam on SLT’s 248-acre Glen Oaks Ranch, a failing bridge one mile south

down the creek at SLT's 3.5-acre Stuart Creek Run property, and a county-maintained box culvert at the southern edge of the Stuart Creek Run property at Arnold Drive (Exhibit 1 and 2). The project will be conducted working with the Sonoma Ecology Center, SLT's project partner for the restoration of Stuart Creek. SLT has already completed studies of feasibility, hydrology and fish passage engineering and developed preliminary plans for each of the three barriers, and a conceptual plan for low-impact public access improvements including interpretive panels describing anadromous fish passage restoration on Stuart Creek at the Stuart Creek Run property near the community of Glen Ellen. SLT has consulted closely with fluvial geomorphologists, engineers, and biologists with the California Department of Fish and Game (DFG) and the National Marine Fisheries Service (NMFS), as well as engineering consultants Prunuske Chatham, Inc. for these preliminary fish passage improvement plans, and the final designs will incorporate the criteria and priorities for fish passage restoration called for in the construction funding program offered by DFG, the Fisheries Restoration Grant Program (FRGP). This coordination among agency staff and project partners working with SLT has lead to preliminary plans that all parties support (Please see Project Letters in Exhibit 4).

The proposed project would enable SLT to finalize a design of chutes and pools to restore fish passage and remove the failing bridge culvert at Stuart Creek Run, and complete designs for modifications to the nearby concrete box culvert at Arnold Drive including the addition of fish passage baffles. In 2011, SLT acquired the Stuart Creek Run property and retired development potential for the parcel. SLT can now complete a more effective, less costly restoration for this location. At SLT's Glen Oaks Ranch, approximately one mile up Stuart Creek, decades of seasonal high velocity flows over the Glen Oaks dam have scoured out a significant pool below the dam. The pool is considered valuable refuge as it has supported at least two age classes of rainbow trout for many years. Yet the existing 2.5-foot drop over the dam, excessive water velocities and low water depths prevent passage of juvenile and adult fish. The proposed project will enable SLT to complete a final sediment transport study to determine the appropriate dimensions for a notch to be made in the dam for fish passage, and for excavation above the dam to ensure fish passage while also preventing the excessive movement of upstream cobble and sediment into the refuge pool below. By coordinating improvements for the failing bridge at Stuart Creek Run, the partial barrier at the Arnold Drive box culvert, and the full barrier at the Glen Oaks Ranch dam, SLT and its restoration partners can effect a watershed-level improvement for salmonids in Stuart Creek watershed.

Through the proposed project, SLT will also support the use of their Stuart Creek Run property for public recreation and interpretation of the adjacent fish passage improvements by completing designs for a public access trail, 3-4 gravel parking spaces and signage. The project will enhance the potential for expansion of environmental programming currently operating at Glen Oaks Ranch and the Audubon Canyon Ranch's Bouverie Preserve to the Stuart Creek Run property. SLT and Audubon Canyon Ranch have also initiated discussion on a vision of connecting their respective Stuart Creek trail systems.

Sonoma Land Trust is a local non-profit organization that works closely with private landowners, the Sonoma County Agricultural Preservation and Open Space District (SCAPOS) and other public agencies, nonprofit partners, and foundations to conserve scenic, natural, agricultural and open land for the future of Sonoma County. Since 1976, Sonoma Land Trust has protected more than 25,000 acres of beautiful, productive and environmentally significant land in and around Sonoma County. SLT has conducted a wide range of successful land acquisition and habitat

restoration projects with support from the Conservancy including the acquisition of Roche Ranch, the Jenner Headlands and a number of Baylands properties, and the restoration of wetlands now in progress at Sears Point.

**Site Description:** Located west and south of Santa Rosa and just north and west of the town of Sonoma, the Stuart Creek watershed flows to upper Sonoma Creek watershed and descends to San Pablo Bay. Stuart Creek meets a second tributary to upper Sonoma Creek, Calabazas Creek, in the town of Glen Ellen.

Approximately 45% of the land (7,000 acres) and 95% of the available anadromous fish habitat in the Stuart Creek watershed are permanently protected by conservation easement and fee title ownership by SLT and Audubon Canyon Ranch. SLT's 234-acre Glen Oaks Ranch is a quarter mile upstream from SLT's recently acquired 3.5-acre Stuart Creek Run property. Glen Oaks Ranch has a range of high quality mixed chaparral, live oak woodland, blue oak woodland, valley oak woodland, savannah, riparian habitat and grasslands with expansive west-facing views of Sonoma Valley and Sonoma Mountain as well as .85-miles of Stuart Creek. Audubon Canyon Ranch's adjacent 535-acre Bouverie Preserve protects 1.5 miles of Stuart Creek that runs through the property, which includes Stuart Canyon's natural waterfalls as well as mature mixed evergreen and riparian forest. SLT and Audubon Canyon Ranch have trail systems and environment-based educational programs including SLT's On the Land program and the Bouverie Preserve school field trip program in which over 200 volunteer docents annually host 3,000 children from 90 grade schools in Napa and Sonoma Counties.

The Bay Area Critical Linkages Project, supported in part by the Conservancy, identified a potential loss of habitat connectivity through a narrow "bottle-neck" in the Stuart Creek area near Glen Ellen (Exhibit 3). SLT is working quickly with landowners and other conservation partners to develop a strategy to protect habitat and wildlife movement in this pinch-point area of the corridor, including the acquisition of the Stuart Creek Run property. This habitat linkage, if protected successfully, will ensure continued passage for wildlife, allow movement for adaptation to climate change, and also provide permanent protection of the anadromy for all but 200 feet of Stuart Creek's valuable riparian habitat.

**Project History:** In 2003, the Conservancy conducted an extensive inventory of existing fish passage barrier data for coastal California streams, identifying more than 16,000 potential barriers to fish passage. Through this effort it became apparent that local public entities lacked sufficient funds or staff to develop fish passage projects, though grant resources for implementation were available. The Conservancy subsequently provided a grant to CEMAR to assess the potential of the San Francisco Estuary's streams to provide habitat for restored steelhead runs and to identify restoration projects in high priority watersheds. The resulting *San Francisco Estuary Steelhead Status Report (2005)* is a respected resource on steelhead/rainbow trout distributions in watersheds around the San Francisco Bay for management agencies, local officials, the scientific community and grassroots environmental groups working toward increasing the numbers of steelhead and salmon using the San Francisco Bay and its watersheds. CEMAR subsequently developed the San Francisco Estuary Fish Passage Improvement Program in 2006, with support from the Conservancy, to complete fish passage designs for the four top priority fish passage barriers identified in the San Francisco Bay Area, including the Stuart Creek

Run Bridge.

In 2008, the Sonoma Ecology Center and the property owner prior to SLT worked with CEMAR to design a fish passage project at the Stuart Creek Run property. The previous owners had been willing to allow a fish passage restoration project to be completed at the failing bridge on their property only if the restoration design protected the buildable space on the parcel. The restoration design developed by CEMAR incorporated this design requirement and, by necessity, called for a significant amount of engineered reinforcement to protect a future home site on the parcel. When SLT subsequently purchased the property in 2011 for conservation and recreational purposes, the right to build a home on the property was permanently extinguished. Thus, a revised restoration design is now possible for the parcel without the need to maintain a building envelope. SLT has actively engaged with Conservancy staff, fisheries agency staff and local partners, including the Sonoma Ecology Center, to develop the approach for restoring fish passage to more than two miles of Stuart Creek through the proposed project. SLT retained Prunuske Chatham, Inc. and worked with engineers and fisheries biologists with DFG and NMFS to reach consensus on a design of chutes and pools to restore fish passage at Stuart Creek Run while also protecting homes bordering the property and to remove two other identified fish barriers on Stuart Creek.

SLT has directly contributed \$32,295 for feasibility studies, hydraulic assessment and preliminary project designs for the proposed fish passage project, and fully funded the \$140,000 fee title acquisition of the Stuart Creek Run property for fish passage improvement and public access. With respect to the source of construction funds, SLT will apply for the FRGP grant in 2013 for anticipated construction June 2014. The proposed project is a priority for local partners working to restore northern California steelhead populations in the San Francisco Bay estuary (Please see Exhibit 4 for Project Letters) and moves forward the Conservancy's prior investment in the Sonoma Creek watershed for fish passage improvement, a goal of the 2007 Strategic Plan.

**PROJECT FINANCING**

<b>Coastal Conservancy</b>	\$162,000
<b>United States Fish and Wildlife Service (pending)</b>	\$25,000
<b>Sonoma Land Trust (in-kind)</b>	<u>\$13,200</u>
<b>Total Project Costs</b>	\$200,200

The anticipated source of Conservancy funds is the fiscal year 2005-2006 appropriation to the Conservancy from the Water Security, Clean Drinking Water, Coastal Beach Protection Fund of 2002 (Proposition 50). Proposition 50 authorizes the use of these funds for the purpose of protecting coastal watersheds through projects to acquire, protect and restore land and water resources that are undertaken pursuant to the Conservancy's San Francisco Bay Conservancy Program, Chapter 4.5 of Division 21 of the Public Resources Code (Water Code section 79570). Pursuant section 79570, funds may be used for planning associated with protection, acquisition, and restoration activities. The proposed project will accomplish these purposes by completing

bid-ready engineered designs, environmental review and permits for a fisheries restoration project in a San Francisco Bay Area watershed. The restoration project will ultimately enhance the natural habitat of steelhead trout, a species of special concern. In addition, watershed protection activities financed with Proposition 50 funds must be “consistent with the applicable adopted local watershed management plan and the applicable regional water quality control plan adopted by the regional water quality control board” (Water Code section 79507). The proposed project is consistent with both the Conservancy’s enabling legislation and with applicable local and regional watershed management plans as described below.

**CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:**

The project is undertaken pursuant to Chapter 4.5 of the Conservancy’s enabling legislation, Public Resources Code sections 31160-31165 to address resource goals in the San Francisco Bay Area.

The proposed project has three project sites which are all located within the County of Sonoma, which is within the nine-county San Francisco Bay Area, consistent with section 31162 of the Public Resources Code.

Pursuant to subsection 31162(a), the Conservancy may award grants that will “improve public access to and around the bay, coast, ridge tops, and urban open spaces . . . through completion . . . of regional bay, coast, and ridge trail systems”. Consistent with Section 31162(a), the proposed project will complete designs for public access on the Stuart Creek Run project location within Sonoma County, one of the nine Bay Area counties.

Pursuant to subsection 31162(b), the Conservancy may act “to protect, restore, and enhance natural habitats and connecting corridors, watersheds, scenic areas, and other open space resources of regional significance”. The proposed project would assist in the enhancement of the natural habitat of steelhead trout, a species of special concern, in a connecting corridor of regional significance.

The Stuart Creek Fish Passage Design project satisfies all of the criteria for determining project priority under subsection 31163(c), since the project: 1) is supported by adopted regional plans including the Regional Water Quality Control Plan for San Francisco Bay, the General Plan of Sonoma County, the *San Francisco Bay Plan-Fish, Aquatic Organisms and Wildlife - Policy 2*, (San Francisco Bay Conservation and Development Commission), the *Steelhead Restoration and Management Plan for California*, (California Department of Fish and Game, 1996, updates to Steelhead Tasks in 2010), and the *Central California Coast Steelhead Recovery Plan*, (National Marine Fisheries Service, Draft Document); 2) serves a regional constituency by creating habitat for steelhead trout, a species of statewide concern; 3) can be implemented in a timely manner as SLT is prepared to complete the project upon approval by the Conservancy; 4) provides benefits that would be lost if the project is not quickly implemented as it will remove an unstable bridge that threatens fish habitat; and 5) includes matching funds as detailed above.

In addition, Public Resources Code section 31111 allows the Conservancy to undertake plans and feasibility studies to carry out the purposes of Division 21 of the Public Resources Code.

**CONSISTENCY WITH CONSERVANCY'S 2007 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 10, Objectives G and I** of the Conservancy's 2007 Strategic Plan, the proposed project will complete one plan to restore riparian habitat and to restore watershed function by addressing barriers to migration and improving fish passage for salmonids.

Consistent with **Goal 11, Objective A** of the Conservancy's 2007 Strategic Plan, the proposed project will provide plans for a recreational trail and public access improvements.

**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 November 10, 2011, 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. **Support of the public:** There is a wide range of support for this project including Congresswoman Lynn Woolsey, State Senator Noreen Evans, State Assemblyman Jared Huffman, local County Supervisor Valerie Brown, NMFS, DFG, CEMAR, SCAPOSD, Sonoma County Water Agency, Sonoma County Public Works, SF Joint Venture, Audubon Canyon Ranch, and Southern Sonoma County Resource Conservation District, among others. Please see Project Letters in Exhibit 4.
4. **Location:** Stuart Creek is a tributary to Calabazas Creek in the Sonoma Creek Watershed, one of 8 anchor watersheds for steelhead recovery for the San Francisco Bay Estuary, and within the nine-county jurisdiction of the San Francisco Bay Conservancy Program.
5. **Need:** Resources for fish passage improvement planning are limited and securing the design and permitting is essential for obtaining construction funds. The proposed project will not be able to move forward without Conservancy funding for final designs.
6. **Greater-than-local interest:** The project will support the recovery of northern California steelhead, a species of state-wide interest. The steelhead fisheries found in the San Francisco Estuary are part of the Central California Coast Evolutionary Significant Unit, which is listed as "threatened" under the Endangered Species Act. Steelhead trout are an important historical, natural, and economic resource for both the State's fishing industry as well as Bay Area residents.
7. **Sea level rise vulnerability:** The project area is located approximately 286 feet above sea-level, inland from the coast and upland from San Pablo Bay; as a result the project is not vulnerable to sea-level rise.

**Additional Criteria**

8. **Urgency:** Central California coast steelhead runs have declined by 80-90% in the past 50 years and Stuart Creek is one location where habitat offers potential to support steelhead recovery and there currently is a high density of rainbow trout. The proposed project is urgently needed as Stuart Creek Run bridge threatens to release 275 cubic yards of sediment and debris into the creek and an estimate of 5,000 cubic yards of sediment may result from subsequent down-cutting of the streambed.
9. **Resolution of more than one issue:** The project will complete fish passage designs as well as designs for public access improvements.
10. **Leverage:** See the “Project Financing” section above.
11. **Innovation:** The project is innovative in its use of scientific analysis of steelhead resources and hydrologic conditions to develop engineered designs that are most beneficial for each of the three fish barrier locations. SLT’s acquisition of the Stuart Creek Run property greatly improved the opportunity to design the creek restoration without engineering around a building envelope for the parcel as was required by the previous owner.
12. **Readiness:** The Sonoma Land Trust is ready to immediately complete the project, should Conservancy funds be authorized.
13. **Realization of prior Conservancy goals:** See “Project History” above.
14. **Return to Conservancy:** See the “Project Financing” section above.
15. **Cooperation:** The project is supported by agencies and organizations with experience in creek and fish restoration including NMFS, DFG, CEMAR and the Sonoma Ecology Center.
16. **Vulnerability from climate change impacts other than sea level rise:** The proposed project will design creek improvements to allow adaptation as well as can be anticipated to potential changes in temperature, timing and intensity of rainfall, species migration, fire risk and water demand, using current modeling and projections for the Sonoma Valley area. The project will design improvements to steelhead passage, increase aquatic connectivity and habitat availability for spawning and rearing, and increase genetic flow and diversity of the species. Upland habitats associated with Stuart Creek will continue to be managed for diverse natural vegetation and wildlife communities, maintaining habitat heterogeneity and natural disturbance regimes; the majority of the watershed will remain under permanent protection by SLT and Audubon Canyon Ranch.
17. **Minimization of greenhouse gas emissions:** The proposed project will complete designs and environmental review for three fish passage improvements and low-impact public access improvements. The designs and environmental review will include Best Management Practices to limit greenhouse gas emissions that may occur during future construction of these improvements. By coordinating construction at the three sites, using Best Management Practices, SLT will limit emissions to the greatest extent possible. In SLT’s purchase of the Stuart Creek Property for this restoration project, it permanently retired all development potential of the parcel and thereby precluded potential carbon emissions that might otherwise have resulted from residential development.

**COMPLIANCE WITH CEQA:**

Preparation of the project involves only data gathering, planning, and feasibility analyses for possible future actions and is thus statutorily exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code of Regulations section 15262. Planning carried out as part of this project will, however, consider environmental factors as required by section 15262.

Staff will file a Notice of Exemption for this project upon its approval.