COASTAL CONSERVANCY

Staff Recommendation
December 13, 2007

WILLOW CREEK CHANNEL RESTORATION AND FISH PASSAGE PROJECT (2ND BRIDGE)

File No. 07-096-01
Project Manager: Matthew Gerhart

RECOMMENDED ACTION: Authorization to disburse up to $130,000 to Stewards of the Coast and Redwoods for engineering, design and environmental documentation for a culvert redesign and channel restoration project in Willow Creek, a tributary to the Russian River in western Sonoma County, for the purpose of restoring channel connectivity and critical anadromous fish habitat.

LOCATION: Willow Creek, Lower Russian River Watershed, Sonoma County

PROGRAM CATEGORY: Resource Enhancement

EXHIBITS

Exhibit 1: Project Location and Watershed Map

Exhibit 2: Lower Willow Creek Sedimentation Diagram

Exhibit 3: Letters of Support

RESOLUTION AND FINDINGS:

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

"The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed one hundred thirty thousand dollars ($130,000) to Stewards of the Coast and Redwoods ("Stewards") for the development of engineering designs and environmental documentation for a culvert redesign and channel restoration project in Willow Creek in western Sonoma County, for the purpose of restoring channel connectivity and critical anadromous fish habitat.

This authorization is subject to the condition that prior to disbursement of Conservancy funds, Stewards shall submit for the review and written approval of the Executive Officer of the Conservancy:

1. A final work program, including a budget and schedule.
2. The names of any contractors and subcontractors to be employed for the project.

3. Any permission necessary to pursue the project on the lands of the County.
4. Evidence that all other funds necessary to complete the project have been obtained."

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 Project Selection Criteria and Guidelines, last updated by the Conservancy on September 20, 2007.
2. The proposed authorization is consistent with the purposes and objectives of Chapter 6 of Division 21 of the Public Resources Code, regarding enhancement of coastal resources.
3. Stewards of the Coast and Redwoods is a nonprofit organization existing under Section 501(c)(3) of the Internal Revenue Service Code, and whose purposes are consistent with Division 21 of the Public Resources Code."

PROJECT SUMMARY:

The proposed authorization would enable the Stewards of the Coast and Redwoods ("Stewards") to plan and design culvert replacement and fish passage improvements in the lower Willow Creek watershed in western Sonoma County. The project will identify an engineered solution for a County road that crosses Willow Creek and currently impedes natural channel processes and impairs the biological productivity of salmonids within the watershed. Final work products will include a technically-detailed characterization of current hydrology, geotechnical considerations, and fish passage requirements; 80% technical designs; and permit application materials for a culvert or bridge solution that will allow adequate flow and re-establish channel formation processes at the location of the road crossing (also known as 2nd Bridge). Stewards will also ensure completion of all necessary environmental documentation, to the level needed to support an application for project implementation funding through the Department of Fish and Game's (DFG's) Fisheries Restoration Grant Program.

In 2005, the Stewards completed the *Willow Creek Watershed Management Plan*, which was developed through a stakeholder-based watershed planning process. The plan identified four top priorities in the watershed: 1) improving habitat for indigenous wildlife species, 2) increasing populations of salmon and steelhead to sustainable levels, 3) reducing sediment input to Willow Creek, and 4) resolving sedimentation issues at the 2nd Bridge. The proposed project will help to implement the plan's recommendations by aiding the restoration of channel formation throughout the lower reach of Willow Creek to allow for the recovery of healthy populations of coho salmon and steelhead to one of Sonoma County's coastal watersheds.

High rates of sediment production in the Willow Creek watershed from past land use practices have led to aggradation (filling of the channel and/or valley) in lower Willow Creek. The low valley slopes, combined with frequent backwater conditions during high flows on the Russian River, naturally promote sediment deposition upstream of the tidal wetlands at the mouth of

Willow Creek. Historic channel management practices (realignment and frequent dredging) sought to control the natural tendency of the creek to meander across the lower Willow Creek valley. A road up the valley was established in the 1930s that crossed the lower valley in 3 locations. The channel at the 2nd crossing required regular maintenance to conform to the bridge location established at that time.

After the purchase of the area by the California Department of Parks and Recreation (DPR) in 1978, dredging of the channel ceased due to financial and ecological constraints. Natural aggradational processes reasserted control over the system, filling the man-made channel and inducing channel migration to the west side of the valley. Subsequently, the bermed roadway across the valley at the 2nd bridge crossing began to restrict channel connectivity, impeding channel-forming processes at the creek's preferred location, and became a barrier to anadromous salmonids and other aquatic species. Since 1995, coho salmon have no longer been found spawning in Willow Creek, and steelhead presence has remained sporadic.

A Prunuske Chatham, Inc. (PCI) study, *Sustainable Channel Development in Lower Willow Creek, Sonoma County, California* (PCI 2005), outlined a range of solutions for the 2nd bridge floodplain crossing to allow for natural channel-forming processes and to restore fish passage. Reestablishing a single-thread channel in lower Willow Creek and at the existing bridge location was dismissed as an option, as it would not be self-maintaining or sustainable. Feasible options included replacing the floodplain culverts at the west side of the crossing, building a causeway across the valley, or removing the bridge and valley crossing altogether and rerouting the road on the east side of the valley out of the floodplain.

Initial consensus was reached by the Willow Creek Technical Advisory Committee (TAC) in 2005 that rerouting the road was the preferred long-term, ecologically superior alternative. However, subsequent to scoping and on-site route assessment by DPR in fall 2005, it was determined that road realignment was not an economically, geologically, or ecologically viable option as it would: 1) require extensive road cuts into unstable slopes, 2) be twice as long as the existing road and traverse untouched coastal grassland ridges, and 3) cross intact riparian areas and marshy wetlands. Even with cost and ecological impact mitigation, it is unlikely that permits or the public concurrence needed to establish a new road would be obtainable, as this area is within the coastal zone and Sonoma Coast State Park.

With the elimination of the road relocation option, the TAC was reconvened in spring 2007. A range of culvert and bridge options was reviewed in the context of ecological and hydraulic performance, future and existing road service levels, relative costs, and implementation timeframes. A new consensus was reached to design and install a channel crossing at the valley thalweg (west side of the 2nd bridge roadway) that will provide for channel development, hydraulic connectivity, fish passage, and a 20-50 year lifespan. Choices include a free-span bridge or multiple arched or box culverts.

Accordingly, the proposed project has been determined to be the most reasonable given costs, right-of-way issues, and implementation needs and constraints. The installation of a single bridge or 2-4 culverts at this time does not preclude the later installation of additional similar structures to create a raised, open causeway across the valley bottom should the need arise. Further

examination of the predicted channel evolution process since the completion of the channel feasibility study (PCI 2005) indicates the proposed solution will last a minimum of 20 years and is likely to be functional for much longer.

Phase 1 of the project includes preliminary design scoping—researching the preferred culvert replacement options, performing necessary geotechnical and hydraulic analyses, and producing an adaptive management and monitoring plan for channel development in the reaches upstream and downstream of the project. The design criteria for the crossing and details on the bridge and culvert options will be presented to the TAC for their review and decision on a preferred option. Phase 2 of the project will entail developing the design of the preferred replacement option to 80% design, with full site plans and designer's cost estimates. These plans can then be used to solicit funds for construction grants. Regulatory compliance planning will be completed in this phase and will include all analyses and documentation for CEQA and construction permits. Multiple meetings of the TAC will be held during the design and planning phase. A technical project report will be produced, and the design and implementation plan will be presented to the public. It is anticipated that the project will be submitted to the DFG's Fisheries Restoration Grant Program for construction funding.

Site Description: Willow Creek flows from an 8.7 square mile watershed into the Russian River approximately 2 miles from the river mouth at Jenner. The western, lower portion of Willow Creek forms a tidal estuary and narrow floodplain with several open fields and small wetlands surrounded by tall stands of redwood. The watershed is one of the lowest tributaries on the Russian River, and unique in that a large majority (>80%) of it is in public ownership dedicated for the purposes of natural resource protection.

Biologists consider the Willow Creek watershed to be an excellent spawning and nursery area for salmon and steelhead trout. Lower Willow Creek is comprised of a low-gradient riparian floodplain corridor, supporting a thick alder and willow overstory, which is subject to regular inundation in winter storms. The mainstem and major tributaries of Willow Creek provide the primary portion of coho and steelhead spawning and rearing habitat. Removing the fish passage barrier and restoring channel connectivity at 2nd Bridge is expected to improve access to 7.4 miles of steelhead and 4.7 miles of coho spawning and rearing habitat.

Project History: Conservancy involvement in Willow Creek began in 1987, with the Conservancy's funding of the Sonoma County Coastal Wetland Enhancement Plan. The plan identified the Willow Creek watershed as an important part of the region's wetland system due to the fact that the watershed terminates at a freshwater marsh and riparian thicket on the south side of the Russian River. This portion of the watershed is currently part of Sonoma Coast State Park.

In May 1996, the Conservancy funded the Sonoma County Coastal Parcel Study, conducted by the Sonoma Land Trust. The study highlighted fee acquisition and easement opportunities, trail and public access potential, and the conservation of unique natural features. Although the study identified additional property in the upper Willow Creek watershed as a very significant opportunity for resource protection and public access, the owner of the Willow Creek property was not willing to sell at that time.

For the past five years, Conservancy staff has been meeting with the West County Coastal Collaboration Working Group that represents interested agencies, environmental groups and legislators. The working group identified the Willow Creek Property as one of the highest priorities for acquisition in the region. In 2004, the property was purchased from Mendocino Redwood Company with a coalition of local and state funds, including Conservancy funds, and transferred to the DPR for inclusion in Sonoma Coast State Park.

Stewards has been active in supporting resource management projects in Russian River State Parks since the mid-1990s. Its mission is to promote education, preservation, and restoration of the natural and cultural resources of Russian River area state parks through interpretation and public stewardship. Since 2000, Stewards has been raising funds and implementing public education and resource management projects in the Willow Creek watershed, including the *Willow Creek Watershed Management Plan* and *Sustainable Channel Development in Lower Willow Creek, Sonoma County, California*, the two preliminary reports supporting this project. Additionally, Stewards has performed water quality monitoring in the watershed since 2003.

This authorization will allow Stewards to continue its working relationships with DPR and the County of Sonoma to provide necessary contract oversight for the design and permitting work. Stewards' experience and success in the provisioning of programs throughout the area make it highly qualified to carry out the directives of this authorization. Stewards' Executive Director, Michele Luna, has successfully managed grant-funded dune and watershed restoration projects with funding provided by the Conservancy, the Community Foundation of Sonoma County, the State Water Resources Control Board, the Sonoma County Water Agency, the Sonoma County Fish and Wildlife Commission, FishAmerica, and others.

DPR and the County of Sonoma have been active partners throughout the planning process for Willow Creek. To date, DPR has implemented and is implementing $1.3 million in upper-watershed sediment reduction and road remediation to address ongoing sources of sediment in the watershed; the County has helped fund and is helping implement this work. Additional transportation project mitigation funding is expected to help DPR assist in continued road surveying and decommissioning on the property, large woody debris placement, gully surveying and stabilization work, and adaptive management of the lower Willow Creek corridor. All of these will be essential components to the long-term success of this project. In connection with these restoration projects, DFG considers Willow Creek a top candidate for inclusion in the Coho Salmon Captive Broodstock Program, through which native coho fisheries stocks would be re-introduced and supported in the watershed.

PROJECT FINANCING:

Coastal Conservancy	$130,000
Sonoma County Fish and Wildlife (applied for)	14,000
Private Donations (applied for)	14,000
DPR	10,000
DFG	2,000
Total Project Cost	**$170,000**

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 enabling legislation.

The proposed project will accomplish these purposes by preparing necessary designs to restore fish passage and improve habitat for coho salmon and steelhead trout.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The proposed project is undertaken pursuant to Chapter 6 of Division 21 of the Public Resources Code (Sections 31251-31270 et seq.) as follows:

Pursuant to Section 31251, the Conservancy may award grants to 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. The proposed project is consistent with this section in that it will provide a necessary step in the restoration of fish habitat that has suffered due to road construction in the Willow Creek valley.

Consistent with Section 31252, the proposed project is consistent with the Sonoma County Local Coastal Program as described in the "Consistency with Local Coastal Program Policies" section below.

Pursuant to Section 31253, the Conservancy may provide up to the total cost of any coastal resource enhancement project. Consistent with this section, the proposed authorization provides approximately three-fourths of the total project cost with the balance provided by DPR, DFG, private donors, and the County of Sonoma.

Pursuant to Section 31111, the Conservancy may fund and undertake plans and feasibility studies, and may award grants to public agencies and nonprofit organizations for these purposes.

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

Consistent with **Goal 6, Objective 6C** of the Conservancy's 2007 Strategic Plan, the proposed project will improve water quality, habitat, and other coastal resources within coastal watersheds. Specifically, it will "fund the development of plans, designs, and California Environmental Quality Act (CEQA) compliance documents required for the removal of fish barriers."

In addition, the proposed project will assist in the fulfillment of Conservancy **Goal 5, Objectives 5B and 5C**, in that the project will assist in restoring and enhancing biological diversity in coastal watersheds through "restoring and enhancing coastal habitats" and "preserving and restoring wildlife corridors both between core habitat areas along the coast and from coastal to inland habitat areas."

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 September 20, 2007, 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:** The project has the broad support of community groups, agencies, and individuals in the watershed. Planning and support of the project has included the participation of local and national non-profits (Stewards of the Coast and Redwoods, LandPaths, Trout Unlimited), local agencies (Sonoma County Dept. of Public Works and Transportation), state agencies (DPR, DFG), NOAA Fisheries Service, as well as private landowners (including Mendocino Redwood Company). Letters of support are provided in Exhibit 3.
4. **Location:** The proposed project would be located within the coastal zone of Sonoma County. Willow Creek is one of the lowest tributaries of the Russian River, located between the coastal town of Jenner and the town of Duncans Mills.
5. **Need:** The sedimentation and stream flow problems present at Second Bridge have been identified as one of the chief obstacles to the restoration of stronger salmonid runs in the Willow Creek watershed. DPR is in the process of implementing $1.3 million in sediment reduction and habitat improvement projects throughout the upper watershed; however, these projects will have limited benefit to fisheries without a solution at the proposed project site. Partners are prepared to implement the project and potential project implementation funding sources have been identified.
6. **Greater-than-local interest:** The DFG has noted resolving passage and streamflow issues at Willow Creek as one of the highest fisheries restoration priorities in the lower Russian River basin, itself one of the most important areas for fisheries restoration in the entire coastal watershed. Willow Creek has been a state-wide priority for land acquisition for the protection and restoration of natural resources for decades, and continued comprehensive ecological management of the watershed will ensure the realization of these state-wide priorities. The project is highlighted as a model fish passage project in the Conservancy's *Inventory of Barriers to Fish Passage in California's Coastal Watersheds* report.

Additional Criteria

7. **Urgency:** Project funding is needed immediately to begin design work in time to submit for permitting and implementation funding from the DFG's Fisheries Restoration Grant Program in the upcoming spring, thereby avoiding additional delays of one to two winter seasons in addressing the barrier.

8. **Resolution of more than one issue:** The project will assist in fish passage throughout a critical reach of the watershed not only at the immediate project site but by spurring channel re-formation processes throughout the lower watershed. The project will also allow for improved public access to the State Park, which is often closed to through-traffic in the winter due to flooding.
9. **Leverage:** See the "Project Financing" section above.
10. **Innovation:** The project takes an innovative approach in that it seeks not simply to physically modify the channel to improve connectivity and fish habitat, but to improve the stream's ability to undergo channel formation and sediment transport itself; i.e. the relatively small-scale solution implemented here will allow for the main work of ongoing channel establishment and maintenance to proceed passively and sustainably.
11. **Readiness:** Stewards is prepared to enter into agreements with the Conservancy and an experienced contractor, and DPR, DFG and the County are prepared to offer oversight in guiding the process and choosing from the various design alternatives.
12. **Realization of prior Conservancy goals:** See "Project History" above.
13. **Cooperation:** The project will take benefit of the large number of project partners already active to date, including the local, regional, state and federal partners mentioned in the "Support of the Public" section above.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The Sonoma County Local Coastal Program (LCP), certified in 1981 and revised and incorporated into the Sonoma County General Plan on December 12, 2001, identifies the need for public action and assistance to resolve existing problems in special resource areas including stream corridors that provide habitat for anadromous fish such as Willow Creek. Policies include protecting the biological productivity of coastal waters, streams, wetlands, and estuaries; special protection for species of biological and economic importance; and the protection and restoration of riparian areas.

Specifically, the proposed authorization is consistent with Sonoma County LCP Environmental Resources Management Recommendations for Riparian Areas (10) and (12) that "require erosion control measures for projects affecting the riparian corridor" and allow for grading, excavation and other actions when "…such action will maintain the value of the area as a habitat for wildlife and aquatic organisms and is compatible with the continued viability of the habitat."

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

As required of a "coastal watershed protection" project proposed with funding from the Water Security, Clean Drinking Water, Coastal Beach Protection Fund of 2002 (Proposition 50), the proposed project is consistent with a local watershed management plan. As described in detail in the "Project Summary" section above, the proposed project furthers three of the top four recommendations from the *Willow Creek Watershed Management Plan,* completed in 2005 to comprehensively address natural resource and water management issues in the watershed.

Specifically, the proposed project is recommended in the plan as a top priority watershed implementation project.

COMPLIANCE WITH CEQA:

Preparation of the Willow Creek Channel Restoration and Fish Passage 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 California Code of Regulations §15262.

Staff will file a Notice of Exemption upon approval.