

Quiota Creek Fish Passage Improvement, **2016** Crossing 4

Introduction:

1. Cachuma Operation and Maintenance Board (COMB) will implement the Quiota Creek Fish Passage Improvement at Crossing 4 project. The purpose of the project is to continue the long-term effort and sequence of projects that will remove all remaining man-made migration barriers within Quiota Creek and throughout the Santa Ynez River basin.

This project is necessary because by removing the impediment at Crossing 4 on Quiota Creek in Santa Barbara County, 3.27 miles of stream with high-quality critical habitat will be opened up for southern steelhead spawning, rearing and over-summering. No anadromous steelhead have been observed in this creek since monitoring began in 2000, due to partial or total barriers along Quiota Creek. Genetic analysis performed by the National Oceanic and Atmospheric Administration (NOAA) Science Center at the University of California, Santa Cruz identified a tissue sample from a 2008 steelhead (600 mm fork-length) trapped on the Lower Santa Ynez River mainstem just upstream of the Quiota Creek confluence as a fish that originated from Quiota Creek (Garza and Clemento, 2010). Hence, the Quiota Creek *O. mykiss* population does contain anadromous fish genes. The project will eliminate any migration delays and open up unimpeded access to significant spawning and rearing habitat for steelhead within the Quiota Creek watershed and improve general access to upper basin habitats within the Santa Ynez River drainage, a Core 1 watershed in the Southern Steelhead Recovery Plan (National Marine Fisheries Service (NMFS), 2012).

2. Permit Disclosure: The Project Manager shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured.
3. All habitat improvement will follow techniques in the California Salmonid Stream Habitat Restoration Manual Parts VI, VII, IX and XII (Flosi et al 1998 and 2002).

Objective(s):

The specific objective of this project is to provide access to 3.27 miles of spawning and rearing habitat for southern steelhead by removing the passage migration barrier at Crossing 4 on Quiota Creek, and replacing it with a 53-foot span concrete bottomless bridge. This objective relates to the NMFS Southern California Steelhead Recovery Plan task SYR-SCS-3.1 Develop and implement plan to remove or modify fish passage barriers within the watershed (NMFS 2012).

The goals are to provide hydrologic connectivity through the new crossing, allowing sufficient flow depths for salmonid passage during minimal flows as well as allowing access to good spawning and rearing habitat in Quiota Creek. This effort will help to

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facilitate the development of a self-sustaining population of Southern California steelhead within the Santa Ynez River Watershed below Bradbury Dam.

Project Description:

Location: The project site is located in the lower half of the Santa Ynez River watershed, 8.4 stream miles below Bradbury Dam (Lake Cachuma) and 39.6 miles upstream from the Pacific Ocean and east of the cities of Lompoc and Buellton. Quiota Creek enters the Santa Ynez River near the town of Santa Ynez, Santa Barbara County. Crossing 4 is located 2.6 miles upstream of the confluence of Quiota Creek with Santa Ynez River. The project is located at Latitude 34.56152000, Longitude -120.08685000 of the Santa Ynez 7.5 Minute U.S.G.S. Quadrangle, as depicted in the Project Location Map.

The project work site will extend into the creek channel approximately 170 feet upstream and 50 feet downstream of the fourth road crossing on South Refugio Road. The proposed road work will extend approximately 150 feet east and 210 feet west of the stream crossing.

Project Set Up: The Project Manager will provide oversight and administration (secure permits, hire subcontractors, coordinate project related meetings and communication, billing, compiling of project status reports, grant management and biological monitoring) for this project. The Project Manager will hire HDR Fisheries Design Center (HDR) as their engineering subcontractor. HDR will provide all engineering and design work for this project. The Project Manager will also hire a construction subcontractor with the experience and expertise to remove the existing crossing, complete all in-channel work and install a new bridge. The construction subcontractor will be responsible for mobilization, demolition and excavation of the existing crossing, installation of the new bridge and all activities associated with its installation and restoration of the site following construction. Additionally, other subcontractors may be hired as needed to implement this project such as survey crews, geotechnical specialists, construction oversight engineers, materials testing firms, general and specialist construction crew members, water quality inspectors, water diversion experts and arborists.

Materials: The project materials will consist of a new bridge system (bridge components, abutments, rails) as well as a single 18-foot wide lane road surface to the existing County road surfaces. The materials include concrete, gravel, sand, rock, railings, asphalt, fill material, signage, anti-graffiti paint, dewatering system, erosion control material, plants, tree stakes and fencing.

Tasks: The COMB staff, their Engineering subconsultant and the Construction subconsultants will complete the following tasks:

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Task 1: Pre-Implementation

- a. Finalize plan sets to bring to construction-ready level (100%)
- b. Acquire necessary county and state permits
- c. Obtain Notice to Proceed following 100% design review
- d. Set up photo monitoring sites
- e. Fish rescue and relocation, if necessary.

Task 2: Implementation of Fish Passage Improvement

- a. Installation of the stream by-pass and reach dewatering system.
- b. Demolition and removal of the existing crossing.
- c. Excavation and construction of the bridge system and wing wall footings.
- d. Installation of 53-foot by 18-foot prefabricated bottomless-arched culvert (bridge) and wing walls.
- e. Installation of Engineered Streambed Material.
- f. Re-grade the stream bottom with native stream bed materials.
- g. Rebuild the roadway and cover with asphalt.
- h. Anti-graffiti treatment on exposed areas of concrete.
- i. Install the of bridge and road guard rails.
- j. Install cattle exclusion fencing.

Task 3: Post Project Monitoring and Maintenance.

- a. Site clean-up.
- b. As-Built Survey. The technical subcontractor will prepare a red-line markup of the construction documents with any changes that occurred during construction. A brief As-Built Memorandum will be prepared that provides a discussion of any differences between the construction documents and the as-built survey and potential concerns arising from the difference.
- c. Permanent erosion control and re-vegetation of the site with native plants.
- d. Maintenance and monitoring of restoration site for a period of 3 to 5 years, including irrigation set up, weed planted areas and re-plant, if necessary. The Monitoring Plan will include monitoring the fish passage hydraulics as well as the condition of the concrete arch bridge, cattle exclusion fencing, and planted vegetation. Any maintenance issues that may arise will be addressed in a timely manner by the Project Manager.
- e. Evaluate fish habitat improvement projects as described in the California Salmonid Stream Habitat Restoration Manual.
- f. Public Outreach – Upon completing the project, Project Manager will create a newsletter that will describe the project and the objectives achieved for restoration of southern steelhead within the Santa Ynez River basin. In addition, Project Manager will distribute a press release describing the project for the general public and to further promote recovery efforts of southern steelhead, with the objective of heightening awareness and engendering support of steelhead in local waterways.

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Task 4: Prior to the bid and construction company selection process, the Project Manager will define the role of HDR Fisheries Design Center staff during construction. All subcontractors bidding on the project must understand that the design engineer(s) will be given the authority to direct the selection and placement of all rock during that phase of the project. During the selection process, the Project Manager will select the subcontractor with prior experience installing bridges since this component is critical to the success and durability of the project.

Task 5: The Project Manager will notify HDR Fisheries Design Center that they will be required to provide weekly Quality Assurance/Quality Control (QA/QC) reports to the Grantor's engineer using the Grantor's QA/QC reporting template.

Task 6: Provide administration of the grant including, but not limited, to personnel oversight, preparing and submission of invoices, progress reports, and the Final Grant Report.

Upon completion of the project, the Grantee will photograph the constructed project and develop a written final completion report for submission to Grantor. The final report will contain: 1) general grant information, 2) location of work, 3) project access, 4) participating landowners names and addresses, 5) a description and analysis of the restoration and planning techniques used, 6) a description of the results of the project, 7) dates of work and the number of person hours expended, 8) labeled before and after photos of selected restoration activities and techniques, and 9) grant dollars spent and contributed and/or in kind services used to complete the project. List all tasks to be accomplished to complete the goals and describe how tasks will be achieved.

Deliverables:

- Implementation plans (Dewatering, Erosion control, Fish removal, Maintenance and Monitoring and Re-vegetation)
- Weekly QA/QC reports
- Monthly progress reports,
- Final report, including copies of: final designs, permits and photos of project pre-, during, and post-construction,
- Monitoring of re-vegetation effort after project completion along with project monitoring report,
- As-built design drawings and report.

Timelines: The project is anticipated to take two years to construct. The construction window is September 15 to October 30 of each year unless otherwise designated in the project permits. Any delays will be communicated to the Grantor's project manager immediately. The following outlines the phases that must be accomplished in order to successfully complete the project:

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Tasks 1a and 4: July –August 2016;
Task 1b-e and Task 2: August to October 30 in 2016 and in 2017;
Task 3: November 1 to December 31, 2016;
Task 5: Weekly (September 1 to October 30);
Task 6: Monthly – submission of progress reports and/or updates;
February 1, 2019 - Draft Grant Report in accordance with Attachment 2;
March 1, 2019 - Final Grant Report, final invoice and project documentation

Additional Requirements:

1. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife.
2. The bridge (culvert) design and installation will meet flow carrying capacity required for a 100-year flood event, as identified by specifications determined by the NOAA Fisheries and the Grantor, for adult and juvenile salmonid fish passage. The project will follow the NMFS (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and criteria for fish passage as described in Volume II, Part IX, of the California Salmonid Stream Habitat Restoration Manual. The engineered plans for the bridge (culvert) installation shall be visually reviewed and authorized by NOAA Fisheries or CDFW's engineers prior to commencement of work.
3. All habitat improvements will follow techniques described in the California Salmonid Stream Habitat Restoration Manual, Volume I, and Volume II Part XI and Part XII. The Project Manager/landowner will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season. Planting of tree seedlings shall take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. The standard for success is 80% survival of plantings or 80% ground cover for broadcast planting of seed, after a period of three years.
4. Final structure design and placement will be determined by field consultation between the Project Manager's and Grantor's Project Managers. All habitat improvements will follow techniques described in the California Salmonid Stream Habitat Restoration Manual.
5. Any modification to the design that occurs during construction must be approved by the Project Manager's design engineers and either Marcin Whitman, (916) 445-3832, or Margie Caisley, (916) 445-3162, CDFW

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Engineers in writing prior to the change being implemented. The Grantor's Project Manager will also be notified by telephone (562)342-7186. Failure to do so will result in cancellation of the grant.

6. In instances where water is present in the work area, the Project Manager shall notify the Grantor's Project Manager a minimum of five (5) working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Grantor personnel to oversee the implementation of the water diversion plan and the safe removal and relocation of steelhead and other fish life from the project area. If the project requires dewatering of the site, and the relocation of steelhead, the Project Manager will implement the following measures to minimize harm and mortality to listed steelhead:
 - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
 - The Project Manager shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
 - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
 - The Project Manager will provide fish relocation data to the Grantor's Project Manager on a form provided by the Grantor.
 - Additional measures to minimize injury and mortality of steelhead during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual.
7. The Project Manager/landowner will maintain the livestock exclusion fence(s) for a period of 10 years and totally exclude livestock from the riparian zone. Maintenance will include repair of fences to a level that will effectively exclude livestock from the livestock exclusion project area. Maintenance will not include damage that exceeds 50 percent of the fence due to natural disaster.
8. No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling

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equipment. Any and all equipment will be removed from the streambed and flood plain areas at the end of each workday.

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
724654 Fish Passage Improvement at Crossing 4, Quiota Creek
S 06N 31W Section 36
Santa Barbara County

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Abrams' oxytheca <i>Acanthoscyphus parishii</i> var. <i>abramsii</i>	PDPGN0J041			G4?T2	S2	1B.2
2 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S3	SC
3 California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened		G2G3	S2S3	SC
4 California tiger salamander <i>Ambystoma californiense</i>	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
5 Contra Costa goldfields <i>Lasthenia conjugens</i>	PDAST5L040	Endangered		G1	S1	1B.1
6 Cooper's hawk <i>Accipiter cooperii</i>	ABNKC12040			G5	S4	
7 Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	PDAST5L0A1			G4T2	S2	1B.1
8 Davidson's saltscale <i>Atriplex serenana</i> var. <i>davidsonii</i>	PDCHE041T1			G5T1	S1	1B.2
9 Gaviota tarplant <i>Deinandra increscens</i> ssp. <i>villosa</i>	PDAST4R0U3	Endangered	Endangered	G4G5T2	S2	1B.1
10 Hoover's bent grass <i>Agrostis hooveri</i>	PMPOA040M0			G2	S2	1B.2
11 Miles' milk-vetch <i>Astragalus didymocarpus</i> var. <i>milesianus</i>	PDFAB0F2X3			G5T2	S2	1B.2
12 Ojai fritillary <i>Fritillaria ojaiensis</i>	PMLIL0V0N0			G2?	S2?	1B.2
13 Palmer's mariposa-lily <i>Calochortus palmeri</i> var. <i>palmeri</i>	PMLIL0D122			G3T3?	S3?	1B.2
14 Refugio manzanita <i>Arctostaphylos refugioensis</i>	PDERI041B0			G2	S2	1B.2
15 San Diego desert woodrat <i>Neotoma lepida</i> <i>intermedia</i>	AMAFF08041			G5T3T4	S3S4	SC
16 Santa Barbara honeysuckle <i>Lonicera subspicata</i> var. <i>subspicata</i>	PDCPR030R3			G5T2	S2	1B.2
17 Santa Barbara jewelflower <i>Caulanthus amplexicaulis</i> var. <i>barbarae</i>	PDBRA0M012			G4T2	S2	1B.1
18 Santa Ynez false lupine <i>Thermopsis macrophylla</i>	PDFAB3Z0E0		Rare	G1	S1	1B.3
19 Sonoran maiden fern <i>Thelypteris puberula</i> var. <i>sonorensis</i>	PPTHE05192			G5T3	S2	2B.2
20 Southern California Steelhead Stream	CARE2310CA			GNR	SNR	
21 Southern Coast Live Oak Riparian Forest	CTT61310CA			G4	S4	
22 Southern Cottonwood Willow Riparian Forest	CTT61330CA			G3	S3.2	
23 Southern Vernal Pool	CTT44300CA			GNR	SNR	
24 Southern Willow Scrub	CTT63320CA			G3	S2.1	

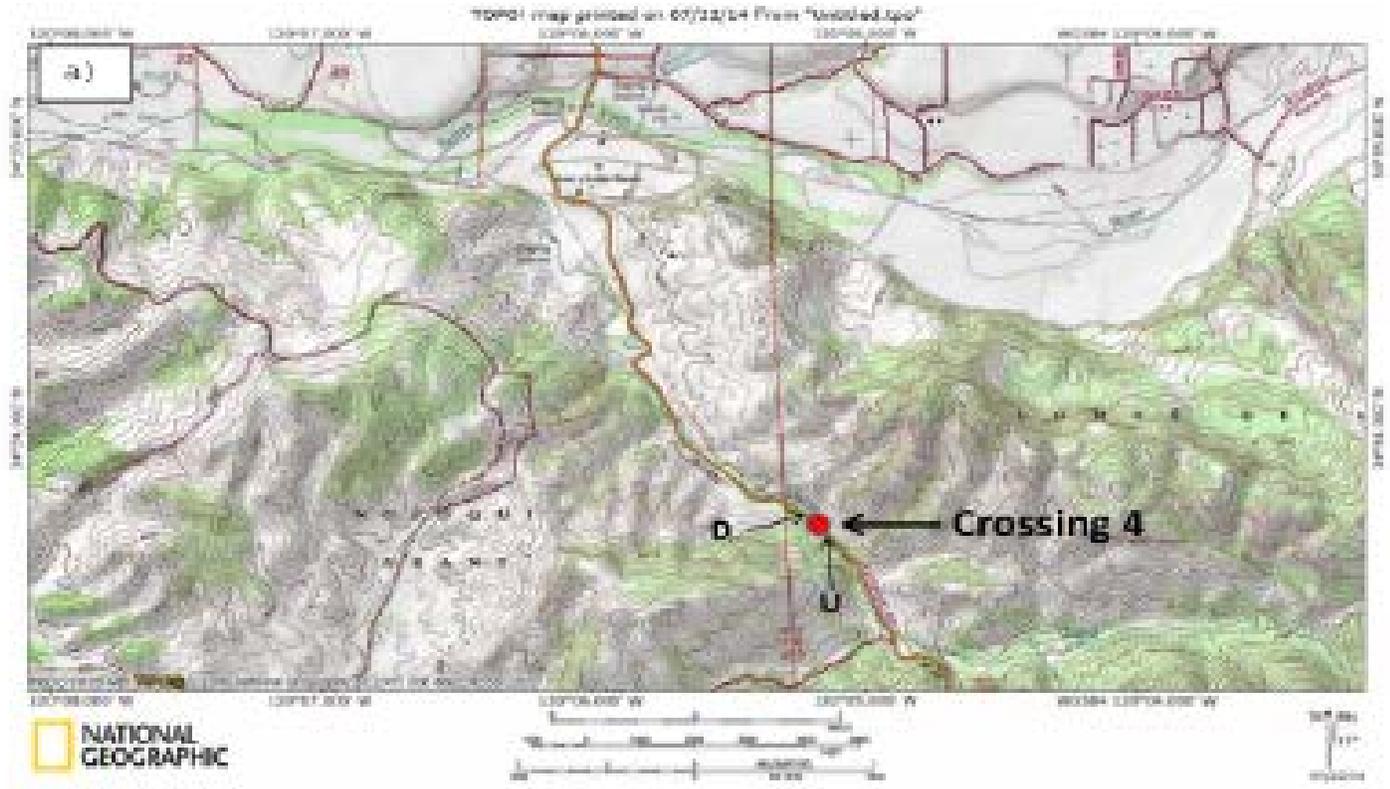
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25 Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010		Candidate Threatened	G3G4	S2	SC
26 Valley Needlegrass Grassland	CTT42110CA			G3	S3.1	
27 bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S2	
28 black-flowered figwort <i>Scrophularia atrata</i>	PDSCR1S010			G2G3	S2S3	1B.2
29 chaparral ragwort <i>Senecio aphanactis</i>	PDAST8H060			G3?	S2	2B.2
30 coast horned lizard <i>Phrynosoma blainvillii</i>	ARACF12100			G3G4	S3S4	SC
31 ferruginous hawk <i>Buteo regalis</i>	ABNKC19120			G4	S3S4	
32 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S3	SC
33 globose dune beetle <i>Coelus globosus</i>	IICOL4A010			G1G2	S1S2	
34 late-flowered mariposa-lily <i>Calochortus fimbriatus</i>	PMLIL0D1J2			G3	S3	1B.2
35 mesa horkelia <i>Horkelia cuneata var. puberula</i>	PDROS0W045			G4T1	S1	1B.1
36 monarch - California overwintering population <i>Danaus plexippus pop. 1</i>	IILEPP2012			G4T2T3	S2S3	
37 obscure bumble bee <i>Bombus caliginosus</i>	IHYM24380			G4?	S1S2	
38 pale-yellow layia <i>Layia heterotricha</i>	PDAST5N070			G2	S2	1B.1
39 round-leaved filaree <i>California macrophylla</i>	PDGER01070			G3?	S3?	1B.2
40 sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	IICOL02101			G5T2	S1	
41 seaside bird's-beak <i>Cordylanthus rigidus ssp. littoralis</i>	PDSCR0J0P2		Endangered	G5T2	S2	1B.1
42 silvery legless lizard <i>Anniella pulchra pulchra</i>	ARACC01012			G3G4T3T4 Q	S3	SC
43 southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	ABPBX91091			G5T3	S2S3	
44 southern curly-leaved monardella <i>Monardella sinuata ssp. sinuata</i>	PDLAM18161			G3T2	S2	1B.2
45 southern tarplant <i>Centromadia parryi ssp. australis</i>	PDAST4R0P4			G3T2	S2	1B.1
46 southwestern willow flycatcher <i>Empidonax traillii extimus</i>	ABPAE33043	Endangered	Endangered	G5T2	S1	

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47 steelhead - southern California DPS <i>Oncorhynchus mykiss irideus</i>	AFCHA0209J	Endangered		G5T1Q	S1	SC
48 tidewater goby <i>Eucyclogobius newberryi</i>	AFCQN04010	Endangered		G3	S3	SC
49 tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020			G2G3	S1S2	SC
50 two-striped garter snake <i>Thamnophis hammondi</i>	ARADB36160			G4	S3S4	SC
51 umbrella larkspur <i>Delphinium umbracolorum</i>	PDRAN0B1W0			G3	S3	1B.3
52 vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened		G3	S3	
53 western pond turtle <i>Emys marmorata</i>	ARAAD02030			G3G4	S3	SC
54 western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened		G3T3	S2	SC
55 western spadefoot <i>Spea hammondi</i>	AAABF02020			G3	S3	SC
56 white-tailed kite <i>Elanus leucurus</i>	ABNKC06010			G5	S3S4	
57 white-veined monardella <i>Monardella hypoleuca ssp. hypoleuca</i>	PDLAM180A3			G4T2T3	S2S3	1B.3

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Project location just south of the town of Santa Ynez on Refugio Road; D downstream and U upstream of the project