

APPENDIX E

Biological Resources Report and Conceptual Resource Management Plan

APPENDIX E1
Biological Resources Report

DRAFT



Biological Resources Technical Report

Warner Ranch

County of San Diego, California



DECEMBER 2015

PROPONENT:
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FINAL

**BIOLOGICAL RESOURCES REPORT
WARNER RANCH**

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County of San Diego, California**

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DECEMBER 2015

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GLOSSARY OF TERMS AND ACRONYMS

ACOE	U.S. Army Corps of Engineers
APN	Assessor's Parcel Number
BMO	Biological Mitigation Ordinance
BMP	Best Management Practice
BRCA	Biological Resource Core Areas
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CSS	Coastal Sage Scrub
CWA	Clean Water Act
DEV	Developed Land
DPDS	Department of Planning and Development Services
DPR	Department of Pesticide Regulation
DPW	Department of Public Works
EDA	Estate Development Area
EIR	Environmental Impact Report
EO	Executive Order
FESA	Federal Endangered Species Act
FMZ	Fuel Modification Zone
GIS	Geographic Information System
GPS	Global Positioning System
LBZ	Limited Building Zone
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
NCCP	Natural Communities Conservation Program
NCMSCP	North County Multiple Species Conservation Plan Draft
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
OHWM	Ordinary High Water Mark
PAMA	Pre-approved Mitigation Area
RMWD	Rainbow Municipal Water District
RMP	Resource Management Plan

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RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SMX	Southern Mixed Chaparral
SSC	Species of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
TPM	Tentative Parcel Map
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service

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SUMMARY OF FINDINGS

The Warner Ranch project area (project area) is located within the 513-acre boundary of Warner Ranch in Pala, California. The project area is bordered by the city of Rainbow to the northwest, Pala-Temecula Road to the east, and State Route-76 (SR 76) and Pala Casino Resort and Spa to the south, and Interstate 15 (I-15) is located approximately 4 miles to the west. The proposed project (Vesting Tentative Map Tract No. 5508rpl2) includes development of 780 dwelling units and various on-site attendant features, including roads, parks, drainage structures, landscaping, a water reservoir (i.e., tank), fire station, wastewater treatment facility, and brush management zone.

Dudek performed vegetation mapping, jurisdictional wetland delineation determinations, rare plant surveys, and focused surveys for California gnatcatcher (*Polioptila californica*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and arroyo toad (*Anaxyrus (=Bufo) californicus*) within the 513-acre project area from April 2010 to September 2010; as well as a Hermes copper (*Hermelycaena [Lycaena] hermes*) habitat assessment in 2011; golden eagle (*Aquila chrysaetos*) nest and foraging surveys in 2011, 2012, and 2013; and other focused biological surveys in 2005 and 2008, including surveys for southern steelhead trout (*Oncorhynchus mykiss irideus*), Stephens' kangaroo rat (*Dipodomys stephensi*), and Quino checkerspot butterfly (*Euphydryas editha quino*). In 2012, Dudek mapped vegetation communities within off-site portions of the project. A total of 16 vegetation communities and land covers were mapped in the project area. The upland vegetation communities recorded in the project area include non-native and valley needlegrass (native) grasslands, coastal sage and southern cactus scrubs, scrub oak and southern mixed chaparrals, coast live oak woodland, and non-native land covers including orchards and agriculture. Riparian and wetland vegetation communities in the project area include mulefat scrub, sycamore alluvial woodland, non-vegetated channel, southern coast live oak riparian forest, and southern cottonwood-willow riparian forests. A majority of these riparian and wetland communities, in addition to unvegetated stream channels, are under the jurisdiction of the U.S. Army Corps of Engineers (ACOE); California Department of Fish and Wildlife (CDFW), formerly the California Department of Fish and Game (CDFG); Regional Water Quality Control Board (RWQCB); and/or County of San Diego (County) as jurisdictional waters/wetlands.

During 2010 rare plant surveys, seven special-status plant species were found in the project area. These species are listed in the California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants: rainbow manzanita (*Arctostaphylos rainbowensis*), a California Rare Plant Rank (CRPR) 1B.1 and County Group A species; Parry's tetracoccus (*Tetracoccus dioicus*), a CRPR 1B.2 and County Group A species; graceful tarplant (*Holocarpha virgata* ssp. *elongata*), a CRPR 4.2 and County Group D species; rush-like bristleweed (*Xanthisma junceum*), a CRPR 4.3 and County Group D species; Palmer's grappling hook (*Harpagonella palmeri*), a CRPR 4.2 and

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County Group D species; Engelmann oak (*Quercus engelmannii*), a CRPR 4.2 and County Group D species; and prostrate spineflower (*Chorizanthe procumbens*). While the prostrate spineflower is not recognized by other listing sources at this time, it is considered by the County to have a low level of sensitivity. Potential impacts to prostrate spineflower are evaluated in this report.

Fifteen special-status wildlife species were detected during the 2010 focused animal and plant surveys: Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), a CDFW Watch List species and County Group 1 species; Cooper's hawk (*Accipiter cooperii*), a CDFW Watch List species and County Group 1 species; sharp-shinned hawk (*Accipiter striatus*), a California Species of Special Concern (SSC) and County Group 1 species; great blue heron (*Ardea herodias*), a County Group 2 species; red-shouldered hawk (*Buteo lineatus*), a County Group 1 species; turkey vulture (*Cathartes aura*), a County Group 1 species; northern harrier (*Circus cyaneus*), an SSC species and County Group 1 species; coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), an SSC species and County Group 1 species; yellow warbler (*Dendroica petechia brewsteri*), an SSC species and County Group 2 species; white-tailed kite (*Elanus leucurus*), a fully protected species and County Group 1 species; northern red-diamond rattlesnake (*Crotalus ruber*), an SSC species and County Group 2 species; coastal western whiptail (*Aspidoscelis tigris stejnegeri*), a County Group 2 species; Blainville's horned lizard (*Phrynosoma blainvillei*), an SSC species and County Group 2 species; northwestern San Diego pocket mouse (*Chaetodipus fallax*), an SSC species and County Group 2 species; and San Diego woodrat (*Neotoma lepida intermedia*), an SSC species and County Group 2 species.

Impacts from the proposed project include potential impacts to arroyo toad and arroyo toad critical habitat; impacts to suitable habitat for southwestern willow flycatcher and least Bell's vireo; impacts to California gnatcatcher critical habitat; habitat loss for one pair of cactus wren; habitat loss for Southern California rufous-crowned sparrow; foraging habitat loss for special-status raptors including golden eagle; habitat loss and potential impacts to County Group 1 species; direct impacts to County Group 2 special-status reptiles; significant direct impacts to vegetation communities and jurisdictional waters nesting birds protected under the Migratory Bird Treaty Act; and traffic-related wildlife movement impacts. Significant indirect impacts could occur to vegetation communities, jurisdictional waters, special-status plant species, special-status wildlife species, and nesting birds. Mitigation measures needed to reduce these impacts to less than significant include the preservation of on-site open space by establishing an open space easement and implementing a resource management plan (RMP), establishing a limited building zone (LBZ) easement, implementing on-site cactus scrub creation or off-site cactus scrub conservation; creation and enhancement of wetlands habitat in the project area or off site; implementation of traffic signal control and adaptively managed wildlife directive fencing; and implementation of pre-construction surveys, biological construction monitoring, and avoidance measures.

1 INTRODUCTION

1.1 Purpose of the Report

The purpose of this biological resources report is to document the floral and faunal resources that are present or have potential to occur in the project area as identified through literature review, formal wetlands delineation, vegetation community mapping, and focused surveys for special-status plant and wildlife species recognized by local, state, or federal resource agencies. This report also analyzes the potential biological resource direct, indirect, and cumulative impacts resulting from the proposed project; it analyzes the biological significance of the site with respect to regional biological resource planning; and it proposes mitigation measures to avoid, minimize, or mitigate significant impacts to a less-than-significant level consistent with federal, state, and local regulations, including the California Environmental Quality Act (CEQA), and the Resource Protection Ordinance (RPO).

1.2 Project Location and Description

The project area is located within the 513-acre Warner Ranch property in Pala, California. The project area is bordered by the city of Rainbow to the northwest, Pala-Temecula Road to the east, and SR 76 and Pala Casino Resort and Spa to the south, and I-15 is located approximately 4 miles to the west (Figure 1). The site is located within the U.S. Geological Survey (USGS) 7.5-minute Pala and Pechanga quadrangles; latitude 33°22'18" N, longitude 117°5'23" W (Figure 2). The project area includes a portion of Gomez Creek and its channel tributaries on the western side of the property, as well as Pala Creek on the easternmost portion of the project area. Elevations in the project area range from 355 to 1,000 feet above mean sea level. The Assessor Parcel Numbers (APNs) in the project area are 100-021-32-00, 110-090-18-00, 110-021-10-00, 110-040-22-00, 110-090-17-00, and 110-090-10-00. The survey area is within the boundaries of land covered by the draft North County Multiple Species Conservation Program (NCMSCP); however, as this plan is available only in draft form with no specific timeline for finalization, the project is not analyzed in the context of the draft NCMSCP.

The proposed Warner Ranch Project (Vesting Tentative Map Tract No. 5508RPL2) is intended to provide a range of workforce housing opportunities consistent with the Job/Housing Balance goals and policies of the San Diego County General Plan. The recently adopted General Plan and associated Pala/Pauma Community Plan provides for the implementation of this project by designating this 513.5-acre property as a Special Study Area (SSA). The SSA requires a focused land use planning analysis “to determine the most compatible and consistent land uses for the property.” The designation has required additional planning studies intended to address the unique character of the site and surrounding area as well as address property constraints to allow for the creation of a “cohesive and comprehensive land use plan” (County of San Diego 2011).

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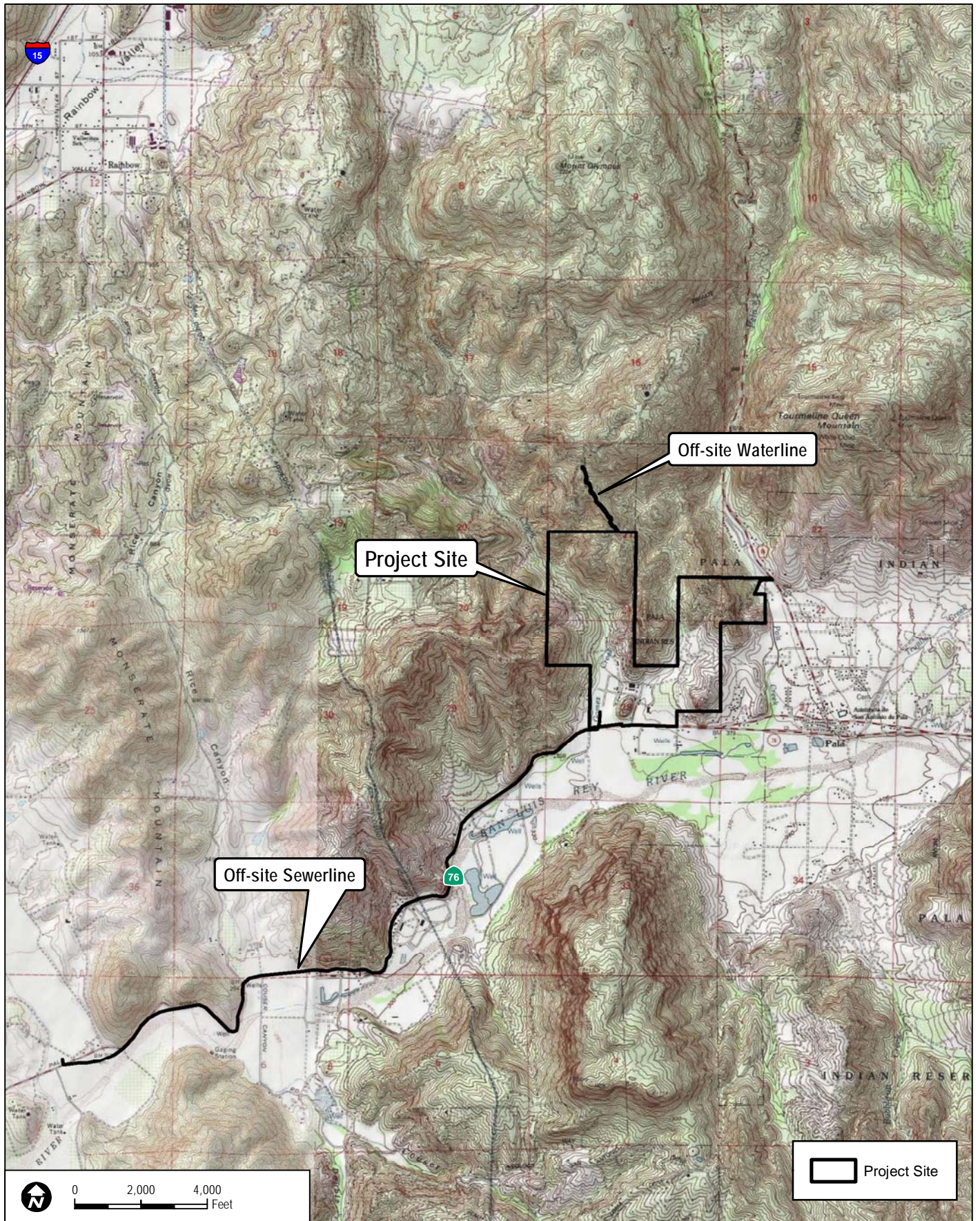
The Warner Ranch Project proposes a General Plan Amendment (GPA), Specific Plan, Rezone Administrative Permit (for gated access), and Vesting Tentative Map to develop 513.5 acres with 780 residential units and associated public and private facilities and services (Figure 3). The following is a summary of the proposed project:

- 780 residential units (534 single family detached, with lot sizes ranging from 3,000 to 8,000 square feet and 246 multi-family and attached townhomes)
- 7.7 acres of private neighborhood parks, clubhouse, and pool
- 14.6 acres of privately maintained landscaped areas
- A 4.2-acre active public park (active recreational uses)
- 358.8 acres of preserved open space
- A fire station (10,000 square feet)
- Public and private community facilities would include sewer pumps, drainage structures, utility vaults, etc. Additionally, a water reservoir would be constructed on the western portion of the property. The reservoir would receive water from an existing 8-inch water line in Jeremy Way that is maintained by the Rainbow Municipal Water District (RMWD). Water would then be distributed to the project via a 12-inch line, which is connected to the water reservoir.
- Off-site improvements would include frontage improvements and a signalized intersection at the project entry and SR 76, as well as signalized improvements to the existing SR 76 and Cole Grade Road intersection. In order to provide the water reservoir on site, approximately 3,000 linear feet of 8-inch-diameter pipeline would be constructed from the terminus of the existing line in Jeremy Way to the property's northern boundary line. Additionally, a 6-inch force sewer main would run from a new pump station on the southwestern boundary of the site, to the west within the right-of-way for SR 76, where it would ultimately connect to another new pump station to be provided by the RMWD.

The project area would be accessed by a central entry road at its current intersection with SR 76, where a signalized intersection is required. The project would also make frontage improvements to the existing 120-foot-wide Pala Road/SR 76 easement. These improvements include the widening of the existing 24-foot-wide pavement to 52 feet, two 12-foot-wide drive lanes, a 12-foot-wide painted center median, and 8-foot-wide shoulders that also include a painted bike lane in each direction. Additionally, a 350-foot-long and 12-foot-wide acceleration/deceleration lane is proposed adjacent to the project's main entry.

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 Project Site

DUDEK

6653-01

SOURCE: ArcGIS Online World Topographic Map Service

Warner Ranch - Biological Technical Report

FIGURE 2
Vicinity Map

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Earthwork quantities for on-site development are anticipated to consist of 2.3 million cubic yards of cut material and 2.3 cubic yards of fill material. The proposed grading will be balanced with no import or export of materials.

The project would be implemented in phases. Major facilities such as the proposed fire station, water storage reservoir, forced sewer line, frontage improvements, drainage improvements, and public park, are intended to be constructed as a part of the initial phases of the project.

1.3 Survey Methodologies

Data regarding biological resources present in the project area were obtained through a review of pertinent literature and through field reconnaissance; both are described in detail below.

1.3.1 Literature Review

Sensitive biological resources present or potentially present in the project area were identified through a 2010 and 2011 literature search in addition to prior reports prepared for the project area. The following sources were used during the literature review process:

- U.S. Fish and Wildlife Service (USFWS) (1997, 1999, 2001, 2002) for wildlife survey protocols
- Southwestern willow flycatcher survey protocols (Sogge et al. 2010)
- CDFG's (2011a) Natural Diversity Database was queried to compile a list of potentially occurring flora and fauna in and surrounding the Pala and Pechanga quadrangles
- CNPS's Inventory of Rare and Endangered Plants of California seventh online edition (CNPS 2011) was searched to compose a list of potentially occurring flora in and around the Pala and Pechanga quadrangles
- Focused California Gnatcatcher, Least Bell's Vireo and Southwestern Willow Flycatcher Surveys, Warner Ranch Project, County of San Diego, California (Dudek 2005a)
- Draft Existing Conditions Biological Resources Report & MSCP Hard Line Preserve Analysis – Warner Ranch Development (Dudek 2005b)
- Focused Quino Checkerspot Butterfly Survey for the Warner Ranch Project, Pala Area, County of San Diego, California (Dudek 2008)
- Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Results for the Warner Project, County of San Diego, California (Dudek 2010a)
- 2010 California Gnatcatcher Focused Survey Results for the Warner Ranch Project, Community of Pala, County of San Diego, California (Dudek 2010b)
- Memorandum for Warner Ranch Trout Survey of Gomez Creek (Dudek 2010c)

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- Stephen's Kangaroo Rat Presence/Absence Trapping Studies, Warner Ranch, San Diego County, California (Envira 2010)
- Memorandum for Warner Ranch Arroyo Toad Survey (Dudek 2011).

1.3.2 Agency Consultation

Since the project planning began in 2005, the County has been in consultation with multiple agencies, including CDFW and the U.S. Fish and Wildlife Service (USFWS). Recent meetings include two County batching meetings (June 21, 2012, and March 21, 2013) to review the project, discuss project issues, and provide direction on resolving these issues. On April 11, 2013, the County, CDFW, and client visited the project area for purposes of assessing the preserved cactus wren location. Finally, on April 16, 2013, the County, USFWS, and client met to discuss the analysis of potential golden eagle use on the project area. In terms of regional preserve planning efforts, the project is within the draft NCMSCP planning area; however, as this plan is available only in draft form with no specific timeline for finalization, the project is not analyzed in the context of the draft NCMSCP. This report is prepared under the County Report and Format Requirements (County of San Diego 2010a), and significance determination is based on the County's Significance Determination and Report and Format Requirements (County of San Diego 2010b). The County RPO (County of San Diego 2007) was also utilized to help assess resource sensitivity and habitat connectivity.

1.3.3 Field Reconnaissance

From April 2010 to November 2012, Dudek biologists conducted biological reconnaissance surveys of the 513-acre project area, consisting of a formal wetlands delineation, rare plant surveys, focused special-status wildlife surveys, vegetative community mapping, and the preparation of a biological resources map in accordance with current County standards and regulations, a Hermes copper butterfly (*Hermelycaena [Lycaena] hermes*) habitat assessment, and golden eagle (*Aquila chrysaetos*) nest surveys. Vegetation mapping included a 100-foot buffer around the perimeter of the survey area, consistent with County regulations. Envira biologist Philippe Vergne, under contract with Dudek, conducted small mammal trapping surveys in 2010. In 2005, Dudek biologists conducted focused surveys for rare plants and special-status wildlife species; and in 2008, a habitat assessment for Stephen's kangaroo rat (*Dipodomys stephensi*) and focused surveys for Quino checkerspot butterfly (*Euphydryas editha quino*) were conducted.

Table 1 lists the dates, conditions, personnel, and focus for each survey in the project area in 2010, 2011, and 2012. Table 2 lists survey periods and focuses on the site prior to 2010.

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Table 1
Schedule of Surveys

Date	Focus/area	Personnel	Time	Weather Conditions
4/29/2010	ARTO, CRLF, Trout; on-site riparian areas	JDP, TSL	4:10p – 11:00p	Air: 64–47°F, water: 57–54°F; 0%–30% cloud cover (cc); 0–2 mph wind
5/11/2010	LBVI; on-site riparian areas	TSL	5:45a – 11:00a	Air: 63–67°F; 20–30% cc; 0–3 mph
5/21/2010	LBVI, WIFL; on-site riparian areas	JDP	6:10a – 11:00a	Air: 56–68°F; 80–100% cc; 0–4 mph
5/26/2010	RP; Southwest portion	KCD	8:10a – 4:45p	Air: 70°F; 20–30% cc; 0–1 mph
	ARTO; on-site riparian areas	JDP	5:10p – 10:10p	Air: 55–68°F, water: 60°F; 0–10% cc; 0–5 mph
5/28/2010	RP; Northeast portion	KCD	7:35a – 2:30p	Air: 65–70°F; 0–5% cc; 0–1mph
	RP; Near Pala-Temecula Road	VRJ	7:00a – 230p	Air: 62°F; 0% cc; 0–1 mph
6/2/2010	RP	KJM	8:00a – 1:15p	100% cc; 1–4 mph
	RP; lower slopes east of Gomez Creek; western 60 acres	VRJ	8:00a – 1:00p	Air: 65–80°F; 0–70% cc; 0–5 mph
	LBVI, WIFL, ARTO; on-site riparian areas	JDP	6:45a – 1:15p	Air: 57–77°F, water: 58–60°F; 30–100% cc; 0–5 mph
6/9/2010	ARTO; on-site riparian areas	JDP	6:23p – 10:00p	Air: 58–65°F, water: 61–63°F; 0–100% cc; 0–4 mph
6/11/2010	RP; extension-northern parcel	KCD	8:40a – 2:50p	Air: 70–72°F; 90–100% cc; 0–1 mph
	LBVI; on-site riparian areas	TSL	5:45a – 8:40a	Air: 62–64°F; overcast (100% cc); 0–3 mph
6/21/2010	LBVI, WIFL; on-site riparian areas	JDP	7:00a – 11:45a	Air: 59–72°F; 0–100% cc; 0–5 mph
6/28/2010	RP; Additional western 60 acres continued	VRJ	1:00p – 5:00p	Air: 72–80°F; 0% cc; 0–5 mph
6/30/2010	ARTO; on-site riparian areas	JDP	5:50p – 10:10p	Air: 59–72°F, water: 63–65°F; 0% cc; 0–3 mph
7/2/2010	LBVI, WIFL; on-site riparian areas	JDP	7:45a – 11:45a	Air: 62–76°F; 0–30% cc; 0–5 mph
7/6/2010	ARTO; on-site riparian areas	JDP	4:20p – 9:45p	Air: 60–70°F, water: 54–65°F; 0–100% cc; 0–4 mph
7/12/2010	LBVI, WIFL; on-site riparian areas	JDP	7:50a – 11:15a	Air: 67°F; 0% cc; 0–3 mph
7/28/2010	LBVI; on-site riparian areas	JDP	7:00a – 11:15a	Air: 60–73°F; 0–100% cc; 0–4 mph
8/4/2010	RP	CJF	8:00a – 2:00p	Air: 60–90°F; 100% cc overcast; 0 mph
	RP	BAS	7:00a – 2:30p	Air: 60–91°F; 0–100% cc; 0–4 mph
	RP	PS	8:00a – 2:00p	Air: 60–90°F; 0–100% cc; 0–4 mph
8/5/2010	RP	BAS	8:00a – 1:35p	Air: 62–84°F; 0–100% cc; 0–3 mph
	JD	CJF/VRJ	8:30a – 1:15p	Air: 65–90°F; 0–50% cc; 0–4 mph
	RP; VEG	CJF	1:30p – 2:40p	Air: 90°F; 0% cc; 0–3 mph
8/24/2010	CAGN; Area A	BAO	6:00a – 12:20p	Air: 70–80°F; 0–10% cc; 0 mph

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Table 1
Schedule of Surveys

Date	Focus/area	Personnel	Time	Weather Conditions
8/27/2010	CAGN: Area B	AMH	6:00a – 11:10a	Air: 65–75°F; 0% cc; 3–8 mph
	CAGN; Area C	PML	7:00a – 10:40a	Air: 63–76°F; 0% cc; 1–6 mph
9/3/2010	CAGN; Area C	KJM	6:30a – 1:00p	Air: 57–96°F; 0% cc; 0–8 mph
9/10/2010	CAGN; Area C	KJM	6:30a – 12:15p	Air: 55–92°F; 0% cc; 0–8 mph
	CAGN; Area A	PML	7:00a – 11:20a	Air: 58–78°F; 0% cc; 0–4mph
9/14/2010	CAGN; Area B	JDP	7:15a – 12:00p	Air: 54–88°F; 0% cc; 0–5 mph
9/17/2010	CAGN; Area A	JDP	7:50a – 12:00p	Air: 57–80°F; 0–100% cc; 0–5 mph
10/10– 5/2010	SKR	PJV	Various	See Appendix A
11/23/2010	Trout	BZ, TC, TH, TL,	7:00a –11:20a	Air: 59–55°F; <10% cc; 0–3 mph
10/20/11	GOEA Nest Survey	JDP	8:20a –3:45p	Air: 59–74°F; 60%–0% cc; 0–6 mph
10/25/2011	Hermes Copper Habitat Assessment	CJF	9:00a – 11:50a	Air: 65°F; 20%-100% cc; 0 mph
1/5/12	GOEA Breeding Season Nest Survey	JDP	8:45a – 11:00a	Air: 68–75°F; 25%–5% cc; 0–4 mph wind
11/12/12	Vegetation Mapping – Off site	CJF	9:00a – 12:00p	Not recorded
4/27/13	Golden Eagle Foraging Survey	JDP	0610-1215	Air: 54–76°F; 0%–100% cc; 0-10 mph wind

Table 2
Biological Surveys Conducted Prior to 2010

Dates	Type	Personnel	Number of surveys
April 2005	QCB	DWF, BAO, MLB	4
May–Jun, 2005	RP	MSE, CKK, KJM, SMB, MCD, DWF, VRJ, RMK, SSS	13
May–Jul, 2005	LBVI	JDP, AMH	8
May–Jul, 2005	WIFL	JDP, AMH	9
Jun–Aug, 2005	CAGN	JDP	8
Apr–Jun, 2005	ARTO	BAO	6
September 2005	Trout	BAO, JDP, SMB	1
September 2006	Trout	JDP, SMB	1
March 2008	SKR Habitat Assessment	PB	1
Mar–Apr, 2008	QCB	PML, BAO, KJM, JDP, TLW, VRJ, DWF	26

Survey Designations

RP – Rare plant surveys

JD – Jurisdictional wetlands delineation

LBVI – Focused least Bell's vireo surveys

CAGN – Focused California gnatcatcher surveys

ARTO – Focused arroyo toad surveys

VEG – Vegetation communities mapping

QCB – Focused Quino checkerspot butterfly surveys

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SKR – Focused Stephen's kangaroo rat surveys
Trout – Presence/absence survey for southern steelhead trout
WIFL – Focused southwestern willow flycatcher surveys

Personnel

AMH – Anita M. Hayworth
CJF – Callie J. Ford
KCD – Katie C. Dayton
MSE – Megan S. Enright
PS – Patricia Schuyler
RMK – Rebekah M. Krebs
TLW – Tricia L. Wotipka

BAO – Brock A. Ortega
DWF – David W. Flietner
KJM – Kam J. Muri
PML – Paul M. Lemons
PJV – Philippe Jean Vergne (Envira)
SMB – Scott M. Boczkiewicz
VRJ – Vipul R. Joshi

BAS – Britney A. Strittmater
JDP – Jeffrey D. Priest
MCD – Marc C. Doalson
PB- Phil Behrends
RJM – Randall J. McInvale
SSS – Sparrow S. Serrano
BZ – Brian Zitt (ECORP)
TC – Todd Chapman (ECORP)
TH – Tim Hovey (CDFW)
TL – Thomas Liddicoat

1.3.4 Resource Mapping

The overall vegetative cover was determined by walking meandering transects, spaced approximately 25 feet apart, and making an ocular estimate of percent cover of trees, shrubs, herbs, and bare ground. The mapping was done in the field directly onto an aerial photographic base (Digital Globe 2008) on project-specific topography, when available. The maximum scale of the map was 200-scale (1 inch = 200 feet) base. A global positioning system (GPS) backpack unit with sub-meter accuracy was used to delineate certain vegetation boundaries. Following completion of the fieldwork, all information was uploaded into ArcView, vegetation polygons were transferred to a topographic base and digitized using ArcGIS, and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present in the project area was determined. Vegetation communities and land cover types in the footprint of the off-site sewer line were not digitized, since those improvements occur within the developed roadway of SR 76 and an intensive agricultural orchard.

Vegetation community classifications follow Holland (1986) and Oberbauer et al. (2008), with modifications to accommodate the lack of conformity of the observed communities to those of Holland and Oberbauer et al. A differentiation between disturbed and undisturbed vegetation communities was made in the field based on species composition for which native shrub cover at 20–50 percent was classified as “disturbed.” Areas with less than 20 percent native shrub cover were mapped as non-native communities or other land cover types.

1.3.5 Flora

Special-status plant surveys were conducted by Dudek to determine the presence or absence of plant species considered endangered, rare, or threatened under CEQA Guideline 15380 (14 CCR 15000 et seq.).

All plant species encountered during the field surveys were identified and recorded. Latin and common names of plants follow *The Jepson Manual* (Hickman 1996) or more recent published taxonomical revisions of genera. Where not listed in *The Jepson Manual*, common names are

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taken from the Calflora online database (Calflora 2011). A cumulative list of plant species observed on the project area is presented in Appendix B.

1.3.5.1 Focused Rare Plant Surveys

Focused surveys for special-status plant species were conducted by Dudek biologists May through June 2005 and in May, June, and August of 2010. The surveys were timed to capture potential blooming annuals and perennially blooming sensitive plant species. Survey emphasis was placed on determining the presence, or potential for occurrence, of species found on state, federal, and CNPS 1B and 2 lists, and County lists A–D. All special-status species locations were mapped in the field directly onto aerial photographs of the project area and were entered into a handheld Trimble GeoXT GPS unit.

1.3.6 Fauna

Dudek biologists conducted focused surveys for California gnatcatcher (*Polioptila californica*), least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii extimus*) in May through August 2005 and May through September 2010; protocol surveys to determine presence/absence of arroyo toad were conducted April through July 2005 and April through September 2010; focused surveys for southern steelhead trout (*Oncorhynchus mykiss irideus*) were conducted in 2005 and 2006; focused surveys for Quino checkerspot butterfly were conducted in May 2005 and protocol surveys for Quino checkerspot butterfly were conducted March through April 2008; trapping studies for Stephens' kangaroo rat were conducted in October 2010; a habitat assessment was conducted for Hermes copper butterfly in October 2011; and nest surveys for golden eagle were conducted in October 2011 and January 2012. A more detailed description of methodology is below. Wildlife species were identified during field surveys by sight, vocalizations, burrows, tracks, scat, or other signs, using binoculars (7×50 or 10×42 power) when necessary. In addition to species actually detected, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. Latin and common names of animals follow Stebbins (2003) for reptiles and amphibians, American Ornithologists' Union (AOU) (2010) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA) (2001) for butterflies. A list of wildlife species observed within the project area during 2005, 2008, and 2010 surveys is presented in Appendix C.

1.3.6.1 Focused Coastal California Gnatcatcher Surveys

The surveys for gnatcatcher (2005, 2010) were conducted in conformance with the currently accepted protocol of USFWS, coastal California gnatcatcher 1997 presence/absence survey protocol. Protocol surveys within an enrolled natural community conservation program (NCCP)

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area include three surveys in all suitable habitat and a maximum of 100 acres surveyed per day. Therefore, a minimum of three surveys was required during appropriate weather conditions.

A tape of recorded California gnatcatcher vocalizations played approximately every 50–100 feet was used to induce responses from potentially present California gnatcatchers. If a California gnatcatcher was detected, tape playback would have been terminated to minimize potential for harassment. A 200-scale (1 inch = 200 feet) aerial photo and topographic map of the site was used to map any California gnatcatchers detected. See Appendices D and E for California gnatcatcher survey reports.

1.3.6.2 Southwestern Willow Flycatcher

Surveys for flycatcher (2005, 2010) were conducted concurrently with the vireo surveys. All surveys consisted of slowly walking a methodical, meandering transect within and adjacent to all riparian habitat in the project area. The perimeter also was surveyed. This route was arranged to cover all suitable habitat in the project area. A vegetation map (1 inch = 200 feet) of the project area was available to record any detected vireo or flycatcher. Binoculars (10×50) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (Sogge et al. 1997) in conjunction with the 2000 Southwestern Willow Flycatcher Protocol Revision issued by USFWS, which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. It is recommended that one survey is made during the period from May 15–31, one survey from June 1–21, and three surveys between June 22 and July 17. A tape of recorded flycatcher vocalizations was used, approximately every 50–100 feet within suitable habitat to induce flycatcher responses. To avoid harassment of the species, playback would have been halted as soon as a bird was detected. See Appendices D and F for flycatcher focused survey reports.

1.3.6.3 Least Bell's Vireo Surveys

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo (2005, 2010) followed the currently accepted Least Bell's Vireo Survey Guidelines (USFWS 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats during the period from April 10 to July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations were not used during the surveys. Surveys were conducted between dawn and 1200 hours and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather. See Appendices D and F for vireo survey reports.

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1.3.6.4 Quino Checkerspot Butterfly Surveys

Focused Quino checkerspot butterfly surveys (2005, 2008) were conducted over 26 visits within a 5-week period between March 19 and April 18, 2008. Surveys were conducted by Dudek biologists in accordance with current USFWS protocol (USFWS 2002). Focused Quino checkerspot surveys in 2005 were initiated in the third week of the adult flight season and therefore were not completed in accordance with the USFWS protocol, but serve as additional anecdotal data.

The survey methods consisted of slowly walking roughly parallel transects throughout all potential habitat within the survey area (i.e., all areas that are not excluded per the survey protocol, generally including sage scrub, open chaparral, grasslands, open or sparsely vegetated areas, hilltops, ridgelines, rocky outcrops, trails, and dirt roads). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10–15 acres per hour. See Appendix G for Quino checkerspot butterfly survey report.

1.3.6.5 Arroyo Toad Surveys

Focused nocturnal/diurnal surveys for the arroyo toad (2005, 2010) were conducted by Dudek within Gomez Creek in the project area in conformance with currently accepted USFWS survey protocol (USFWS 1999). Although there was suitable habitat within Pala Creek, surveys could not be conducted within the creek due to lack of water during the survey period. The USFWS protocol requires six diurnal (daytime) and six nocturnal (nighttime) surveys to be conducted between March 15 and July 1 during non-full-moon situations. Each diurnal/nocturnal survey pair must be completed within 24 hours of each other and paired surveys must occur at least 7 days apart. At least one survey pair must occur in April, May, and June. The creek area was surveyed on 12 paired occasions under appropriate weather and moon conditions. Diurnal surveys consisted of walking slowly along the creek and in adjacent riparian habitat while searching for eggs, larvae, and juveniles. Nocturnal surveys consisted of walking along the creek, stopping frequently, while listening for the arroyo toad's diagnostic trill. See Appendix H for the arroyo toad memorandum.

1.3.6.6 Trout Surveys

In September of 2005, Dudek biologists Jeff Priest, Scott Boczkiewicz, and Brock Ortega conducted an initial presence/absence stream survey for southern steelhead trout for the project area. In September of 2006, Dudek biologists Jeff Priest and Scott Boczkiewicz conducted another presence/absence stream survey for trout in the project area. In April 2010, Dudek biologists Jeff Priest and Thomas Liddicoat conducted a focused survey for special-status species (i.e., arroyo toad) along Gomez Creek in the project area. In November 2010, ECORP biologists Brian Zitt and Todd Chapman, CDFW biologist Tim Hovey, and Dudek biologist Thomas

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Liddicoat conducted a presence/absence stream survey for trout in the project area in an attempt to collect a tissue sample at the request of CDFW.

The surveys mentioned were performed on foot and along the reach of Gomez Creek within the project area. This section of Gomez Creek is approximately 0.75 mile long beginning approximately 1 mile upstream from the confluence with the San Luis Rey River and continuing upstream to the northern limits of the project area. The headwaters to Gomez Creek occur off site and were not examined during the surveys. During each survey, the biologists carefully and quietly hiked from downstream to upstream along the edges of Gomez Creek to detect any trout and document any potential areas within the reach that may be suitable to support trout.

The survey conducted in April 2010 was performed on foot using the same methods described for surveys conducted in 2005 and 2006; however, the survey focus was for arroyo toad and not for trout. The same 0.75-mile stretch of Gomez Creek was carefully hiked from downstream to upstream along the edges of the creek. Although trout was not the focus, any observations were recorded directly in the field into a notebook. The focused surveys were conducted along the edges of Gomez Creek from the end of April through the end of July.

After correspondence with CDFW in October 2010, a follow-up survey was recommended by CDFW and conducted in November 2010. During this survey, Mr. Liddicoat led the fish biologists, Mr. Chapman (ECORP), Mr. Hovey (CDFW), and Mr. Zitt (ECORP), on foot to the location where the trout was observed. Nets and an Electrofisher machine were used to aid in the capture, tissue sample collection, and identification of any trout present. In addition to the Electrofisher machine, a large 15-gallon bucket, hand nets, two gill nets, a tape measure, and a digital fish scale were also carried in the project area to collect information on any captured fishes. Immediately after arrival to the pools, Mr. Chapman and Mr. Zitt evaluated the area and installed a gill net on the downstream side of the pool to restrict any fishes from escaping the pool downstream. The pool was blocked upstream by existing rocks and tiering, and did not require a gill net. Prior to using the machine within the creek, Mr. Chapman tested the water conductivity and set the correct electronic frequency based on the conductivity and approximate fish size to avoid directly killing fishes present in the pool. Once the Electrofisher was tuned appropriately to the area, Mr. Chapman began probing the stream. While probing, Mr. Hovey and Mr. Zitt stood ready to net anything flushed out by the Electrofisher machine. Any aquatic species detected from the Electrofisher probing were captured and immediately placed into a 15-gallon live-well bucket containing water collected at the pool. The Electrofisher was used by Mr. Chapman with assistance from Mr. Zitt and monitored by Mr. Hovey. Only two pools, directly adjacent to each other, were probed with the Electrofisher machine during the survey. Adjacent areas within Gomez Creek, approximately 200 feet upstream and downstream of the two pools probed, were also evaluated by Mr. Hovey for the potential to support trout, and none were

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identified; thus, the Electrofisher machine was not used anywhere else in the project area. See Appendix I for the trout memorandum.

1.3.6.7 *Stephens' Kangaroo Rat Trapping Studies*

In October 2010, Philippe Vergne of Envira was contracted under Dudek to conduct live-trapping for Stephens' kangaroo rat. The study was conducted in suitable Stephens' kangaroo rat habitat in the project area. A habitat assessment was conducted in order to identify suitable habitat. Five areas were chosen for trapping lines, and 20 to 30 and 90 traps were set 10 meters apart at each trapping area. See Appendix A for the Stephens' Kangaroo Rat Presence/Absence Trapping Studies report.

1.3.6.8 *Golden Eagle Nest Survey*

In October 2011, Dudek biologist Jeff Priest conducted a golden eagle nest survey in areas near the project area that had historically documented golden eagle nests. These areas include the slopes immediately west of the project area and a location within the San Luis Rey River approximately 1,200 feet from the southwest corner of the project site, adjacent to SR 76. The historical locations were provided by the County and Technology Associates (TAIC). The survey method for identifying potential golden eagle nest locations included pedestrian surveys using binoculars (10x42 power), assessing large trees for raptor nests, and evaluating potential raptor nests to determine whether they could support nesting golden eagles. Within the San Luis Rey River, a survey buffer of approximately 2,500 feet from the southwest corner of the project site was used, and included all large trees within the river valley and the historical location of the golden eagle nest provided by the County and TAIC. In January 2012, an additional breeding-season golden eagle nest survey was conducted within the San Luis Rey River, within the 2,500-foot buffer zone described above. During the winter, the leaves have dropped from most trees in the area and raptor nests are readily visible. See Appendix J for the Golden Eagle Memorandum.

1.3.6.9 *Golden Eagle Foraging Survey*

On April 27, 2013, Dudek biologist Jeff Priest conducted one golden eagle foraging survey from a single observation point on a hilltop in the southeastern portion of the site. The survey point location was recommended by USFWS golden eagle Biologist Joel (Jeep) Pagel. The timing of the survey was coordinated with the USFWS who confirmed that the Gregory Canyon golden eagle nest site was currently active at the time of the foraging survey. This timing maximized the opportunity to observe potential golden eagle foraging in the project region and determine if the project site is being utilized as a golden eagle foraging site. Surveys were conducted in accordance with the Interim Golden Eagle Technical Guidance (Pagel et al. 2010). Resumes of survey personnel were provided to USFWS prior to conducting the survey. Surveys were

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conducted for 6 hours starting at approximately 0610. Binoculars, a spotting scope, and range finder were all utilized. All observed raptors were identified by species and age class, and locations were noted on project maps with aerial photograph and topography. Surveys were terminated after one survey based on direction provided by the USFWS division chief (Stadtlander, pers. comm. 2013).

1.3.6.10 Hermes Copper Butterfly Habitat Mapping

The host plant for Hermes copper butterfly, spiny redberry (*Rhamnus crocea*) was identified and generally mapped during botanical surveys conducted in 2005 and 2010 but precise locations were not mapped. Following these surveys, the County (2010a) provided interim guidelines for assessing and mapping suitable habitat for this species, which includes mapping mature spiny redberry within 15 feet of California buckwheat (*Eriogonum fasciculatum*). The botanical survey data was reviewed to determine the areas of the site where spiny redberry was identified; no areas within the proposed development were found to support spiny redberry, but spiny redberry was identified at unmapped locations within proposed open space in the western portion of the site. A habitat assessment was conducted in October 2011 by Dudek biologist Callie Ford to map potential habitat (in accordance with County guidelines) for Hermes copper butterfly in open space within 500 feet of the western boundary of the proposed development. Suitable habitat includes areas supporting mature spiny redberry within 15 feet of California buckwheat and areas within 150 meters (500 feet) of Hermes copper butterfly observations. Dudek surveyed suitable habitat including coastal sage scrub, southern mixed chaparral, scrub oak chaparral, and mulefat scrub.

Surveys within the on-site waterline impact areas, as well as the off-site impact area, were not conducted because impacts in these areas are primarily within existing roads and would only affect small amounts of habitat adjacent to those roads. Therefore, these impacts are unlikely to have a substantial effect on Hermes copper butterfly.

1.3.7 Jurisdictional Wetlands Delineation

Dudek biologists Callie Ford and Vipul Joshi performed a formal (routine) wetlands delineation within the 513-acre project area in 2005 and updated the delineation on August 5, 2010. All areas identified as being potentially subject to the jurisdiction of ACOE, RWQCB, CDFW, or the County were field verified and mapped.

The wetlands delineation was performed in accordance with the methods prescribed in the 1987 *Wetland Delineation Manual, Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 1987), the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (ACOE 2008), and the ACOE/Environmental Protection Agency (EPA) Rapanos Guidance

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(Environmental Laboratory 1987; ACOE 2008; ACOE and EPA 2008). ACOE and RWQCB, pursuant to the federal Clean Water Act (CWA), include all areas supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW- and County-regulated wetlands. Waters under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology). RWQCB may also take jurisdiction over surface waters lacking ACOE regulation pursuant to the state Porter-Cologne Act. These areas generally include areas with at least one of the three wetlands indicators but that are isolated from a tributary of a navigable water through the lack of evidence of surface water hydrology.

Wetland determinations were made at 11 sampling points (Appendix K) to determine which areas are under the jurisdiction of ACOE and RWQCB. The extent of wetlands areas was determined by mapping the areas with similar vegetation and topography to sampled locations.

The County RPO (County of San Diego 2007) identifies environmental resources, including wetlands, present within the County and provides measures to preserve these resources.

The RPO identifies wetlands as lands that have one or more of the following attributes:

- Lands that periodically support a predominance of hydrophytes (plants whose habit is water or very wet places)
- Lands in which the substratum is predominantly undrained hydric soil
- Lands where an ephemeral or perennial stream is present and whose substratum is predominately non-soil and where such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

Hydrology, vegetation, and soils were assessed at 11 geographically distinct sampling locations throughout the project area to determine the presence or absence of wetland field indicators. The overall area was assessed for evidence of an ordinary high water mark (OHWM), saturation, permanence of surface water, wetland vegetation, and nexus to traditional navigable waters of the U.S. A more detailed description of the methods is described below.

The location of sampling points and the limits of wetlands were collected in the field using a 200-scale (1 inch = 200 feet) aerial photograph, topographic base, and GPS equipment with sub-meter accuracy. Dudek GIS technician Mark McGinnis digitized the jurisdictional extents based on the GPS data and collected data directly onto field maps into a project-specific GIS using ArcGIS software.

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Hydrophytic Vegetation

Seasonal changes in species composition, human land-use practices, wildfires, and other natural disturbances can adversely affect the wetlands vegetation determination. During the delineation, a data station point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50 percent of the dominant species sampled were characterized as either obligate, facultative wetland, and/or facultative per the *National List of Vascular Plant Species that Occur in Wetlands: 1988 National Summary* (Reed 1988). In those cases where the dominance test failed but there were positive indicators of hydric soils and/or hydrology, the vegetation parameter was re-evaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. The standard plot sampling technique was used to sample vegetation within a 10-foot radius for herbaceous vegetation and a 30-foot radius for trees, shrubs, and woody vines. All plant species observed during the surveys were identified and recorded. Where plant identification could not be made in the field, a sample was taken and later identified in the laboratory.

Hydric Soils

According to the National Technical Committee for Hydric Soils, hydric soils are “soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (USDA (U.S. Department of Agriculture) Soil Conservation Service 1994). Soil from the data station pits, prepared using a “sharp shooter” shovel, was examined for various hydric soil indicators, as described in the 1987 Manual, *Field Indicators of Hydric Soils in the United States v. 5.01* (USDA, NRCS 2003), and ACOE’s *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (ACOE 2008). Munsell Soil Color Charts were used to determine soil chroma and value. Where feasible, soil pits were prepared to depths ranging from 10 to 12 inches; however, in many cases, pit depth only reached 6 inches due to the nature of the soil. Dry soils were moistened to obtain the most accurate color. Excavated soils were inspected for such hydric indicators as low chroma values and mottling, vertical streaking, sulfidic odor, and high organic matter content in the upper horizon. Evidence of previous ponding or flooding, slope shape, existing landform characteristics, soil material/composition, and hydrophytic vegetation were also assessed to determine the presence of hydric soils.

Hydrology

Per the guidelines prescribed in ACOE’s *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (ACOE 2008), wetland hydrology indicators are separated into four major groups: groups A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B

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indicators consist of evidence that the site has been or is currently subjected to ponding, including, but not limited to, water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation, including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of “vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the Facultative (FAC)-Neutral test” (ACOE 2008). Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated in the project area by intensive field review. Please see Appendix K for the completed data station forms.

1.3.8 Survey Limitations

The vegetation mapping, wetlands delineation, and special-status plant surveys were conducted during the day and during the months of the year when most annuals would have been evident or identifiable. Special-status plant surveys were conducted in years following near average winter rainfall, providing adequate conditions for germination of annual plant species and flowering of perennial plant species and thus allowing detection during focused surveys. Birds represent the largest component of the vertebrate fauna, and because most are active in the daytime, all the focused bird surveys were conducted during the day. In contrast, daytime surveys usually result in few observations of mammals, many of which may be active at night. In addition, many species of reptiles and amphibians are nocturnal or cryptic in their habits and are difficult to observe using standard meandering transects. While the survey area was accessible, some sections of the project area were difficult to thoroughly traverse due to the steepness of the hillsides combined with impenetrable stands of chaparral.

The current survey effort provides an accurate representation of the potential for special-status biological species to occur in the project area given the existing general geographic characteristics of the site, surrounding land uses, and habitat quality. The surveys were thorough and comprehensive, and the results of the study contained herein provide a reasonable, accurate assessment of the 513-acre project area.

1.4 Environmental Settings

The central portion of the project area, at about 350 feet in elevation, is relatively flat. The primary drainage from the site is conveyed through Gomez Creek, which occurs in a relatively steep canyon in the northern part of the property, upstream of the relatively flat terrace in the southern portion of the property. The remainder of the site consists of hills of up to 1,000 feet in elevation. The project area generally has a warm, dry climate consistent with the San Diego area,

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and the average temperature in the community of Pala ranges from 56°F to 73°F, with an annual rainfall of about 11 inches (The Weather Channel 2010).

According to the U.S. Department of Agriculture (USDA) (2010), there are eight soil types found in the project area, and descriptions based on those by Bowman (1973) and Web Soil Survey appear below.

Las Posas stony fine sandy loam, 9–30 percent slopes: This soil is a well-drained soil with a clay loam subsoil, formed from basic igneous rock. Occurring on moderately steep hillsides, with runoff speed of medium to rapid and an erosion hazard of moderate to high, this soil supports upland species such as chaparral-oak, chamise (*Adenostoma fasciculatum*), sumac, ceanothus (*Ceanothus* spp.), California sagebrush, annual grasses, and a few scattered oaks (*Quercus* spp.) in mountainous areas. Las Posas series soils can support mafic-endemic plant communities due to the presence of gabbro/metavolcanic soil inclusions.

Las Posas stony fine sandy loam, 30–65 percent slopes: This is a well-drained soil with a clay loam subsoil, originating from sandstone and shale. Occurring on fairly steep hillsides, with runoff speeds of rapid to very rapid and an erosion hazard of high to very high, this soil supports the same upland floral species as the Las Posas stony fine sandy loam 9–30 percent slope soil.

Cieneba coarse sandy loam, 30–65 percent slopes, eroded: This is an excessively drained soil resulting from weathered granite and granodiorite. Occurring on fairly steep hillsides, with runoff speeds of rapid to very rapid and an erosion hazard high to very high, this soil supports flat-top buckwheat, chamise, California sagebrush, and annual grasses and forbs.

Cieneba-Fallbrook rocky sandy loams, 30–65 percent slopes, eroded: This is a well- to somewhat- excessively drained soil with a sandy clay loam subsoil, resulting from weathered granite and granodiorite. Occurring on fairly steep hillsides, with runoff speeds of rapid to very rapid and an erosion hazard high to very high, this soil supports oak, broadleaf chaparral, and intermittent areas of chamise in addition to those listed for Cieneba coarse sandy loam.

Ramona sandy loam, 2–5 percent slopes: This is a well-drained soil with a sandy clay loam subsoil and granitic origins. Occurring in alluvial fans and on terraces, with slow runoff speeds and a slight erosion hazard, this soil supports mouse barley, wild oats, filaree (*Erodium* spp.), soft chess (*Bromus hordeaceus*), chamise, and a few scattered oaks and annual forbs.

Ramona sandy loam eroded, 5–9 percent slopes: This soil has the same characteristics as the Ramona sandy loam of 2–5 percent slope, except that runoff speeds are slow to medium and the erosion hazard is slight to moderate.

Ramona gravelly sandy loam, 15–30 percent: This is a well-drained soil with a gravelly sandy clay loam subsoil and granitic origins. Occurring in alluvial fans on moderately steep grades,

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with medium to rapid runoff speeds and a moderate to high erosion hazard, this soil supports mouse barley, wild oats, filaree, soft chess, chamise, and a few scattered oaks and annual forbs.

Visalia sandy loam, 0–2 percent slopes, 10.3 percent of land: This is a well-drained soil with a fine sandy loam subsoil and granite origins. Occurring in alluvial fans and nearly level with flood plains, with very slow runoff speeds and a slight erosion hazard, this soil supports chamise, annual grasses, flat-top buckwheat, California live oak, and scrub oak (*Quercus* spp.). This soil type may be subject to flooding for short periods of time.

Warner Ranch is a privately owned ranch with agricultural activities and associated residences. Warner Ranch is a working ranch with citrus and avocado groves, as well as livestock and horses. There is an office and housing for ranch employees. Developed areas, agricultural uses, and disturbed areas occupy approximately 151.5 acres of the 513.5-acre site. The remaining acreage supports native habitats and areas of jurisdictional waters and/or wetlands associated with Gomez Creek and Pala Creek.

The central portion of the project area, at about 350 feet in elevation, is relatively flat. The primary drainage from the site is conveyed through Gomez Creek, which occurs in a relatively steep canyon in the northern part of the property, upstream of the relatively flat terrace in the southern portion of the property. The remainder of the site consists of hills of up to 1,000 feet in elevation. The project area generally has a warm, dry climate consistent with the San Diego area, and the average temperature in the community of Pala ranges from 56°F to 73°F, with an annual rainfall of about 11 inches.

Portions of the project area have burned in the last 20 years. In 1997, the Pala Fire burned the northeast corner of the site; in 2004, the Warner Fire burned the north–central portions of the project area, including the off-site area in between the northern project boundary; in 2009, another Pala fire burned 122 acres within and near the project area; and in August 2011, there was a Pala fire that burned 223 acres just east of Pala-Temecula Road (CAL FIRE 2011).

1.4.1 Regional Context

Warner Ranch is located within an unincorporated area of San Diego County within the community of Pauma–Pala, southeast of the city of Rainbow, along the San Luis Rey River. The project area is located within the draft NCMSCP planning area; however, this plan has not yet been adopted, and the current project will not be analyzed under this plan. Existing conserved lands in the area include Mount Olympus, approximately 2 miles north of the site, and Wilderness Gardens, located approximately 2.5 miles east of the site; both are properties owned and managed by the County Department of Parks and Recreation. The U.S. Forest Service boundary is approximately 4.5 miles northeast of the site. The region where the property is

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situated consists primarily of agricultural and undeveloped lands with the exception of the Pala tribal lands to the east of the site and the community of Rainbow to the northwest.

A Base Map for the project is included in Figure 4 and follows the County's map requirements (County of San Diego 2010a).

1.4.2 Habitat Types/Vegetation Communities

Upland vegetation present includes coastal sage scrub (including disturbed), non-native grassland, granitic and mafic southern mixed chaparral (including disturbed), southern cactus scrub, scrub oak chaparral, and valley needlegrass grassland (Figure 5a). Riparian and wetland vegetation communities present include southern coast live oak riparian forest (including disturbed), mulefat scrub, non-vegetated channel, sycamore alluvial woodland, and southern cottonwood-willow riparian forest. Disturbed habitat, orchards, developed, and agricultural lands are present in the project area as well. Special-status vegetation communities are classified based on whether the County requires mitigation for impacts to these communities. Special-status communities in the project area include coastal sage scrub, scrub oak chaparral, granitic and mafic southern mixed chaparral, coast live oak woodland, valley needlegrass grassland, non-native grassland, mulefat scrub, riparian woodlands/forests, and non-vegetated channels (County of San Diego 2010b). Southern cactus scrub is not recognized by Oberbauer (Oberbauer et al. 2008), but it provides habitat for the special-status cactus wren and is considered a special-status vegetation community in this report.

These vegetation communities and land cover types are described below, their acreages are presented in Table 3, and their spatial distributions are shown on Figure 5a.

Table 3
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code ¹	Existing Acreage
<i>Upland Scrub</i>		
Southern cactus scrub*	N/A	4.6
Diegan coastal sage scrub*	32500	149.1
Disturbed Diegan coastal sage scrub*	32500	31.0
<i>Subtotal</i>		<i>184.7</i>
<i>Upland Woodland and Savannah</i>		
Scrub oak chaparral*	37900	7.9
Granitic southern mixed chaparral*	37121	85.9
Mafic southern mixed chaparral	37122	30.2
Coast live oak woodland*	71160	0.4
Disturbed granitic southern mixed chaparral*	37120	0.2
<i>Subtotal</i>		<i>124.6</i>

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Table 3
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code ¹	Existing Acreage
<i>Upland Grassland</i>		
Valley needlegrass grassland*	42110	1.2
Non-native grassland*	42200	27.6
<i>Subtotal</i>		28.8
<i>Riparian Scrub</i>		
Mulefat scrub*	63310	1.7
<i>Riparian woodlands/forests</i>		
Southern cottonwood-willow riparian forest*	61330	6.9
Sycamore alluvial woodland*	62100	4.3
Southern coast live oak riparian forest*	61310	10.4
Disturbed southern coast live oak riparian forest*	61310	0.7
<i>Subtotal</i>		22.3
<i>Unvegetated Waters</i>		
Non-vegetated channel*	64200	<0.1
<i>Non-Natural Land Covers</i>		
Agriculture (Intensive)	18200	17.4
Agriculture (Extensive)	18300	58.8
Developed	N/A	2.5
Disturbed	11300	4.5
Orchard	18100	68.3
<i>Subtotal</i>		151.5
Total		513.5

¹ Holland (1986) as modified by Oberbauer et al. (2008).

* Considered special-status by the County (2010a).

The off-site portions of the project include a waterline that extends north of the project area along Jeremy Road, road improvements at the intersection of Cole Grade Road and SR 76, and the installation of a sewer line along SR 76. The vegetation communities mapped for the waterline and intersection improvements are shown on Figure 5b. The off-site portion of the waterline is approximately 1.64 acres and includes disturbed habitat (0.93 acre), agriculture (0.6 acre), and Diegan coastal sage scrub (0.09 acre). The off-site waterline construction area is within the existing Jeremy Way (3,000 feet long by 30 feet wide) and will be constructed with a typical traffic control plan to allow access by residents while keeping construction within the limits of work used of this impacts analysis. The intersection improvements project area is 2.59 acres and includes 0.86 acre of orchard and 1.73 acres of developed land.

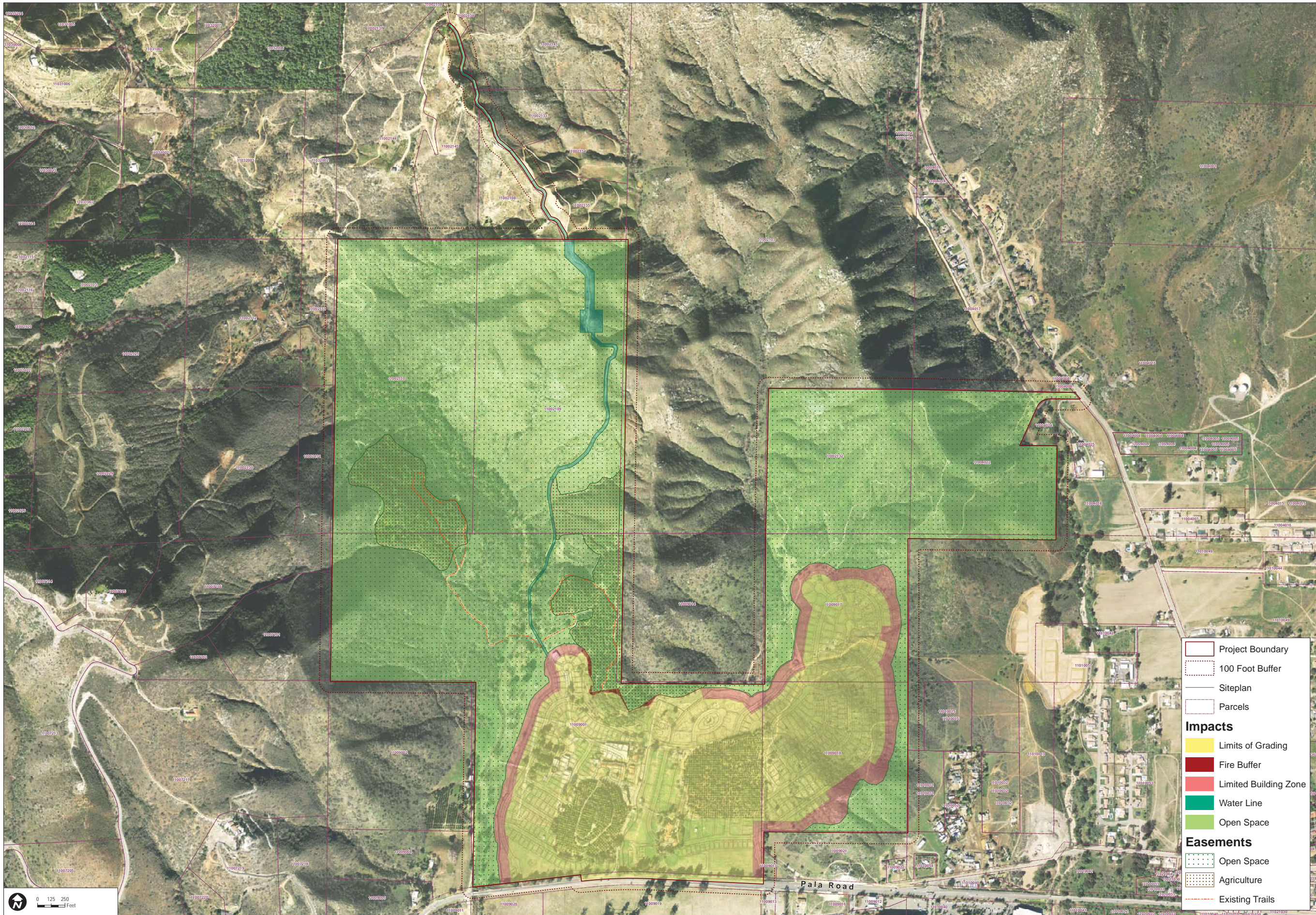
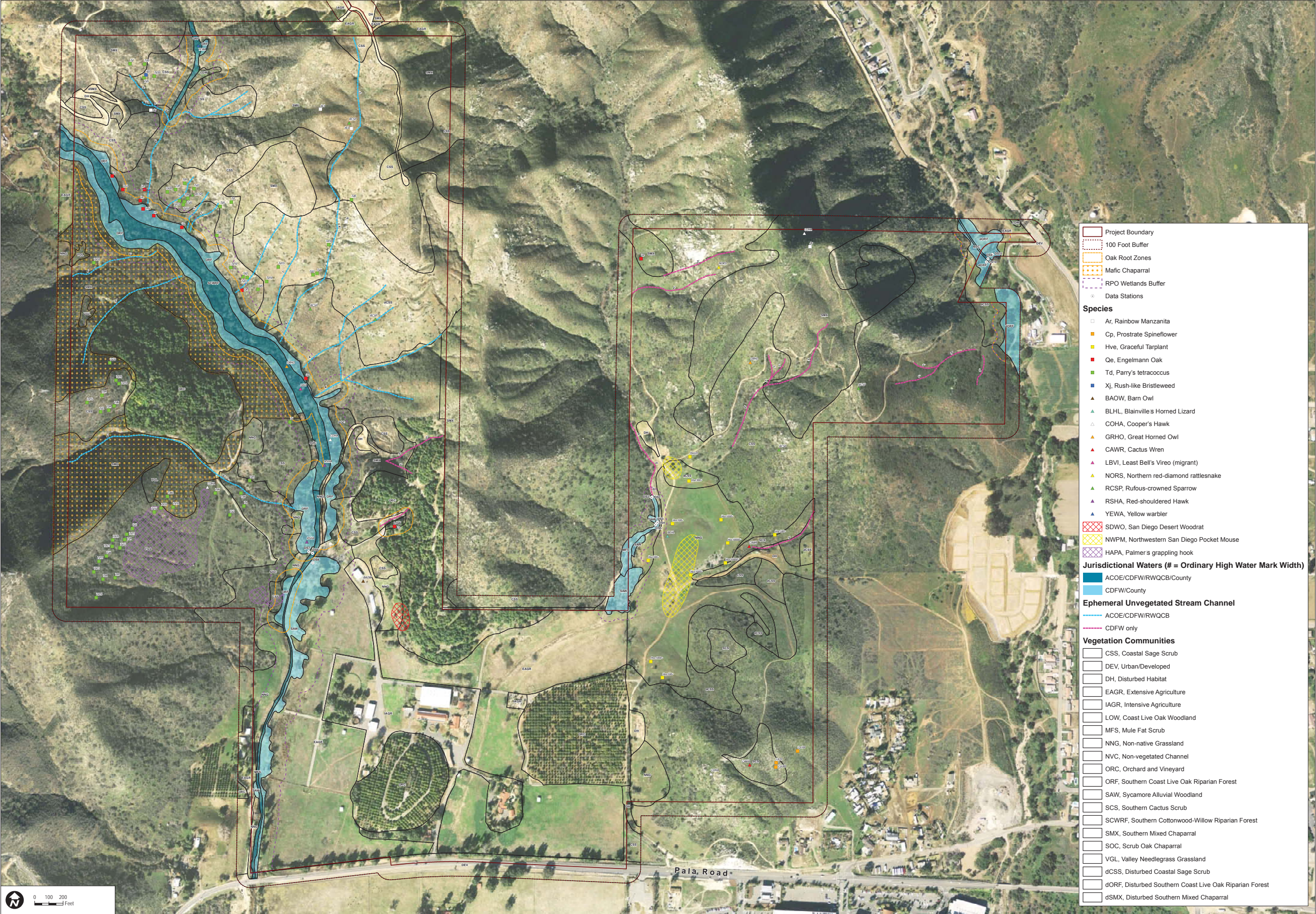


FIGURE 4
Base Map

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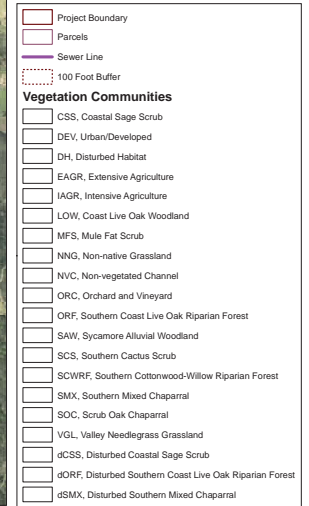
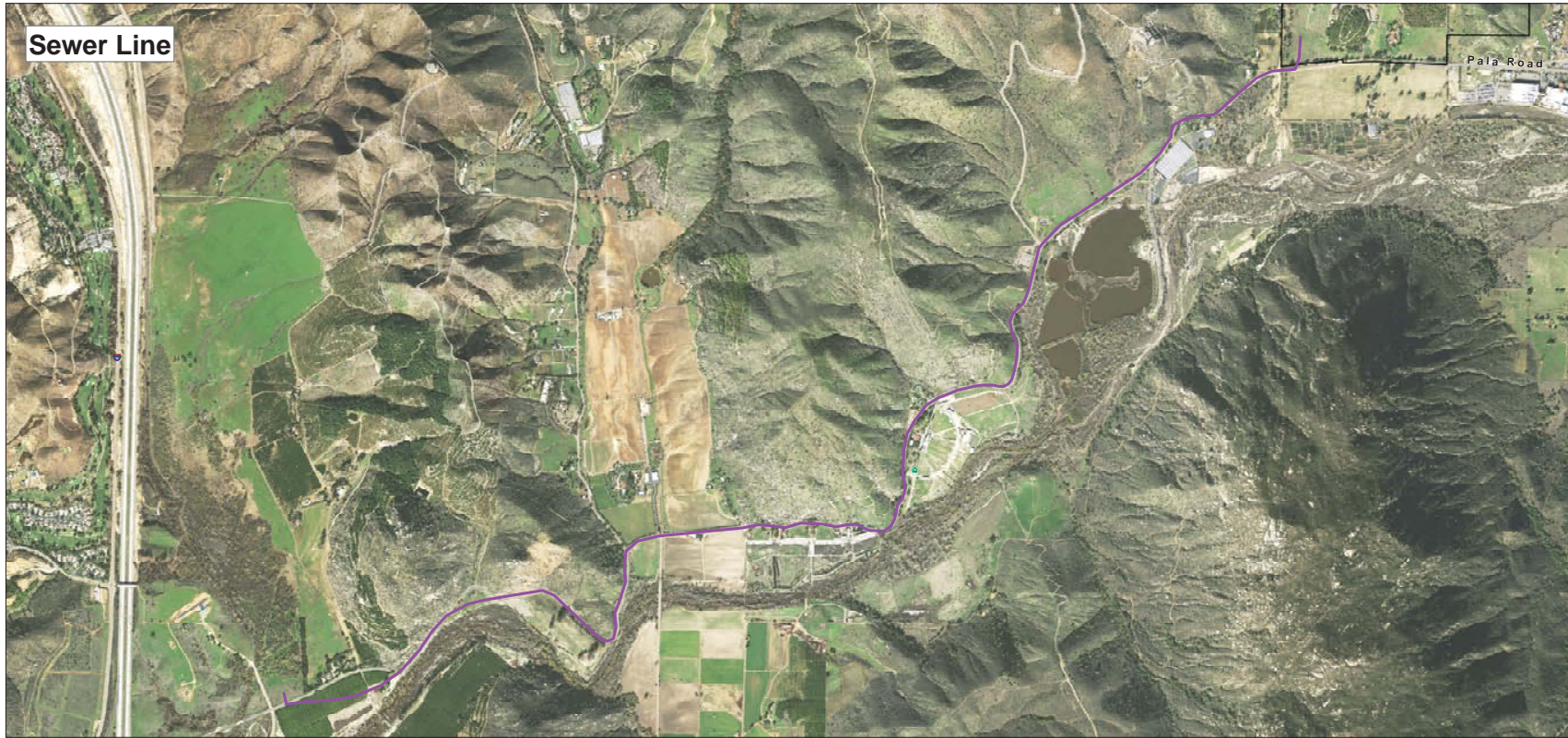
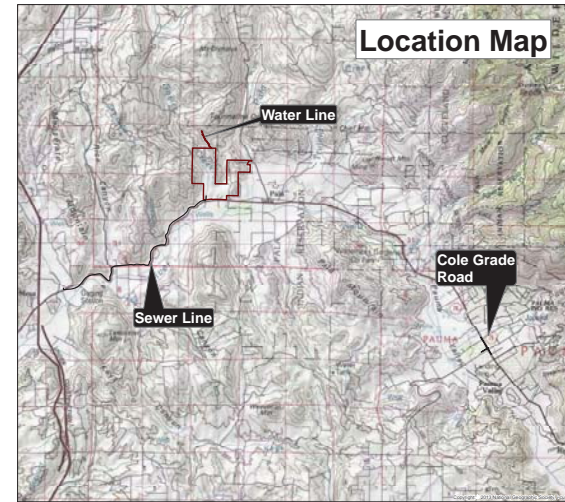
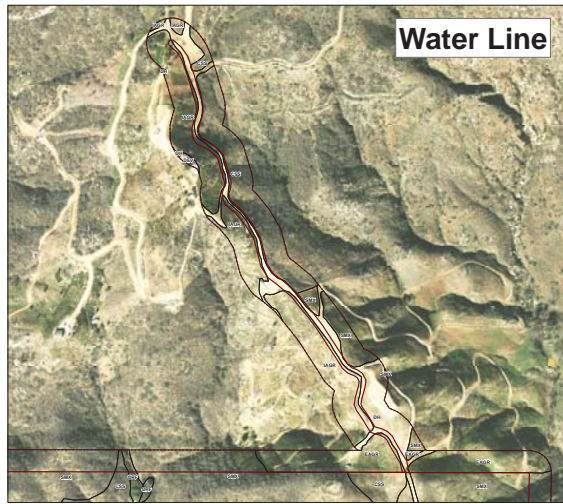
SOURCE: DigitalGlobe 2008

6653-01

Warner Ranch - Biological Technical Report

FIGURE 5a
Biological Resources Map

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SOURCE: DigitalGlobe 2008

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Warner Ranch - Biological Technical Report

FIGURE 5b

Biological Resources Map - Off-site Areas

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The proposed off-site sewer line¹ is located within approximately 5.4 acres of the roadway of SR 76 except for the western terminus which crosses into a small portion of disturbed habitat and non-native grassland (<0.1 acre) (Figure 5b).

1.4.2.1 Coastal Sage Scrub

The coastal sage scrub community is characterized by shrubs up to one meter tall, with many species being facultative drought-deciduous, and thus most active during winter and early spring. This community is usually located in the project areas with low moisture; clay-rich soils; or steep, xeric slopes.

Coastal sage scrub is mapped on gentle slopes and south-facing exposures in both the western and eastern portions of the site. In general, shrub cover in these areas is relatively low (approximately 30–60 percent) with common species including California sagebrush, flat-top buckwheat, and laurel sumac. Where coastal sage scrub occurs as a mosaic with southern mixed chaparral in the northern portion of the site, yellow bush-penstemon (*Keckiella antirrhinoides* ssp. *antirrhinoides*) is a common component. Understory species are varied, including fringed spineflower (*Chorizanthe fimbriata*), yellow pincushion (*Chaenactis glabriuscula* var. *glabriuscula*), California everlasting (*Gnaphalium californicum*), chalk dudleya (*Dudleya pulverenta*), caterpillar phacelia (*Phacelia cicutaria*), silver puffs (*Uropappus lindleyi*), bromes (*Bromus* spp.), and star thistle (*Centaurea melitensis*).

In 1993, CDFG and California Resources Agency (CRA) published the Southern California Coastal Sage Scrub NCCP Conservation Guidelines (Conservation Guidelines) (CDFG and CRA 1993a) and the Southern California Coastal Sage Scrub NCCP Process Guidelines (Process Guidelines) (CDFG and CRA 1993b). The Conservation Guidelines provide guidance to determine the habitat value of the coastal sage scrub, and the Process Guidelines explain the roles of local, state, and federal agencies and how the NCCP planning process will shift focus from the regional level to the subregional level. The Process Guidelines also provide guidance to approve an interim habitat loss application based on criteria in Section 4.2(g) of the Process Guidelines and to determine the required mitigation for impacts to coastal sage scrub, as well as suitable options for mitigation, including dedication of land.

Based on the Subregional Coastal Sage Scrub NCCP Planning Unit Focus Map (CDFG and CRA 1993a), the project area is located near or within a satellite area, which is described as islands of substantial coastal sage scrub, and habitat value should be planned in conjunction with one of the focus areas. The closest focus area is located approximately 17 miles away, southwest of Highway 78 and I-15. The coastal sage scrub in the project area is mapped in 26 separate polygons, seven of

¹ The sewer line is approximately 23,676 linear feet long and estimated to be 10 feet wide.

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which are disturbed coastal sage scrub, for a total of 181.1 acres. Coastal sage scrub that contains 20–50 percent native species by percent cover were mapped as “disturbed” associations. These polygons are located throughout the undeveloped portions of the project area. The polygons of coastal sage scrub on the eastern side of the project area are located closer to residential areas and Pala-Temecula Road; the coastal sage scrub in the western portion of the ranch are located in undeveloped areas. The Conservation Guidelines categorize the coastal sage scrub into three categories: Higher Value (large, dense areas of coastal sage scrub), Intermediate Value (natural lands that occurs in linkages and are close to possible core coastal sage scrub areas, or have high species richness), and Lower Value (remaining coastal sage scrub areas) (CDFG and CRA 1993a). Figure 2-4 (Vegetation Mapping) of the draft NCMSCP identifies some coastal sage scrub within the project area with dense coastal sage scrub mapped within one to two miles west of the project area; and Figure 3-1 (California Gnatcatcher Habitat Evaluation Model Results) of the draft NCMSCP identifies Low, Medium, and High habitat values for California gnatcatcher habitat within portions of the project area. Concentrated areas identified as Very High habitat values are located within one to two miles west of the project area.

Using this information, the coastal sage scrub habitat in the project area would be considered Intermediate Value habitat. While it is in proximity of a Very High Value area to the west, the coastal sage scrub within the project area is interspersed in distribution and patch size. In addition, focus surveys for California gnatcatcher were conducted in 2005 and 2010 within all suitable habitats, including coastal sage scrub, and the surveys were negative.

1.4.2.2 Non-Native Grassland

Annual grassland is present mainly within the south–central portion of the project area in flat to gently sloped areas adjacent to the existing ranch operation. Predominant species include non-native annual grasses, such as slender wild oat (*Avena barbata*), red brome (*Bromus madritensis* ssp. *rubens*), and non-native forbs, such as red-stemmed filaree (*Erodium cicutarium*). Annual grasslands on the project area appear to have been regularly disturbed through mowing. Native species are limited and include species such as Nievitas cryptantha (*Cryptantha intermedia*), spreading goldenbush (*Isocoma menziesii* ssp. *menziesii*), morning glory (*Calystegia macrostegia*), calabazilla (*Cucurbita foetidissima*), and deerweed.

1.4.2.3 Mulefat Scrub

The mulefat scrub vegetative community on site is composed of tall, herbaceous riparian shrubs and trees, strongly dominated by mulefat (*Baccharis salicifolia*). If not for regular flooding, this early seral community would generally succeed to sycamore- or cottonwood-dominated riparian woodlands or forests. This community often occurs as an irregular understory in gaps in the

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sycamore alluvial woodland community, and usually occurs in intermittent stream channels with coarse substrate and a water table of moderate depth.

Mulefat scrub is found within the southern, downstream segment of Gomez Creek, from just above the existing concrete Arizona crossing of the creek within the ranch, to SR 76 along the southern border. This segment is characterized by an approximately 5–15-foot deep, mostly steeply incised channel. Vegetation cover varies from 5–100 percent generally with lower cover, isolated to channel bed margins, occurring in more highly scoured (i.e., less topsoil) situations. Mulefat occurs throughout the channel segment; associated species include salt-cedar (*Tamarisk ramosissima*), Mexican tea (*Chenopodium ambrosioides*), cocklebur (*Xanthium strumarium*), Parish's monkeyflower (*Mimulus parishii*), and dock (*Rumex conglomerates*). Mulefat is also mapped in an isolated section of riparian vegetation that occurs in the eastern portion of the project area.

Mulefat is a hydrophytic plant species that typically indicates the presence of waters of the U.S. and/or state. The mulefat that occurs in Gomez Creek is considered wetland under the jurisdiction of ACOE, CDFW, RWQCB, and the County. The isolated section of mulefat in the eastern portion is mapped as CDFW and County wetland.

1.4.2.4 Southern Mixed Chaparral

This drought- and fire-adapted community is composed of woody shrubs, 1.5 to 3.0 meters tall, frequently forming dense, impenetrable stands. It develops primarily on mesic north-facing slopes and in canyons, and is characterized by crown- or stump-sprouting species that regenerate following burns or other ecological catastrophes.

Southern mixed chaparral occurs throughout the northern portions of the project area, often in a mosaic with coastal sage scrub. Predominant species in the project area include chamise, mission manzanita (*Xylococcus bicolor*), greenbark ceanothus (*Ceanothus tomentosus*), hoary-leaf ceanothus (*Ceanothus crassifolia*), and scrub oak (*Quercus berberidifolia*). Other associated species include poison oak (*Toxicodendron diversilobum*), San Diego bedstraw (*Galium nuttallii* ssp. *nuttallii*), caterpillar phacelia, littleseed muhly (*Muhlenbergia microsperma*), miner's lettuce (*Claytonia perfoliata* var. *perfoliata*), bull thistle (*Cirsium vulgare*), ropevine (*Clematis pauciflora*), and Nuttall's snapdragon (*Antirrhinum nuttallianum* ssp. *nuttallianum*). Southern mixed chaparral that contains 20–50 percent native species by percent cover were mapped as “disturbed” associations.

The southern mixed chaparral in the project area occurs on Cienega–Fallbrook series, Cienega series, and Las Posas series soils. Las Posas soils are considered metasedimentary derived soils (Oberbauer et al. 2008) and some of the chaparral (mainly in the western portion of the project area) where underlain by Las Posas soils is thus classified as mafic southern mixed chaparral.

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The remaining chaparral (underlain by Cieneba-Fallbrook and Cieneba soils) within the project area is classified as granitic southern mixed chaparral.

1.4.2.5 Southern Cactus Scrub

Southern cactus scrub is not described in Holland (1986) or Oberbauer et al. (2008). It is a rare form of coastal sage scrub, occurring in relatively isolated areas throughout San Diego County (e.g., Chula Vista, San Pasqual).

In the project area, this community consists of over 50 percent cover of prickly-pear cactus (*Opuntia littoralis*) with associated species typical of coastal sage scrub species and non-native grasses. It is mapped in portions of the southeastern project area.

1.4.2.6 Scrub Oak Chaparral

This community is a thick, evergreen chaparral up to 20 feet tall. More mesic than most chaparrals, scrub oak chaparral recovers faster from fire, despite considerable leaf litter accumulation.

Scrub oak chaparral was identified in the central–western portion of the site on gentle to steep slopes east and west of Gomez Creek. Scrub oak is the dominant species with an open, tall stature (approximately 60 percent cover and 10–15 feet in height) on gentle slopes, where understory and gap species include purple needlegrass (*Stipa pulchra*), California buckwheat, and bromes. On steep slopes, the composition of the scrub oaks is dense and of reduced height (approximately 90 percent cover and 6–10 feet in height) with an understory dominated by poison oak with other species including common eucrypta (*Eucrypta chrysanthemifolia*), yellow bush-penstemon, and toyon (*Heteromeles arbutifolia*).

1.4.2.7 Valley Needlegrass (Native) Grassland

Valley needlegrass (native) grassland is dominated by perennial, tussock-forming purple needlegrass of up to 2 feet in height. Native and introduced annuals often outnumber the bunchgrass in cover. This habitat type usually occurs on fine-textured, clay soils that are extremely dry in the summer and moist in the winter. It often intergrades with oak woodlands on wetter, well-drained sites.

Native grasslands on the project area are found in only three locations, on an east-facing exposure, mid-slope above Gomez Creek. Shrub cover is below 20 percent, native grasses compose at least 10 percent cover, with the remainder of the plant cover composed of a combination of native and non-native annuals, such as osmadenia (*Osmadenia tenella*), soft chess, dot-seed plantain (*Plantago erecta*), narrow-leaf filago (*Logfia gallica*), slender wild

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oat, Douglas' microseris (*Microseris douglasii* ssp. *douglasii*), everlasting nest straw (*Stylocline gnaphalioides*), and canchalagua (*Centaurium venustum*).

1.4.2.8 Sycamore Alluvial Woodland

Sycamore alluvial woodland is a winter-deciduous, open, broad-leafed riparian community. Introduced grasses and mulefat comprise the understories of these communities. The variant that occurs in the County is found in wide, cobble, braided channels that are subject to scour during flooding events and support an open canopy of mature western sycamore.

In the project area, sycamore alluvial woodland occurs both alongside Gomez Creek and the eastern tributary channel, but clearly above the OHWM for both channels. Mature western sycamores are the predominant species, occurring as an open, tall structure with a relatively dense non-native understory along Gomez Creek and a more sparse understory along the eastern tributary channel. Associated species in both locations include bull thistle, bristly ox-tongue, wild mustard (*Hirschfeldia incana*), and rip-gut grass (*Bromus diandrus*). Soils in both areas are sandy; disturbance, likely through mowing and grazing, appears to have been more intensive in the western areas. Sycamore alluvial woodland is also mapped in an isolated area of riparian vegetation in the eastern portion of the project area.

Sycamore alluvial woodland is typically considered hydrophytic vegetation that indicates the presence of waters of the U.S. and/or state. The sycamore alluvial woodland that occurs adjacent to Gomez Creek is considered a wetland under the jurisdiction of the CDFW and County. The isolated section of sycamore alluvial woodland in the eastern portion is also mapped as a CDFW and County wetland.

1.4.2.9 Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest on the Warner Ranch project area occurs as two subtypes according wetlands jurisdictional designation; each also occurs in disturbed phases, for a total of four mapping categories.

Southern coast live oak riparian forest, under the jurisdiction of ACOE, CDFW, RWQCB, and the County as a wetlands community, occupies the OHWM within the northern tributary to Gomez Creek. Coast live oak (*Quercus agrifolia*) is the dominant species, and the channel also contains arroyo willow, mulefat, and an herbaceous understory. Along the small stretch of Pala Creek in the project area, oaks occur sparsely along an open sandy channel. Although no substantial populations of invasive exotic species were found in this creek segment in the project area, off-road vehicular activity was observed and appears to be a regular occurrence and therefore the area is mapped as disturbed.

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Southern coast live oak riparian forest, under the jurisdiction of CDFW and the County only, occurs on slopes above the OHWM on either side of Gomez Creek, and along Pala Creek. Associated species in this community include poison oak, prickly ox-tongue (*Picris echinoides*), California mugwort (*Artemisia douglasii*), and bull thistle. The disturbed phase of this subtype, located on the east side of Gomez Creek, has been altered by mechanical disturbance (apparently regular mowing and parking/driving), creating a compacted soil condition and substantially reducing understory cover and oak recruitment.

Per the County's Report Format and Content Requirements (County of San Diego 2010a), the oak root protection zone was mapped in GIS by establishing a 50-foot buffer around all oak woodlands in the project area, including coast live oak woodland, southern coast live oak riparian forest, and disturbed southern coast live oak riparian forest. The oak root protection zone is shown on Figure 5a.

1.4.2.10 Coast Live Oak Woodland

Coast live oak is the singular evergreen species dominating this community, with the canopy height reaching 10–25 meters. This community tends to occupy relatively exposed sites in the north and shaded ravines in the south, and it intergrades with other communities depending on location and conditions.

Coast live oak woodland occurs in a few locations in the project area, where coast live oak occurs on hillsides with moderately dense, tall structure and is not associated with a drainage. Understory species include species typical of southern mixed chaparral, such as toyon and ropevine, and non-native annuals, such as black mustard (*Brassica nigra*) and bull thistle. Areas mapped as coast live oak woodlands are not associated with stream channels and do not support hydrophytic vegetation; therefore, they are not considered wetlands of the U.S., state, or County.

Per the County's Report Format and Content Requirements (County of San Diego 2010a), the oak root protection zone was mapped in GIS by establishing a 50-foot buffer around all oak woodlands in the project area, including coast live oak woodland, southern coast live oak riparian forest, and disturbed southern coast live oak riparian forest. The oak root protection zone is shown on Figure 5a.

1.4.2.11 Southern Cottonwood-Willow Riparian Forest

Frequently overflowed and sub-irrigated lands alongside streams and rivers provide the moist, mineral soil necessary for dominant species recruitment in this seral type.

The majority of vegetation within Gomez Creek within the OHWM is mapped as southern cottonwood-willow riparian forest and falls under the jurisdiction of ACOE, CDFW, RWQCB,

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and the County as a wetlands community. Species composition includes a mixture of arroyo willow; Fremont's cottonwood; and coast live oak in the tree layer; a shrub layer of mulefat and giant cane (*Arundo donax*), which varies from sparse to dense; and a herbaceous layer that varies in cover according to shrub density and rock exposure and includes dwarf nettle (*Urtica urens*), water speedwell (*Veronica angallis-aquatica*), Parish's monkeyflower, narrow-leaved willow, and cocklebur.

1.4.2.12 Non-Vegetated Channel

Non-vegetated channel refers to ephemeral and intermittent stream channels that are barren or sparsely vegetated, and thus does not fit into other wetland habitat categories. The lack of vegetation has generally been due to the scouring effects of flood events.

On site, non-vegetated channel is mapped within Pala Creek as waters under the jurisdiction of ACOE, CDFW, RWQCB, and the County and consists of a wide, sandy bottom channel with southern coast live oak riparian forest mapped outside of the OHWM.

1.4.2.13 Orchard

This on-site community is comprised of artificially irrigated land dominated by citrus and avocado trees. These trees are typically low and bushy with an open understory, where short grasses and other herbaceous plants between grow between rows (Oberbauer et al. 2008).

1.4.2.14 Agricultural

According to Oberbauer et al. (2008), this type of community describes lands that support an active agricultural operation. In the project area, the agricultural areas are separated into intensive agriculture, which includes the corrals and ranch buildings; and extensive agriculture, which includes the pasture lands.

1.4.2.15 Disturbed Habitat

While Holland's *Terrestrial Natural Communities of California* descriptions (1986) do not address disturbed habitat, Oberbauer et al. (2008) explains disturbed habitat as referring to areas that are not developed, yet lack vegetation, and usually result from harsh or repeated mechanical perturbations. Dirt roads and other mechanically disturbed areas are mapped as disturbed habitat.

1.4.2.16 Developed

The areas mapped as developed lands include portions of SR 76 and Pala-Temecula Road.

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1.4.3 Flora

A total of 389 species of vascular plants were observed within the project area. Some 81 percent of the species (317) were native, nearly all of which are associated with undisturbed native San Diego vegetation communities like coastal sage scrub and southern cottonwood-willow riparian forest. The remaining 19 percent of the total species (72) were non-native species, and are generally commonly invasive plants, such as bromes.

A cumulative list of plant species recorded by Dudek during the 2005 and 2010 biological surveys is presented as Appendix B. Special-status plant species are addressed below and the potential to occur table is Appendix L.

1.4.4 Fauna

The project area supports habitat for a number of common upland and riparian species. Cumulatively, 136 species of wildlife were observed during the 2005, 2008, and 2010 biological surveys, as described in Appendix C. Special-status wildlife species are addressed below and the potential to occur table is Appendix M.

Species Richness

Species richness in the project area is relatively high due to the property size and amount of undeveloped land and number of native upland and wetland habitats. Species richness is generally increased with the presence of more habitat types and ecotones. The western side of the property likely has higher species richness than the eastern side due to the presence of upland, woodland and wetland habitats and ecotones associated with Gomez Creek canyon. The eastern side of the property likely has lower species richness than the western side because it is fairly monotypic with upland scrub habitats and no wetland-to-upland ecotones and very little woodland-to-upland ecotones. Although species richness is high, the number of species and the wildlife population levels (i.e., number of individuals) is typical for undeveloped areas in this region, and particularly those areas which support multiple habitat types (i.e., upland, riparian, woodland, and wetland).

1.4.4.1 Reptiles and Amphibians

Eleven reptile species and three amphibian species were found within the project area during 2005, 2008, and 2010 surveys, including western skink (*Eumeces skiltonianus*), western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), Pacific treefrog (*Hyla regilla*), and California treefrog (*Hyla cadaverina*).

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1.4.4.2 Birds

Seventy-seven bird species were detected during the biological surveys. Common species observed within the project area include California towhee (*Pipilo crissalis*), house finch (*Carpodacus mexicanus*), house wren (*Troglodytes aedon*), and song sparrow (*Melodia melospiza*).

Raptor Foraging and Nesting

Raptors observed in the project area during 2005, 2008, and 2010 surveys include: Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*; observation during 2010 mammal trapping study), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), northern harrier (*Circus cyaneus*; 2005 only), turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*; non-breeding season observation in September and October, 2010), and barn owl (*Tyto alba*). The best nesting opportunities for raptors in the project area occur within woodland habitats in the Gomez Creek canyon on the western side of the property. This area likely provides nesting opportunities for Cooper's hawk, red-tailed hawk and red-shouldered hawk. Because golden eagle, white-tailed kite, northern harrier were observed less frequently during the high number of survey hours in the project area, they are likely opportunistically using the area for foraging or passing over the site. If these species were nesting in the project area, more frequent observations of these species during surveys would have been expected. There is no suitable habitat for golden eagle nesting in the project area.

There are opportunities for raptor foraging throughout the grasslands and in sparse native habitat areas in the project area. Grasslands in the project area are limited to ranch areas, primarily associated with active pastures. Due to the high level of ranch activities, including grazing, dog training, and mowing, grasslands are considered of moderate value for foraging. The native uplands, riparian habitat, and woodlands on site are considered high value for foraging, but are species-specific. For example, woodlands provide foraging opportunities for bird hunters like Cooper's hawk, while scrub habitats provide foraging opportunities for mammal hunters like red-tailed hawk. In the context of region's undeveloped or rural areas within the large block of land stretching from I-15 east to Lake Henshaw, north to the Palomar Mountains, and south to Escondido, the project area does not constitute a hot-spot for raptor foraging. This large block of land supports numerous raptor foraging and nesting opportunities throughout the project region, including but not exclusive to the Warner Ranch site.

Foraging opportunities for golden eagle in the project area are in open or sparse habitats to allow for their large wing-spans. Based on the very low frequency of golden eagle observations in the project area (one in 2010); the high number of survey hours conducted in 2005, 2008 and 2010; and focused surveys for golden eagle nests in October 2011 and January 2012 in areas

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historically identified to support nests, golden eagle use of the site for foraging is expected to be opportunistic rather than high. If foraging use in the project area by golden eagle was high, we would expect a greater frequency of observations of this species during the multi-year, multi-survey effort conducted in the project area.

Migratory Species

Migratory bird species are expected to primarily occur in wooded habitats associated with Gomez Creek; however, migrants could pass through any area in the project area and typically would only remain for a brief period (e.g., 1 day to 1 week). Diversity of migrants observed in the project area was low and included the following winter migrants: sharp-shinned hawk, western bluebird (*Sialia mexicana*), yellow-rumped warbler (*Dendroica coronata*), white-crowned sparrow (*Zonotrichia leucophrys*) and American robin (*Turdus migratorius*). Summer migrants observed included: yellow warbler, Pacific slope flycatcher, cliff swallow, and black-headed grosbeak.

Nesting Species

Both resident bird species and summer migrants nest in the project area. Typical resident species include acorn woodpecker, black phoebe, western scrub jay, and other passerine species. Potentially nesting summer migrants include Pacific slope flycatcher, cliff swallow, yellow warbler, black-headed grosbeak, among others. These species nest in a variety of habitats, including natural, undeveloped areas; and buildings, bridges, and culverts. In the project area, suitable nesting for bird species includes upland scrub, chaparral, riparian scrub and woodland, oak woodland and forest, agricultural land, ornamental plantings, and grassland. These habitats are similar to vegetation communities found within the San Luis Rey River valley and adjacent hillsides. In addition, the area provides nesting opportunities for many common bird species.

1.4.4.3 Mammals

Eighteen mammal species were observed in the project area. Common species observed include bobcat (*Lynx rufus*), brush rabbit (*Sylvilagus bachmani*), California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), Botta's pocket gopher (*Thomomys bottae*), and raccoon (*Procyon lotor*). The mammal species observed during the surveys are species commonly observed in San Diego County. Bobcat, coyote, and mule deer are common species in natural, undeveloped areas. Gomez Creek likely serves as a local wildlife corridor for mammals such as mule deer, Mountain lion (*Puma concolor*), coyote, bobcat, and gray fox (*Urocyon cinereoargenteus*).

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1.4.4.4 Invertebrates

Twenty-eight butterfly species were recorded in the project area. Common species observed include funereal duskywing (*Erynnis funeralis*), Behr's metalmark (*Apodemia mormo virgulti*), western-tailed blue (*Everes amyntula*), acmon blue (*Plebejus acmon*), common buckeye (*Junonia coenia*), Lorquin's admiral (*Limenitis lorquini*), tiger swallowtail (*Papilio glaucus*), and mourning cloak (*Nymphalis antiopa*).

1.4.4.5 Fish

One species of trout was identified on site (*Oncorhynchus* sp.). Two individual trout were observed within the survey reach of Gomez Creek during the September 2005 survey, and one individual trout was observed during surveys in 2010 (Appendix I). No other fish were observed in the creek. The two individuals observed in 2005 were found in separate pools, approximately 50–100 yards apart. One fish was caught on a barbless hook and examined. Results were submitted to Mr. Allen Greenwood of San Diego Trout and to CDFW, however species identification was not confirmed and further investigation was later recommended.

The trout observed in 2010 was determined in November 2010 by CDFW biologist Tim Hovey and ECORP biologists Todd Chapman and Brian Zitt to have originated from the upstream property owner's stock pond. It was confirmed by CDFW that the observed trout was a stocked fish and was not the southern steelhead subspecies.

1.4.5 Sensitive Plant Species

Seven special-status plant species were observed in the project area during the course of the 2005 and 2010 Dudek surveys. Based on presence/absence surveys during 2 years of surveys in the spring and summer, when special-status species would have been detected, no other special-status species are expected to occur in the project area. Appendix L lists the special-status plant species (CNPS and California Natural Diversity Database (CNDDB) occurrences) reported in the USGS 7.5-minute Pala and Pechanga quadrangles and the surrounding 10 topographic quadrangles, as well as those species' potential to occur in the project area based on habitat associations, preferred soil substrate, life form, elevation, and blooming period. The CNDDB forms for special-status species observed in the project area are included in Appendix P.

1.4.5.1 Critical Habitat

There is no USFWS designated critical habitat for plant species within or near the Warner Ranch project area.

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1.4.5.2 County List A and B Species

Rainbow Manzanita (*Arctostaphylos rainbowensis*)

Rainbow manzanita is not a state or federally listed species, but it is a CRPR 1B.1 and County List A species. This species was observed during both 2005 and 2010 rare plant surveys; a total of seven individuals occur in the project area; six of these occurrences are in the northwestern portion of the project area and one is located in the northeastern portion of Warner Ranch. The biological resources map (Figure 5a) shows the exact locations in the project area.

Rainbow manzanita is endemic to California. It is restricted to chaparral habitats in southwestern Riverside County, south of Pauba Valley, and northwestern San Diego County, north of the San Luis Rey River, between elevations of 300 and 600 meters (Keeley and Massihi 1994). It extends east to the Aqua Tibia range and west to the Santa Margarita Mountains (Keeley and Massihi 1994). The Warner Ranch project is located within its range, and supports a small population of this species.

Parry's Tetracoccus (*Tetracoccus dioicus*)

Parry's tetracoccus is not a State or federally listed species, but it is a CRPR 1B.2 and County List A species. This species was recorded during both 2005 and 2010 rare plant surveys. Approximately 524 individuals were mapped in the western portion of the project area. The biological resources map (Figure 5a) shows the exact locations in the project area.

Parry's tetracoccus occurs in chaparral and coastal sage scrub habitats in Southern California and Baja California, Mexico. In California, it is found in Orange, Riverside, and San Diego Counties between elevations of 165 and 1,000 meters. Warner Ranch is located within a portion of this species' range and supports a substantial population of this species.

1.4.5.3 County List C and D Species; Other

Prostrate Spineflower (*Chorizanthe procumbens*)

Prostrate spineflower is not a state or federally listed species. This species was considered for inclusion in the California Native Plant Society's Inventory of Rare and Endangered Plants, but it was rejected because it was considered too common. While not recognized at this time by other listing sources, the County considered this species to have a low level of sensitivity. This species was recorded during both 2005 and 2010 rare plant surveys. Approximately 410 individuals were mapped in the southeast portion of the project area. The biological resources map (Figure 5a) shows the exact locations in the project area.

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Prostrate spineflower occurs in coastal Southern California and northwestern Baja California, Mexico, in valleys and hillsides below elevations of 800 meters (Munz 1974; Hickman 1993). In California, it occurs on the mesas and foothills of the Santa Monica, San Gabriel, and San Bernardino Mountains within Los Angeles County, San Bernardino County, Riverside County, Orange County, and San Diego County (Reveal and Hardham 1989). In Mexico, this species ranges as far south as Camalu along the coast of Baja California (Reiser 1994) and has been recorded from at least 18 locations (Reveal and Hardham 1989). Prostrate spineflower is most common in coastal Orange and San Diego Counties, where it has been reported from about 25 localities (Reiser 1994; Roberts 1997). The project area is within this species' range and provides suitable habitat in coastal sage scrub and southern cactus scrub in the project area. This species is widespread and relatively common in its range and the project area does not support a substantial population of prostrate spineflower.

Palmer's Grappling Hook (*Harpagonella palmeri*)

Palmer's grappling hook is not a State or federally listed species, but is a CRPR 4.2 species and County list D species. This species was recorded during the 2010 rare plant surveys. Approximately 650 individuals were mapped west of Gomez Creek. The biological resources map (Figure 5a) shows the exact locations in the project area.

Palmer's grapplinghook has limited distribution in its range in California; it occurs in the cismontane regions of Los Angeles, Orange, Riverside, and San Diego Counties; Santa Catalina Island; Arizona; Baja California, Mexico; and Sonora, Mexico, between elevations of 20 and 955 meters (CNPS 2011). Based on occurrence data from Calflora (2011) and CNDDB (CDFG 2011a), this species is abundant in coastal north San Diego County, and northeast of the project area in Riverside County. The project area does not support a substantial population of Palmer's grappling hook.

Graceful Tarplant (*Holocarpha virgata* ssp. *elongata*)

Graceful tarplant is not a State or federally listed species, but is a CRPR 4.2 species and County list D species. This species was recorded during the 2010 rare plant surveys. Approximately 23,500 individuals were mapped in the eastern portion of the project area. The biological resources map (Figure 5a) shows the locations.

This subspecies is endemic to Orange, Riverside and San Diego Counties between 60 and 1,100 meters in elevation (CNPS 2011). It occurs in a variety of upland habitats, including chaparral, cismontane woodland, coastal sage scrub, and valley and foothill grassland. Based on occurrence data in Calflora (2011), this species is widespread in coastal and eastern San Diego County, but occurs more abundantly in Riverside County. Graceful tarplant has not been previously recorded in this area based on the Calflora and CNDDB occurrence data. Although

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a large number of individuals were observed, this population size is not unusual for this species which is highly abundant where it occurs. Also, the lack of recorded occurrences in this area is not unusual given that the project area is within the known range of the species and due to its low sensitivity status, observations are not always recorded in public databases.

Engelmann Oak (*Quercus engelmannii*)

Engelmann oak is not a state or federally listed species, but is a CRPR 4.2 species and County list D species. This species was recorded during both 2005 and 2010 rare plant surveys. Twelve oaks were mapped along Gomez Creek and one was mapped in the eastern portion of the project area. The biological resources map (Figure 5a) shows the locations.

Historically, Engelmann oak woodlands were found from the San Gabriel Mountains to the foothills of Baja California (Scott 1990). Currently, Engelmann oaks inhabit the smallest range of any oak tree in the southwestern United States (Scott 1990). The two remaining major populations occur around Black Mountain in central San Diego County and Santa Rosa Plateau in southern Riverside County. Scattered stands can be found between coastal terraces and desert scarp while some individual trees occur along the southern and western edges of the Perris Plain and the scarp between the Coachella Valley and mountains south of Santa Rosa Peak (Scott 1990). The vast majority of extant stands (93 percent) exist in San Diego County, while Riverside and Orange Counties contain 6 percent and 0.5 percent, respectively (Scott 1991). The project area supports a typical distribution for a small population of Engelmann oak in San Diego County.

Rush-Like Bristleweed (*Xanthisma junceum*)

Rush-like bristleweed is not a state or federally listed species, but is a CRPR 4.3 species and County list D species. This species was recorded during the 2010 rare plant surveys. Five locations were mapped in the northwest corner of the project area. The biological resources map (Figure 5a) shows the exact locations in the project area.

Rush-like bristleweed occurs in chaparral and coastal sage scrub habitats in San Diego County; Arizona; and Baja California and Sonora, Mexico, between elevations of 240 and 1,000 meters (CNPS 2011). Based on the occurrence data provided in Calflora (2011), this species is more commonly found in inland parts of San Diego County south of Escondido. Rush-like bristleweed has not been previously recorded near the project area based on the Calflora occurrence data. However, the five individuals recorded does not represent a substantial population of this species and the location is within the known range of the species.

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1.4.6 Sensitive Wildlife Species

Dudek conducted focused California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, Quino checkerspot butterfly, arroyo toad, trout, and Stephens' kangaroo rat surveys in the project area. Focused bird surveys were conducted May through August 2005 and May through September 2010; toad surveys April through July 2005 and April through September 2010; Quino checkerspot butterfly surveys in May 2005 and March through April 2008; and trout surveys in September 2005, September 2006, April 2010, and November 2010; and focused trapping studies for Stephens' kangaroo rat was conducted in October 2010 (Envira 2010). A survey for golden eagles and nest sites was conducted in fall 2011 and winter 2012 in areas historically supporting a golden eagle nest location based on records provided by the County and TAIC. A habitat assessment was conducted for Hermes copper butterfly in fall 2011. Any special-status species detected during those surveys, and any incidental observations during the small mammal trapping study, wetland delineation, and rare plant surveys are discussed below. In total, 45 special-status wildlife species were observed or have potential to occur in the project area. Appendix M lists occurrences of special-status animal species reported in the USGS 7.5-minute Pala and Pechanga quadrangles (CDFG 2011a) and the surrounding 10 topographic quadrangles, as well as those species' potential to occur in the project area based on the presence of suitable habitat and life history of the wildlife. The CNDDDB forms for special-status species observed in the project area are included in Appendix P.

1.4.6.1 Critical Habitat

Federal critical habitat occurs in the project area for California gnatcatcher and arroyo toad (Figure 6). Critical habitat for least Bell's vireo and southwestern willow flycatcher is present in the San Luis Rey River to the south of the project area, but does not occur in the project area (USFWS 2012).

1.4.6.2 County Group 1 Species

County Group 1 species that have been observed in the project area, or have high potential to occur are described below and included in Appendix M.

Arroyo Toad

Arroyo toad is a federally endangered species and County Group 1 species. The arroyo toad is found along low-gradient streams in coastal and desert drainages as well as high-elevation valleys in Southern California and northern Baja California, Mexico. It uses aquatic, riparian, and upland habitats to different degrees depending on an individual's stage of development, the time of year, and the weather. Breeding and larval development occur within aquatic habitats; foraging may occur within drying stream beds, terraces adjacent to breeding sites, and nearby uplands, where aestivation and overwintering also occur. Outside of the breeding season, juvenile and adult arroyo

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toads are terrestrial and spend most of their lives on open terraces and in riparian habitats, typically adjacent to breeding locations, and, less commonly, moving into upland habitats.

Focused surveys conducted for arroyo toad were conducted in 2005 and 2010 within Gomez were negative in both years. The entire extent of Gomez Creek on site was surveyed in both years. Suitable habitat was identified in Pala Creek; however, no water was present at the time of the surveys therefore no surveys were conducted in Pala Creek. Based on these surveys, the species is not currently present within the project area.

CNDDDB and USFWS databases show records within 1 kilometer of the project area in the San Luis Rey River and Pala Creek. In addition to breeding habitat and current status, the County requires a review of all suitable aestivation and foraging habitat within 1 km of occupied breeding habitat or suitable stream segments (County of San Diego 2010b). The San Luis Rey River and Pala Creek are considered suitable habitat for arroyo toad. Habitat in the project boundary within 1 km of the San Luis Rey River and Pala Creek arroyo toad locations was reviewed to determine if suitable aestivation and foraging habitat are present and if suitable breeding habitat on site could be occupied in the future by arroyo toad. Areas that had slopes greater than 66 percent and active (intensive) agriculture areas were excluded as unsuitable (e.g., orchards, regularly disked, farmed, or grazed areas). Suitable habitat was further reduced when barriers (e.g., existing development, major roads) constraining movement from the San Luis Rey into the project area were considered. Barriers between the project area and the San Luis Rey River and Pala Creek include active agriculture, the Pala Casino and associated parking lots, SR 76, and steep upland slopes, residences and other development adjacent to the eastern boundary of the project area. The only likely movement into the project area is through the culvert at Gomez Creek under SR 76 or in Pala Creek when it supports flowing water.

Based on the potential movement corridors, approximately 1.3 acres of land was identified as suitable breeding habitat for arroyo toad in the project area (Figure 5c). This includes the mulefat scrub within the lower reaches of Gomez Creek in the project area, and the non-vegetated channel in Pala Creek within the project area. The lower reach of Gomez Creek dried early in the season during 2005 and 2010 focused surveys. Annually, this area typically does not maintain a flowing water connection with the San Luis Rey River through areas identified as suitable breeding habitat on site throughout the arroyo toad breeding season. Additionally, the closed-canopy oak woodland along the upper reach of Gomez Creek on site likely constitutes unsuitable breeding habitat for the species. Based on the negative surveys for arroyo toad, it is not breeding within Gomez Creek and the habitat on site is of marginal quality due to the disturbance or canopy cover. However, due to the proximity of the site to the San Luis Rey River, this breeding habitat may be occupied in the future. The adjacent upland areas would be considered suitable for aestivation if it were present.