

Arroyo Parida Bridge Replacement

NES Addendum



Arroyo Parida Creek and Bridge (12/13/2006), view upstream

Natural Environment Study Addendum

Bridge Replacement
in southeastern Santa Barbara County
near the City of Carpinteria

05-SB-192- PM 15.5

06-396100

July 2008



For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Chuck Cesena, 50 Higuera Street, San Luis Obispo, CA 93401; (805) 549-3622 Voice, or use the California Relay Service TTY number, 800/735-2929.

Natural Environment Study Addendum

Bridge Replacement
in southeastern Santa Barbara County
near the City of Carpinteria

05-SB-192- PM 15.5

06-396100

Prepared By: _____ Date: _____

Virginia Strohl, Associate Biologist
(805) 542-4670
California Department of Transportation
Environmental Planning
District 5

Approved By: _____ Date: _____

Chuck Cesena, Senior Environmental Planner
(805) 549-3622
California Department of Transportation
Environmental Planning
District 5

Summary

The California Department of Transportation proposes to replace the existing Arroyo Parida Creek Bridge on State Route 192 in Santa Barbara County near the city of Carpinteria. The need for replacement is based on the continuing deterioration of the structural concrete and scour at the end of the concrete channel lining. Substandard bridge features, such as shoulder width and sight distance, would also be updated to meet current standards.

The construction of the project would have a net beneficial impact on Southern California steelhead (*Oncorhynchus mykiss*) as fish passage through the site would be improved by removal of the existing concrete channel lining and installation of rock weir grade control structures. Riparian plantings on-site would compensate for temporal impacts to Southern California steelhead. To avoid impacting steelhead, minimization measures would be implemented during construction activities.

The following table reflects the impacts that the Arroyo Parida project would have on jurisdictional waters of the United States and wetlands under California Coastal Commission jurisdiction:

Affected Resource	Impacts (acres)	
	Temporary	Permanent
Waters of the United States	Arroyo Parida	
	0.090	0.189
	Intermittent Tributary	
	0.024	0.001
CCC Wetlands	Arroyo Parida	
	0.037	0.023
	Intermittent Tributary	
	0.001	0.0006

National Marine Fisheries Service issued a Biological Opinion on August 6, 2003, with an incidental take statement for steelhead including mitigation measures that will be incorporated into the project.

The following permits and agreements would need to be obtained for the Arroyo Parida project:

- Section 404 permit from the United States Army Corps of Engineers (Corps) for impacts to waters of the United States.

- Section 401 certification from the Regional Water Quality Control Board for impacts to waters of the United States.
- Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game for impacts to Arroyo Parida Creek and the intermittent tributary.
- Coastal Development Permit from the County of Santa Barbara (Coastal Act authority) for impacts to wetlands with California Coastal Commission jurisdiction.

A total of 15 invasive plant species were found within the project limits and are listed on the California Invasive Plant Council's Invasive Plant Inventory. Measures will be taken to avoid and minimize the spread of invasive species within the project limits.

Migratory bird special provisions would be included in the construction contract and would require pre-construction surveys and avoidance and minimization measures for migratory birds.

Caltrans proposes to compensate onsite for the permanent loss of waters of the United States and wetlands by restoring 0.10 acre of waters of the United States and 0.08 acre of wetlands

To compensate for temporary loss of riparian areas, coast live oaks will be replaced at a 10:1 ratio. In addition to coast live oak, associated riparian vegetation will also be planted, including willows.

Table of Contents

Chapter 1. **Introduction** **10**

 1.1. Project History..... 10

 1.2. Project Description 10

Chapter 2. **Study Methods**..... **13**

 2.1. Biological Study Area 13

 2.2. Studies Required..... 13

 2.2.1. General and Plant Surveys..... 13

 2.2.2. California Red-legged Frog Surveys 13

 2.2.3. Wetland Delineation 14

 2.3. Personnel and Survey Dates 14

 2.4. Agency Coordination..... 15

 2.4.1. Informal Consultation With US Fish and Wildlife Service..... 15

 2.4.2. Formal Consultation With National Marine Fisheries Service..... 15

 2.5. Limitations That May Influence Results 16

Chapter 3. **Results: Environmental Setting** **17**

 3.1. Description of the Existing Biological and Physical Conditions..... 17

 3.2. Regional Species 17

Chapter 4. **Results: Biological Resources, Discussion of Impacts and Mitigation**..... **21**

 4.1. Discussion of Riparian, Waters of the United States and Wetland Communities... 21

 4.1.1. Riparian Community 22

 4.1.1.1. Survey Results 22

 4.1.1.2. Avoidance and Minimization Efforts 22

 4.1.1.3. Project Impacts 22

 4.1.1.4. Compensation 23

 4.1.2. Waters of the United States 24

 4.1.2.1. Survey Results 24

 4.1.2.2. Avoidance and Minimization Efforts 24

 4.1.2.3. Project Impacts 25

 4.1.2.4. Compensation 25

 4.1.3. Wetland 25

 4.1.3.1. Survey Results 26

 4.1.3.2. Avoidance and Minimization Efforts 26

 4.1.3.3. Project Impacts 26

 4.1.3.4. Compensation 27

 4.2. Sensitive Species Potentially in the Project Area 27

 4.2.1. California Red-Legged Frog..... 28

 4.2.2. Steelhead 28

 4.2.2.1. Critical Habitat 29

 4.2.2.2. Avoidance and Minimization Efforts 29

 4.2.2.3. Compensation 30

 4.3. Cumulative Effects 31

Chapter 5. **Permits and Technical Studies for Special Laws or Conditions**. **32**

 5.1. Federal Endangered Species Act Consultation Summary 32

 5.2. California Endangered Species Act Consultation Summary 32

 5.3. Permit Requirements 32

 5.4. Invasive Weeds..... 33

Chapter 6. **References** 35

Appendix A **Project and Wetland Mapping**..... 37

Appendix B **Biological Study Area**..... 39

Appendix C **Appendix C FWS Species List**..... 41

Appendix D **Plant List** 43

Appendix E **FWS Concurrence Letter** 45

Appendix F **NMFS Biological Opinion**..... 47

Appendix G **Restoration Plan** 49

List of Figures

FIGURE 1: PROJECT LOCATION MAP 12

List of Tables

Table 1: Personnel and Survey Dates 15
Table 2: Special-Status Species Potentially Occuring in the Vicinity of the Project.. 18
Table 3. Trees Proposed for Removal 23
Table 4. Riparian Mitigation 24
Table 5. Estimated Impacts to WOUS 25
Table 6. Estimated Impacts to CCC Wetlands..... 27
Table 7. Biological Study Area Sensitive Species Table..... 28

List of Abbreviated Terms

Addendum	Natural Environmental Study Addendum
API	Area of Potential Impact
BSA	Biological Study Area
Caltrans	California Department of Transportation
CCA	California Coastal Act
CCC	California Coastal Commission
CNDDDB	California Natural Diversity Database
Corps	Army Corps of Engineers
CNPS	California Native Plant Society
CRLF	California red-legged frog
CWA	Clean Water Act
dbh	diameter breast height
DFG	California Department of Fish and Game
ESA	Environmentally Sensitive Area
ESU	Environmentally Significant Unit
GPS	Global Positioning System
FHWA	Federal Highway Administration
FWS	United States Fish and Wildlife Service
NES	Natural Environmental Study
NMFS	National Marine Fisheries Service
OHWM	Ordinary High Water Mark
PM	post mile
RSP	rock slope protection
SR	State Route
WOUS	Waters of the United States

Chapter 1. Introduction

The purpose of this Natural Environmental Study Addendum (Addendum) to the Natural Environmental Study (NES) (Caltrans 2003) is to update the species list and to review the proposed project in sufficient detail to determine to what extent the project may affect threatened, endangered, or proposed species as well as other natural resources. This is not a stand-alone document and should be read in conjunction with the NES. The Addendum is prepared in accordance with Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) regulation, policy and guidance. The document presents technical information upon which later decisions regarding project impacts are developed.

1.1. Project History

It is proposed to replace the existing Arroyo Parida Creek Bridge on State Route (SR) 192 at Post Mile (PM) 15.5, 2.0 miles north west of the City of Carpinteria in Santa Barbara County (see Figure 1). Arroyo Parida Creek is also known as Arroyo Paredon Creek. The existing Arroyo Parida Creek Bridge was built in the 1920's. The need for replacement is based on the continuing deterioration of the structural concrete and scour at the end of the concrete channel lining. Other features of the bridge are not consistent with current standards, such as shoulder width and sight distance. The purpose of this project is to provide a structurally sound bridge that meets current standards and improve the conditions of the creek channel.

1.2. Project Description

The existing bridge is approximately 25 feet long and 19 feet wide. The new bridge would consist of two 12-foot wide lanes and 8-foot wide shoulders. The proposed bridge centerline would match the existing bridge centerline. The bridge would be a reinforced concrete slab bridge with a concrete bridge rail. The bridge rail approaches would be protected with a slotted rail terminal type end treatment. Rock slope protection (RSP) would be placed upstream along the side slopes for approximately 66 feet upstream and 98 feet downstream of the bridge. Aesthetic treatment would be added to the bridge rail and end treatments. Several trees will be removed due to the widening of the shoulders and the raising of the profile.

Currently, the channel beneath the existing bridge is lined with a concrete apron that extends approximately 39 feet downstream of the bridge. A scour pool has formed at the downstream end of the apron, along with a 4 foot drop that forms a barrier to upstream migration of Federally endangered Southern California steelhead (*Oncorhynchus mykiss*). This project would remove the concrete apron and construct rock weir grade control structures 131 feet downstream and 33 feet upstream of the proposed bridge to improve fish passage.

This project would also construct an 8-foot shoulders along the roadway on each end of the bridge, extending approximately 328 feet to the east of the bridge and 656 feet to the west of the bridge. In addition, the profile of the roadway approach on the west side of the bridge would be raised (by approximately 6 feet at the high point) to improve sight distance. The horizontal alignment would also be corrected to improve sight distance along the entire project limits. The 8-foot shoulders would be tapered at the end of the project limits to conform to the existing pavement. A retaining wall would be constructed on the southwest quadrant of the bridge approach approximately 82 feet in length. Aesthetic treatment would be added to the retaining wall. This project would also replace an existing 36-inch corrugated metal pipe culvert located 262 feet west of the bridge, with an 8 x 5 foot reinforced concrete box culvert. Rock slope protection would be placed at the outlet of the culvert to dissipate flow and prevent erosion. See Appendix A for project mapping.

This project would require construction easements, and new right of way on the north and south side of SR 192. Modifications to driveways within the project limits would be required. Two high-pressure gas lines would need to be relocated. In addition, utility poles would need to be relocated outside the clear recovery zone on both the north and south sides of SR 192.

This project would require approximately seven months of construction. During construction a detour will be in place, as this portion of SR 192 would be closed to through traffic.

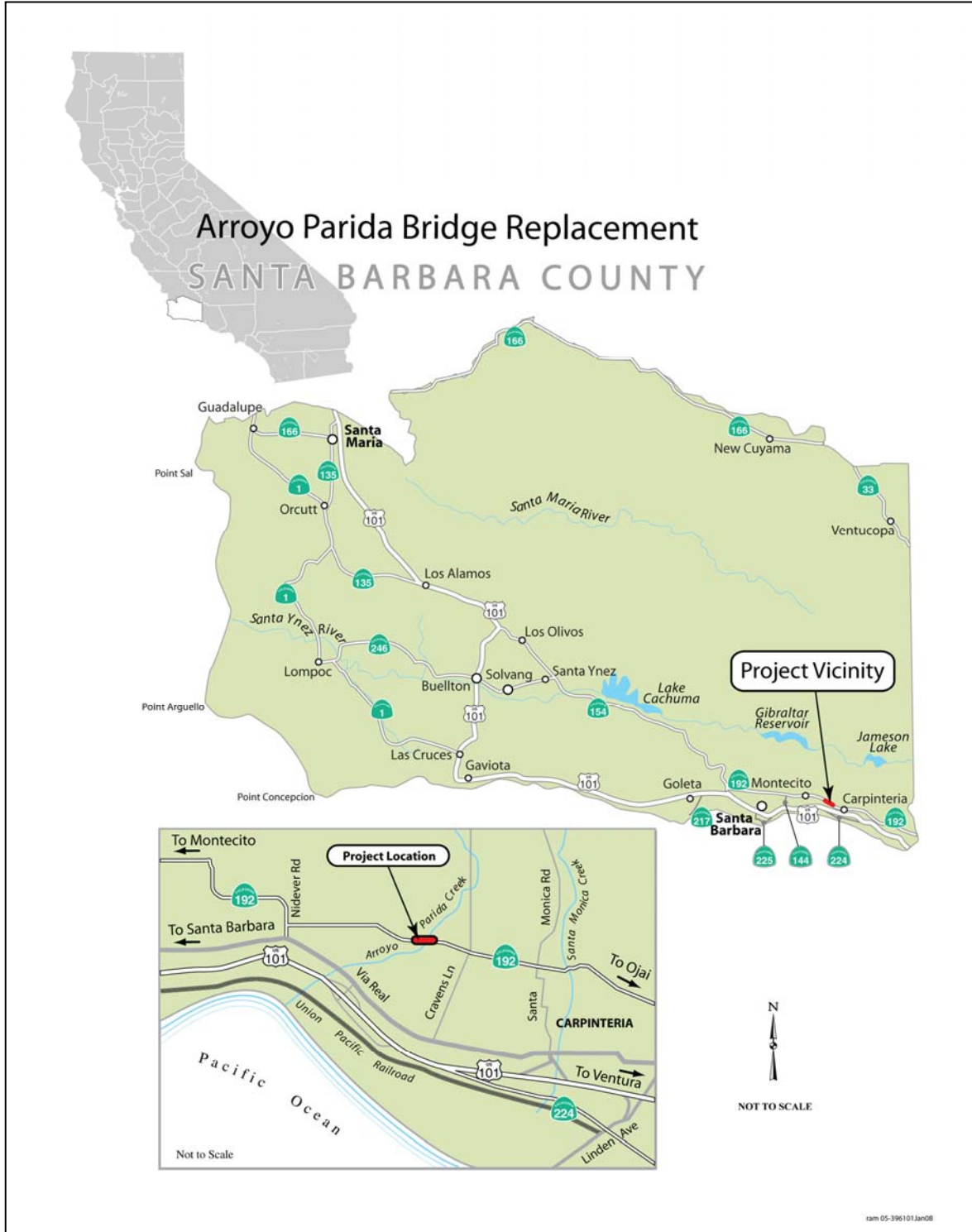


FIGURE 1: PROJECT LOCATION MAP

Chapter 2. Study Methods

2.1. Biological Study Area

The biological study area (BSA) consists of two components. The first is the area to be directly impacted by construction-related activities or the Area of Potential Impact (API). The second component of the BSA is the Arroyo Parida water drainage outside of the API that might be indirectly affected. This part of the BSA was surveyed for California red-legged frog (*Rana aurora draytonii*). See Appendix A for mapping of the API and Appendix B for mapping of the entire BSA.

2.2. Studies Required

Studies for the Addendum were initiated by downloading an updated species list from Ventura US Fish and Wildlife Service (FWS) website (Appendix C). The project occurs on the Carpinteria 7.5-minute USGS Quad. The California Department of Fish and Game (DFG) California Natural Diversity Database (CNDDDB) was queried for Carpinteria and surrounding USGS quads. Following is a detailed description of all studies completed for the Addendum.

2.2.1. General and Plant Surveys

After the completion of the NES the project was reassigned to a new Caltrans biologist. In June of 2003 the project was revisited to look for the presence of potential habitat for special-status species and to decide what further in-depth studies needed to be conducted. A site assessment of the area was completed for California red-legged frog (CRLF).

Plant surveys of the area were conducted in May and July 2005, and were timed to capture the blooming period for special-status species that had the potential to occur within the API. All plants observed during these surveys were identified on site or collected and identified later in the office. A list of plant species observed within the API is located in Appendix D.

2.2.2. California Red-legged Frog Surveys

Although there are no known records of CRLF occurring within the Arroyo Parida watershed, a CRLF observation in 2002 in a watershed to the east within the Santa

Monica Creek watershed prompted the FWS to encourage Caltrans to survey this project. A site assessment to determine if suitable habitat for CRLF existed within the BSA was completed on June 17, 2003.

Protocol level surveys for CRLF were conducted during the day and night of October 21 & 23, 2003 by Caltrans biologists within the drainage approximately 4,734 feet upstream and approximately 4,199 feet downstream of the project.

2.2.3. Wetland Delineation

A jurisdictional wetland delineation was completed within the API on December 13 and 20, 2006, by Caltrans biologist Mitch Dallas. The routine wetland delineation method was followed as described in the 1987 Corps Wetland Delineation Manual (Environmental Laboratory 1987). Plants were identified based on the Jepson Manual (Hickman 1993). Wetland indicators of plant species were based on Reed (1988). Hydric soil criteria was based on soil mapping from Natural Resources Conservation Services.

Representative sample plots and soil pits were studied to determine the presence of hydric soils, hydrophytic vegetation, and wetland hydrology. Soil texture, matrix and mottle colors were documented. Matrix color was determined from moist soil peds using Munsell Soil Charts (Munsell 1994). Jurisdictional features were mapped using a Trimble Global Positioning System (GPS) unit capable of sub-metric accuracy. Areas that were incapable of receiving satellite information for the Trimble GPS were delineated with hand measurements and later digitized onto mapping (Appendix A).

2.3. Personnel and Survey Dates

A chronological list of surveys performed for the Addendum is presented in the following table:

Table 1: Personnel and Survey Dates

Survey Type	Survey Date	Personnel
General biological and CRLF site assessment	June 17, 2003	Mitch Dallas
CRLF protocol surveys	October 21, 2003	Mitch Dallas, Mike Lisitza
CRLF protocol surveys	October 23, 2003	Mitch Dallas, Chuck Cesena
Botanical surveys	May 6, 2005	Mitch Dallas
Botanical surveys	July 12, 2005	Mitch Dallas
Wetland delineations	December 13, 2006	Mitch Dallas
Wetland delineations	December 20, 2006	Mitch Dallas
General Biological	February 19, 2008	Virginia Strohl

2.4. Agency Coordination

A record of coordination conducted with various agencies during the preparation of this environmental document:

2.4.1. Informal Consultation With US Fish and Wildlife Service

- December 2002, Caltrans discussed a recent observation of CRLF in the adjacent Santa Monica Creek watershed with Ms. Bridget Fahey. Ms. Fahey encouraged Caltrans to conduct CRLF protocol surveys within the Arroyo Parida drainage.
- November 5, 2003, Caltrans submitted to FWS a request for concurrence of a “Not Likely to Adversely Affect” determination for CRLF based on negative survey results.
- February 19, 2004, Caltrans received from FWS concurrence letter that the project was not likely to adversely affect CRLF (Appendix E).

2.4.2. Formal Consultation With National Marine Fisheries Service

- October 3, 2002, the FHWA initiated Section 7 Formal Consultation with the National Marine Fisheries Service (NMFS) on for project impacts to steelhead.

- August 6, 2003, NMFS issued a Biological Opinion with an incidental take statement for steelhead including mitigation measures that will be incorporated into project (Appendix F).

2.5. Limitations That May Influence Results

No limitations that would affect the results and conclusions of this report have been identified.

Chapter 3. Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

See NES for description of the physical and biological conditions of the BSA.

3.2. Regional Species

The following table lists special-status species that were identified by the in-office research as potentially occurring in the vicinity of the project. It also discusses the species habitat requirements and whether or not those requirements are met within the API. Those species with potential habitat present in the API are discussed in Chapter 4.

Table 2: Special-Status Species Potentially Occuring in the Vicinity of the Project

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale for Habitat Presence/Absence Finding
Mammals:					
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CSC	Prefers dry rocky slopes	A	Suitable habitat is not present in the project site
Birds:					
<i>Accipiter cooperii</i>	Cooper's hawk	CSC	Occurs in lower elevation woodlands nesting mainly in riparian growths of deciduous trees	P	Suitable habitat is present in the project site
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	FT	Sandy beaches, salt pond levees & shores of large alkali lakes	A	Alkali and sandy beach habitat not present in the project site
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	SE	Inhabits coastal salt marshes	A	Coastal salt marsh habitat not present in the project site
<i>Rallus longirostris levipes</i>	Light-footed clapper rail	FE,SE	Coastal salt marshes traversed by tidal sloughs	A	Coastal salt marsh habitat not present in the project site
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE,SE	Willow dominated riparian habitat preferred with a low, dense shrub layer for nesting	A	Low, dense willow nesting habitat is not present at the project site
Reptiles:					
<i>Thamnophis hammondi</i>	two-striped garter snake	CSC	In or near permanent fresh water, often along streams with rocky beds and riparian growth	P	Stream habitat present at project site but species not identified during surveys
Amphibians:					

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale for Habitat Presence/Absence Finding
<i>Bufo californicus</i>	Arroyo toad	FE	Sandy or gravelly margins of large streams where riparian terraces present	A	Large stream and sandy margin habitat not present at project site
<i>Rana aurora draytonii</i>	California red-legged frog	FT	In or near permanent sources of deep water with dense shrubs or emergent vegetation	P	Suitable habitat is present at the project site
Fish:					
<i>Eucyclogobius newberryi</i>	tidewater goby	FT, CSC	Lagoons and other brackish water habitats; will swim upstream into fresh water	A	Arroyo Parida's flow at the project is seasonally intermittent and does not provide suitable habitat
<i>Oncorhynchus mykiss irideus</i>	Southern California steelhead	FE, CH, CSC	Creeks from Santa Maria river south to San Mateo Creek in San Diego County	P	Suitable habitat is present at the project site
Invertebrates:					
<i>Danaus plexippus</i>	Monarch butterfly	None	Roosts in wind-protected tree groves (eucalyptus, monterey pine, cypress)	A	Roosting trees not present at project site
Plants:					
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Ventura marsh milk-vetch	FE,SE	Coastal salt marsh	A	Salt marsh habitat not present at project site and species not identified during botanical surveys
<i>Atriplex coulteri</i>	Coulter's saltbush	CNPS 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland	P	Species not identified during botanical surveys
<i>Calochortus weedii</i> var. <i>vestus</i>	Late-flowered Mariposa lily	CNPS 1B.2	Chaparral, cismontane woodland	P	Species not identified during botanical surveys

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale for Habitat Presence/Absence Finding
<i>Cordylanthus maritimus ssp. maritimus</i>	Salt marsh bird's-beak	FE,SE	Coastal salt marsh, coastal dunes	A	Salt marsh and coastal dune habitat not present at project site and species not identified during botanical surveys
<i>Delphinium umbraculorum</i>	umbrella larkspur	CNPS 1B.3	Cismontane woodland	P	Species not identified during botanical surveys
<i>Lasthenia glabrata ssp. coulteri</i>	Coulter's goldfields	CNPS 1B.1	Coastal salt marshes, playas, valley and foothill grassland, vernal pools	P	Species not identified during botanical surveys
<i>Quercus dumosa</i>	Nuttall's scrub oak	CNPS 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub	P	Species not identified during botanical surveys
<i>Thelypteris puberula var sonorensis</i>	Sonoran maiden fern	CNPS 2.2	Meadows and seeps	A	Meadow and seep habitat not present at project site and species not identified during botanical surveys.

Absent [A] means no further work needed. Present [P] means general habitat is present and species may be present. Status: Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); California Special Concern species (CSC); California Native Plant Society (CNPS), Critical Habitat (CH). California Native Plant Society Listings: **1B.1** Rare, threatened, or endangered in California and elsewhere, seriously endangered in California; **1B.2** Rare, threatened, or endangered in California and elsewhere, fairly endangered in California **1B.3**; Rare, threatened, or endangered in California and elsewhere, not very endangered in California; **2.2** Rare, threatened, or endangered in California, but more common elsewhere, fairly endangered in California.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

This section discusses natural communities and special-status species that occur or have the potential to occur in the API.

4.1. Discussion of Riparian, Waters of the United States and Wetland Communities

This section discusses natural communities of special concern that are protected under Clean Water Act (CWA) Section 401 and 404, Fish and Game Code Section 1602 Streambed Alteration Agreements and the California Coastal Act. Jurisdiction over actions that have a potential to impact wetlands, other waters and riparian areas vary with regulatory agencies.

The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters through prevention and elimination of pollution. Section 404 of the CWA establishes a permit program administered by the Army Corps of Engineers (Corps) regulating the discharge of dredged or fill material into waters of the United States (including wetlands).

Waters of the U.S are waterways, either for commerce or recreation, below the Ordinary High Water Mark (OHWM). Wetlands are a subcategory of waters and are the transitional areas between open water and upland.

Corps has established a three parameter approach to determining if an area qualifies as a wetland. The area must exhibit wetland hydrology, hydric soils, and hydrophytic vegetation for Corps to take jurisdiction of a wetland. Areas below the OHWM but lacking anyone of the three parameters are considered other waters.

The California Coastal Commission (CCC) oversees implementation of the California Coastal Act (CCA). A permit from the California Coastal Commission (CCC) or the city or county with coastal permit jurisdiction is required if a project plans to place fill in wetlands within the coastal zone. The CCC takes jurisdiction over areas exhibiting only one wetland parameter.

The DFG regulates activities that would alter the flow, bed, channel or bank of streams and lakes by issuing Streambed Alteration Agreements. In riparian areas their

jurisdictional limits are usually to the tops of the stream or lake banks or the outer edge of riparian vegetation.

4.1.1. Riparian Community

The description of the riparian community that occurs within the API is provided in the 2003 NES. This section discusses project impacts, avoidance and minimization measures that would result from the proposed project and supersede the NES.

4.1.1.1. SURVEY RESULTS

Riparian areas were identified at Arroyo Parida Creek and at the intermittent tributary (Appendix A). Riparian trees that would be impacted by the proposed project were measured and delineated onto mapping.

4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

All work will be confined to Caltrans Right of Way and temporary construction easement areas. Other protective measures include:

- To protect the large sycamores (*Platanus racemosa*) onsite, Environmentally Sensitive Areas (ESA) will be established on portions of the easterly creek bank. The ESA will be delineated on project plans and in the field at the start of construction.
- Individual native trees not planned for removal will be protected by ESA fencing.
- To avoid impacting nesting birds in the riparian vegetation, all clearing will be accomplished outside the nesting season (February 15- September 1).
- To minimize potential effects upon water quality, it will be necessary to divert flows around the work site by means of coffer dams and diversion pipes. The diversion will be in place April 15 – November 30 during construction as detailed in the NMFS Biological Opinion.

4.1.1.3. PROJECT IMPACTS

Six coast live oaks (*Quercus agrifolia*) ranging in size from 24 to 6-inch (dbh) and one non-native tree will be removed from the riparian area during construction. The three large sycamore trees that provide the majority of the existing shade to the creek within the API will be avoided. Additional oaks and non-native trees will need to be removed to widen the shoulders outside of the riparian area. See Table 3 for a list of

all trees to be removed. See Appendix A for location map of existing trees proposed for removal.

Table 3. Trees Proposed for Removal

SPECIES	RIPARIAN AREA						NON-RIPARIAN AREA			
	Coast live-oak	Size (dbh)	24"	20"	9"	8"	6"	Size (dbh)	20"	9"
Quantity		1	1	1	1	2	Quantity	1	1	2
Non-native	1						8			

4.1.1.4. COMPENSATION

Riparian plantings would be placed at all four corners of the new bridge, along the banks of the creek south of the bridge, in the small basin between Arroyo Parida Creek and the intermittent tributary and on the banks of the tributary south of highway (See Appendix G). Willows would be planted in the ungrouted rock slope protection that will replace the current grouted rock onsite. Most of the mitigation planting for the riparian losses at the intermittent drainage and for the isolated trees along the edge of the highway will occur at the bridge as very little additional room is available within the drainage or along the highway shoulder.

Coast live oaks over six inches dbh would be included in the restoration planting at a 10:1 ratio, meaning that a minimum of 100 trees would be planted (See Table 4). Disturbed areas that are not large enough to accept riparian trees and shrubs would be seeded for erosion control.

The riparian plantings will be monitored to ensure successful revegetation at 6 months after implementation and then once a year for two year.

Table 4. Riparian Mitigation

RIPARIAN TREES				
Species	Riparian Area Removal	Non-Riparian Area Removal	Total Trees Removed	Total Trees to be Replanted at 10:1 Mitigation Ratio
Coast live-oak	6	4	10	100

4.1.2. Waters of the United States

This section discusses project impacts, avoidance and minimization measures, and compensation that would result from the proposed project and supersede the NES.

4.1.2.1. SURVEY RESULTS

Waters of the US (WOUS) were identified at Arroyo Parida Creek and at the intermittent tributary (Appendix A).

4.1.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

- To minimize potential effects upon water quality, it will be necessary to divert flows around the work site by means of coffer dams and diversion pipes. The diversion will be in place April 15 – November 30 during construction.
- All areas beyond the minimum required for construction would be off limits to construction activities.
- All storage/stockpile areas would be located in uplands.
- A Storm Water Prevention Plan will be implemented during construction as directed by the Caltrans National Pollutant Discharge Elimination System statewide storm water permit.
- The new bridge would span the creek and wetlands and will not require piers to be constructed within the WOUS.

4.1.2.3. PROJECT IMPACTS

There would be permanent impacts to WOUS as a result of construction-related activities for the project. Permanent impacts at the intermittent tributary would occur from replacing the existing culvert with a larger concrete box culvert and installing rock slope protection. Permanent impacts to the Arroyo Parida Creek would occur from installing the rock weirs and rock slope protection. Temporary impacts would not be from fill placement, but disturbance from equipment access, which Corps does not regulate. The following table shows the amount of impacts the project would have on WOUS (See Appendix A):

Table 5. Estimated Impacts to WOUS

	ARROYO PARIDA CREEK	INTERMITTENT TRIBUTARY	TOTAL
Permanent	0.189 acres	0.001 acres	0.191 acres
Temporary (no fill placement, equipment access only)	0.090 acres	0.024 acres	0.114 acres

4.1.2.4. COMPENSATION

All temporary impacts to WOUS will be graded, if needed, to reflect their pre-existing state. Both the channel and the intermittent tributary are within the active floodplain and will quickly re-establish with vegetation naturally. No attempt will be made to revegetate these areas within the WOUS. Riparian vegetation will be planted on the channel slopes above the WOUS. Removal of the concrete channel lining in Arroyo Parida Creek will allow the restoration of most of the creek bottom. Some of the channel bottom would be covered with the rock used to build the rock weir grade control structures. Approximately 0.10 acre of WOUS would be restored by removing the concrete channel lining.

4.1.3. Wetland

The description of the wetlands that occur within the API is provided in the 2003 NES. This section will address modifications to the survey results, project impacts, avoidance and minimization measures and compensatory mitigation that resulted from the proposed project and supersede the NES.

4.1.3.1. SURVEY RESULTS

Wetland delineations were completed within the project area and it was determined that all three wetland parameters (hydrology, hydric soils and hydrophytic vegetation) do not exist on the project site, however several areas do exhibit hydrophytic vegetation or one wetland characteristic. Therefore the wet areas occurring on the project area exhibiting one wetland characteristic would qualify as CCC wetland, but would not qualify as wetlands under Corps regulatory jurisdiction.

CCC wetlands at Arroyo Parida Creek are limited to a thin band of vegetation within the creek both up and downstream from the cement channel lining. CCC wetlands at the intermittent tributary are located both upstream and downstream of the existing culvert (See Appendix A).

4.1.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

- To minimize potential effects upon water quality, it will be necessary to divert flows around the work site by means of coffer dams and diversion pipes. The diversion will be in place April 15 – November 30 during construction.
- All areas beyond the minimum required for construction would be off limits to construction activities.
- All storage/stockpile areas would be located in uplands.
- A Storm Water Pollution Prevention Plan will be implemented during construction as directed by the Caltrans National Pollutant Discharge Elimination System statewide storm water permit.
- The new bridge would span Arroyo Parida Creek and wetlands and not require piers to be constructed within the wetlands.

4.1.3.3. PROJECT IMPACTS

Permanent and temporary impacts to wetlands within Arroyo Parida Creek would occur from construction of the rock weirs. Impacts to wetlands within the intermittent tributary would result from placing rock slope protection beneath the culvert outflow and extending the culvert. Areas calculated as CCC wetlands impacts are a subset of the areas calculated for WOUS impacts.

Table 6. Estimated Impacts to CCC Wetlands

	ARROYO PARIDA CREEK	INTERMITTENT TRIBUTARY	TOTAL
Permanent	0.023 acre	0.0006 acre	0.024 acre
Temporary (no fill placement, equipment access only)	0.037 acre	0.001 acre	0.038 acre

4.1.3.4. COMPENSATION

All temporary impacts to wetlands will be graded, if needed, to reflect their pre-existing state. Both the channel and the intermittent tributary are within the active floodplain and will quickly re-establish with vegetation naturally. No attempt will be made to revegetate the wetland areas. Riparian vegetation will be planted on the channel slopes above the WOUS. Removal of the concrete channel lining in Arroyo Parida Creek will allow the restoration of most of the creek bottom. Some of the channel bottom would be covered with the rock used to build the grade control weirs. Approximately 0.088 acre of wetlands would be restored.

4.2. Sensitive Species Potentially in the Project Area

Table 2 contains all the species for which potential habitat was found within the BSA. Those species that were determined absent, except for CRLF, are not discussed further; species determined present are discussed in the paragraphs following Table 7.

Table 7. Biological Study Area Sensitive Species Table

Scientific Name	Common Name	Status	Species Present/Absent	Rationale
Special-Status Plants				
<i>Atriplex coulteri</i>	Coulter's saltbush	CNPS 1B.2	A	Species not identified during botanical surveys
<i>Calochortus weedii</i> var <i>vestus</i>	Late-flowered Mariposa lily	CNPS 1B.2	A	Species not identified during botanical surveys
<i>Delphinium umbraculorum</i>	umbrella larkspur	CNPS 1B.3	A	Species not identified during botanical surveys
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	CNPS 1B.1	A	Species not identified during botanical surveys
<i>Quercus dumosa</i>	Nuttall's scrub oak	CNPS 1B.1	A	Species not identified during botanical surveys
Special-Status Wildlife				
<i>Accipiter cooperii</i>	Cooper's hawk	CSC	A	Species not identified during surveys
<i>Rana aurora draytonii</i>	California red-legged frog	FT	A	Species not identified during protocol level surveys
<i>Oncorhynchus mykiss irideus</i>	Southern California steelhead	FE, CH, CSC	P	Known to occur within study area
<i>Thamnophis hammondi</i>	two-striped garter snake	CSC	A	Species not identified during surveys. Closest known occurrence is 9 miles northwest of the project.

4.2.1. California Red-Legged Frog

The California red-legged frog (*Rana aurora draytonii*) is a Federal Threatened species and California Special Concern Species known to occur in coast range watersheds from near Point Reyes to northern Baja California. There are isolated occurrences in the Sierra Nevada foothills as well.

Protocol level surveys for California red-legged frog were negative. This project is not likely to adversely affect California red-legged frog. USFWS concurred with this determination in their letter dated February 19, 2004 (See Appendix F).

Minimization or avoidance measures are not warranted for this project. The project site is not within a critical habitat unit for California red-legged frog.

4.2.2. Steelhead

Steelhead (*Oncorhynchus mykiss irideus*), an ocean-going form of rainbow trout, occupy streams in watersheds with perennial fresh water. The Arroyo Parida

population is part of the Southern California Evolutionarily Significant Unit (ESU). This ESU of steelhead is designated Federally Endangered and Arroyo Parida is designated as critical habitat for this species.

Analysis of potential impacts to steelhead trout is provided in the NES. On August 6, 2003, NMFS issued an Incidental Take Statement for potential impacts to steelhead trout that could result from project construction (See Appendix F). It was confirmed with NMFS that the current project, as proposed, would be covered under the existing Biological Opinion. This section will address the avoidance, minimization and mitigation measures that resulted from formal consultation with NMFS and supersede the avoidance, minimization and mitigation measures listed in the NES.

4.2.2.1. CRITICAL HABITAT

This section of Arroyo Parida is designated critical habitat for the Southern California Steelhead ESU. The proposed project will remove the existing grouted channel lining, which has created a migration barrier under some flow conditions, and construct a series of rock weir grade control structures designed to facilitate fish passage. This work will enhance the critical habitat for steelhead within Arroyo Parida Creek.

4.2.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

- To avoid direct effects to steelhead, water from Arroyo Parida Creek would be diverted around the worksite and into a temporary culvert. The diversion would remain in place for the duration of the project, and then be removed immediately after the work is completed. Use of a soil or sediment berm for isolating flowing water from the workspace would be prohibited.
- A biologist experienced in Fisheries work will be present at the worksite for the purpose of monitoring the water diversion, construction activities, and sediment runoff control. Caltrans will supply the name of the Fisheries biologist to NMFS at least 10 business days prior to the start of construction.
- The Caltrans biologist will ensure that no steelhead are in the work area prior to the water diversion and during the project action. If fish are found near or within the location that will be dewatered, the biologist will contact NMFS to determine a proper relocation strategy prior to the start of work.
- The Caltrans biologist would contact NMFS immediately if a steelhead is found dead or injured.

- Caltrans will incorporate erosion control and sediment detention devices into the construction project for purposes of minimizing sediment runoff into flowing water. Sediment collect in the devices will be disposed of off-site and will not be allowed to reenter the creek channel.
- When de-watering of the workspace is necessary, either a pump will remove water to an upland disposal site, or a filtering system will be used to collect and then return clear water to the creek, for the purpose of avoiding input of sediment/water slurry into the creek. The pump or filtering system intake would be fitted with juvenile fish exclusion screen or netting (no larger than .025-inch), or similar devices that accomplishes the same purpose.
- To avoid conflicts with migration of adult steelhead, Caltrans will not begin work until April 15 and will complete all instream work and remove the water diversion by no later than November 30.
- All material and debris related to bridge demolition and construction will be removed from the creek channel bed and riparian zone as soon as possible and prior to November 30.
- Caltrans will notify NMFS when construction is to begin 10 days prior to initiating work.
- Caltrans will provide a written monitoring report to NMFS within 15 working days following the completion of the project.
- All areas of native vegetation that are outside the project work area will be delineated as Environmentally Sensitive Areas on project plans and marked in the field with flagging or temporary fencing.

4.2.2.3. COMPENSATION

- The existing grouted channel lining, which has created a migration barrier under some flow conditions, will be removed and replaced with a series of rock weirs designed to facilitate fish passage.
- The cinder block and grouted rock bank lining will be removed and replaced with ungrouted rock and planted with willow poles.
- All coast live oak trees removed would be replaced onsite at a 10:1 ratio. Associated riparian vegetation, such as willows, will also be replanted.

4.3. Cumulative Effects

The National Environmental Policy Act defines a cumulative effect as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

The California Environmental Quality Act defines a cumulative effect as “two or more individual effects which, when considered together, are considerable or... compound or increase other environmental impacts.”

Caltrans is planning to widen Highway 101 to a 6-lane facility from .4 miles south of Carpinteria Creek Bridge to Sycamore Creek Bridge. This work will require the replacement of Arroyo Parida Creek Bridge on Highway 101. The existing Arroyo Parida Creek Bridge on Highway 101 does not impede steelhead from passing through nor will the new bridge impede passage after construction. Impacts to steelhead from the construction of the Highway 101 project would be temporary in nature and combined with the beneficial affects of the Arroyo Parida Creek Bridge Replacement project would not add to an adverse cumulative effect.

Chapter 5. Permits and Technical Studies for Special Laws or Conditions

5.1. Federal Endangered Species Act Consultation Summary

On October 3, 2002, the Federal Highway Administration (FHWA) initiated Section 7 Formal Consultation with the National Marine Fisheries Service (NMFS) on for project impacts to steelhead. NMFS issued a Biological Opinion on August 6, 2003, with an incidental take statement for steelhead including mitigation measures that will be incorporated into project (See Appendix F).

On November 5, 2003, Caltrans submitted to USFWS a request for concurrence of a “Not Likely to Adversely Affect” determination for California red-legged frog based on negative survey results. USFWS issued a concurrence letter to Caltrans on February 19, 2004, that the project was not likely to adversely affect CRLF (See Appendix E).

Both NMFS and FWS were contacted regarding the re-evaluation of this project. Based on the proposed project described in this document, it is not necessary to reinitiate consultation with NMFS or conduct additional informal consultation with FWS for this project.

5.2. California Endangered Species Act Consultation Summary

No consultation is required under the California Endangered Species Act because no State-listed species would be affected.

5.3. Permit Requirements

Caltrans will obtain a Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code, from the DFG for work to be completed in Arroyo Parida Creek and the unnamed tributary.

Caltrans will obtain a permit pursuant to Section 404 of the CWA, from the Corps for the discharge of fill material into waters of the US. Additionally, pursuant to Section

401 of the CWA, Caltrans will obtain State certification from the Regional Water Quality Control Board for these discharges.

Caltrans will consult with Santa Barbara County (Coastal Act Authority) regarding the proposed work that would impact the wetlands occurring within the project limits.

5.4. Invasive Weeds

On February 3, 1999, President Bill Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem, whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the state’s noxious weed list to define the invasive plants that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

The following plants occur on the California Invasive Plant Council’s Invasive Plant Inventory:

- Bermuda butter cup (*Oxalis pes-capre*)
- Bristly ox-tongue (*Picris echioides*)
- Bur clover (*Medicago polymorpha*)
- Cappy ivy (*Delairea odorata*)
- Castor bean (*Ricinus communis*)
- Fennel (*Foeniculum vulgare*)
- Italian ryegrass (*Lolium multiflorum*)
- Italian thistle (*Carduus pycnocephalus*)
- Plantain (*Plantago lanceolata*)
- Poison hemlock (*Conium maculatum*)
- Radish (*Raparus sativus*)
- Red brome (*Bromus madritensis ssp. rubens*)
- Ripgut brome (*Bromus diandrus*)
- Soft chess (*Bromus hordeaceus*)
- Vinca (*Vinca major*)

To avoid and minimize the spread of invasive weeds, the invasive species removed during construction activity and would not be replanted as part of highway landscaping. Care shall be taken to avoid including any species that occurs on the California Invasive Plant Council's Invasive Plant Inventory in the Caltrans erosion control seed mix or landscaping plans for the project.

Chapter 6. References

- California Department of Fish and Game (DFG). 1990. California Statewide Wildlife Habitat Relationships System. California's Wildlife Volumes I, II & III.
- California Department of Transportation (Caltrans). 2003. Natural Environmental Study Report (NES) for Arroyo Parida Creek Bridge Replacement
- California Native Plant Society (CNPS). 2001. Inventory of Rare and Endangered Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA. x + 388pp.
- Environmental Laboratory. 1987. Corp of Engineers Wetlands Delineation Manual. (Technical Report YL-87-1.) U.S. Army Corps of Engineers, Waterways Experiment Station. Vicksburg, MS.
- Hickman, J.C. 1993. The Jepson Manual Higher Plants of California. University of California Press, Berkeley and Los Angeles, California. 1400 pp.
- Jameson jr., E.W. and Peeters, Hans J. 1988. California Mammals. University of California Press, Berkeley, California. 403pp.
- Munsell. 1994. Munsell Soils Color Chart. Macbeth Division of Kollmorgen Instruments Corporation. Baltimore, Maryland.
- Natural Diversity Data Base. 2008. Computer report for elements: California Department of Fish and Game, Sacramento, California.
- Reed. P. B., Jr. 1988. National List of Plant Species that Occur in Wetlands: California Region 0. (Biological Report 88[26.10]0. US Fish and Wildlife Service. Fort Collins, Colorado.
- Patton, James L., and Alvarez-Castaneda, Sergio Ticul. 2005. Phylogeography of the desert woodrat, *Neotoma lepida*, with comments on systematics and biogeographic history. Contribuciones Mastozoologicas en Homenaje A Bernarado Villa, 706 p. Conabio, Mexico

US Fish and Wildlife Service (FWS). 2008. Listed, Proposed, and Candidate Species which may occur in Santa Barbara County.

http://www.fws.gov/ventura/esprograms/listing%5Fch/spplists/species_sba.cfm. Accessed June 2008.

Appendix A Project and Wetland Mapping

Appendix B Biological Study Area

Appendix C Appendix C FWS Species List

Appendix D Plant List

Flora Species Observed- Arroyo Parida	
Scientific Name	Common Name
<i>Alnus</i> sp.	alder
<i>Anagallis arvensis</i>	scarlet pimpernel
<i>Anaphalis margaritacea</i>	pearly everlasting
<i>Artemisia californica</i>	California sagebrush
<i>Artemisia douglasiana</i>	mugwort
<i>Avena</i> sp.	oats
<i>Baccharis salicifolia</i>	mule fat
<i>Brassica</i> sp.	mustard
<i>Bromus diandrus</i>	ripgut brome*
<i>Bromus hordeaceus</i>	soft chess*
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome*
<i>Carduus pycnocephalus</i>	Italian thistle*
<i>Conium maculatum</i>	poison hemlock*
<i>Convolvulus</i> sp.	bindweed
<i>Delairea odorata</i>	cape ivy*
<i>Equisetum</i> sp.	horsetail
<i>Erodium</i> sp.	filaree
<i>Ficus</i> sp.	fig tree
<i>Foeniculum vulgare</i>	fennel*
<i>Hordeum murinum</i>	foxtail
<i>Lavatera cretica</i>	cornish mallow
<i>Leymus condensatus</i>	giant rye
<i>Lolium multiflorum</i>	Italian ryegrass*
<i>Lotus scoparius</i>	California broom
<i>Malva parviflora</i>	cheeseweed
<i>Marah fabaceus</i> <i>fabaceus</i>	wild cucumber
<i>Medicago polymorpha</i>	bur clover*
<i>Oxalis pes-caprae</i>	bermuda butter cup*
<i>Quercus agrifolia</i>	coast live oak
<i>Picris echioides</i>	bristly ox-tongue*
<i>Plantago lanceolata</i>	plantain*
<i>Platanus racemosa</i>	Western sycamore
<i>Raparus sativus</i>	radish*
<i>Ricinus communis</i>	castor bean*
<i>Rubus ursinus</i>	California blackberry
<i>Salix</i> sp.	willow
<i>Sambucus mexicana</i>	elderberry
<i>Scrophularia californica</i>	California figwort
<i>Stachys bullata</i>	California hedge nettle
<i>Toxicodendron diversilobum</i>	poison oak
<i>Vinca major</i>	vinca*
<i>Vulpia</i> sp.	fescue

* Plant occurs on California Invasive Plant Council's Invasive Plant Inventory

Fauna Species Observed	
Scientific Name	Common Name
Birds	
<i>Aphelocoma californica</i>	Western scrub jay
<i>Calypte anna</i>)	Anna's hummingbird
<i>Contopus sordidulus</i>	Western wood pewee
<i>Dendroica coronata</i>	Yellow-rumped warbler
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Petrochelidon pyrrhonota</i>	cliff swallow (presence detected by nests)
<i>Picoides villosus</i>	Hairy woodpecker
<i>Sayornis nigricans</i>	Black phoebe
<i>Turdus migratorius</i>	robin
Mammals	
<i>Neotoma macrotis</i>	Big-eared woodrat (presence detected by nests)
<i>Procyon lotor</i>	raccoon (presence detected by tracks)
Amphibians	
<i>Pseudacris cadaverina</i>	California treefrog
<i>Pseudacris regilla</i>	Pacific treefrog
<i>Rana catesbeiana</i>	Bullfrog
<i>Taricha torosa torosa</i>	California newt

Appendix E FWS Concurrence Letter

Appendix F NMFS Biological Opinion

Appendix G Restoration Plan
