South Coast Habitat Restoration

Working to protect, conserve, and restore the various habitats and native biodiversity of the Santa Barbara and Ventura areas, through implementing habitat restoration projects, outreach to community members and landowners in our watersheds, as well as chairing the Carpinteria Creek Watershed Coalition.

Acknowledgments

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Table of Contents

Introduction.....1
Carpinteria Creek Watershed.....3
Bliss Fish Passage Restoration Project.....5
Pinkham Fish Passage Restoration.....7
Cate School Bank Stabilization.....9
Raya Fish Passage Improvements.....11
Upper Gobernador Fish Passage Restoration.....13
Carpinteria Creek Mouth.....17
Tajiguas Creek Watershed.....19
Ventura River Watershed.....23
Lion Creek Fish Passage Restoration.....25

South Coast Habitat Restoration is a local non-profit organization based in Carpinteria that is dedicated to environmental stewardship and habitat enhancement. We emphasize Steelhead trout (Oncorhynchus mykiss) recovery through a variety of watershed restoration projects throughout Santa Barbara and Ventura counties.

Steelhead trout are an anadromous form of rainbow trout native to the Pacific coast of North America. Southern Steelhead trout are an evolutionarily distinct population native to southern California and Northern Mexico. Southern Steelhead are dapted to the seasonally dry streams and arid climate that they experience at the southern end of the steelhead range. Their populations once numbered in the hundreds of thousands but today are less than 1% of these historic numbers. The drastic decline is in large part due to the building of dams, concrete flood control channels, and other barriers that block these migratory fish from reaching their spawning grounds and completing their life cycle. In 1997 the National Marine Fisheries Service listed Southern Steelhead trout, as endangered from the Santa Maria River south.

SCHR is working to restore access for steelhead by removing barriers and improving habitat conditions within our local creeks. SCHR works with private property owners and public agencies to develop and implement voluntary habitat restoration projects.

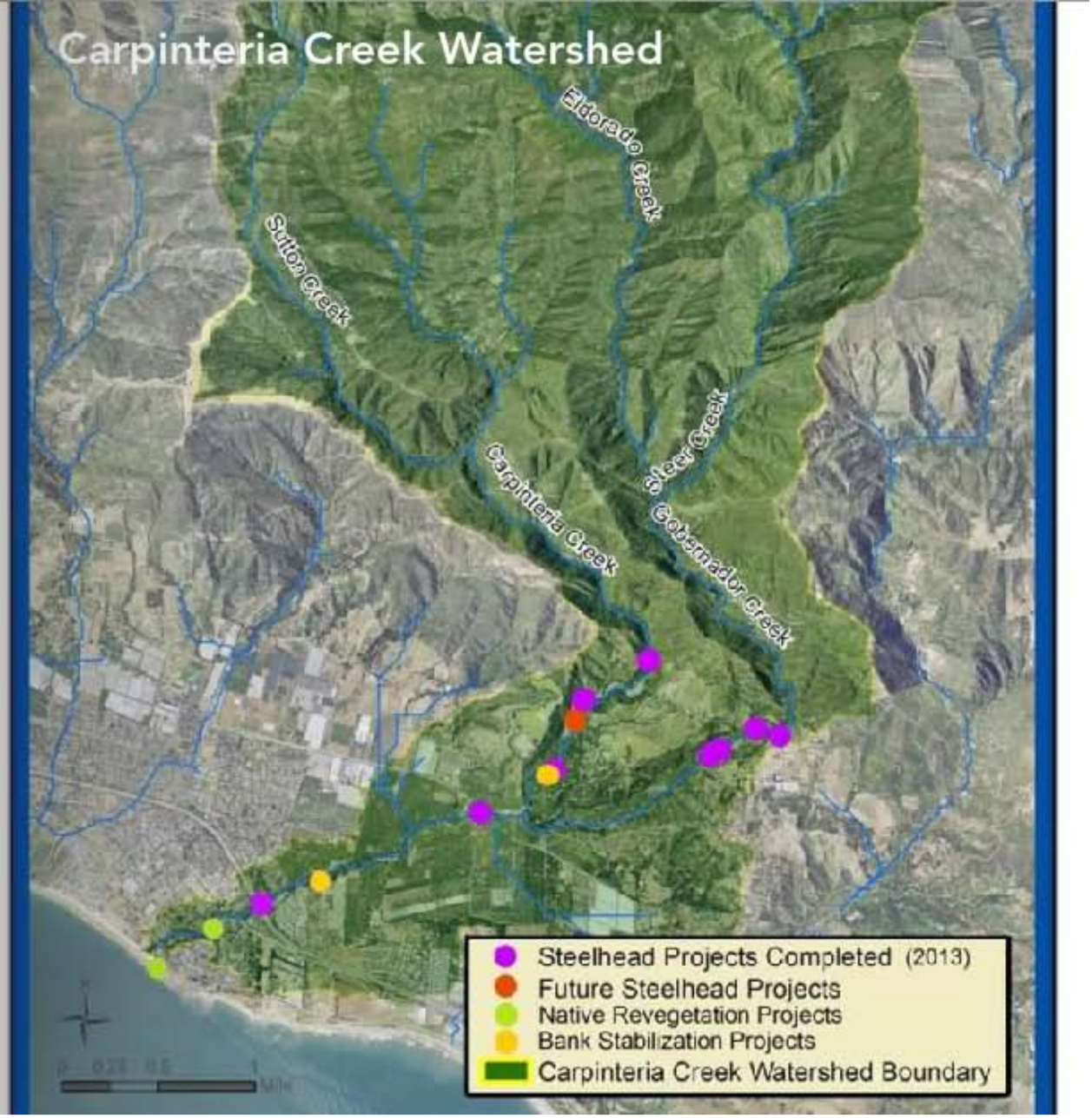
Project types

Fish Passage Restoration

Bank Stabilization and Riparian Restoration

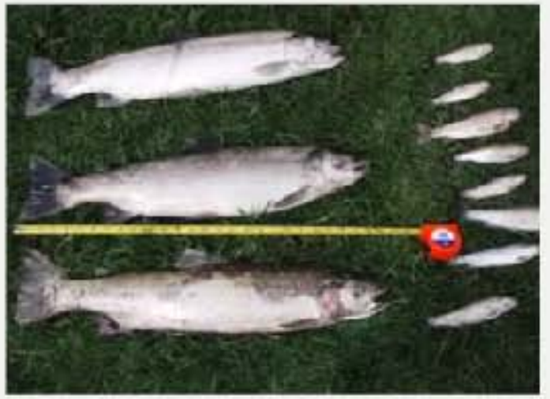
Community Restoration

The Carpinteria Creek Watershed has been a major focus of steelhead recovery efforts on the South Coast since the Carpinteira Creek Watershed Coalition was founded back in 2001. The Coalition and its member organizations spearheaded the creation of a Watershed management Plan. The first fish passage project was completed by the City of Carpinteria in 2004 followed by four seperate projects being completed in 2008. In total nine barriers have now been removed or modified to provide fish passage into the headwaters of Carpinteria Creek. Passage is now open within the main tributary to the watershde, on Gobernador Creek. One major barrier remains on the mainstem of Carpinteria Creek and SCHR is currently working with the private property ownes to develop the project designs and secure the neceasry grant funding to complete the project. In addition to fish passage restoration SCHR has completed a bank stabilization project and a large community volunteer restoration effort at the mounth of Carpinteria Creek within the Carpinteria State Beach.



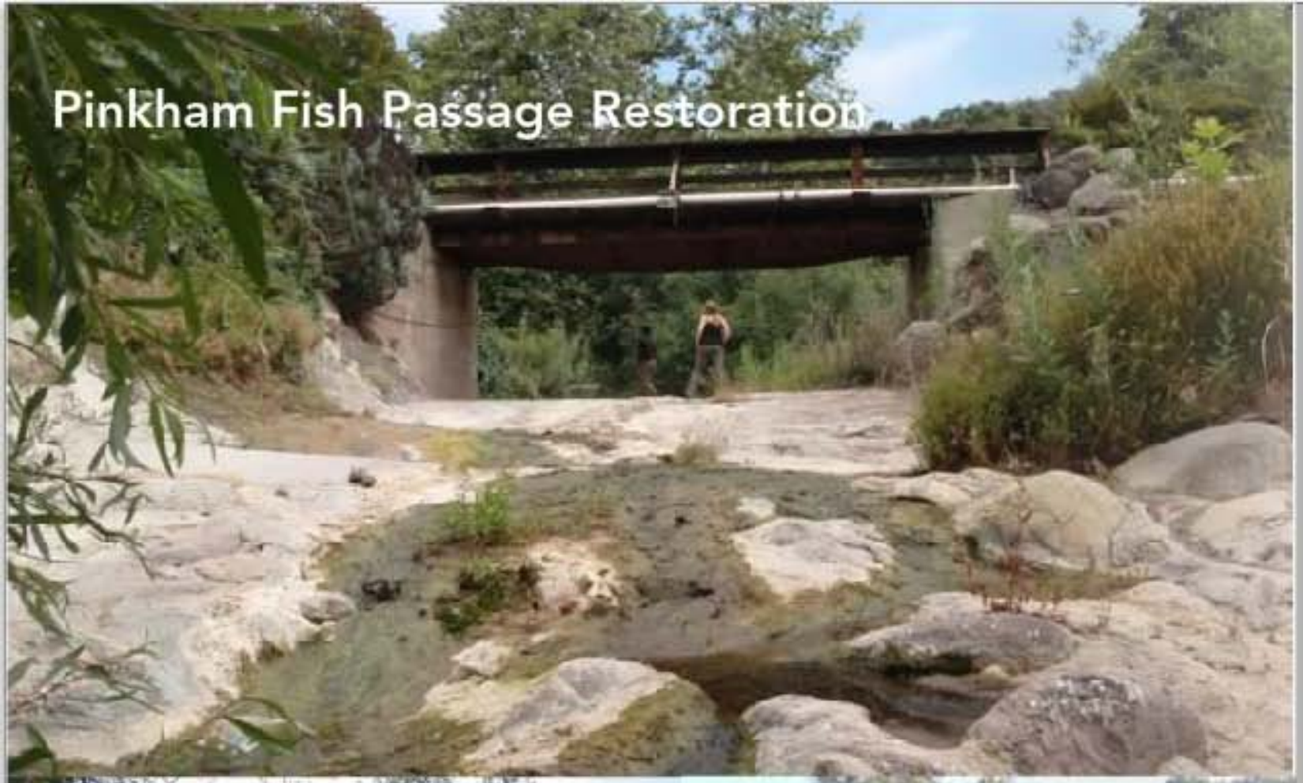
Bliss Fish Passage Restoration Project

The Bliss Fish Passage Restoration Project was completed in the Fall of 2008. The low flow crossing (opposite page at top) was the first major barrier that steelhead from the ocean encountered as they tried to make their way upstream. In the Spring of 2008 just a few months before this barrier was removed, three adult female steelhead migrated into Carpinteria Creek and were unable to make it over the barrier and subsequently died in the pool downstream when stream flows rapidly receded



The barrier is a result of the change in channel grade that results from the section of concreted roadway. The restoration project removed all of the concrete from the stream channel (top left), regraded the channel bed to a natural slope, built and installed a new freespanning vehicular bridge (top right and bottom left), and revegetated the site with native riparian vegetation. The stream now flows freely underneath the bridge and steelhead have access through the site (opposite page at bottom).

Pinkham Fish Passage Restoration



The Pinkham Fish Passage Restoration Project removed one of the last major barriers from a private ranch along the mainstem of Carpitneria Creek. The barrier at the site was a result of an undersized bridge and over 90 feet of concreted stream channel and banks (opposite page at top). This smooth concrete lacked a low flow channel or roughnes elements and therefore acted as a velocity barrier to migrating fish. The project removed the undersized bridge and replaced it with a wider free span bridge (opposite page at bottom left).

In addition to the new bridge all of the concrete was removed from the stream channel and the streambed was regraded to a natural slope using boulders and materials salvaged from the project site. Large boulders were incorporated into the channel and banks to mimic the natural channel upstream and to help lock in the channel in. These roughness elements also slow stream velocities and provide resting areas for migrating fish (opposite page at bottom right). The project involved excavation of the stream channel and for the new bridge abutments (above).

Cate School Bank Stabilization

The goal of the Cate School Bank Stabilization Project was to improve steelhead habitat, water quality, and streambank conditions in the Carpinteria Creek watershed at private property owned by the Cate School Corporation in Santa Barbara County. The project addressed a 300 foot area of eroding stream bank within an avocado orchard (top left). The project employed biotechnical bank stabilization for the protection of steep banks using rock toe installation, root wad structures and willow trenching (opposite page at top and bottom right). Construction of the project was completed in the Fall of 2010. The upper and lower sections of near vertical creek banks were laid back to a more gradual slope (left middle and bottom). Large rocks were placed in a trench along the toe of the slope. Willow and sycamore poles were placed within the trench and throughout the project site to help further stabilize the bank. In the middle 100 foot section of the project four large root wads (from felled avocado trees) were installed in order to direct flows away from the creek bank and protect it from further erosion.

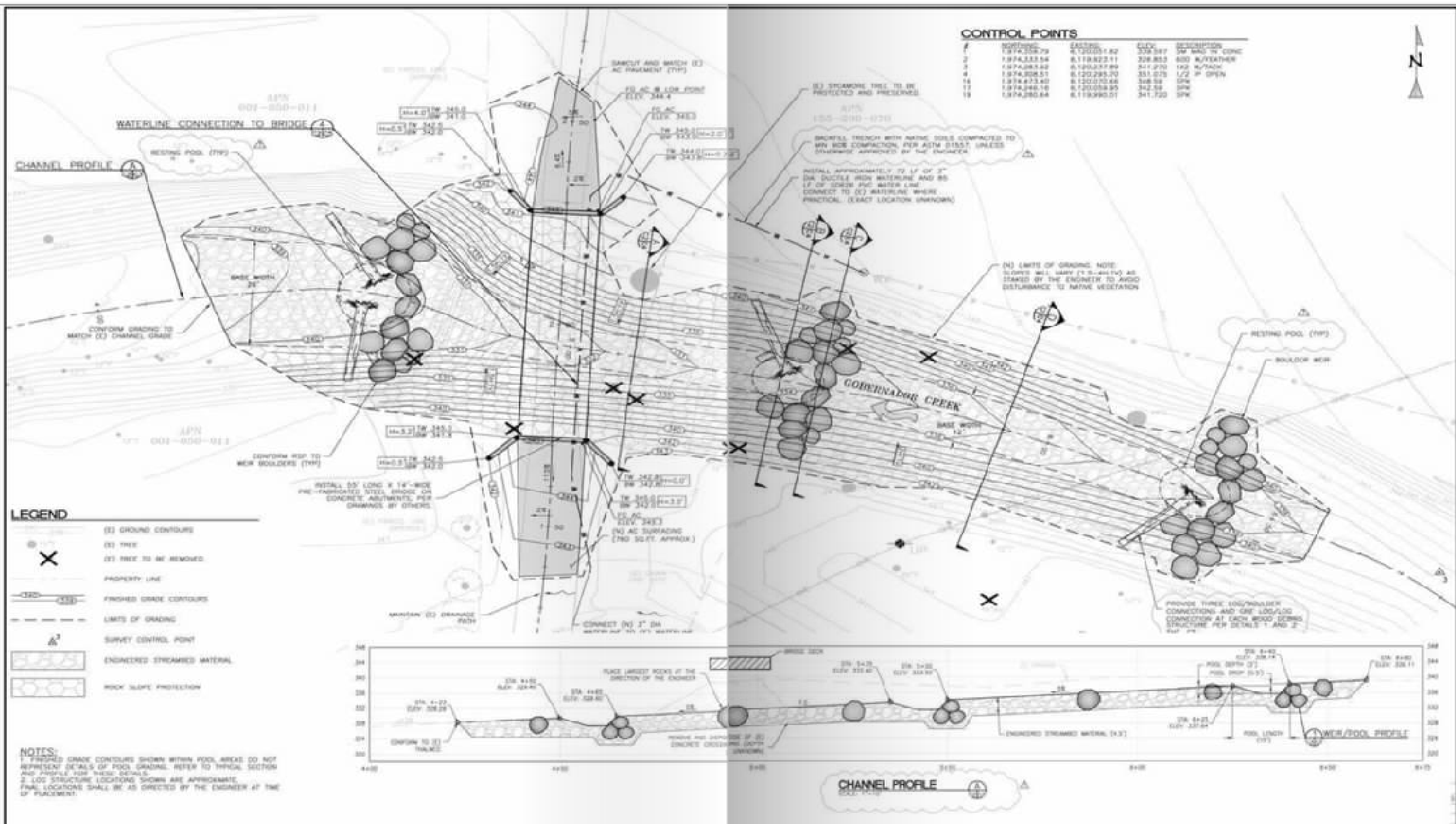
The Raya fish passage restoration project involved the removal of two low flow crossings on Gobernador Creek, the major tributary to Carpinteria Creek. As part the Raya project two redundant crossings (opposite page top, and this page middle) on a single property were removed and replaced with a single bridge (opposite page bottom). SCHR secured permits and construction funding for the project as well as managed the implementation/construction of the project. The project was completed in 2008 at the same time as two other barrier removal projects. All of the concrete was removed from the stream channel (bottom left) and the channel was regraded using natural stream bed materials to restore fish passage. A new free spanning vehicular bridge was installed at the location of the usptream low flow crossing (below). Re-vegetation occurred shortly thereafter with native riparian trees and shrubs. Native revegetation efforts at the site have been successful at reaching the performance criteria of 80% cover of native by the end of five years. Native riparian trees at the site are now over twenty feet tall (opposite page at bottom). In conjunction with other completed and planned projects, the community goal of opening up passage to the upstream natural barrier to steelhead in the head waters of Gobernador Creek is now complete since the removal of the Upper Gobernador crossing in 2011. Migrating steelhead now have uninhibited access to the headwaters of Gobernador creek from the Pacific Ocean.

Raya Fish Passage Improvements

Upper Gobernador Fish Passage Restoration

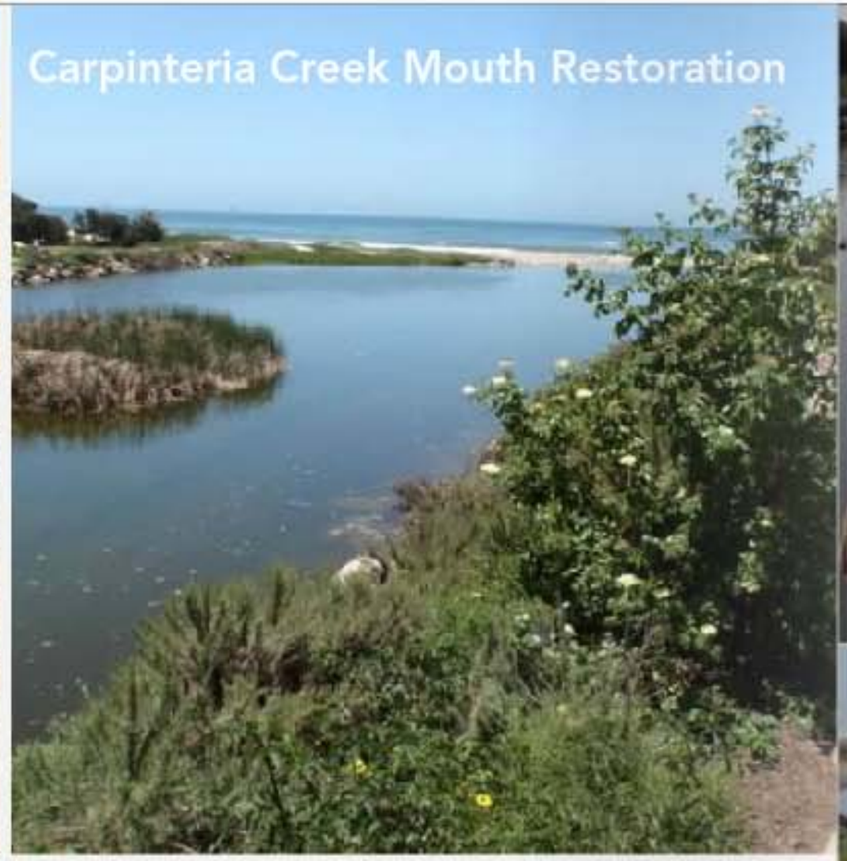
The Upper Gobernador Fish Passage Restoration Project removed the final barrier from the Gobernador Creek Watershed. The barrier was a concrete low flow crossing which resulted in a 14 foot jump height for fish and was deemed a complete barrier to fish passage (opposite page at top and this page at top left). Its removal opened up over a mile of spawning and rearing habitat and opened passage from the Pacific Ocean into the perennial headwaters of the Creek.

The project involved the removal of the existing concrete crossing and regrading of nearly 300 feet of stream channel to make up for the unnatural change in channel elevation that occurred on the downstream end of the crossing (bottom right). A new free span vehicular bridge was installed as well as three large woody debris structures which will help to maintain pool habitat within this reach. Re-vegetation efforts included native container planting as well as seeding and tree stakes. The native plants are thriving and filling in the project site.



NOTES:
1. FINISHED GRADE CONTOURS SHOWN WITHIN POOL AREAS DO NOT REPRESENT DETAILS OF POOL GRADING. REFER TO TYPICAL SECTION AND PROFILE FOR THESE DETAILS.
2. LOG STRUCTURE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER AT TIME OF PLACEMENT.

Carpinteria Creek Mouth Restoration



The Carpinteria Creek Mouth Project was a community restoration effort that used volunteers to help solarize non-native iceplant with sheets of black plastic (opposite at top) and re-vegetated the site with a diverse palette of local native plants. The project was completed in 2010, in partnership with California State Parks, and Channel Islands Restoration. Before the project the site was dominated by the non-native iceplant (top). After the solarization was complete native plants were installed within the dead iceplant (middle), below left a recent photo of the finished project site, and above right another after photo of the project site. Opposite page, above photo shows the installation of sheets of black plastic using wooden stakes and sand bags to help secure and hold the plastic in place, and below shows the project site just a few months after planting during a volunteer weeding event.

Tajiguas Watershed Restoration

The Rancho Tajiguas Barrier Removal Projects aim to restore steelhead passage to six miles of historically accessible stream. To date five concrete low flow crossings have been removed from the watershed. These redundant stream crossings were replaced with one clear span vehicular bridge. The crossings that were removed were constructed decades ago as part of the ranch agricultural operations and over time became barriers to steelhead trout migration as stream flows moved over the smooth concrete, picked up speed, and scoured out stream bed material on the downstream end. Rancho Tajiguas, is a private property that encompasses the entire Tajiguas Creek Watershed on the Gaviota Coast near Santa Barbara, California. The first phase of the project was completed in 2011 and restored approximately three miles of steelhead spawning and rearing habitat. At each of the five project sites construction involved removing the concrete crossings, regrading of the stream channel, the restoration of the stream banks within the project area using biotechnical methods of bank stabilization, and re-vegetation of the site with native riparian species. Re-vegetation efforts began in December 2011, in total over 600 native container plants were planted at the sites along with tree stakes that were salvaged from the sites prior to construction. Removal of the barriers and replacement of the crossings with a single bridge significantly improved conditions for steelhead within the Tajiguas Watershed along the Gaviota Coast.

The second phase of construction will begin in late Summer 2014. This second phase will remove the final four barriers from the watershed. Two low flow crossings will be replaced with bottomless arched culverts, one concrete grade control structure will be removed in its entirety, and one concrete diversion strucutre will be removed and replaced with a constructed weir and pool to provide sufficient depths.

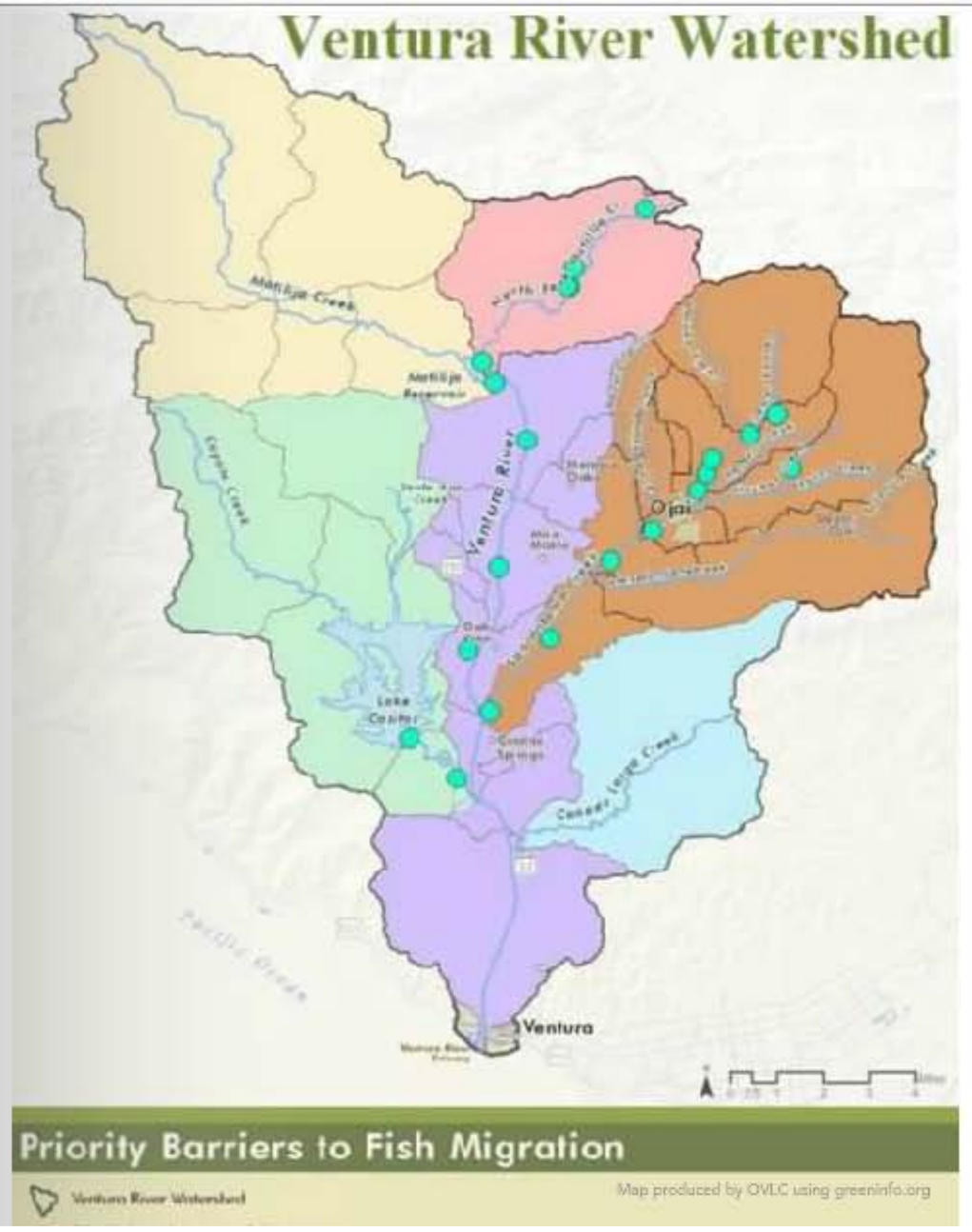
Tajiguas Watershed Restoration Continued

As part of the larger barrier removal efforts that took place in 2011 in the Tajiguas Watershed a bank stabilization project was incorporated into one of the sites. It involved the removal of a large pipe and cobble revetment structure from the left creek bank (opposite at top) and replacement with a bio-engineered method of bank stabilization known as a willow wattle fence (opposite bottom left and right). The fence is made of live willow poles that have been stripped of all their leaves and branches. Support poles are inserted deep into the soil roughly 4-6 feet deep and then willow poles are woven in and out of the support poles to create the fence. These willow poles will root into the surrounding soil and sprout new leaves to create a living fence. Four willow fences were built at this site, going up the bank to create a series of terraces and provide a stable grade along the bank. The roots of the willow trees will further stabilize the bank at this site. Additional bank stabilization methods were used as part of the Tajiguas project including willow stakes, planting of deep rooted native species, and a willow wattle mattress. In addition to the removal of five concrete crossings, one clear span bridge was installed (below) to provide the property owners fish friendly access across the creek.

Ventura River Watershed

The Ventura River watershed covers an area of about 227 square miles. All of this land drains into the Ventura River, either directly or through draws and tributaries. The major tributaries to the Ventura River include Matilija Creek, North Fork Matilija Creek, San Antonio Creek, and Canada Larga. The Ventura River mouth at the Pacific Ocean is located within Emma Wood State Beach. There are a number of barriers within the Ventura River Watershed. Large dams on Coyote Creek and on Matilija creek have greatly reduced what was historically available. Removing smaller barriers in the watershed especially in North Fork Matilija at Wheeler Gorge, and throughout the larger San Antonio Watershed will be essential to the recovery of steelhead populations in the watershed.

The Ventura River Watershed Council is currently working to develop a watershed management plan which aims to ensure the watershed's protection into the future. It will identify ways in which the efforts currently underway in the watershed can complement and support one another. It will outline for the community, for decision-makers, and for all stakeholders the many projects that could help advance a sustainable watershed; and it will identify among those the ones of greatest priority.



Lion Creek Fish Passage Restoration

The project broke ground in the summer of 2010. The barrier to steelhead trout migration was removed and replaced with an 85 foot clear spanning bridge, constructed from a recycled railroad car. The project area has been re-vegetated with native trees and shrubs with the help of the California Conservation Corps. The project area will continue to be monitored and maintained for the next few years.

The Lion Creek project involved the removal of a stream crossing which acted as a barrier to migration for the federally endangered steelhead trout. Lion Creek is a tributary to San Antonio Creek, a major steelhead creek within the Ventura River Watershed. The project opened up access to approximately 9.5 miles of upstream habitat. The project was a collaborative effort between SCHR, the property owner, as well as local, state and federal agencies. SCHR wrote grants and was awarded over $300,000 in grant funding to complete the project.

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