Appendix 1.
Biological Technical Report

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Final
Biological Technical Report for the Valley - Ivyglen Transmission Line Project Riverside County, California
(Volume I of II)

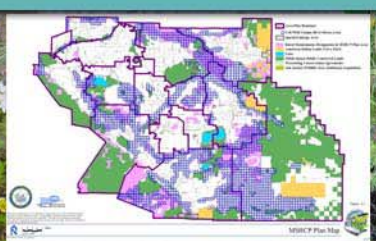
Prepared for:
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Prepared by:
AMEC Earth & Environmental, Inc.
9210 Sky Park Court, Suite 200
San Diego, California 92123
(858) 300-4300

October 2006

Project No. 6151000801-1001





FINAL
BIOLOGICAL TECHNICAL REPORT FOR THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT RIVERSIDE COUNTY, CALIFORNIA

VOLUME I OF II

Prepared for:
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, California 91770

Submitted by:
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San Diego, California 92123
(858) 300-4300

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ACRONYMS

BLM	Bureau of Land Management
CFGC	California Fish and Game Code
CDFG	California Department of Fish and Game
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CSC	California Special Concern Species
CWA	Clean Water Act
ESA	Endangered Species Act
EPD	Environmental Programs Department
FE	Federally Listed as Endangered
FSC	Federal Species of Concern
FT	Federally Listed Threatened
GPS	Geographic Position System
HCP	Habitat Conservation Plan
kV	Kilowatt
MBTA	Migratory Bird Treaty Act
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NEPSS	Narrow Endemic Plant Species Survey
NOAA	National Oceanic and Atmospheric Administration
PEA	Proponent's Environmental Assessment
ROW	Right-of-Way
SCE	Southern California Edison
SE	State Listed as Endangered
ST	State Listed as Threatened
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Project:	Valley-Ivyglen Transmission Line Project
Project Proponent:	Southern California Edison
Principal Investigator:	AMEC Earth & Environmental, Inc. 9210 Sky Park Court, Suite 200 San Diego, California 92123

At the request of Southern California Edison (SCE), AMEC Earth & Environmental (AMEC) conducted a biological resources assessment for the proposed Valley-Ivyglen Transmission Line Project which is designed to improve reliability and meet projected electrical load requirements in the western Riverside County area. The Valley-Ivyglen Transmission Line Project involves the construction of a new 115kV transmission line which will connect the Valley Substation to the Ivyglen Substation. The Valley Substation is located in the southwest corner of an unincorporated area known as Romoland, adjacent to the city of Perris. The Ivyglen Substation is located in the southeastern portion of unincorporated Corona, along Temescal Canyon Road and near the Glen Ivy Hot Springs. The Ivyglen Substation is approximately 19 miles west of the Valley Substation.

The project area has been divided into one Preferred Route and ten alternative routes. The biological study area for the proposed project consists of a 200-foot wide corridor, 100 feet on each side of the proposed transmission line segments. The length of the biological study area is approximately 59 miles.

The project site is in the coverage area of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). The purpose of the biological resources assessment is to provide an overview-level assessment of the biological resources present and potentially present within the project area, evaluate consistency with the MSHCP, and to determine what focused sensitive species surveys or wetland/jurisdictional waters delineations may be necessary for further project review.

As a result of the biological resources assessment, it was determined that the following focused studies will be required for project consistency with the MSHCP:

- Focused surveys for MSHCP Narrow Endemic Plant Species, MSHCP Criteria Area Plant Species, and other California Native Plant Society (CNPS) listed species that are not covered by the MSHCP.
- Burrowing Owl Pre-Construction Surveys
- Delineations of jurisdictional waters/wetlands and MSHCP Riverine and Vernal Pool Habitats.

1.0 INTRODUCTION

1.1 Project Background

The purpose of this study is to document the biological resources associated with the Valley-Ivyglen Transmission Line Project which is designed to improve reliability and meet projected electrical load requirements in the western Riverside County area (Figure 1).

The proposed project is in the coverage area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in western Riverside County.

1.2 Project Description

The Valley-Ivyglen Transmission Line Project involves the construction of a new 115kV transmission line which will connect the Valley Substation to the Ivyglen Substation. This transmission line will be installed in an existing right-of-way (ROW) where available, and new ROWs where none exist. The Valley Substation is located in the southwest corner of an unincorporated area known as Romoland, adjacent to the city of Perris. The Ivyglen Substation is located in the southeastern portion of unincorporated Corona, along Temescal Canyon Road and near the Glen Ivy Hot Springs (Figure 2). The Ivyglen Substation is approximately 19 miles west of the Valley Substation.

The majority of the transmission poles will be 75 feet high; however, 80-foot and 85-foot high poles may be installed for clearance purposes. Pole spacing (spanning) will be determined by ground clearance, overhead clearance, wind loading per California Public Utilities Commission (CPUC) standards, distance between angle points, and environmental constraints.

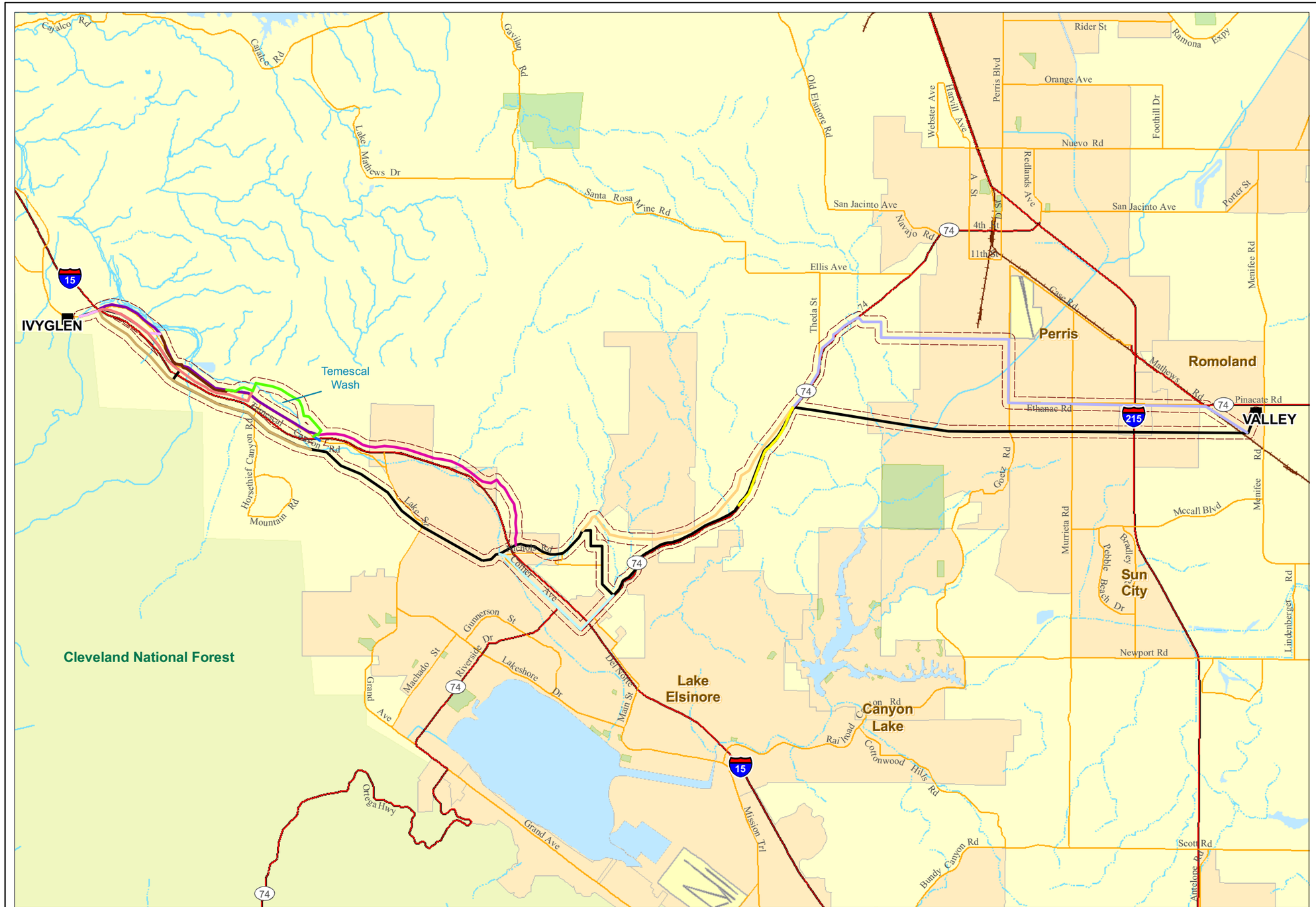
The project area has been divided into one Preferred Route and ten alternative routes. Each proposed route is illustrated in Volume II and described in Section 3.2 of this report. The biological study area for the proposed project consists of a 200-foot wide corridor, 100 feet on each side of the proposed transmission line segments. The length of the biological study area is approximately 59 miles.

SCE engineers will select transmission line routes based on well-located sites that will minimize or avoid any impacts to sensitive environmental resources. Route selection will influence equipment and construction, pole types, pole height, and other factors. Therefore, potential impacts may vary according to the routes which are selected for construction. The chosen routes will determine the transmission route alternatives for analysis in the required Proponent's Environmental Assessment (PEA).

The proposed Valley-Ivyglen Transmission Line Project would also require construction of a new communication path which would connect the Ivyglen Substation to the Valley Substation. This communication path is required for communication and monitoring of the substation and subtransmission line equipment. Along most of the telecommunication route, fiber optic cable

FIGURE 1

Regional Project Location
Valley - Ivyglen Transmission Line Project, California



LEGEND

- Substations
- Project Boundary
- Preferred Route
- *Alternative Routes*
  - E-2
  - C-2
  - C-5
  - C-7
  - W-2
  - W-3
  - W-5
  - W-6
  - W-7
  - W-9
  - W-11
  - W-12

Base Data

Road Classification

- Major Road
- Major Freeway

Rivers

- Perennial Stream
- Intermittent Stream and Canal
- Lake
- Parks and Forests
- Major Cities

LOCATION MAP

MAP NOTES

Data Source
SCE, AMEC - Transmission Lines
AMEC Project Boundary
ESRI StreetMap USA - Base Data

Projection
State Plane, California 406, NAD 83, Feet
Path: w:sd06\bio\SCE\ivy_glen\
mxd\prj_vicinity_new.mxd
Date: 10/26/2006

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

N

0 1.5 3 Miles

amec

Project Vicinity
Valley - Ivyglen Transmission Line Project, California

FIGURE

2

will be installed overhead on the new Valley-Ivyglen 115 kV structures. The telecommunication line construction activities would begin after new Valley-Ivyglen 115 kV subtransmission line structures are installed. Some sections of the fiber optic line will be installed underground by the use of trenching and/or boring methods.

The trenching method would involve installing the underground conduit through a 5-inch PVC conduit that will be place in an excavated trench (18 inches wide and 36 inches deep) which will be dug using a backhoe. Areas where boring will be utilized to install the fiber optic telecommunication line would initially involve the excavation of a 6 foot by 8 foot hole. A boring machine will then be placed within the hole and drilling tube wherein the conduit will be placed would be inserted in the ground by the machine. Areas along the Preferred Route where these methods will be used are identified in Section 3.2 of this report.

1.3 Project Location

The proposed project is located in western Riverside County; the proposed transmission line routes also traverse unincorporated Riverside County, and the cities of Lake Elsinore, Corona, Perris, Sun City, and Canyon Lake, California. The proposed routes also traverse through portions of the following U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Corona South, Lake Matthews, Steele Peak, Perris, Lakeview, Santiago Peak, Alberhill, Lake Elsinore, Romoland, Winchester, Sitton Peak, and Wildomar.

1.4 Regulatory Setting

1.4.1 Federal Regulations

1.4.1.1 Federal Regulation of Waters of the United States, Including Wetlands (Clean Water Act Sections 404 and 401)

The U.S. Army Corps of Engineers (Corps or USACE) and the Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into "*waters of the United States*", including wetlands, under Section 404 of the Clean Water Act (CWA). The USACE has defined the term "wetlands" as follows:

> *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

Some classes of fill activities may be authorized under general permits if specific conditions are met. Projects that would result in the placement of dredged or fill material into waters of the U.S. require a Section 404 permit from the Corps. Utility line construction activities that result in the placement of fill into waters of the U.S. may be authorized under Section 404 Nationwide Permit 12 (at the discretion of the Corps). Nationwide Permit 12 also notes that overhead utility lines constructed over navigable waters of the United States require a Rivers and Harbors Act Section 10 permit. The general definition of navigable waters of the United States includes those waters of the United States that are subject to the ebb and flow of the tide shoreward to

the mean high water mark, and/or are presently used or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. Nationwide permits do not authorize activities that are likely to jeopardize the existence o f a threatened or endangered species (listed or proposed for listing under the federal Endangered Species Act) or that may affect properties listed or eligible for listing in the National Register of Historic Places (56 FR 59134, November 22, 1991). In addition to conditions outlined under each nationwide permit, project-specific conditions may be required by the Corps as part of the Section 404 permitting process.

Section 401 of the CWA requires the issuance of a water quality certification or waiver thereof for all Section 404 nationwide or individual permits issued by the Corps. The EPA has deferred water quality certification authority to the Regional Water Quality Control Board (RWQCB). The federal government also supports a policy of minimizing "*the destruction, loss, or degradation of wetlands*." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

1.4.1.2 Federal Policies on Riparian Communities in California

Riparian communities have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, streambank stabilization, and runoff water filtration. Throughout the United States, riparian habitats have declined substantially in extent and quality compared with their historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, which consequently, has lead federal agencies to adopt policies to arrest further loss. United States Fish and Wildlife Service (USFWS) mitigation policy identifies California's riparian habitats as belonging to resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644, January 23, 1981).

1.4.1.3 Federal Endangered Species Act

The USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries oversee the federal Endangered Species Act (ESA). Sections 9 and 4(d) of the ESA prohibit the "*take*" of any fish or wildlife species listed as endangered or threatened, including the destruction of habitat that could hinder species recovery. The ESA defines take as, "*to harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed animal species, or attempt to engage in such conduct.*" The Section 9 take prohibition of the ESA applies only to wildlife and fish species. Section 9 also prohibits the removal, possession, damage, or destruction of any endangered plant from federal lands. Section 9 further prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in non-federal areas in knowing violation of any state law or in the course of criminal trespass.

Candidate species and species that are proposed for listing receive no protection under the ESA. The USFWS has jurisdiction over plants, wildlife, and resident fish; NOAA Fisheries has jurisdiction over anadromous fish, marine fish, and marine mammals. Section 7 of the Act mandates that all federal agencies consult with the USFWS and/or NOAA Fisheries to ensure

that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify critical habitat for listed species.

Under Section 10(a)(1)(B) of the ESA, permits to authorize "*incidental take*" of listed species may be issued. "*Incidental take*" is defined by the ESA as take that is incidental to, and not for the purpose of, carrying out an otherwise lawful activity. To obtain a take permit, an applicant must submit a HCP outlining what will be done to minimize and mitigate the impact of the permitted take on the listed species. The underlying principle of Section 10 exemption from the ESA is that some individuals of a species or portions of their habitat may be expendable over the short term, as long as enough protection is provided to ensure the long-term recovery of the species.

1.4.1.4 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) states that without a permit issued by the U.S. Department of the Interior, it is unlawful to pursue, hunt, take, capture, transport, import, or kill any migratory bird. A list of migratory bird species protected by the MBTA appears in 50 CFR 10.13.

1.4.1.5 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (The Eagle Act) amended in 1962, was originally implemented for the protection of bald eagles (*Haliaeetus leucocephalus*). In 1962, Congress amended the Eagle Act to cover golden eagles (*Aquila chrysaetos*), a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof. The golden eagle, however, is accorded somewhat lighter protection under the Eagle Act than the bald eagle (USFWS 2006b).

1.4.2 State Regulations

1.4.2.1 State Regulation of Waters

The CDFG regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the California Fish and Game Code (CFGC) requires notification of the CDFG for lake or stream alteration activities. If, after notification is complete, the CDFG determines that the activity may substantially adversely affect an existing fish and wildlife resource, the CDFG has authority to issue a streambed alteration agreement under Section 1603 of the CFGC. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These may include avoidance or minimization of heavy equipment use within stream zones, limitations on work periods to avoid impacts to wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

1.4.2.2 Storm Water Pollution Prevention Plan

The RWQCB implements water quality regulations under the federal CWA and the State Porter-Cologne Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activity. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

1.4.2.3 California Endangered Species Act

California implemented its own Endangered Species Act (CESA) in 1984. The state act prohibits the take of state-listed endangered and threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated "*fully protected species*"). Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (NPPA) of 1977, which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants which are not regulated under the NPPA. In this case, plants listed as rare or endangered under the NPPA are not protected under CESA but can be protected under the California Environmental Quality Act (CEQA). In addition, plants that are not state-listed but meet the state standards for listing, are also protected under CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plant*s (CNPS 2006) potentially qualify for protection under CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection under CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection under CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the state standards for listing.

1.4.2.4 California Fish and Game Code Bird Protections

Section 3503 of the CFGC prohibits destruction of the nests or eggs of most native resident and migratory bird species. Section 3503.5 of the CFGC specifically prohibits the taking of raptors or destruction of their nests or eggs.

1.4.3 Local Regulations

1.4.3.1 Western Riverside County Multiple Species Habitat Conservation Plan

The proposed Valley-Ivyglen Transmission Line Project is in the coverage area of the Western Riverside County MSHCP which serves as a HCP pursuant to Section 10(a)(1)(B) of the ESA, as well as a Natural Communities Conservation Plan (NCCP) under the NCCP Act of 2001. The MSHCP, which was adopted by the County of Riverside on 17 June 2003, is one of several

large, multi-jurisdictional habitat conservation planning efforts in Southern California with the overall goal of maintaining biological diversity within a rapidly urbanizing region. The MSHCP will allow Riverside County and participating cities to better control local land-use decisions and maintain a strong economic climate in the region while addressing the requirements of the ESA and CESA.

The MSHCP aims to create a 500,000-acre Conservation Area from approximately 347,000 acres of existing public lands and 153,000 acres of existing private land within the 1.26-million-acre MSHCP area (1,966 square miles). It includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. It covers multiple species and multiple habitats within a diverse landscape, from urban centers to undeveloped foothills and montane forests.

The MSHCP provides a conservation area for 146 special-status species, including federal and state listed endangered and threatened species, and provides incidental take permits for development projects that impact these conserved “covered” species. Under the MSHCP, the USFWS and CDFG (collectively known as the “Wildlife Agencies”) will grant "*Take Authorization*" for otherwise lawful actions, such as public and private development that may incidentally take or harm individual species or their habitat outside of the MSHCP Conservation Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area.

The MSHCP Conservation Area is designated within a significantly larger MSHCP Criteria Area. This Criteria Area is intended to facilitate the process by which the county or cities will evaluate property that may be included in the MSHCP Conservation Area after the plan is implemented. The Criteria Area is an analytical tool which assists in determining which properties to evaluate for acquisition, and conservation under the MSHCP and does not impose land use restrictions. The Criteria Area is mapped as cells of approximately 160 acres that are formed by overlaying USGS quarter sections on the Criteria Area. Each cell is uniquely identified and has specific conservation criteria. Some of the cells are grouped into subunits of the Criteria Area.

The overall 1.26 million acre MSHCP area is subdivided into 16 Area Plans, each of which include Criteria Area cells. Each Area Plan has specific protection measures, criteria, and surveys that are required for a proposed development plan to comply with the MSHCP. The proposed Valley-Ivyglen Transmission Line lies within the Temescal Canyon, Elsinore, Lake Matthews/Woodcrest, Mead Valley, and Sun City/Menifee Area Plans of the MSHCP.

For land use projects within the Criteria Areas, the county’s Environmental Programs Department (EPD) administers the Property Owner Initiated Habitat Evaluation and Acquisition Negotiation Strategy (HANS) and ensures project level consistency with other elements of the MSHCP. The HANS process applies to property which may be needed for inclusion in the MSHCP Conservation Area or subjected to other MSHCP criteria and shall be implemented by the county and those cities that have agreed to implement the HANS process. Based on

current mapping, portions of the proposed Valley-Ivyglen Transmission Line are within Criteria Area cells, and thus will be subject to the HANS process.

A parcel outside the Criteria Areas generally does not require any type of habitat assessment, unless the parcel is within a required plant/animal survey area. With certain covered species, existing data is not sufficient to meet ESA Section 10(a) issuance criteria for take authorization.

MSHCP Biological Surveys

Of the 146 species covered by the MSHCP, no surveys are required by applicants for public and private projects for 106 of these Covered Species. There are 40 species for which surveys may be required by applicants for public and private development projects, including 4 birds, 3 mammals, 3 amphibians, 3 crustaceans, 14 narrow endemic plants, and 13 other sensitive plants within the Criteria Area. Of these species, surveys will be required within suitable habitat areas in locations identified on MSHCP survey maps (Section 6.0 of the MSHCP) and avoidance and minimization measures implemented in accordance with the species-specific objectives for those species. The possibility exists that surveys may be avoided if the project is designed to avoid identified species and their associated habitats.

Narrow Endemic Plant Species Surveys and Criteria Area Species Surveys

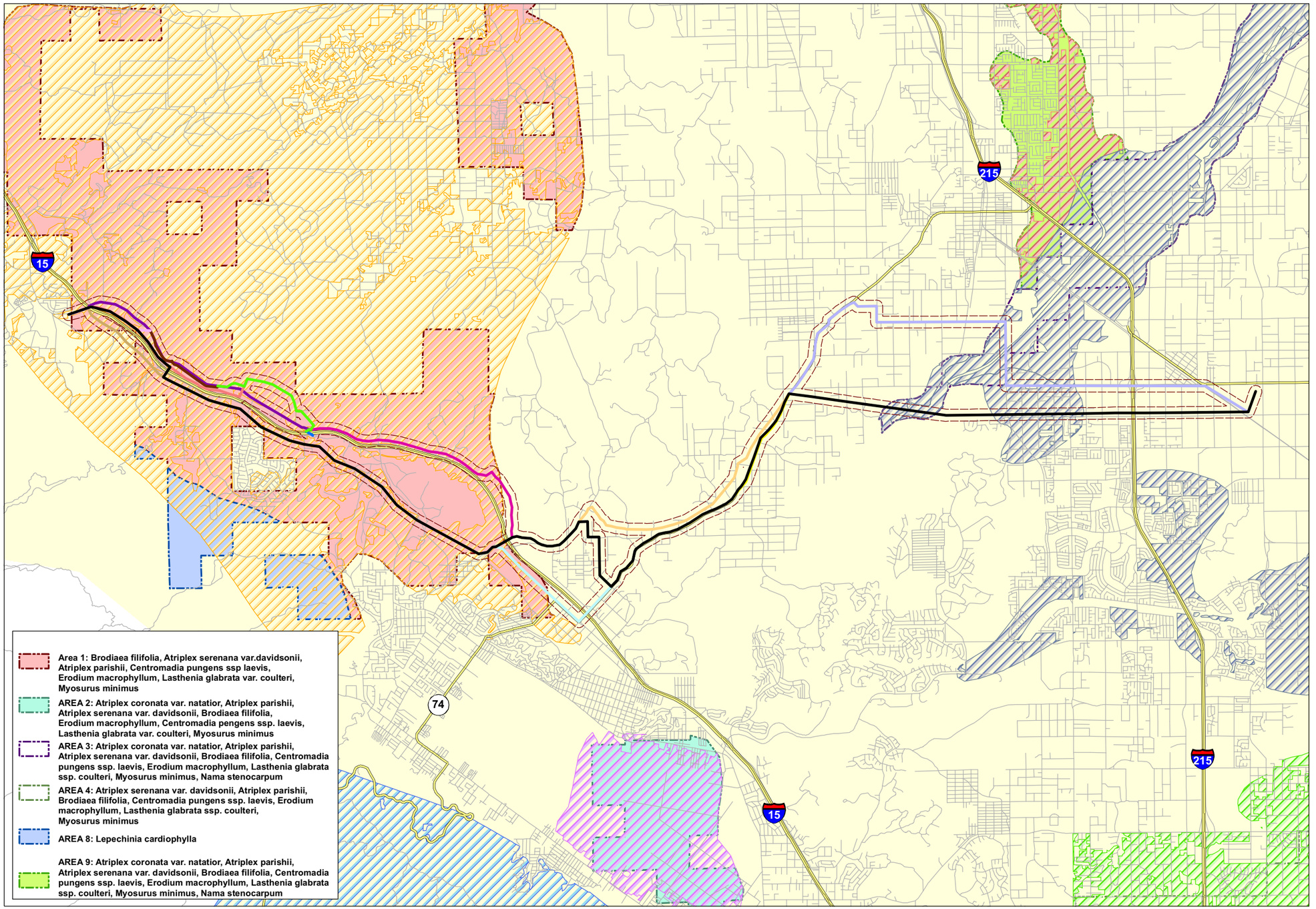
The Valley-Ivyglen Transmission Line Project lies within identified MSHCP Narrow Endemic Plant Species Survey Areas (Figure 3). Within these areas, site-specific focused surveys for Narrow Endemic Plant Species (Table 1) shall be required for all public and private projects where appropriate habitat is present.

In addition to the Narrow Endemic Plant Species, other surveys are needed for specific species "*Criteria Area Species*" (Table 1) in conjunction with the MSHCP. The *Additional Survey Needs and Procedures* policies presented in Section 6.3.2 of the MSHCP outlines these habitats and species. Additional surveys shall be conducted within suitable habitat for these species in the MSHCP Criteria Area (Figure 3).

The MSHCP also specifies areas that need to be surveyed for specific amphibian, bird, and mammal species (Figure 5). The proposed Valley-Ivyglen Transmission Line Project does not traverse any of the areas depicted on the Amphibian and Mammal Survey Areas within the Criteria Area. However, the project does include areas which include Burrowing Owl (*Athene cunicularia hypugaea*) Survey Areas (Figure 4).

Table 1. MSHCP Narrow Endemic and Additional Criteria Area Species

MSHCP Narrow Endemic Plant Species		MSHCP Criteria Area Species	
Scientific Name	**Common Name**	**Scientific Name**	**Common Name**
Allium marvinii	Yucaipa Onion	*Atriplex coronata* var. *notatior*	San Jacinto Valley Crownscale
Allium munzii	Munz's Onion	*Atriplex parishii*	Parish's Brittlescale
Ambrosia pumila	San Diego Ambrosia	*Atriplex serenana* var. *davidsonii*	Davidson's Saltscale
Arabis johnstonii	Johnston's Rockcress	*Berberis nevinii*	Nevin's Barberry
Calochortus palmer var. *munzii*	Munz's Mariposa lily	*Brodiaea filifolia*	Thread-Leaved Brodiaea
Dodecahema leptoceras	Slender-Horned Spine Flower	*Ceanothus ophiochilus*	Vail Lake Ceanothus
Dudleya multicaulis	Many-Stemmed Dudleya	*Erodium macrophyllum*	Round-Leaved Filaree
Galium angustifolium ssp. *jacinticum*	San Jacinto Mountains Bedstraw	*Centromadia pungens*	Smooth Tarplant
Navarretia fossalis	Spreading Navarretia	*Lasthenia glabrata* ssp. *coulteri*	Coulter's Goldfields
Orcuttia californica	California Orcutt Grass	*Lepechinia cardiophylla*	Heart-Leaved Pitcher Sage
Phacelia stellaris	Brands Phacelia	*Myosurus minimus*	Little Mousetail
Satureja chandleri	San Miguel Savory	*Nama stenocarpum*	Mud Nama
Sibaropsis hammittii	Hammitt's Clay-Cress	*Navarretia prostrata*	Prostrate Navarretia
Trichocoronis wrightii var. *wrightii*	Wright's Trichocoronis		



LEGEND

Riverside MSHCP

MSHCP Boundary

Narrow Endemic Plant Species Survey

Allium munzii, Ambrosia pumila, Dodecahema leptoceras, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Satureja chandleri, Sibaropsis hammittii, Trichocoronis wrightii var. wrightii

Allium munzii, Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Sibaropsis Hammittii, Trichocoronis wrightii var wrightii

Allium munzii, Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Trichocoronis wrightii var wrightii

Allium munzii, Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Trichocoronis wrightii var. wrightii

Dudleya multicaulis, Orcuttia californica, Navarretia fossalis, Satureja chandleri, Sibaropsis hammittii, Trichocoronis wrightii var. wrightii

Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Trichocoronis wrightii var wrightii

Project Data

Project Boundary

Preferred Route

Alternative Routes

E-2
C-2
C-5
C-7
W-2
W-3
W-5
W-6
W-7
W-9
W-11
W-12

Base Data

Major Freeways

Roads

MAP NOTES

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
MSHCP_NESSA_new.mxd
Date: 10/30/2006

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

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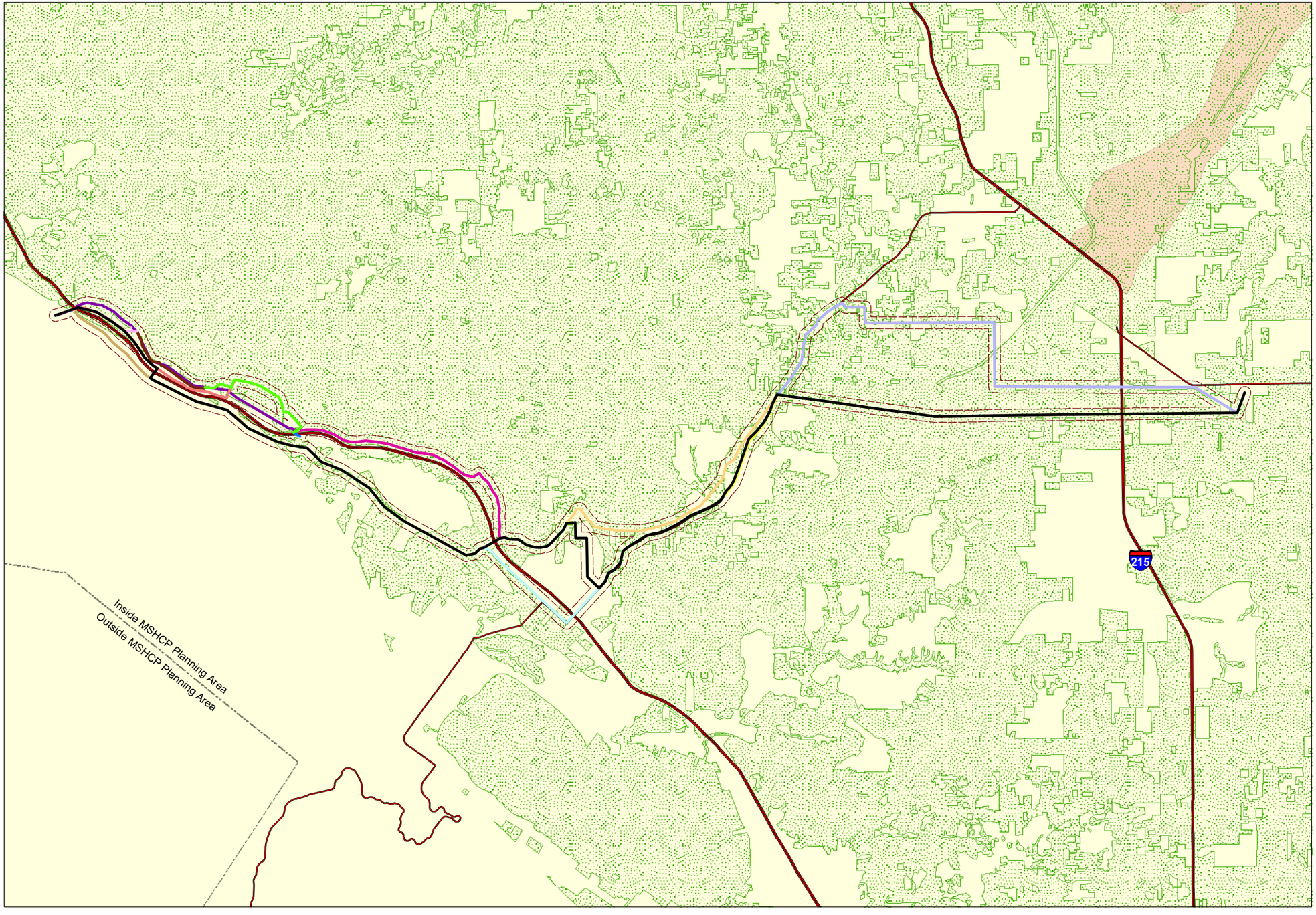
Miles

Narrow Endemic Species Survey Area and Criteria Area Species Survey Area
Valley - Ivyglen Transmission Line Project, California

FIGURE
3



LEGEND

Riverside MSHCP

- MSHCP Boundary
- LA Pocket Mouse Survey Area Only
- Amphibian Survey Area
- Burrowing Owl Survey Areas

Project Data

- Preferred Route
- *Alternative Routes*
  - E-2
  - C-2
  - C-5
  - C-7
  - W-2
  - W-3
  - W-5
  - W-6
  - W-7
  - W-9
  - W-11
  - W-12
- Project Boundary

Base Data

- Major Freeways

LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
MSHCP_BUOW_new.mxd
Date: 10/24/2006

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

0 0.35 0.7 1.4 2.1 2.8 3.5
Miles

amec

Bird, Amphibian and Mammal Survey Areas
Valley - Ivyglen Transmission Line Project, California

FIGURE
4

MSHCP Riparian/Riverine Areas and Vernal Pools

The MSHCP requires site surveys of riparian, riverine, and vernal pool resources in order to conserve these resources and the species that use them. The MSHCP does not replace existing federal and state regulations covering lakes, streams, vernal pools and other wetland areas. Thus, projects must comply with existing regulations for these resources. An assessment of the potentially significant effects of projects on riparian/riverine areas, and vernal pools, shall be performed as currently required by CEQA.

Section 6.1.2 *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools* of the MSHCP defines Riparian/Riverine Areas and vernal pools as follows:

- *Riparian/Riverine Areas are lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.*

- *Vernal pools are seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season, but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season.*

In addition to mapping vernal pools, the MSHCP requires mapping of stock ponds, ephemeral pools, and other features which may be suitable habitat for Riverside fairy shrimp (*Streptocephalus woottoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Santa Rosa fairy shrimp (*Linderiella santarosae*).

If surveys find these resources on a project site, these resources may be conserved through inclusion in the Conservation Area during the HANS process. The MSHCP describes a strategy of impact avoidance, minimization, and mitigation for these resources. The MSHCP further requires that long-term conservation of these areas is assured, and recommends that indirect impacts be reviewed to provide protection for these areas.

MSHCP Habitat Suitability Assessments

The MSHCP states that "*prior to conducting surveys for Narrow Endemic and Criteria Area Species, habitat suitability assessments may be undertaken by a biologist/botanist with expertise in the plant species of concern to determine whether focused surveys for individual species are required and to focus the species-specific survey efforts*."

In general, habitat suitability assessments may be undertaken year-round, with the exception of vernal pool species for which habitat suitability assessments must be conducted during the rainy season. For species with specific known reliance on rainfall and hydrology affinities, completion of a habitat suitability assessment and/or focused survey with negative results shall be sufficient to satisfy survey requirements for those species during years with at least normal rainfall.

2.0 METHODOLOGY

Prior to the field survey, records from the CDFG's California Natural Diversity Database (CNDDB) *RareFind3* (CNDDB 2005) and the CNPS' *Inventory of Rare and Endangered Plant*s (CNPS 2006) were reviewed for potential occurrence of any sensitive species or habitats within the quadrangles wherein the proposed Valley-Ivyglen Transmission Line Project lies. In addition, a previous study conducted within the project area, *Draft Biological Resources Report Valley-Ivyglen Transmission Line Project Riverside County, California* (Entrix, Inc. 2005) was reviewed.

Based on this review, a list of potentially occurring special-status plants and animals was prepared for the study area. Plant and animal taxa were considered to be special-status species if they were classified as one or more of the following:

- Officially listed by California or the federal government as endangered, threatened, or rare;
- A candidate for State or Federal listing as endangered, threatened, or rare;
- Taxa listed in the CNPS' *Inventory of Rare and Endangered Plants of California*;
- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines;
- Bureau of Land Management, U.S. Fish and Wildlife Service, or U.S. Forest Service Sensitive Species; and
- Taxa that are biologically rare, very restricted in distribution, or declining (CDFG 2006).

Field maps were created prior to field visits (1 inch = 400 feet) which depicted the aerial view of each proposed transmission line segment and included known sensitive species CNDDB data points. Potentially occurring habitats for special-status species were identified prior to field investigations through aerial photo-interpretation and consultations with SCE staff biologists.

Between 24 April and 22 August 2006 AMEC biologists, Patrick McConnell, Chester McGaugh and Nathan Moorhatch conducted biological surveys and habitat suitability assessments within the preferred transmission line segment and nine alternative routes.

Surveys were conducted in order to assess the biological resources and potential impacts to biological resources which are associated with the proposed transmission line project. Surveyed areas included a 200-foot-wide corridor centered on the segment. The survey efforts documented the following:

1. General biological characteristics of the each segment corridor;
2. Presence of any listed or special-status species;
3. Vegetation communities;
4. Flora and fauna species inventories;
5. Habitat suitability for MSHCP Narrow Endemic Plant Species;

6. Habitat suitability for MSHCP Criteria Area Plant Species;
7. Habitat suitability for other listed species that are not included in the MSHCP;
8. Habitat suitability and presence/absence surveys for burrowing owls;
9. MSHCP vernal pool and riparian/riverine habitats; and
10. USACE and CDFG jurisdictional areas.

As part of the proposed project, a telecommunication route will also be installed along the Preferred Route. Areas where telecommunication construction activities will involve trenching and/ or boring activities associated with the installation of the telecommunication line were additionally surveyed. These five locations along the Preferred Route were surveyed to include a 500-foot area.

Data was collected by numerous techniques including the use of a hand-held global positioning system (GPS), standardized data forms, photographs, and aerial field maps. Surveys were conducted according to Table 2, which indicates the surveyed segments, personnel involved, and date.

Table 2. Survey Dates, Personnel, and Methods

Proposed Routes	Surveyor	Date (2006)	Foot Survey	Windshield Survey	Inaccessible
Preferred Route	P.M.;C.M.	04/25, 4/26, 04/27, 05/02, 05/03	✓	✓	
Alternative E-2	P.M.;N.M.	4/27, 05/02, 05/03	✓	✓	
Alternative C-1	P.M.;C.M.	4/27 , 05/02, 05/03	✓	✓	
Alternative C-5	P.M.;N.M.	4/27 , 05/02, 05/03	✓	✓	
Alternative C-7	P.M.;N.M.	4/27 , 05/02, 05/03		✓	
Alternative W-2	P.M.;N.M.	05/03, 05/04	✓	✓	✓
Alternative W-3	P.M.;N.M.	04/27, 05/02	✓	✓	
Alternative W-5	P.M.;N.M.	04/26, 4/27	✓		
Alternative W-6	P.M.;N.M.	04/27, 05/02	✓	✓	
Alternative W-7	P.M.;N.M.	04/24, 04/25, 05/03, 05/04	✓	✓	
Alternative W-9	P.M.;N.M.	05/02, 05/03	✓	✓	
Alternative W-11	P.M.;N.M.	05/02, 05/03	✓	✓	
Alternative W-12	P.M.;N.M.	04/24, 04/25, 04/26	✓	✓	

C.M. = Chester McGaugh; AMEC Wildlife Biologist
N.M. = Nathan Moorhatch; AMEC Wildlife Biologist
P.M. = Patrick McConnell; AMEC Botanist

2.1 Sensitive Plant Species Surveys

Botanical surveys of the transmission line Preferred Route and Alternative routes were conducted following the CDFG *Guidelines for Assessing the Effects of Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2006) and the CNPS *Botanical Survey Guidelines* (CNPS 2001). Botanical surveys were performed when most plant species would be detectable.

Areas with potential habitat for special-status species (i.e., mesic sites, rocky outcrops, gabbroic soils, etc.) to occur were surveyed on foot. Other areas were surveyed by vehicle in areas where there was little to no potential for occurrence or in highly disturbed areas. Plant species were noted along each proposed route during field surveys (Appendix A).

Vegetation communities along each proposed transmission line route were described according to the MSHCP Conservation Area descriptions (County of Riverside 2003), and dominant plant species and community structure were recorded. Wetlands, streams, and/or vernal pools were also noted.

According to the CNPS *Electronic Inventory of Rare or Endangered Vascular Plants of California* (CNPS 2006) and the CDFG *RareFind3* database, 51 special-status plant species are known to occur or have the potential to occur in the general vicinity of the proposed Valley- Ivyglen project (Table 3).

Additional information on special-status species, such as habitat needs, flowering periods, potential for occurrence within the project area, and MSHCP coverage is provided in Appendix B. Species accounts are also provided for MSHCP Narrow Endemic and Criteria Area species (Appendix C).

2.2 Sensitive Wildlife Surveys

Reconnaissance wildlife surveys were conducted in conjunction with vegetation mapping and sensitive plant species surveys for sensitive wildlife known to occur within the vicinity of the study area and/or that have the potential to occur in the study area (Table 4). The project area was traversed on foot to survey each vegetation community and look for evidence for wildlife presence. All wildlife and wildlife signs, including tracks, fecal material, nests, and vocalizations were noted (Appendix D). All sensitive wildlife species encountered were mapped and added to a GIS database.

2.2.1 Burrowing Owl Surveys

Habitat on each proposed transmission line route was also assessed for burrowing owl presence, use, and potential use. Burrowing owl habitat assessment surveys were conducted according to the CDFG *Burrowing Owl Consortium Guidelines* (CDFG 1993) and the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside 2006).

Areas with potential burrowing owl habitat, including grasslands, sage scrub, and low growing vegetation were surveyed for potential owl burrows and owls. These surveys included ground squirrel and ground squirrel burrow surveys. Biologists walked areas of potential habitat while searching for burrowing owls, potential and active burrows, and owl sign such as feathers, pellets, and prey items.

Surveys were conducted to allow 100 percent visual coverage of potential habitat. The survey area included a 500-foot buffer area from the center line of each route. The guidelines require that, if the project site contains burrows that could be used by burrowing owls, survey efforts should be directed towards determining owl presence.

Table 3. Special-Status Plant Species Known to Occur or with the Potential to Occur in the Valley-Ivyglen Project Area

Scientific Name	Common Name	Status CNPS/Federal/State/County
Abronia villosa var. *aurita*	Chaparral Sand-Verbena	1B.1/-/-/-
Allium munzii	**Munz's Onion**	**1B.1/FE/ST/NES**
Ambrosia pumila	San Diego Ambrosia	1B.1/FE/-/NES
Arctostaphylos rainbowensis	Rainbow Manzanita	1B.1/-/-/CS
Astragalus pachypus var. *jaegeri*	Jaeger's Milk-Vetch	1B.1/-/-/CS
Atriplex coronata var. *notatior*	San Jacinto Valley Crownscale	1B.1/FE/-/CAS
Atriplex coulteri	Coulter's Saltbush	1B.2/-/-/CS
Atriplex pacifica	South Coast Saltscale	1B.2/-/-/CS
Atriplex parishii	Parish's Brittlescale	1B.1/-/-/CAS
Atriplex serenana var. *davidsonii*	Davidson's Saltscale	1B.2/-/-/CAS
Brodiaea filifolia	Thread-Leaved Brodiaea	1B.1/FT SE/CAS
Brodiaea orcuttii	Orcutt's Brodiaea	1B.1/-/-/CS
Calochortus plummerae	Plummer's Mariposa Lily	1B.2/-/-/CS
Calochortus weedii var. *intermedius*	Intermediate Mariposa Lily	1B.2/-/-/CS
Centromadia pungens ssp. *laevis*	Smooth Tarplant	1B.1/-/-/CS
Chorizanthe parryi var. *parryi*	Parry's Spineflower	3.2/-/-/CS
Chorizanthe polygonoides var. *longispina*	Long-Spined Spineflower	1B.2/-/-/CS
Chorizanthe xanti var. *leucotheca*	White-Bracted Spineflower	1B.2-/-/-
Comarostaphylis diversifolia ssp. *diversifolia*	Summer Holly	1B.2/-/-/-
Convolvulus simulans	**Small-Flowered Morning Glory**	4.2/-/-/CS
Cupressus forbesii	Tecate Cypress	1B.1/-/-/CS
Dodecahema leptoceras	Slender-Horned Spineflower	1B.1/FE/SE/NES
Dudleya cymosa ssp. *ovatifolia*	Santa Monica Mountains Dudleya	1B.2/FT/NC
Dudleya multicaulis	Many-Stemmed Dudleya	1B.2/NES
Dudleya viscida	Sticky Dudleya	1B.2/-/-/CS
Erodium macrophyllum	Round-Leaved Filaree	2.1/CAS
Eryngium aristulatum var. *parishii*	San Diego Button-Celery	1B.1/FE/SE
Hordeum intercedens	Vernal Barley	3.2/-/-/CS
Harpagonella palmeri	Palmer's grapplinghook	4.2/-/-/CS
Horkelia cuneata ssp. *puberula*	Mesa Horkelia	1B.1/-/-/-
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	1B.1/-/-/CAS
Lepidium virginicum var. *robinsonii*	Robinson's Pepper-Grass	1B.2/-/-/CS
Lepechinia cardiophylla	Heart-Leaved Pitcher Sage	1B.2/-/-/CAS

Scientific Name	Common Name	Status CNPS/Federal/State/County
Limnanthes gracilis ssp. *parishii*	Parish's Meadowfoam	1B.2/-/ST/CS
Monardella hypoleuca ssp. *lanata*	Felt-Leaved Monardella	1B.2/-/-/-
Monardella macrantha ssp. *hallii*	Hall's Monardella	1B.3/-/-/CS
Myosurus minimus ssp. *apus*	Little Mousetail	3.1/-/-/CAS
Navarretia fossalis	Spreading Navarretia	1B.1/FT/-/CS
Navarretia prostrata	Prostrate Navarretia	1B.1/NC/CAS
Nolina cismontanas	Chaparral Nolina	1B.2/-/-/-
Orcuttia californica	California Orcutt Grass	1B.1/FE/SE/NES
Phacelia suaveolens ssp. *keckii*	Santiago Peak Phacelia	1B.3/-/-/CS
Satureja chandleri	San Miguel Savory	1B.2/-/-/NES
Senecio aphanactis	Rayless Ragwort	2.2/-/-/-
Scutellaria bolanderi ssp. *austromontana*	Southern Skullcap	1B.2-/-/CS
Sibaropsis hammittii	Hammitt's Clay-Cress	1B.2/-/-/-
Sidalcea neomexicana	Salt Spring Checkerbloom	2.2-/-/CS
Sphaerocarpos drewei	Bottle Liverwort	1B.1/-/-/-
Symphyotrichum defoliatum	San Bernardino Aster	1B.2/-/-/-
Tetracoccus dioicus	Parry's Tetracoccus	1B.2/-/-/CS
Tortula californica	California Screw Moss	1B.2/-/-/-
Trichocoronis wrightii var. *wrightii*	Wright's Trichocoronis	2.1/-/-/CS

Federal Status

FE = Federal Endangered
FT = Federal Threatened

State/CDFG Status

SE = State Endangered
ST = State Threatened

County Status

CS = MSHCP Covered Species which has been "take authorized".
NES = MSHCP Narrow Endemic Species
CAS = MSHCP Criteria Area Species
BOLD = Identified within the project area.

CNPS Status

1B = Rare or Endangered in California and elsewhere
2 = Rare or Endangered in California, but more common elsewhere
3 = Review List- Plant for which we need more information
4 = Plants with limited Distribution- Watch List
.1 = Seriously endangered in California
.2 = Fairly endangered in California
.3 = Not very endangered in California

Table 4. Special-Status Wildlife Species Known to Occur or with the Potential to Occur in the Valley-Ivyglen Project Area

Common Name	Scientific Name	Status
Birds		
Cooper's Hawk	*Accipiter cooperii*	CSC (nesting), MBTA, CS
Sharp-Shinned Hawk	*Accipiter striatus*	CSC, CS
Tri-Colored Blackbird (Nesting Colony)	*Agelaius tricolor*	FBCC, CSC, MBTA, CS
Southern California Rufous-Crowned Sparrow	***Aimophila ruficeps canescens***	**CSC, MBTA, CS**
Bell's Sage Sparrow	***Amphispiza belli belli***	**FBCC, CSC, MBTA, CS**
Golden Eagle	*Aquila chrysaetos*	FBCC, BEPA, CSC, CFP, MBTA, CS
Burrowing Owl	*Athene cunicularia*	FSC, FBCC, CSC (Burrow sites) , MBTA. CAS
Ferruginous Hawk	*Buteo regalis*	FBCC, CSC (wintering), MBTA, CS
Northern Harrier	*Circus cyaneus*	CSC (nesting), MBTA, CS (breeding)
White-Tailed Kite	*Elanus leucurus*	CFP, MBTA, CS
Willow Flycatcher (Southwestern)	*Empidonax traillii (extimus)*	FE (*extimus*), SE (all subspecies), MBTA, CS (*extimus*)
California Horned Lark	*Eremophila alpestris actia*	CSC, MBTA, CS
American Peregrine Falcon	*Falco peregrinus anatum*	FBCC, SE, MBTA, CS
Bald Eagle	*Haliaeetus leucocephalus*	FT, SE, BEPA, MBTA, CS
Yellow-Breasted Chat	*Icteria virens*	CSC (nesting), MBTA, CS
Loggerhead Shrike	*Lanius ludovicianus*	FBCC, CSC (nesting), MBTA, CS
White-Faced Ibis	*Plegadis chihi*	CSC, MBTA
Coastal California Gnatcatcher	***Polioptila californica californica***	**FT, CSC, MBTA, CS**
Least Bell's Vireo	*Vireo bellii pusillus*	FE, SE, MBTA, CS
Mammals		
Dulzura California Pocket Mouse	*Cheatodipus californicus femoralis*	CSC
Stephens' Kangaroo Rat	*Dipodomys stephensi*	ST/FE CS
Western Mastiff Bat	*Eumops perotis*	CSC
San Diego Black-Tailed Jackrabbit	*Lepus californica bennettii*	CSC, CS
San Diego Desert Woodrat	*Neotoma lepida intermedia*	CSC, CS
Southern Grasshopper Mouse	*Onychomys torridus ramona*	CSC
Northwestern San Diego Pocket Mouse	*Perognathus (Chaetodipus) fallax fallax*	CSC, CS

Common Name	Scientific Name	Status
Los Angeles Pocket Mouse	*Perognathus longimembris brevinasus*	FE, CSC, NE, MSHCP Covered Species
(Townsend's) Big-Eared Bat	*Corynorhinus (Plecotus) townsendii*	CSC
Amphibians		
Arroyo Toad	*Bufo californicus*	FE, CSC, CS
Western Spadefoot Toad	***Scaphiopus hammondii***	**CSC, CS**
Reptiles		
Orange-Throated Whiptail	*Aspidoscelis (Cnemidophorus) hyperythra beldingi*	CSC CS
Coastal Western Whiptail	*Aspidoscelis (Cnemidophorus) tigris stejnegeri*	CNDDB: G5T3T4S2S3, CS
Coastal Rosy Boa	*Charina (Lichanura) trivirgata roseofusca*	CNDDB: G4G5S3S4
Southwestern Pond Turtle	*Clemmys marmorata pallida*	CSC, CS
San Diego Banded Gecko	*Coleonyx variegates abbottii*	CNDDB: G5T3T4S2S3, CS
Northern Red Diamond Rattlesnake	*Crotalus ruber ruber*	CSC, CS
San Diego Mountain Kingsnake	*Lampropeltus zonata pulchra*	CSC, CS
Coast (San Diego) Horned Lizard	*Phrynosoma coronatum (blainvillei)*	CSC, CS
Coast Patch-Nosed Snake	*Salvadora hexalepis virgultea*	CSC
Two-Striped Garter Snake	*Thamnophis hammondi*	CSC
Invertebrates		
Quino Checkerspot Butterfly	*Euphydryas editha quino*	FE, CS
Riverside Fairy Shrimp	*Streptocephalus woottoni*	FE, CS

Federal Status

FE = Federal Endangered

FT = Federal Threatened

FBCC= Federal Birds of Conservation Concern
MBTA = Migratory Bird Treaty Act Species
BEPA=Bald and Golden Eagle Protection Act

State/CDFG Status

SE = State Endangered

ST = State Threatened

CFP= California Fully Protected Species

CSC = California Species of Concern

CNDDB = has a California Natural Diversity DataBase ranking only

County Status

CS = MSHCP Covered Species which has been "*take authorized*".
CAS= MSHCP Criteria Area Species

BOLD= Identified within the project area.

3.0 SURVEY RESULTS AND EXISTING CONDITIONS

The topography in the study area is generally gentle rolling hills. The approximately 58 miles of study area contains a combination of agricultural, municipal, private, and reserve land, most with previous disturbance. The project area also traverses through portions of public lands which are managed by the Bureau of Land Management (BLM) (Figure 5).

3.1 Regional Overview

3.1.1 Climate

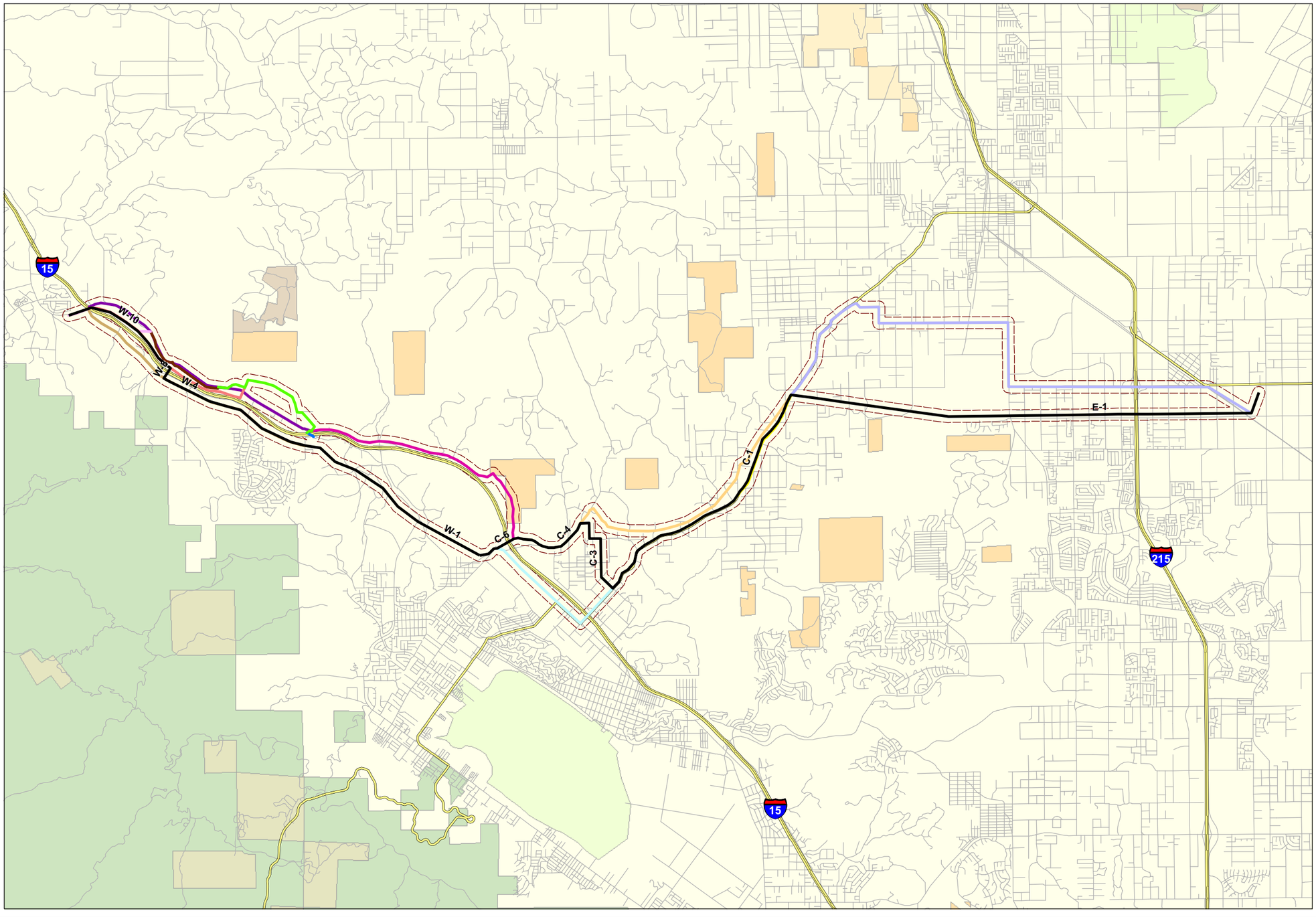
The study area is located within a Mediterranean climate region consisting of warm, dry summers and mild, wet winters. In summer, temperatures often reach 100º F and winter temperatures fall into the 30º, with an occasional freeze. Average annual temperature ranges are fairly moderate for the area, ranging from 49.3º F to 79.5º F. Average total precipitation for the area is approximately 10 to 15 inches per year (Western Regional Climate Center 2005).

3.1.2 Soils

The project area is located on predominantly flat areas that have historically been used for grazing and agriculture. Soils in the study area are primarily in the Monserate-Arlington-Exeter and Traver-Domino-Willows associations. These soils are characterized as level to moderately steep soils that have a surface layer of sandy loam often with a hardpan. The soils can vary from very shallow to relatively deep (USDA 1971). The soils in the area do not generally have a high clay component. However, there are “lenses” of clay soils in the study area.

The Traver-Domino-Willows association is considered a MSHCP sensitive soil type and includes saline-alkali soils largely located along floodplain areas of the San Jacinto River (Figure 6). Sensitive plants which may be supported by the Traver-Domino-Willows soil association include two federally-listed species: San Jacinto Valley crownscale (*Atriplex coronata* var*. notatior*) and spreading navarretia (*Navarretia fossalis*). Other sensitive plant species found in this association include Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var*. davidsonii*), and vernal barley (*Hordeum intercedens*) (County of Riverside 2003).

Clay soils may support several listed threatened or endangered species: Munz's onion (*Allium munzii*), thread-leaved brodiaea (*Brodiaea filifolia*) and San Diego button celery (*Eryngium aristulatum* var*. parishii*). Other sensitive plant species occurring on clay soils include, Orcutt's brodiaea (*Brodiaea orcuttii*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), small-flowered morning glory (*Convolvulus simulans*), many-stemmed dudleya (*Dudleya multicaulis*), Palmer's grapplinghook (*Harpagonella palmeri*), graceful tarplant (*Holocarpha virgata* ssp*. elongata*), and small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) (County of Riverside 2003).



LEGEND

Land Ownership

- Bureau of Land Management
- U.S. Forest Service
- State Fish and Game
- State Parks and Recreation
- State
- Private Conservancy
- Private

Project Data

- Project Boundary
- Preferred Route
- *Alternative Routes*
  - E-2
  - C-2
  - C-5
  - C-7
  - W-2
  - W-3
  - W-5
  - W-6
  - W-7
  - W-9
  - W-11
  - W-12

Base Data

- Major Freeways
- Roads

LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
CaSIL - Government Ownership
SCE - Alternatives, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\ownership_new.mxd
Date: 10/30/2006

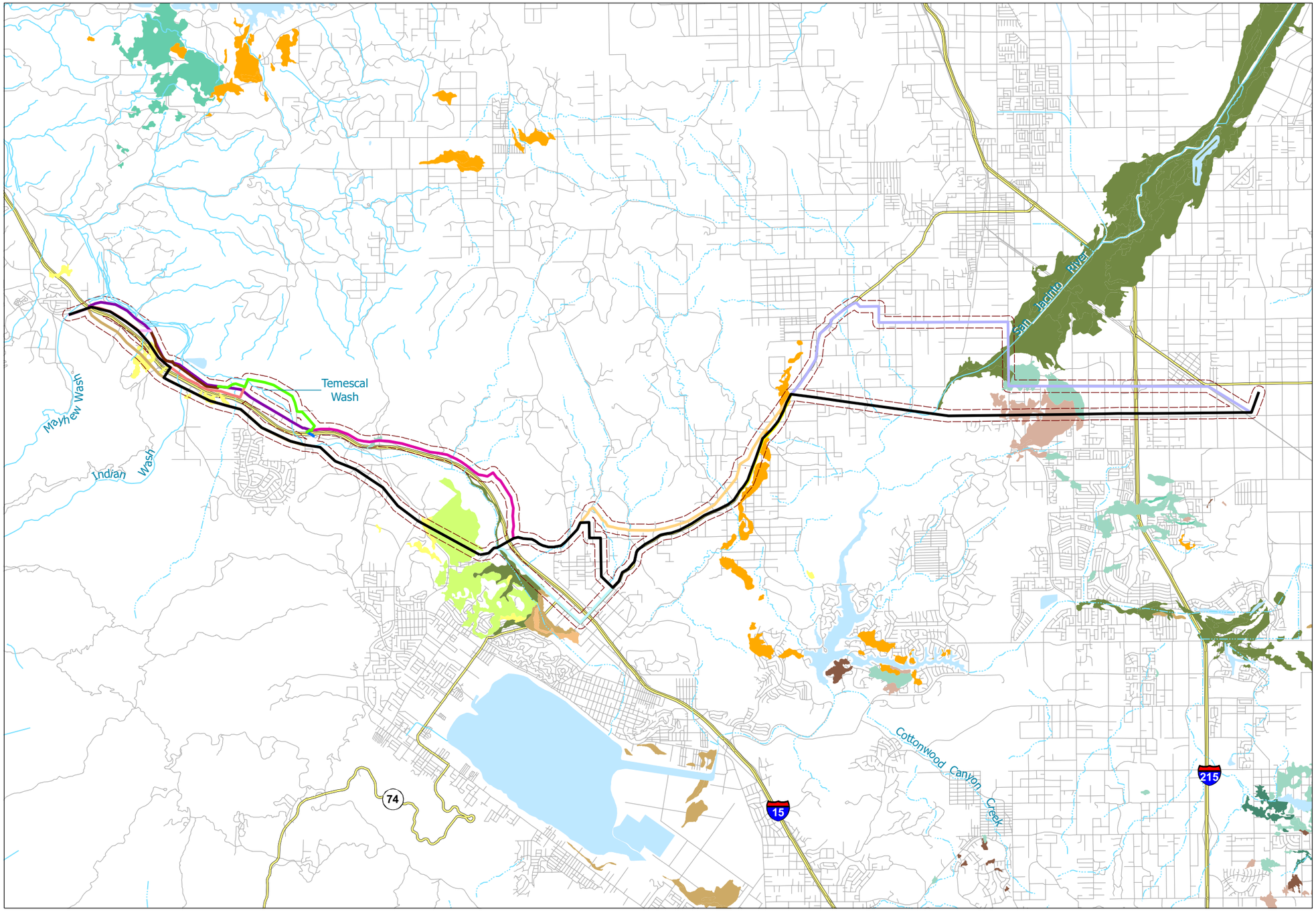
PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

0 0.5 1 2 3
Miles

amec

Land Ownership
Valley - Ivyglen Transmission Line Project, California

FIGURE
5



LEGEND

MSHCP Sensitive Soil Groups

- Altamont clay
- Altamont cobbly clay
- Auld clay
- Auld cobbly clay
- Bosanko clay
- Porterville clay
- Porterville cobbly clay
- Porterville gravelly clay
- Traver fine sandy loam
- Traver loamy fine sand
- Willows silty clay

Project Data

- Preferred Route
- *Alternative Routes*
  - E-2
  - C-2
  - C-5
  - C-7
  - W-2
  - W-3
  - W-5
  - W-6
  - W-7
  - W-9
  - W-11
  - W-12
- Project Boundary

Base Data

Road Classification

- Major Freeways
- Roads

Rivers and Streams

- Perennial Stream
- Intermittent Stream
- Lake

MAP NOTE

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\soil_new.mxd
Date: 10/30/2006

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

N

0 0.5 1 2 3
Miles

amec

Sensitive Soils
Valley - Ivyglen Transmission Line Project, California

FIGURE
6

3.1.3 Vegetation Communities

The vegetation communities and land cover types in the Valley-Ivyglen Transmission Line Project area are primarily coastal sage scrub, grasslands, agriculture, and developed disturbed land (ruderal habitat). Additional plant communities found within the study area include woodlands and forest, Riversidean alluvial fan sage scrub, riparian scrub/woodland/forest, vernal pools, and open water. Previous agriculture, grazing, fire suppression, and invasion of nonnative plant species have contributed to the disturbed condition of many vegetation communities in the study area.

The vegetation communities which were identified in the Valley-Ivyglen Transmission Line Project area are described in Appendix E. These communities are classified using the plant community definitions in the Western Riverside County MSHCP which is based on the vegetation communities presented in the *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986).

3.2 Valley-Ivyglen Transmission Preferred Route and Alternatives

Existing conditions of the Valley-Ivyglen Transmission Line preferred and alternative routes are discussed below. Table 5 illustrates the habitat types that were present along each of the routes. Volume II of this report contains aerial maps which illustrate the vegetation communities that are present along each route.

Table 5. Valley-Ivyglen Transmission Line Project Vegetation Communities

Proposed Routes	Coastal Sage Scrub	Nonnative Grassland	Agricultural Land	Developed-Disturbed Land	Woodlands and Forest	Riversidean Alluvial Fan Sage Scrub	Riparian Scrub, Woodland Forest	Meadows and Marshes
Preferred Route	✓	✓	✓	✓	✓	✓	✓	✓
Alternative Routes								
E-2	✓	✓	✓	✓	✓		✓	
C-2	✓	✓	✓	✓		✓	✓	
C-5	✓		✓	✓			✓	✓
C-7	✓		✓	✓			✓	
W-2	✓	✓	✓	✓			✓	
W-3	✓						✓	
W-5	✓	✓		✓	✓	✓	✓	
W-6	✓	✓	✓	✓		✓	✓	✓
W-7	✓	✓	✓	✓	✓	✓	✓	✓
W-9	✓	✓		✓	✓	✓	✓	✓
W-11	✓	✓			✓	✓	✓	
W-12	✓	✓		✓	✓	✓	✓	

3.2.1 Preferred Route

The Preferred Route is approximately 22.6 miles long and begins at the Valley Substation in unincorporated Romoland and ends at the Ivyglen Substation near the Glen Ivy Hot Springs (Maps 1-4, 9-16, 20, 22-23, 28-33). Areas of the Valley Substation (Map 1) (approximately 500 feet from the substation fence to the Valley-Ivyglen Transmission Line riser pole) will be excavated in order to install a telecommunication line.

Portions along the Preferred Route will be trenched and/or bored in order to install underground portions of the fiber optic telecommunication line. The following sites where underground activities will occur were individually surveyed for sensitive species:

a. Valley Substation – the trenched area includes approximately 500 feet from the substation fence to the Valley-Ivyglen Transmission Line riser pole (Map 1).

b. Crossing at existing Elsinore – Ivyglen 115kV line and Lake Street- the trenched area includes approximately 500 feet beneath Lake Street (Map 29).

c. Crossing at I-15 at Hostettler Road – the trenched area includes approximately 500 feet beneath the freeway along Hostettler Road (Map 31).

d. Crossing Existing Elsinore-Ivyglen 115 kV line at Temescal Canyon Road – the trenched area includes approximately 500 feet at crossing beneath Temescal Canyon Road (Map 31).

e. Ivyglen Substation – the trenched area includes approximately 1,500 feet along Temescal Canyon Road beneath the freeway, from Mayhew Road to the Ivyglen Substation (Map 23).

Vegetation Communities: The majority of this Preferred Route passes through disturbed coastal sage scrub and developed habitats. Portions of this route are also vegetated by riparian habitat (Table 6, Maps 1-4, 9-16, 20, 22-23, 28-33).

Special-Status Species: Two MSHCP Covered Species were identified adjacent to the project area boundary along this route. Bells' sage sparrow (*Amphispiza belli belli*) was identified within disturbed coastal sage scrub habitat (Map 11) and evidence of kangaroo rats (scat and burrows) was identified within nonnative grassland habitat in very close proximity to a CNDDB occurrence of Stephens' kangaroo rat (Map 16).

Entrix, Inc. additionally identified populations of smooth tarplant and San Diego ambrosia along this route (Map 16) however; these species were not identified during our field investigations.

Table 6. Preferred Route Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	18.80
	Disturbed	144.90
Agriculture		3.90
Disturbed/Developed		156.50
Nonnative Grassland	Undisturbed	170.90
	Disturbed	11.20
Coast Live Oak Woodland		6.50
Riversidean Alluvial Sage Scrub	Undisturbed	5.90
	Disturbed	17.80
Seasonal Wetland		0.35
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	6.90
	Southern Sycamore/Alder Riparian Woodland	0.76
	Southern Willow Scrub	2.90
	Riparian Woodland	0.18

An active red tailed hawk (*Buteo jamaicensis*) nest, was identified in the southeast fringe of the Pacific Clay property, within a stand of blue gum trees (*Eucalyptus* spp.) (Map 29). Red-tailed hawk is an MBTA listed species. The MBTA of 1916 protects all migratory avian populations, and therefore mandates that this nest not be destroyed if still active during the construction or expansion of this route.

Also, juvenile western spadefoot toads (*Scaphiopus hammondii*), which are California species of special concern and MSHCP Covered Species, were identified within three artificial pools located in a clay mining area of Pacific Clay (Map 30).

No other special status plant or animal species were identified along this route during field investigations.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: Potential habitat for the sensitive long-spined spineflower does exist within undisturbed coastal sage scrub habitat along this route. In addition, areas of this route along the San Jacinto floodplain which include saline-alkali soils may support sensitive plant species which are supported by this soil association. These species include San Jacinto Valley crownscale, spreading navarretia, Parish's brittlescale, San Diego ambrosia, Davidson's saltscale and vernal barley. Focused preconstruction plant surveys will be required within these areas for sensitive plant species.

Clay soils also exist along areas of this route that are associated with the Pacific Clay, Inc. property. Clay soils may provide suitable habitat for sensitive species such as Munz's

onion, thread-leaved brodiaea, San Diego button celery, Orcutt's brodiaea, long-spined spineflower, small-flowered morning glory, many-stemmed dudleya, graceful tarplant, and small-flowered microseris. Focused preconstruction plant surveys will be required within these areas for sensitive plant species.

Burrowing Owl Habitat Assessment: There is a CNDDB point that indicates the historic use of burrowing owls along this route (Map 11) and adjacent to this route outside of the survey area boundary (Map 4). Surveys for burrowing owls were conducted in these potential habitat areas intensively; however, none were observed. Other areas along this route which are occupied by open, nonnative grassland and agricultural fields may support this species. No burrowing owls or evidence of this species were identified during field investigations; however, focused preconstruction burrowing owl surveys will be needed within the nonnative grassland and agriculture field areas if this route is chosen.

Riparian/Riverine Habitat: This Preferred Route crosses through some wetland/riparian habitats that are associated with the San Jacinto River and other drainages, and (Maps 9, 10, 22, 23, and 31-33). The San Jacinto River is considered jurisdictional waters under both the USACE and CDFG. A wetland delineation will be necessary within these areas in order to determine the extent of jurisdiction.

3.2.2 Alternative Routes

3.2.2.1 Alternative E-2

Alternative E-2 begins approximately 2,500 feet west of the Valley Substation and is approximately 9.4 miles long. This alternative route runs northwest along Mathews Road; west on Ethanac Road; north on Goetz Road; west on Mapes Road; north on Sophie Road; and south along Highway 74 terminating at Ethanac Road and Transmission Node 2 (Maps 1-8 and 11).

Vegetation Communities: Much of this route passes through developed/disturbed, agricultural and nonnative grassland habitats. Portions of this route are also vegetated by riparian habitat (Table 7, Maps 1-8 and 11).

Special-Status Species: No special status plant or animal species were identified along this route during field investigations.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: A historic CNDDB point for thread-leaved brodiaea, a MSHCP Criteria Area species is located along this route (Map 5), focused surveys for this species were conducted within this area however, thread-leaved brodiaea plants were not identified. The size and extent of populations of thread-leaved brodiaea within suitable habitat vary in response to the timing and amount of rainfall, as well as temperature patterns. Typically, in any given year, only a fraction of the plants will develop to maturity. Thus, due to the lack of rainfall during this season this species may not be evident within this area during our survey. Thus, focused preconstruction surveys for this species and other alkali soil associated species will be required within this area.

Table 7. Alternative E-2 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub		0.28
Disturbed/Developed		292.9
Agriculture	Field Cropland	85.9
	Grove/Orchard	1.30
Nonnative Grassland		60.5
Woodland and Forest (Juniper Woodland and Scrub)		0.41
Riparian Scrub, Woodland, Forest	Disturbed Riparian Scrub	0.89
	Southern Willow Scrub	0.44
	Tamarisk Scrub	3.78
	Southern Cottonwood/Willow Riparian Forest	0.11
	Tamarisk Scrub	11.9
Seasonal Wetland		0.66

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along Alternative E-2. However, locations along this route do have the potential for burrowing owl occupation due to the presence of ground squirrel burrows and open disturbed habitat. These potentially occupied sites are along the agricultural fields in the eastern half of the route (Maps 1-6). A historic CNDDB occurrence of this species occurs in near the terminus of this segment, in open-disturbed nonnative grassland (Map 11). Preconstruction burrowing owl surveys will be needed within these areas if this route is chosen.

Riparian/Riverine Habitat: Alternative E-2 crosses through some alluvial habitat that is associated with the San Jacinto River and other drainages (Map 5). The San Jacinto River is considered jurisdictional waters and thus, activities in this area may have oversight by the CDFG and USACE. A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction.

3.2.2.2 Alternative C-2

Alternative C-2 begins at Transmission Node 2 is approximately 4.6 miles long. This alternative route runs southwest to its terminus at the junction of El Torro Road and Wells Fargo Drive (Maps 11-15).

Vegetation Communities: The majority of Alternative C-2 passes through nonnative grassland, developed habitats and disturbed coastal sage scrub. Portions of this route are also vegetated by riparian habitat (Table 8, Maps 11-15).

Table 8. Alternative C-2 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	14.0
	Disturbed	65.7
Agriculture Grove/Orchard		0.09
Disturbed/Developed		88.1
Nonnative Grassland		37.5
Disturbed Riversidean Alluvial Fan Sage Scrub		9.96
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	0.58
	Mule Fat Scrub	0.55
	Southern Willow Scrub	1.47

Special-Status Species: Bells sage sparrow, an MSHCP Covered Species, was identified within disturbed coastal sage scrub habitat along this route (Map 11). No other special-status species were identified along Alternative C-2.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSCHP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along Alternative C-2. However, locations along this route do have the potential for burrowing owl occupation due to the presence of ground squirrel burrows and open disturbed habitat. Potential burrowing owl habitat was identified within the areas that are occupied by nonnative grassland along this route (Maps 11-15). A historic CNDDB occurrence of this species occurs in near the terminus of this segment at Transmission Node 2, in open-disturbed nonnative grassland (Map 11). Preconstruction burrowing owl surveys will be needed within these areas if this route is chosen.

Riparian/Riverine Habitat: Alternative a crosses through some wetland/riparian habitats that is associated with an unnamed drainage (Map 13). This and other drainages which intersect this route (Maps 12-15) may be considered jurisdictional waters and thus, activities in this area may have oversight by the CDFG and USACE. A wetland delineation will be necessary within these areas in order to determine the extent of jurisdiction.

3.2.2.3 Alternative C-5

Alternative C-5 runs southeast along Collier Avenue and northeast along Central Avenue to its terminus at the junction of Central Avenue and Conard Avenue (Maps 16 and 25-27). Alternative C-5 is approximately 2.5 miles long.

Vegetation Communities: Alternative C-5 mostly passes through disturbed and developed properties (Table 9, Maps 16 and 24-27). This route additionally traverses through portions of riparian/wetland habitat that is associated with Temescal Wash (Maps 16 and 27).

Table 9. Alternative C-5 Vegetation Communities

Vegetation Community		Acreage
Agriculture Field Cropland		1.11
Disturbed Coastal Sage Scrub		0.40
Disturbed/ Developed		108.5
Freshwater Marsh		0.56
Alkali Marsh		0.74
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	4.03
	Mule Fat Scrub	1.49
	Southern Willow Scrub	7.2

Special-Status Species: No special status plant or animal species were identified along this route during field investigations.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: Historic CNDDB points for three alkali soils associated species, San Diego ambrosia, San Jacinto Valley crownscale and Coulter's goldfields occurs adjacent to the boundary of this route, along the Temescal Wash floodplain (Map 16). Surveys for these species were conducted within this area, however none were identified. Focused preconstruction surveys for these and other alkali soils associated species will be required within this area.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along Alternative C-5; however, potential habitat for this species occurs within the open and disturbed habitats along this route (Maps 25 and 26).

Riparian/Riverine Habitat: Alternative C-5 passes directly through riparian and wetland habitat that is associated with Temescal Wash (Maps 16 and 27). These habitats are possibly jurisdictional wetlands, and thus, activities in this area may have oversight by the CDFG and USACE. A wetland delineation will be necessary within these areas in order to determine the extent of jurisdiction.

3.2.2.4 Alternative C-7

Alternative C-7 begins at Transmission Node 2 and travels southwest to its terminus at Peach Street (Maps 11-13). This alternative route is approximately 1.8 miles in length.

Vegetation Communities: Alternative C-7 passes predominantly through disturbed and developed lands (Table 10, Maps 11-13). This alternative route also traverses through nonnative grassland and disturbed coastal sage scrub habitat (Table 10, Maps 11-13).

Table 10. Alternative C-7 Vegetation Communities

Vegetation Community	Acreage
Agriculture	3.53
Disturbed Coastal Sage Scrub	2.63
Disturbed/ Developed	65.1
Nonnative Grassland	18.0
Southern Willow Scrub	0.28

Special-Status Species: Surveys for special-status species were not conducted by AMEC biologists along Segment C-7; however, the vegetation communities along this route were delineated. Pre-construction for species that may occur in the habitats identified along this route will be needed.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSHCP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along Alternative C-7. However, locations along this route do have the potential for burrowing owl occupation due to the presence of ground squirrel burrows and open disturbed habitat. Potential burrowing owl habitat was identified within the areas that are occupied by nonnative grassland along this route (Maps 11-15). A historic CNDDB occurrence of this species occurs in near the terminus of this segment at Transmission Node 2, in nonnative grassland habitat (Map 11). Preconstruction burrowing owl surveys will be needed within these areas if this route is chosen.

Riparian/Riverine Habitat: An isolated area containing riparian vegetation (riparian scrub) is located along this route (Map 13). Activities in this area may have oversight by the CDFG and USACE. A wetland delineation may be necessary within this areas in order to determine the extent of jurisdiction.

3.2.2.5 Alternative W-2

Alternative W-2 follows I-15 north from Nichols Road to Concordia Ranch Road. This route then travels northward through the BLM land to Big Canyon Drive and Walker Canyon Road; proceeding westerly along the north side of I-15 to its terminus at Concordia Ranch Road and Temescal Canyon Road near the Ivyglen Substation (Maps 16-19, and 31). This route is approximately 4.1 miles long.

Vegetation Communities: The habitat alternates along this route between nonnative grassland, remnant coastal sage scrub, and disturbed coastal sage scrub. Areas containing riparian vegetation are also located along this route (Table 11, Maps 16-19, and 31).

Table 11. Alternative W-2 Vegetation Communities

Vegetation Community		Acreage
Agriculture	Field Cropland	1.65
	Grove/Orchard	1.37
Nonnative Grassland		58.2
Disturbed/ Developed		32.9
Coastal Sage Scrub	Undisturbed	0.94
	Disturbed	103.6
Riparian Scrub, Woodland, Forest	Mule Fat Scrub	0.72
	Southern Cottonwood/Willow Riparian Forest	0.73
	Riparian Scrub	2.39

Special Status Species: Two sensitive MSHCP Covered Species, coastal California gnatcatcher and southern California rufous crowned sparrow (*Aimophila ruficeps canescens*) were observed along this route (Maps 16 and 17). Evidence (scat and burrows) of kangaroo rat species (*Dipodomys* spp.) were also identified along this route (Map 16). It is difficult to determine what species of kangaroo rat is associated with this evidence; however, a historical CNDDB occurrence of Stephens' kangaroo rat occurs in the vicinity of the scat and burrows which were observed; thus, this species is likely to currently inhabit this area (Map 16).

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSCHP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along Alternative W-2. In addition, no suitable habitat for burrowing owls was found along Alternative W-2 during field investigations.

Riparian/Riverine Habitat: Areas which contain riparian vegetation associated with unnamed tributaries are located along this route (Maps 17 and 19). Activities in these areas may have oversight by the CDFG and USACE. A wetland delineation may be necessary within these areas in order to determine the extent of jurisdiction.

3.2.2.6 Alternative W-3

Alternative W-3 is a very small segment (0.12 miles) that follows Temescal Canyon Road (Map 31).

Vegetation Communities: The majority of this alternative route passes through developed habitat (Table 12, Map 31).

Table 12. Alternative W-3 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	0.14
	Disturbed	1.27
Disturbed/Developed		7.08
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	0.001
	Southern Willow Scrub	0.09

Special-Status Species: No special status plant or animal species were identified along Alternative W-3.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSCHP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along this route. Additionally, potential habitat for this species does not occur along this route.

Riparian/Riverine Habitat: No riparian/riverine or wetland habitats were identified along this route.

3.2.2.7 Alternative W-5

Alternative W-5 begins at the intersection of Hostettler Road and Desperado Drive and travels along the south side of I-15 northwestward to Temescal Canyon Road to its terminus just east of the Ivyglen Substation (Maps 20, 22, 23, and 31-33). This route is approximately 4.4 miles long.

Vegetation Communities: The first half of this route travels through a mosaic of developments, disturbed coastal sage scrub and nonnative grassland. Some of the coastal sage scrub on this section is in relatively undisturbed condition, but varies greatly from one hillside to another. The second half of the route crosses intermittent areas of Riversidean alluvial fan sage scrub, and then travels northwest through development. Small stands of coast live oak woodland also exist along this route (Table 13, Maps 20, 22, 23, and 31-33).

Special Status Species: Two populations of Munz's onion (Map 32), a MSHCP Narrow Endemic Plant Species, and a population of small-flowered morning glory (*Convolvulus simulans*), a MSHCP Covered Species were identified in association with clay soils along this route (Map 32).

Table 13. Alternative W-5 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	46.7
	Disturbed	20.5
Disturbed/ Developed		118.3
Nonnative Grassland		7.27
Riversidean Alluvial Fan Sage Scrub		14.2
Oak Woodland		0.02
Coast Live Oak Woodland		3.39
Riparian Scrub, Woodland, Forest	Mule Fat Scrub	0.90
	Southern Sycamore/Alder Riparian Woodland	1.04
	Southern Cottonwood/Willow Riparian Forest	0.69
	Southern Willow Scrub	2.67

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: The CNDDB has point locations for round leaved filaree, many stemmed dudleya, and Munz's onion in this general location where clay soils were identified along this route (Map 32). Clay soils may support other listed threatened or endangered species which prefer these soils such as, thread-leaved brodiaea, San Diego button celery, Orcutt's brodiaea, long-spined spineflower. Focused surveys for these and other clay soils endemic species should be conducted within this area prior to construction activities if this alternative route is chosen.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along Alternative W-5. In addition, no suitable habitat for burrowing owls was found along Alternative W-5 during field investigations.

Riparian/Riverine Habitat: Alternative W-5 passes through a isolated stand of riparian habitat (Map 31). In addition, this route crosses over riparian habitat that is associated with Temescal Wash, near Campbell Ranch Road (Map 33). These areas are likely to be considered jurisdictional wetlands, and thus, activities in these areas may have oversight by the CDFG and USACE. A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction.

3.2.2.8 Alternative W-6

Alternative W-6 begins near the junction of Concordia Ranch Road and Temescal Canyon Road and travels northeast and then northwest to its terminus at Temescal Canyon Road (Maps 20, 31 and 32). This route is approximately 2.1 miles in length.

Vegetation Communities: The majority of Alternative W-6 passes through disturbed coastal sage scrub, developed habitats, and Riversidean alluvial sage scrub. Portions of this route are also vegetated by riparian habitat (Table 14, Maps 20, 31, and 32).

Table 14. Alternative W-6 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	0.14
	Disturbed	38.9
Agriculture		1.55
Disturbed/Developed		21.9
Nonnative Grassland		17.5
Riversidean Alluvial Sage Scrub		18.7
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	5.73
	Southern Willow Scrub	0.09
Freshwater Marsh		0.22

Special-Status Species: No special-status species were observed along this route during field investigations.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along this route. Additionally, potential habitat for this species was not identified along Alternative W-6.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSCHP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Riparian/Riverine Habitat: Alternative W-6 traverses through portions of riparian and alluvial habitat this associated with Temescal Wash (Maps 20 and 32). These areas are likely to be considered jurisdictional wetlands, and thus, activities within in these areas may have oversight by the CDFG and USACE. A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction.

The following special status plant and animal species are known to occur or have historically occurred near or along Alternative W-6:

3.2.2.9 Alternative W-7

Alternative W-7 is approximately 4.2 miles in length. This proposed route runs along the north side of 1-15 from west of Concordia Ranch Road to Mayhew Road to its terminus at the Ivyglen Substation (Maps 20-23 and 31-33). Portions of Alternative W-7 will be excavated in order to install the telecommunication line. The excavated area includes approximately 1,500 feet along Temescal Canyon Road beneath the freeway, from Mayhew Road to the Ivyglen Substation (Map 23).

Vegetation Communities: Alternative W-7 is predominately vegetated by disturbed and developed habitats. Areas of this route are also vegetated by coastal sage scrub, nonnative grassland, Riversidean alluvial fan sage scrub, riparian and wetland habitats and small patches of coast live oak woodland (Table 15, Maps 20-23, 32, and 33). Only portions of this route were

surveyed by AMEC biologist. The vegetation along the un-surveyed areas was mapped through photo-interpretation. Portions of Alternative W-7 will be excavated in order to install the telecommunication line. The excavated area includes approximately 1,500 feet along Temescal Canyon Road beneath the freeway, from Mayhew Road to the Ivyglen Substation (Map 23). These areas were surveyed by AMEC biologists.

Table 15. Alternative W-7. Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	5.12
	Disturbed	16.7
Agriculture		3.79
Disturbed/Developed		93.7
Nonnative Grassland		20.2
Coast Live Oak Woodland		8.73
Riversidean Alluvial Sage Scrub	Undisturbed	20.2
	Disturbed	6.27
Freshwater Marsh		1.95
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	9.24
	Southern Sycamore/Alder Riparian Woodland	9.26
	Southern Willow Scrub	3.86
	Riparian Scrub	7.05
	Mule Fat Scrub	0.46

Special-Status Species: No special status plant or animal species were identified along the surveyed portions of this route during field visits.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: Potential habitat for MSHCP Narrow Endemic and/or Criteria Area plant species may exist in areas which contain clay or alkali soils along this route. Species which are endemic to these soils types which include Munz's onion, thread-leaved brodiaea, and San Diego button celery, Orcutt's brodiaea, small-flowered morning glory, many-stemmed dudleya, Palmer's grapplinghook, graceful tarplant, small-flowered microseris, San Jacinto Valley crownscale, spreading navarretia, Parish's brittlescale, Davidson's saltscale, and vernal barley. Focused surveys for clay and alkali soil endemic species should be conducted within areas containing these soils prior to construction activities if this segment is chosen.

Burrowing Owl Habitat Assessment: No burrowing owls or potential burrowing owl habitat was found along the length Alternative W-7 in areas that were surveyed. However, locations along this route may have the potential for burrowing owl occupation due to the presence of open disturbed habitat (Maps 20-22, 31, and 33). Preconstruction burrowing owl surveys will be needed within these areas if this route is chosen.

Riparian/Riverine Habitat: Areas of this route that traverse the riparian/wetland habitat associated with Temescal Wash may require regulatory oversight by the CDFG and USACE (Maps 20- 23, 32). A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction.

3.2.2.10 Alternative W-9

Alternative W-9 begins at Concordia Ranch Road and travels northwest to its terminus near Temescal Canyon Road (Maps 21, 32 and 33). This route is approximately 1.5 miles in length.

Vegetation Communities: The majority of Alternative W-9 passes through disturbed coastal sage scrub, nonnative grassland and developed habitats. Portions of this route are also vegetated by riparian habitat (Table 16, Maps 21, 32, and 33).

Table 16. Alternative W-2 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	2.68
	Disturbed	16.8
Disturbed/Developed		22.4
Nonnative Grassland		15.6
Coast Live Oak Woodland		6.00
Riversidean Alluvial Sage Scrub		9.08
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	5.73
	Southern Willow Scrub	0.09

Special-Status Species: No special status plant or animal species were identified along the surveyed portions of this route during field visits.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSCHP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or potential burrowing owl habitat was found along the length Alternative W-9 in areas that were surveyed. However, locations along this route may have the potential for burrowing owl occupation due to the presence of open disturbed habitat (Maps 21 and 33). Preconstruction burrowing owl surveys will be needed within these areas if this route is chosen

Riparian/Riverine Habitat: Areas of Alternative W-9 that traverse riparian and wetland habitats that are associated with Indian Wash and Temescal Wash may require regulatory oversight by the CDFG and USACE (Maps 32 and 33). A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction.

3.2.2.11 Alternative W-11

Alternative W-11 is approximately 1.4 miles long. This route travels along the I-15 freeway to its terminus at Ivyglen Substation (Maps 22, 23 and 33)

Vegetation Communities: The majority of Alternative W-11 passes through disturbed coastal sage scrub, nonnative grassland, and developed habitats (Table 17, Maps 22, 23, and 33). Portions of this route are also vegetated by riparian habitat that is associated with Temescal Wash (Map 33).

Table 17. Alternative W-11 Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	3.68
	Disturbed	50.6
Nonnative Grassland		40.1
Coast Live Oak Woodland		5.47
Riversidean Alluvial Sage Scrub		6.57
Southern Sycamore/Alder Riparian Woodland		2.54

Special-Status Species: No special status plant or animal species were identified along this route during field investigations.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSHCP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or signs of burrowing owls were identified along this route. Additionally, potential habitat for this species was not identified along Alternative W-11.

Riparian/Riverine Habitat: Alternative W-11 traverses riparian/wetland habitat that is associated with Temescal Wash. This area may require regulatory oversight by the CDFG and USACE. A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction (Maps 22 and 23).

3.2.2.12 Alternative W-12

Alternative W-12 is approximately 3.2 miles long. This route begins along the north side of I-15 and runs between the freeway and Temescal Canyon Road traveling northwest crossing Indian Truck Trail to its terminus at Temescal Canyon Road east of the Ivyglen Substation (Maps 20, 22, 23, 32, and 33).

Vegetation Communities: Alternative W-12 is predominately vegetated by disturbed coastal sage scrub and developed habitats. Areas of this route are also vegetated by riparian forest, Riversidean alluvial fan sage scrub and small patches of coast live oak woodland (Table 18, Maps 20, 22, 23, 32, and 33).

Table 18. Alternative W-12 Vegetation Communities

Vegetation Community		Acreage
Coast Live Oak Woodland		2.78
Coastal Sage Scrub	Undisturbed	6.60
	Disturbed	76.3
Disturbed/ Developed		49.9
Nonnative Grassland		4.20
Riversidean Alluvial Fan Sage Scrub		13.2
Riparian Scrub, Woodland, Forest	Southern Sycamore/Alder Riparian Woodland	1.05
	Southern Cottonwood/Willow Riparian Forest	2.27

Special-Status Species: No special status plant or animal species were identified along this route during field investigations.

MSHCP Narrow Endemic and Criteria Area Species Habitat Suitability: No potential habitat for MSHCP Narrow Endemic and/or Criteria Area plant species were identified along this route.

Burrowing Owl Habitat Assessment: No burrowing owls or potential burrowing owl habitat was found along the length Alternative W-12.

Riparian/Riverine Habitat: Alternative W-12 intersects Temescal Wash upstream of Lake Corona. Areas of this route that traverse the riparian/wetland habitat associated with Temescal Wash may require regulatory oversight by the CDFG and USACE. A wetland delineation will be necessary within this area in order to determine the extent of jurisdiction (Maps 20-23, 32, and 33).

3.3 Recommended Additional Surveys

Once specific routes have been selected, focused surveys for sensitive species that are required by the MSHCP, such as burrowing owls, Narrow Endemic Plant Species and Criteria Area Species should be conducted prior to the commencement of construction. Sensitive plant and animal species that were not found during the biological surveys for this report but still have a moderate to high potential to occur within the proposed routes of this project are presented in Appendix B. Some of the species that were not found may be absent from the habitat for various reasons (e.g., plants that do not sprout until later in the season, migratory birds that have not yet arrived, etc.). The following focused pre-construction surveys are recommended below to assess the populations within the study area, identify potential impacts to these species, and if present mitigate impacts to them to below a level of significance (Table 16).

Table 19. Recommended Additional Surveys

Proposed Routes	Focused Sensitive Plant Species Surveys	Burrowing Owl Surveys	Wetland Delineation
Preferred Route	✓	✓	✓
E-2	✓	✓	✓
C-2	✓	✓	✓
C-5	✓		✓
C-7	✓	✓	✓
W-2	✓	✓	✓
W-3			✓
W-5	✓	✓	✓
W-6	✓	✓	✓
W-7	✓	✓	✓
W-9			✓
W-11			✓
W-12			✓

4.0 ASSESSMENT OF POTENTIAL IMPACTS

This section presents a general impact analysis of the proposed Valley-Ivyglen Transmission Line project. Because the project is still early in the design stage, this section outlines the potential issues that are likely to arise from the construction of the proposed transmission line segments. A complete project impact analysis will be conducted once a project impact footprint is established.

Impacts are defined as activities that destroy, damage, alter, or otherwise affect biological resources in the project area. Impacts are characterized as five types and are described below.

- Direct impacts occur when biological resources are altered, disturbed, destroyed, or removed during the course of project implementation. Examples of direct impacts are loss of habitat as a result of grading or filling or “take” of a sensitive species.

- Indirect impacts occur when project-related activities affect biological resources in a manner other than direct. Potential indirect impacts include increased noise levels and nonnative weed establishment. Chronic indirect impacts to biological resources resulting

from the operation of a project can include noise, lighting, and increased human presence among other factors.

- Permanent impacts result in the irreversible loss of biological resources. Examples include the removal of sensitive vegetation or vegetation that supports a sensitive species or chronic disturbance of sensitive species during a critical time period (e.g., breeding season).

- Temporary impacts are reversible with the implementation of mitigation measures. Examples include the revegetation of an area cleared during construction, or short-term noise events associated with operations.

- Cumulative impacts are the sum of all impacts from this and other local projects on the biological resources of a region.

4.1 Thresholds for Determining Potential Significance

The primary sources for determining significance of impacts are determined by the National Environmental Policy Act (NEPA), CEQA, NCCP, MSHCP, and local guidelines and ordinances. Guidelines under CEQA provide guidance and interpretation for implementing CEQA statutes. CEQA significance entails any impact to plant and wildlife species listed by federal or state agencies as threatened or endangered, or of regional or local significance. A significant impact to listed or sensitive species could be direct or indirect, with impacts to rare or sensitive habitats also considered significant.

In general, the proposed project could result in a potentially significant impact to the environment if it would:

- Substantially reduce the habitat of a plant or wildlife species
- Cause a plant or wildlife population to drop below self-sustaining levels
- Threaten to eliminate a plant or animal community
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special species in local or regional plans, policies, or regulations, or by the CDFG or the USFWS
- Reduce the number or restrict the range of an endangered, rare, or threatened species
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG, USACE, RWQCB, or USFWS.

The proposed project could potentially produce three types of project-related impacts: direct impacts, indirect impacts, and cumulative impacts.

4.1.1 Direct Impacts

Direct impact analysis is subject to final project design. The most sensitive biological resources found in the study area are related to coastal sage scrub and riparian/wetland habitats. The coastal sage scrub vegetation type itself is a sensitive resource, as several sensitive flora and fauna species are associated with this habitat type including the coastal California gnatcatcher and Stephens' kangaroo rat.

Some permanent impacts to coastal sage scrub may result from clearing around new transmission line poles for construction and maintenance purposes. It is assumed that any direct impacts to sensitive species or habitats will be temporary in nature except for these clearance areas. Participation and compliance with the MSHCP however, can provide mitigation for any net loss to coastal sage scrub habitat within the MSHCP area.

Direct impacts to riparian/wetland habitats may also occur as a result of this project. Vegetation associated with this habitat type may be temporarily negatively impacted during the construction phase of this project. Permanent impacts to these habitats are not anticipated.

4.1.2 Indirect Impacts

Indirect impact analysis is subject to final project design. It is anticipated that there will be some indirect impacts resulting from the project and its proximity to sensitive habitat and sensitive species.

4.1.2.1 Runoff, Erosion, and Siltation

Siltation and erosion resulting from the proposed activities are potentially significant indirect impacts associated with this project because of the proximity of the proposed work area to wetlands and other sensitive habitats. Erosion can remove topsoil necessary for plant growth both in the graded areas and in lower areas affected by increased runoff. The eroded soil can be deposited as silt and alluvium in the drainages. Siltation can damage wetlands and aquatic habitats and bury vegetation or topsoil. Erosion control measures are recommended in the mitigation section of this report that would reduce this potential impact to below a level of significance.

4.1.2.2 Nonnative Weed Establishment

The loss of topsoil from grading or as a result of overland flow may increase the likelihood of exotic plant establishment in native communities. Nonnatives may outcompete native species, suppress native recruitment, alter community structure, degrade or eliminate habitat for native wildlife, and provide food and cover for undesirable nonnative wildlife (Bossard et al. 2000). The introduction of nonnative plant species into a community as a result of soil disturbance and erosion can increase the competition for resources such as water, minerals, and nutrients between native and nonnative species as well as alter the hydrology and sedimentation rates. In addition, if the nonnative plants form a continuous ground cover, an increase in the natural fire regime may occur, further eliminating any remaining native vegetation, and causing a type conversion to a disturbed/nonnative habitat type. As a means of avoiding and minimizing impacts due to nonnative species, mitigation measures should be implemented. The

establishment of nonnative weeds could affect endangered species associated with the surrounding habitat and could therefore be considered potentially significant if not mitigated.

4.1.2.3 Noise and Human Presence

Indirect and temporary impacts to wildlife movement due to construction noise, including presence of humans, would be expected during the construction phases of the proposed project. Noise impacts during the construction of the proposed Valley-Ivyglen transmission lines could be potentially significant. Noise can adversely affect wildlife by frightening or repelling individuals, masking communication, and impairing foraging success and predator detection. These effects are significant when they adversely affect the lifecycle of sensitive species, or constrain wildlife movement through a wildlife corridor; however, these impacts would not be considered significant if the activities were temporary in nature and of short duration.

Construction noise has the potential to impact the lifecycle of sensitive wildlife species identified onsite, or that have a high potential to occur onsite, including sage scrub nesters such as the coastal California gnatcatcher, Bell's sage sparrow, and Southern California rufous crowned sparrow or riparian-nesting birds such as the and least Bell's vireo (*Vireo bellii pusillus*) . The current threshold for significant noise impacts to these species is generally accepted to be 60 dBA (Leq 1 hour) during the breeding season. If construction were to occur outside of the breeding season for these species, noise impacts would be considered not significant. Indirect noise impacts to other nesting migratory birds, including raptors, if present, could be adverse, but not necessarily significant because of the lower sensitivity status of these species.

4.1.2.4 Lighting

If used, nighttime lighting entering adjacent wildlife habitat from construction could temporarily impact sensitive wildlife species and wildlife movement. These temporary impacts would likely be considered adverse, but not significant, unless listed bird species were found nesting within the area of the lighting impact. These impacts could be avoided if nighttime work did not occur during construction of the project.

4.1.2.5 Toxic Substances

Toxic substances can kill wildlife and plants or prevent new growth where soils or water are contaminated. Toxic substances can be released into the environment through several scenarios including planned or accidental releases, leaching from stored materials, pesticide or herbicide use, or fires, among others. No intentional releases of toxic substances are planned as part of the proposed project. Accidental releases could occur from several sources such as leaking equipment, or fuel spills during the course of the construction. The implementation of best management practices (BMPs) during construction will reduce the risk of leaks and fuel spills below a level of significance. A spill contingency plan, written by the construction contractor and approved prior to construction, should be in effect during all phases of construction activities.

4.1.2.6 Fugitive Dust

Trenching, grading, and vehicle operations associated with the construction of the proposed Valley-Ivyglen transmission line may produce fugitive dust. Excessive dust can damage or degrade vegetation by blocking leaf exposure to sunlight. Implementation of dust control measures, as part of BMPs during construction, will reduce fugitive dust emissions to below a level of significance. Dust control measures can include spraying work or driving areas with water and careful operation of equipment.

4.1.3 Cumulative Impacts

Cumulative impact analysis is subject to final project design.

5.0 AVOIDANCE AND MITIGATION MEASURES

Construction activity associated with the proposed project should incorporate BMPs in order to eliminate or minimize environmental impacts. From the biological survey data, potential impacts to coastal sage scrub habitat and populations of Munz's onion would be the largest impacts from the project. As such, steps should be taken to minimize or eliminate these impacts.

Some general environmentally sensitive construction practices that can be implemented to minimize biological impacts before or during construction are listed below.

- Flagging or otherwise marking sensitive plant species so construction crews will avoid direct or indirect impacts to these areas.
- Fencing all construction limits that are adjacent to sensitive biological resources. Temporary fencing should consist of t-posts with the orange barrier fence. Silt fences should be included when construction occurs adjacent to wetlands.
- Flagging kangaroo rat and burrowing owl burrows so as to avoid crushing individuals with heavy equipment.
- Avoid work in coastal California gnatcatcher occupied coastal sage scrub habitat during the breeding season (February-August).
- Avoid the fueling of equipment adjacent to drainages, tributaries, or wetlands and associated plant communities to preclude water quality impacts.
- "No fueling zones" should be designated on construction maps and should be situated a minimum distance of 10 meters from all drainages and wetlands. Contractor equipment shall be checked for leaks prior to operation near riparian areas in coordination with the project biologist.
- Implement appropriate BMPs at all times to maintain proper water quality and prevent additional/excessive soil erosion. Refer to the erosion control plan that will be prepared by the construction contractor. This plan should detail the proper use of hay bales, straw wattles, silt fences, siltation basins, or other devices necessary to stabilize the soil in denuded or graded areas during construction phases of the project.

- Conduct a briefing with all construction supervisors and personnel by a biologist familiar with the biological issues of the project.
- Install new poles, where possible, in areas that are not environmentally sensitive.
- Utilize existing access roads, pads, and previously developed or disturbed areas as much as feasible in order to avoid impacts to sensitive areas.
- In areas where impacts are unavoidable, limit impacts to driving on or parking on scrub instead of grading or otherwise removing vegetation.

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APPENDIX A

Plant Species Encountered

Appendix A
Plant Species Encountered

Family	Scientific Name	Common Name	Native/Exotic
Agavaceae (Liliaceae) Agave Family			
	Hesperoyucca whipplei	Lord's Candle Yucca	N
Aizoaceae Fig-Marigold			
	Mesembryanthemum nodiflorum	Little Ice Plant	N
	Sesuvium verrucosum	Sea-Purslane	E
Amaranthaceae Amaranth Family			
	Amaranthus albus	White Tumbleweed	N
Anacardiaceae Sumac Family			
	Malosma (Rhus) laurina	Laurel Sumac	N
	Rhus integrifolia	Lemonadeberry	N
	Rhus ovata	Sugar Bush	N
	Schinus molle	Brazilian Pepper Tree	E
	Toxicodendron diversilobum	Poison Oak	N
Apiaceae (Umbelliferae) Carrot Family			
	Apiastrum angustifolium	Mock Parsley	N
	Daucus pusillus	Wild Carrot	N
	Sanicula bipinattifida	Purple Sanicle	N
Asclepiadaceae (Asphodelaceae) Milkweed Family			
	Asclepius californicus	Wooly Milkweed	N
	Sarcostemma cynanchoides ssp. hartwegii	Climbing Milkweed	N
Asteraceae (Compositae) Sunflower Family			
	Ambrosia acanthicarpa	Sand Bur	N
	Ambrosia psilostachya	Western Ragweed	N
	Anthemis cotula	Mayweed	E
	Artemisia californica	California Sagebrush	N
	Artemisia douglasiana	Douglas' Mugwort	N
	Artemisia dracunculus	Tarragon	N
	Baccharis salicifolia	Mule Fat	N
	Baccharis sarothroides	Broom Baccharis	N

Family	Scientific Name	Common Name	Native/Exotic
	Bebbia juncea	Sweetbrush	N
	Centaurea melitensis	Tocalote	E
	Chaenactis artemisiifolia	Chaenactis	N
	Chaenactis glabriuscula	Yellow Pincushion	N
	Cnicus benedictus	Blessed Thistle	E
	Conyza canadensis	Horseweed	N
	Conyza coulteri	Fleabane	E
	Cotula coronopifolia	African Brass Buttons	E
	Encelia californica	California Encelia	N
	Encelia farinosa	Brittlebush	N
	Deinandra (Hemizonia) fasciculata	Fascicled Tarplant	N
	Deinandra kelloggii	Kellogg's Tarplant	N
	Deinandra paniculata	San Diego Tarplant	N
	Ericameria palmeri var. *pachylepis*	Box Spring Goldenbush	N
	Erigeron foliosus var. *foliosus*	Leafy Daisy	N
	Eriophyllum confertiflorum	Flat-Topped Goldern Yarrow	N
	Filago californica	Fluffweed	E
	Filago gallica	Narrow Leaf Filago	E
	Gnaphalium californicum	California Everlasting	N
	Gnaphalium luteo-album	Everlasting	E
	Gnaphalium palustre	Lowland Cudweed	N
	Gutierrezia californica	California Matchweed	N
	Hedypnois cretica	Hedypnois	E
	Helianthus annuus	Western Sunflower	N
	Helianthus gracilentis	Slender Sunflower	N
	Heterotheca grandiflora	Telegraph Weed	N
	Iva axillaris	Poverty Weed	N
	Lactuca serriola	Prickly Lettuce	E
	Lasthenia californica	Common Goldfields	N
	Layia glandulosa	White Layia	N
	Lepidospartum squamatum	Scale Broom	N
	Lessingia filaginifolia	San Diego Sand Aster	N
	Malacothrix saxatilis	Cliff Desert Dandelion	N
	Matricaria globifera	Cattle Bush	E
	Matricaria matricarioides	Pineapple Weed	E
	Osmadenia tenella	Osmadenia	N

Family	Scientific Name	Common Name	Native/Exotic
	Picris echioides	Bristly Ox-Tongue	E
	Pluchea sericea	Arrow Weed	N
	Rafinesquia sp.	Chickory	N
	Senecio flaccidus	Butterweed	N
	Silybum marianum	Milk Thistle	E
	Sonchus asper	Prickly Sow Thistle	E
	Sonchus oleraceus	Common Sow Thistle	E
	Stephanomeria virgata	San Diego Wreath Plant	N
	Stylocline gnaphalioides	Everlasting Nest Straw	N
	Tetradymia comosa	Cotton-Thorn	N
	Uropappus lindelyi	Silver Puffs	N
	Xanthium strumarium	Cocklebur	N
Boraginaceae Borage Family			
	Amsinckia menziesii var. *intermedia*	Yellow Fiddleneck	N
	Amsinckia retrorsa	Rigid Fiddleneck	N
	Cryptantha intermedia	Nievitas	N
	Heliotropium curassavicum	Salt Heliotrope	N
	Pectocarya linearis	Comb-Bur	N
	Pectocarya penicillata	Winged Pectocarya	N
	Pectocarya recurvata	Recurved Pectocarya	N
	Plagiobothrys canescens	Valley Popcorn Flower	N
	Plagiobothrys collinus ssp. *californicus*	California Popcorn Flower	
Brassicaceae (Cruciferae) Mustard Family			
	Athysanus pusillus	Dwarf Athysanus	N
	Brassica geniculata	Mediterranean Mustard	E
	Brassica rapa	Field Mustard	E
	Capsella bursa-pastoris	Shepard's Purse	E
	Hirschfeldia incana	Short-Pod Mustard	E
	Lepidium nitidum	Peppergrass	N
	Lepidium dictyotum var. *dictyotum*	Peppergrass	E
	Lepidium latifolium	Broad-Leaved Peppergrass	E
	Raphanus sativus	Wild Radish	E
	Rorippa nasturtium-aquaticum	Watercress	N
	Sisymbrium irio	London Rocket	E

Family	Scientific Name	Common Name	Native/Exotic
	Thysanocarpum laciniatus	Notch Fringepod	N
	Tropidocarpum gracile	Slender Dobie-Pod	N
Cactaceae Cactus Family			
	Cylindropuntia parryi	Cholla	N
	Opuntia ficus-indica	Mission Prickly Pear	E
	Opuntia littoralis	Coastal Prickly Pair	N
Caprifoliaceae Honeysuckle Family			
	Sambucus mexicana	Blue Elderberry	N
Caryophyllaceae Pink Family			
	Loeflingia squarrosa	California Loeflingia	N
	Spergularia bocconii	Boccone's Sandspurry	E
	Spergularia marina	San Spurry	N
	Stellaria sp.		
Chenopodiaceae Goosefoot Family			
	Atriplex argentea	Silverscale Saltbush	N
	Atriplex rosea	Tumbling Oracle	E
	Atriplex semibaccata	Australian Saltbush	E
	Atriplex suberecta	Peregrine Saltbush	E
	Atriplex triangularis	Spearscale	N
	Bassia hyssopifolia	Fivehook	E
	Chenopodium californicum	California Pigweed	N
	Chenopodium murale	Nettle-Leaved Goosefoot	E
	Chenopodium pumilio	Clammy Goosefoot	E
	Salsola tragus	Russian Thistle	E
Convolvulaceae Morning Glory Family			
	Calystegia macrostegia	Morning Glory	N
	Convolvulus arvensis	Field Bindweed	E
	Convolvulus simulans	Small-Flowered Bindweed	N CNPS list 4.2
	Cressa truxillensis	Alkali Weed	N
Cuscutaceae Dodder Family			
	Cuscuta californica	California Dodder	N
	Cuscuta salina	Salt Marsh Dodder	N

Family	Scientific Name	Common Name	Native/Exotic
Crassulaceae Stonecrop Family			
	Crassula connata	Sand Pygmyweed	N
	Dudleya lanceolata	Live-Forever	N
	Dudleya pulverulenta	Chalk Live-Forever	N
Cyperaceae Sedge Family			
	Carex sp.	Sedge	N
	Cyperus eragrostis	Tall Flatsedge	N
	Cyperus squarrosus	Bearded Flatsedge	N
	Eleocharis macrostachya	Common Spikerush	N
	Scirpus acutus	Hardstem Bulrush	N
	Scirpus californicus	California Bulrush	N
	Scirpus pungens	Spike Sedge	
Euphorbiaceae Spurge Family			
	Croton californicus	California Croton	N
	Chamaesyce albomarginata	Rattlesnake Weed	N
	Chamaesyce polycarpa	Ground Spurge	N
	Eremocarpus setigerus	Doveweed	N
	Ricinus communis	Castor Bean	E
	Stillingia linearifolia	Linear-Leaf Stillingia	N
Fabaceae (Leguminosae) Pea Family			
	Astragalus pomonensis	Pomona Rattleweed	N
	Lotus hamatus	Small-Flowered Lotus	N
	Lotus purshianus	Spanish Clover	N
	Lotus salsuginosus	Alkali Lotus	N
	Lotus scoparius ssp. *brevialatus*	Deerweed	N
	Lotus strigosus	Strigose Bird's Foot Treifoil	N
	Lupinus bicolor	Miniature Lotus	N
	Lupinus excubitus	Grape Soda Lupine	N
	Lupinus succulentus	Collar Lupine	N
	Medicago polymorpha	Bur-Clover	E
	Parkinsonia aculeata	Mexican Palo Verde	E
	Trifolium obtusiflorum	Clammy Clover	N
	Vicia benghalensis	Purple Vetch	E

Family	Scientific Name	Common Name	Native/Exotic
Fagaceae Oak Family			
	Quercus agrifolia var. *agrifolia*	Coast Live Oak	N
	Quercus berberidifolia	Scrub Oak	N
Frankeniaceae Frankenia Family			
	Frankenia salina	Alkali Heath	N
Gentianaceae Gentian Family			
	Centaurium venustum	Canchalagua	N
Geraniaceae Geranium Family			
	Erodium botrys	Long-Beak Filaree	E
	Erodium cicutarium	Red-Stem Filaree	E
	Erodium moschatum	Green-Stem Filaree	E
	Geranium carolinianum	Carolina Cranesbill	N
Hydrophyllaceae Waterleaf Family			
	Emmenanthe penduliflora var. *penduliflora*	Whispering Bells	N
	Eucrypta chrysanthemifolia	Common Euscrupta	N
	Phacelia cicutaria var. *hispida*		
	Nemophila sp.	Baby Blue Eyes	N
	Phacelia distans	Wild Heliotrope	N
	Phacelia minor	California Bluebells	N
	Phacelia ramosissima var.*latifolia*	Branching Phacelia	N
Juncaceae Rush Family			
	Juncus balticus	Baltic Rush	N
	Juncus bufonius	Toad Rush	N
	Juncus mexicanus	Mexican Rush	N
	Juncus rugulosus	Wrinkled Rush	N
Lamiaceae (Labiatae) Mint Family			
	Lamium ampexicaule	Henbit	E
	Marrubium vulgare	Horehound	E
	Robinia sp.	Black Locust	E
	Salvia apiana	Cleveland Sedge	N
	Salvia columbariae	Chia	N

Family	Scientific Name	Common Name	Native/Exotic
	Salvia mellifera	Black Sage	N
	Stachys ajugoides	Hedge Nettle	N
Liliaceae Lily Family			
	Calochortus splendens	Splendid Mariposa Lily	N
	Allium haematochiton	Red-Skin Onion	N
			N CNPS list 1B
	Allium munzii	**Munz's Onion**	**MSHCP Narrow Endemic Species**
	Chlorogalum parviflorum	Small Flower Soap Plant	N
	Muilla maritima	Common Muilla	N
Lythraceae Loosestrife Family			
	Lythrum californicum	California Loosestrife	N
	Lythrum hyssopifolia	Grass Poly	E
Malvaceae Mallow Family			
	Malacothamnus fasciculatus	Bush Mallow	N
	Malva parviflora	Cheeseweed	E
	Malvella leprosa	Alkali Mallow	N
Molluginaceae Carpet-weed Family			
	Glinus lotoides	Lotus Sweetjuice	E
Nyctaginaceae Four O'Clock Family			
	Boerhavia coccinea	Scarlet Spiderling	N
	Mirabilis laevis	Wishbone Plant	N
Onagraceae Evening Primrose Family			
	Camissonia bistorta	Southern Sun Cup	N
	Camissonia californica	False Mustard	N
	Camissonia hirtella	Hairy Sun Cup	N
	Clarkia purpurea	Purple Clarkia	N
	Epilobium canum	California Fuchsia	N
	Epilobium ciliatum	Willow Herb	N
Oxalidaceae wood sorrel family			
	Oxalis ces-caprae	Burmuda Buttercup	E

Family	Scientific Name	Common Name	Native/Exotic
Papaveraceae Poppy Family			
	Dicentra chrysantha	Goldern Ear Drops	N
	Eschscholzia caespitosa	Tufted Poppy	N
	Eschscholzia californica	California Poppy	N
	Romneya coulteri	Matilija Poppy	N
Plantaginaceae Plantain Family			
	Plantago coronopifolia	Cut-Leaf Plantain	E
	Plantago erecta	California Plantain	N
	Plantago lanceolata	Narrow-Leaf Plantain	E
	Plantago major	Plantain	E
Platanaceae Plane Tree Family			
	Platanus racemosa	Western Sycamore	N
Poaceae (Gramineae) Grass Family			
	Aristida purpurea	Three-Awned Grass	N
	Arundo donax	Giant Reed	E
	Avena fatua	Wild Oat	E
	Bromus catharticus	Rescue Grass	E
	Bromus diandrus	Ripgut Grass	E
	Bromus hordeaceus	Soft Chess	E
	Bromus madritensis ssp. *rubens*	Red Brome	E
	Cynodon dactylon	Bermuda Grass	E
	Distichlis spicata	Saltgrass	N
	Elymus condensatus	Giant Wild Rye	N
	Hordeum murinum	Mediterranean Barley	E
	Lolium multiflorum	Italian Ryegrass	E
	Lolium perenne	Perennial Ryegrass	E
	Nassella lepida	Foothill Needlegrass	N
	Nassella pulchra	Purple Needlegrass	N
	Phalaris paradoxa	Canary Grass	E
	Poa sp.		
	Polypogon monspeliensis	Rabbitfoot Grass	E
	Schismus barbatus	Mediterranean Grass	E
	Vulpia myuros	Fescue	E

Family	Scientific Name	Common Name	Native/Exotic
Polemoniaceae Phlox Family			
	Allophyllum glutinosum	Blue False Gilia	
	Eriastrum sapphirinum	Blue Wool-Star	
	Gilia diegensis	San Diego Gilia	
	Gilia spp.	Gilia	
	Gilia angelensis	Chaparral Gilia	
	Linanthus liniflorus	Flax-Flowered Gilia	
	Navarretia atractyloides	Skunkweed	
Polygonaceae Buckwheat Family			
	Chorizanthe coriacea	Leather Spineflower	N
	Chorizanthe staticoides	Turkish Rugging	N
	Eriogonum elongatum	Long-Stemmed Eriogonum	N
	Eriogonum fasciculatum var. *foliolosum*	Leafy Buckwheat	N
	Eriogonum gracile	Slender Buckwheat	N
	Polygonum aviculare	Prostrate Knotweed	E
	Polygonum arenastrum	Common Knotweed	E
	Rumex crispus	Curly Dock	E
	Rumex salicifolius	Willow-Leaved Dock	N
Portulaceae Purslane Family			
	Calandrinia sp.		N
	Calyptridium monandrum	Sand-Cress	N
	Claytonia sp.	Miners Lettuce	N
	Anagallis arvensis	Scarlet Pimpernel	E
	Dodecatheon clevelandii	Shooting Star	N
	Portulaca oleracea	Puselane	E
	Stellaria sp.	Chickweed	E
Primulaceae Primrose Family			
	Ceanothus crassifolius	Hoaryleaf Ceanothus	N
	Rhamnus crocea	Red-Berry	N
Ranunculaceae			
	Clematis pauciflora	Southern California Clematis	N
	Delphinium sp.	Larkspur	N

Family	Scientific Name	Common Name	Native/Exotic
Rosaceae Rose Family			
	Adenostoma fasciculatum	Chamise	N
	Prunus ilicifolia ssp. *ilicifolia*	Holy Leaved Cherry	N
	Rosa californica	California Wild Rose	N
Rubiaceae Madder Family			
	Galium angustifolium	Narrow-Leaf Bedstraw	N
	Galium aparine	Annual Bedstraw	N
Salicaceae Willow Family			
	Populus freemontii	Freemont Cottonwood	N
	Salix exigua	Sandbar Willow	N
	Salix gooddingii	Goodding's Willow	N
	Salix lasiolepis	Arroyo Willow	N
Scrophulariaceae Figwort Family			
	Antirrhinum coulterianum	Snapdragon	N
	Antirrhinum nuttallianum	Nuttall's Snapdragon	N
	Castilleja affinis	Coast Indian Paintbrush	N
	Castilleja exserta	Purple Owls Clover	N
	Collinsia concolor	Southern Chineese Houses	N
	Keckiella antirrhinoides	Chaparral Beard-Tongue	N
	Mimulus brevipes	Hillside Monkeyflower	N
	Mimulus cardinalis	Scarlet Monkeyflower	N
	Mimulus guttatus	Common-Monkey Flower	N
	Mimulus pilosus	False Monkeyflower	N
	Penstemon spectabilis	Beard-Tongue	N
	Scrophularia californica	Coast Figwort	N
	Veronica peregrina ssp. *xalapensis*	Speedwell	N
Selaginellaceae Spike Moss Family			
	Selaginella bigelovii	Bigelow's Spikemoss	N
Simaroubaceae Quassia Family			
	Ailanthus altissima	Tree Of Heaven	E
Solanaceae Nightshade Family			
	Datura wrightii	Jimson Weed	N

Family	Scientific Name	Common Name	Native/Exotic
	Nicotiana quadrivalvis	Indian Tobacco	E
	Solanum douglasii	White Nightshade	N
Saururaceae Lizard-Tail Family			
	Anemopsis californica	Yerba Mansa	N
Tamaricaceae Tamarisk Family			
	Tamarix ramosissima		E
Themidaceae Brodiaea Family			
	Bloomeria crocea	Golden Star	N
	Dichelostemma capitatum	Blue Dicks	N
	Muilla maritima	Common Muilla	N
Typhaceae Cattail Family			
	Typha sp.		N
Urticaceae Nettle Family			
	Urtica dioica	Stinging Nettle	N
	Urtica urens	Dwarf Nettle	N
Verbenaceae Vervain Family			
	Verbena lasiostachys	Weedy Verbena	N
Violoaceae Violet family			
	Viola pedunculata	Johnny Jump-Up	N

APPENDIX B
Sensitive Plant and Wildlife Species with Potential to Occur in the Proposed Valley-Ivyglen Transmission Line Project

Appendix B
Sensitive Plant and Wildlife Species with Potential to Occur in the Proposed Valley-Ivyglen Transmission Line Project

Scientific Name [1]	Common Name	Status [2]	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Plants					
Abronia villosa var aurita	Chaparral Sand-Verbena	1B.1	Jan-Sept	Chaparral, Coastal Scrub, Desert Dunes/sandy	High. CNDDB points occur in the study area.
Allium munzii	Munz's Onion	1B.1 FE ST MSHP Narrow Endemic	Mar-May	Chaparral, Cismontane, Woodland Coastal Scrub, Pinyon/Juniper Woodland, Valley and Foothill Grassland/ mesic, clay	High. Identified in the study area.
Ambrosia pumila	San Diego Ambrosia	1B.1 FE MSHP Narrow Endemic	May-Sept	Chaparral, Coastal Scrub, Valley and Foothill Grassland, Vernal Pools/often in disturbed areas	High. CNDDB record within the study area.
Arctostaphylos rainbowensis	Rainbow Manzanita	1B.1 MSHCP Covered Species	Jan-Feb	Chaparral	Low. No habitat present
Astragalus pachypus var. *jaegeri*	Jaeger's Milk-Vetch	1B.1 MSHCP Covered Species	Dec-Apr	Chaparral, Cismontane Woodland, Coastal Scrub, Valley and Foothill Grassland/sandy or rocky	Moderate. Suitable habitat exists.
Atriplex coronata var notatior	San Jacinto Valley Crownscale	1B.1 FE MSHCP Covered Species	Apr-Aug	Playas, Valley and Foothill Grassland (mesic),Vernal Pools/alkaline	High. Alkaline soils exist within the project area.
Atriplex coulteri	Coulter's Saltbush	1B.2 MSHCP Criteria Species	Mar-Oct	Coastal bluff Scrub, Coastal Dunes, Coastal Scrub, Valley and Foothill Grassland/alkaline or clay	High. Alkaline soils exist within the project area.

Scientific Name [1]	Common Name	Status [2]	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Atriplex pacifica	South Coast Saltscale	1B.2 MSHCP Covered Species	Mar-Oct	Coastal Bluff Scrub ,Coastal Dunes, Coastal Scrub, Playas	Moderate. Suitable habitat exists.
Atriplex parishii	Parish's Brittlescale	1B.1 MSHCP Criteria Species	Jun-Oct	Coastal Scrub, Playas, Vernal Pools	Moderate. Suitable habitat exists.
Atriplex serenana var. davidsonii	Davidson's Saltscale	1B.2 MSHCP Criteria Species	Apr-Oct	Coastal Bluff Scrub, Coastal Scrub/alkaline	High. Alkaline soils exist within the project area.
Brodiaea filifolia	Thread-Leaved Brodiaea	1B.1 FT SE MSHCP Criteria Species	Mar-Jun	Chaparral, Cismontane Woodland, Coastal Scrub, Playas, Valley and Foothill Grassland, Vernal Pools/often clay	High. CNDDB record within project area. Clay soils exist near Pacific Clay property.
Brodiaea orcuttii	Orcutt's Brodiaea	1B.1 MSHCP Covered Species	May-July	Closed Cone Coniferous Forest,Chaparral,Cismontane Woodland, Meadows, Valley and Foothill Grassland, Vernal Pools/mesic, clay, sometimes serpentine	Low. No habitat present
Calochortus plummerae	Plummer's Mariposa Lily	1B.2 MSHCP Covered Species	May-July	Chaparral, Cismontane Woodland, Coastal Scrub, Lower Montane Coniferous Forest, Valley and Foothill Grassland/granitic, rocky	Moderate. Suitable habitat exists.
Calochortus weedii var. intermedius	Intermediate Mariposa Lily	1B.2 MSHCP Covered Species	May-July	Chaparral, Coastal Scrub, Valley and Foothill Grassland/rocky	Moderate. Suitable habitat exists.
Centromadia pungens ssp. laevis	Smooth Tarplant	1B.1 MSHCP Criteria Species	Apr-Sept	Chenopod Scrub, Meadows, Playas, Riparian Woodland, Valley and Foothill Grassland	High. Identified by Entrix, Inc. within study area.

Scientific Name [1]	Common Name	Status [2]	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Chorizanthe parryi var. *parryi*	Parry's Spineflower	3.2 MSHCP Covered Species	Apr-Jun	Chaparral, Coastal Scrub/sandy or rocky openings	Moderate. Suitable habitat exists.
Chorizanthe polygonoides var. *longispina*	Long-Spined Spineflower	1B.2 MSHCP Covered Species	April-July	Chaparral, Coastal Scrub, Meadows, Valley and Foothill Grassland/often clay	High. Clay soils within study area.
Chorizanthe xanti var. leucotheca	White-Bracted Spineflower	1B.2 MSHCP Covered Species	Apr-Jun	Mojavean Desert Scrub Pinyon/Juniper Woodland	Low. No habitat present
Comarostaphylis diversifolia ssp. diversifolia	Summer Holly	1B.2 MSHCP Covered Species	Apr-Jun	Chaparral, Cismontane Woodland	Low. No habitat present
Cupressus forbesii	Tecate Cypress	1B.1 MSHCP Covered Species	n/a	Closed Cone Coniferous Forest, Chaparral	Low. No habitat present
Dodecahema leptoceras	Slender-Horned Spineflower	1B.1 FE SE MSHP Narrow Endemic	Apr-Jun	Chaparral, Cismontane Woodland, Coastal Scrub/(alluvian fan)/sandy	High. Alluvial fan present
Dudleya cymosa ssp. ovatifolia	Santa Monica Mountains Dudleya	1B.2 FT	Mar-Jun	Chaparral, Coastal Scrub	Moderate. Suitable habitat exists.
Dudleya multicaulis	Many-Stemmed Dudleya	1B.2 MSHP Narrow Endemic	Apr-Jul	Chaparral, Coastal Scrub, Valley and Foothill Grassland/often clay	High. Clay soils exist near Pacific Clay property.
Dudleya viscida	Sticky Dudleya	1B.2 MSHCP Covered Species	May-Jun	Coastal Bluff Scrub, Chaparral, Coastal Scrub/rocky	Low. No habitat present

Scientific Name [1]	Common Name	Status [2]	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Erodium macrophyllum	Round-Leaved Filaree	2.1 MSHCP Criteria Species	Mar-May	Cismontane Woodland, Valley and Foothill Grassland/clay	High. CNDDB record within project area.
Eryngium aristulatum var. *parishii*	San Diego Button-Celery	1B.1 FE SE MSHCP Covered Species	Apr-Jun	Coastal Scrub, Valley and Foothill Grassland, Vernal Pools/mesic	Low. No habitat present
Hordeum intercedens	Vernal Barley	3.2 MSHCP Covered Species	Mar-Jun	Coastal Dunes, Coastal Scrub, Valley and Foothill Grassland, Vernal Pools	Low. No habitat present
Horkelia cuneata ssp. *puberula*	Mesa Horkelia	1B.1	Feb-Sept	Chaparral, Cismontane Woodland, Coastal Scrub/sand, gravelly	Moderate. Suitable habitat exists.
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	1B.1 MSHCP Criteria Species	Feb-Jun	Marsh and Swamp (coastal salt),Playas, Vernal Pools	Low. No habitat present
Lepidium virginicum var. robinsonii	Robinson's Pepper-Grass	1B.2 MSHCP Covered Species	Jan-July	Chaparral, Coastal Scrub	Moderate.
Lepechinia cardiophylla	Heart-Leaved Pitcher Sage	1B.2 MSHCP Criteria Species	Apr-Jul	Closed Cone Coniferous Forest,Chaparral,Cismontane Woodland	Low. No habitat present
Limnanthes gracilis ssp. parishii	Parish's Meadowfoam	1B.2/ST MSHCP Covered Species	Apr-Jun	Lower Montane Coniferous Forest, Meadows, Vernal Pools/mesic	Low. No habitat present.
Monardella hypoleuca ssp. lanata	Felt-Leaved Monardella	1B.2	Jun-Aug	Chaparral, Cismontane Woodland	Low. No habitat present

Scientific Name [1]	Common Name	Status [2]	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Monardella macrantha ssp. hallii	Hall's Monardella	1B.3 MSHCP Covered Species	Jun-Aug	Broad leafed upland Forest, Chaparral, Cismontane Woodland, Lower Montane Coniferous Forest, Valley and Foothill Grassland	Low. No habitat present
Myosurus minimus ssp. apus	Little Mousetail	3.1 MSHCP Criteria Species	Mar-Jun	Valley and Foothill Grassland, Vernal Pools(alkaline)	Low. No habitat present
Navarretia fossalis	Spreading Navarretia	1B.1/FT MSHP Narrow Endemic	Apr-Jun	Chenopod Scrub, Marsh and Swamp(assorted shallow freshH20),Playas, Vernal Pools	Low. No habitat present
Navarretia prostrata	Prostrate Navarretia	1B.1 MSHCP Criteria Species	Apr-July	Coastal Scrub, Meadows, Valley and Foothill Grassland,(alkaline),Vernal Pools/mesic	Moderate. Mesic alkaline soils present within study area.
Nolina cismontanas	Chaparral Nolina	1B.2	May-July	Chaparral, Coastal Scrub/sandstone or gabbro	Low. No habitat present
Orcuttia californica	California Orcutt Grass	1B.1/FE/SE MSHP Narrow Endemic	Apr-Aug	Vernal Pools	Low. No habitat present
Phacelia suaveolens ssp. keckii	Santiago Peak Phacelia	1B.3 MSHCP Covered Species	May-Jun	Closed Cone Coniferous Forest, Chaparral	Low. No habitat present
Satureja chandleri	San Miguel Savory	1B.2 MSHP Narrow Endemic	Mar-Jul	Chaparral, Cismontane Woodland, Coastal Scrub, Riparian Woodland, Valley and Foothill Grassland/rocky, gabbroic or metavolcanic	Low. No habitat present
Senecio aphanactis	Rayless Ragwort	2.2	Jan-Apr	Chaparral, Cismontane Woodland, Coastal Scrub/alkaline	Moderate. Suitable habitat exists.
Scutellaria bolanderi ssp. austromontana	Southern Skullcap	1B.2 MSHCP Covered Species	Jun-Aug	Chaparral, Cismontane Woodland, ,Lower Montane Coniferous Forest /mesic	Low. No habitat present

Scientific Name [1]	Common Name	Status [2]	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Sibaropsis hammittii	Hammitt's Clay-Cress	1B.2	Mar-Apr	Chaparral, Valley and Foothill Grassland	Moderate. Suitable habitat exists.
Sidalcea neomexicana	Salt Spring Checkerbloom	2.2 MSHCP Covered Species	Mar-Jun	Chaparral, Coastal Scrub, ,Lower Montane Coniferous Forest, Mojave Desert Scrub ,Playas/alkaline, mesic	High. Alkaline soils within the study area
Sphaerocarpos drewei	Bottle Liverwort	1B.1	n/a	Chaparral, Coastal Scrub/opening, soil	Moderate. Suitable habitat exists.
Symphyotrichum defoliatum	San Bernardino Aster	1B.2	Jul-Nov	Cismontane Woodland, Coastal Scrub,Lower Montane Coniferous Forest, Meadows, Marsh and Swamp, Valley and Foothill Grassland(vernally mesic)/near ditches, streams, springs	Moderate. Suitable habitat exists.
Tetracoccus dioicus	Parry's Tetracoccus	1B.2 MSHCP Covered Species	Apr-May	Chaparral, Coastal Scrub	Moderate. Suitable habitat exists.
Tortula californica	Californica Screw Moss	1B.2	n/a	Chenopod Scrub ,Valley and Foothill Grassland/ sandy, soil	Low. No habitat present
Trichocoronis wrightii var. wrightii	Wright's Trichocoronis	1B.1 MSHP Narrow Endemic	May-Sept	Meadows, Marsh and Swamp Riparian Forest, Vernal Pools/alkaline	High. Alkaline soils within the study area

Federal Status

FE = Federal Endangered

FT = Federal Threatened

State/CDFG Status

SE = State Endangered

ST = State Threatened

*= Not included in the MSHCP

CNPS Status

1B= Rare or Endangered in California and elsewhere

2= Rare or Endangered in California, but more common elsewhere

3= Review List- Plant for which we need more information

4= Plants with limited Distribution- Watch List

.1= Seriously endangered in California

.2= Fairly endangered in California

.3= Not very endangered in California

County Status

MSHCP Covered Species = Covered species under County of Riverside Multiple Species Habitat Conservation Plan

MSHCP Narrow Endemic = Listed as a narrow endemic under County of Riverside Multiple Species Habitat Conservation Plan

Scientific Name [1]	Common Name	Status [2]	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Invertebrates				
Euphydryas editha quino	Quino Checkerspot Butterfly	FE, MSHCP Covered Species	Grasslands, sage scrub, chaparral with open areas	Moderate. Has potential to occur within study area.
Streptocephalus woottoni	Riverside Fairy Shrimp	FE, MSHCP Covered Species	Vernal pools or shallow ponded water within grassland, scrub, chaparral	Moderate. Has potential to occur within study area.
Amphibians				
Bufo californicus	Arroyo Toad	FE, CSC, MSHCP Covered Species	Open, sandy or gravelly, riparian breeding areas and adjacent upland habitat within approximately 1 kilometer of breeding areas	Moderate. Has potential to occur within study area.
Scaphiopus hammondii	Western Spadefoot Toad	CSC, MSHCP Covered Species	Ephemeral pools, grassland, scrub, chaparral	High. Present within study area.
Reptiles				
Aspidoscelis (Cnemidophorus) hyperythra beldingi	Orange-Throated Whiptail	CSC, MSHCP Covered Species	Open sage scrub, chaparral, sandy wash, woodland	High. Present within study area.
Aspidoscelis (Cnemidophorus) tigris stejnegeri	Coastal Western Whiptail	CNDDB: G5T3T4S2S3, MSHCP Covered Species	Dense chaparral and sage scrub, especially around sandy washes and streambeds	Moderate. Has potential to occur within study area.
Charina (Lichanura) trivirgata roseofusca	Coastal Rosy Boa	CNDDB: G4G5S3S4	Dry, rocky brushlands and arid habitats, prefers rock outcrops	Moderate. Has potential to occur within study area.
Clemmys marmorata pallida	Southwestern Pond Turtle	CSC, MSHCP Covered Species	Streams, ponds, upland within 400 meters of ponds	Moderate. Has potential to occur within study area in the vicinity of ponded water.

Scientific Name [1]	Common Name	Status [2]	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Coleonyx variegates abbottii	San Diego Banded Gecko	CNDDB: G5T3T4S2S3, MSHCP Covered Species	Coastal Sage scrub and chaparral, prefers rock outcrops	Moderate. Has potential to occur within study area.
Crotalus ruber ruber	Northern Red Diamond Rattlesnake	CSC, MSHCP Covered Species	Scrub, chaparral, riparian	Moderate. Has potential to occur within study area.
Lampropeltus zonata pulchra	San Diego Mountain Kingsnake	CSC, MSHCP Covered Species	Coniferous forest, pine-oak and riparian woodlands, chaparral, Manzanita, and coastal sage scrub; ranging from sea level to high elevations. Prefers areas with rotting logs and/or talus and rock outcrops.	Low. Little to no habitat present.
Lichanura trivirgata roseofusca	Coastal Rosy Boa	CNDDB G4-5, S3-4	Scrub and woodland habitats	High. Has potential to occur within study area.
Phrynosoma coronatum (blainvillei)	Coast (San Diego) Horned Lizard	CSC, MSHCP Covered Species	Sage scrub, chaparral, forests	High. Has potential to occur within study area.
Salvadora hexalepis virgultea	Coast Patch-Nosed Snake	CSC	Open habitats, brush	Moderate. Has potential to occur within study area.
Thamnophis hammondi	Two-Striped Garter Snake	CSC	Creeks and ponds, nearby upland habitats	Moderate. Has potential to occur within study area.
Birds				
Accipiter cooperii	Cooper's Hawk	CSC (nesting), MBTA, MSHCP Covered Species	Oak woodland, eucalyptus, mature riparian forest	High. Present within study area. Potential to nest in study area.
Accipiter striatus	Sharp-Shinned Hawk	CSC, MSHCP Covered Species	Grasslands, coastal sage scrub	Moderate. Has potential to occur within study area as a winter migrant.
Agelaius tricolor	Tri-Colored Blackbird (Nesting Colony)	FBCC, CSC, MBTA, MSHCP Covered Species	Marshes, fields	Moderate. Has potential to occur within study area.

Scientific Name [1]	Common Name	Status [2]	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Aimophila ruficeps canescens	Southern California Rufous-Crowned Sparrow	CSC, MBTA, MSHCP Covered Species	Open coastal sage scrub	High. Present within study area. Potential to nest in study area.
Amphispiza belli belli	Bell's Sage Sparrow	FBCC, CSC, MBTA, MSHCP Covered Species	Coastal sage scrub, chaparral	High. Present within study area. Potential to nest in study area.
Aquila chrysaetos	Golden Eagle	FBCC, BEPA, CSC, CFP, MBTA, MSHCP Covered Species	Grasslands, trees, cliffs, scrub	Moderate. Has potential to forage within study area.
Athene cunicularia	Burrowing Owl	FSC, FBCC, CSC (Burrow sites) , MBTA, MSHCP Covered Species	Open land, old ground squirrel burrows	Moderate. Has potential to occur within study area. Potential to nest in study area (i.e. ground squirrel burrows present).
Buteo regalis	Ferruginous Hawk	FBCC, CSC (wintering), MBTA, MSHCP Covered Species	Grasslands	Moderate. Uncommon winter visitor, could forage in study area.
Circus cyaneus	Northern Harrier	CSC (nesting), MBTA, MSHCP Covered Species (breeding)	Grasslands, marshes, open habitats	Moderate. Has potential to occur within study area. Potential nesting habitat present.
Elanus leucurus	White-Tailed Kite	CFP, MBTA, MSHCP Covered Species	Open habitats with perches	High. Present within study area. Potential nesting habitat present.
Empidonax traillii (extimus)	Willow Flycatcher (Southwestern)	FE (*extimus*), SE (all subspecies), MBTA, MSHCP Covered Species (*extimus*)	Well developed riparian woodland, willow meadows	Moderate. Has potential to occur within study area. Potential nesting habitat present. Potential to nest in study area.

Scientific Name [1]	Common Name	Status [2]	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Eremophila alpestris actia	California Horned Lark	CSC, MBTA, MSHCP Covered Species	Open habitats, bare dirt	Moderate. Has potential to occur within study area.
Falco peregrinus anatum	American Peregrine Falcon	FBCC, SE, MBTA, MSHCP Covered Species	Cliffs	Low. Has potential to occur within study area.
Haliaeetus leucocephalus	Bald Eagle	FT, SE, BEPA, MBTA, MSHCP Covered Species	Ocean shore, lake margins, and rivers.	Moderate. Has potential to occur within study area. Unlikely to nest in area.
Icteria virens	Yellow-Breasted Chat	CSC (nesting), MBTA, MSHCP Covered Species	Mature riparian woodland	Moderate. Has potential to occur within study area. Potential nesting habitat present.
Lanius ludovicianus	Loggerhead Shrike	FBCC, CSC (nesting), MBTA, MSHCP Covered Species	Open habitats, scrub	High. Has potential to occur within study area. Potential nesting habitat present.
Plegadis chihi	White-Faced Ibis	CSC, MBTA	Freshwater lagoons, rivers, lakes, wet agricultural fields, and occasionally salt marshes.	Moderate. Has potential to occur within study area.
Polioptila californica californica	Coastal California Gnatcatcher	FT, CSC, MBTA, MSHCP Covered Species	Coastal sage scrub	High. Present within study area. Potential to nest in study area.
Vireo bellii pusillus	Least Bell's Vireo	FE, SE, MBTA, MSHCP Covered Species	Riparian scrub and low woodland	Moderate. Has potential to occur within study area. Potential nesting habitat present.
Mammals				
Cheatodipus californicus femoralis	Dulzura California Pocket Mouse	CSC	Scrub/grassland interface, also woodlands and chaparral	Moderate. Has potential to occur within study area

Scientific Name [1]	Common Name	Status [2]	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Dipodomys stephensi	Stephens' Kangaroo Rat	ST/FE, MSHCP Covered Species	Grasslands with sparse to no shrub cover	Moderate. Has potential to occur within study area.
Eumops perotis	Western Mastiff Bat	CSC	Areas of chaparral or live oaks and in more arid, rocky regions.	Moderate. Has potential to occur within study area.
Lepus californica bennettii	San Diego Black-Tailed Jackrabbit	CSC, MSHCP Covered Species	Scrub/grassland interface	Moderate. Has potential to occur within study area.
Neotoma lepida intermedia	San Diego Desert Woodrat	CSC, MSHCP Covered Species	Cactus thickets, chaparral, sage scrub	High. Has potential to occur within study area.
Onychomys torridus ramona	Southern Grasshopper Mouse	CSC	Abandoned rodent burrows in low to moderate shrub cover	Moderate. Has potential to occur within study area.
Perognathus (Chaetodipus) fallax fallax	Northwestern San Diego Pocket Mouse	CSC, MSHCP Covered Species	Sage scrub, grassland, desert scrub	Moderate. Has potential to occur within study area.
Perognathus longimembris brevinasus	Los Angeles Pocket Mouse	FE, CSC, NE, MSHCP Covered Species	Narrow coastal plains.	Moderate. Has potential to occur within study area.
Corynorhinus (Plecotus) townsendii	(Townsend's) Big-Eared Bat	CSC	Cold caves and mines	Moderate. Has potential to occur within study area.

Federal Status

FE = Federal Endangered

FT = Federal Threatened

FBCC= Federal Birds of Conservation Concern

MBTA = Migratory Bird Treaty Act Species

BEPA=Bald and Golden Eagle Protection Act

State/CDFG Status

SE = State Endangered

ST = State Threatened

CFP= California Fully Protected Species

CSC = California Species of Concern

CNDDB = has a California Natural Diversity DataBase ranking only

County Status

MSHCP Covered Species = Coveredspecies under County of Riverside Multiple Species Habitat Conservation Plan

APPENDIX C
Western Riverside MSHCP Narrow Endemic and Criteria Area Plant Species

Allium munzii
Munz's onion
USFWS: Endangered; 10/13/98
CDFG: Threatened; 01/90
CNPS: List 1B.1 (California endemic)
MSHCP: Narrow Endemic Species

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Munz's onion is a bulb-forming perennial herb in the lily family (Liliaceae). This onion species is endemic to mesic clay soils of chaparral, valley and foothill grassland, cismontane woodland, pinon and juniper woodland, and coastal scrub habitats within southwestern Riverside County at elevations ranging from 300 to 1,070 meters (m) (984 to 3,510 feet [ft.]) (USFWS 1998, CNPS 2006). Munz' onion produces 10 to 36 white flowers which bloom between the months of March and May (CNPS 2005, Hickman 1993). They only flower during years with adequate rainfall and 3 to 5 years are required after seeds germination for plants to reach maturity and produce flowers. As much as 80 to 90 percent of the suitable habitat for this species has been adversely modified through extensive agriculture, urbanization, and clay mining (CDFG 1989).

This species is known from only 13 populations in Western Riverside County, including the Gavilan Hills, Harford Springs County Park, Paloma Valley, Skunk Hollow, Domenigoni Hills, Bachelor Mountain, and the Elsinore Mountains. It is estimated that the total number of plants is somewhere between 20,000 to 70,000 individuals. (USFWS 1998).

Ambrosia pumila
San Diego ambrosia
USFWS: Endangered 07/02/02
CDFG: None
CNPS:1B.1
MSHCP: Narrow Endemic Species

© 2003 Jim Rocks

San Diego ambrosia is an herbaceous perennial that belongs to the sunflower family (Asteraceae). This species occurs at elevations below 415 m (1,362 ft.) within chaparral, coastal scrub, valley and foothill grassland, and vernal pool habitats of Riverside and San Diego County. It may also be found in disturbed habitats such as fire breaks and roadways. In Riverside County, San Diego ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils (County of Riverside 2003). San Diego ambrosia is monoecious, the staminate and pistillate flowers occur in mixed clusters. Flowers are yellow or translucent and bloom from April to October. This species is known in California from fewer than 20 occurrences and is threatened by development, nonnative plants, road maintenance, and trampling (CNPS 2006).

Three populations of San Diego ambrosia have been mapped in Riverside County. One population is known from Skunk Hollow, a second from Nichols Road north of Lake Elsinore, and a third has been reported for the City of Riverside based on a 1941 collection (County of Riverside 2003).

Atriplex coronata* var. *notatior
San Jacinto Valley crownscale
USFWS: Endangered 10/13/98
CDFG: None
CNPS: 1B.1 (California endemic)
MSHCP: Criteria Area Species


© 2001 Barry Du Bois

San Jacinto Valley crownscale is an annual herb in the goosefoot family (Chenopodiaceae). It is endemic to western Riverside County and is restricted to the San Jacinto, Perris, Menifee, and Elsinore Valleys (County of Riverside 2003). San Jacinto Valley crownscale occurs primarily in floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and, to a lesser extent, alkali grasslands at elevations ranging from 380 to 500 m (1,247 to 1,640 ft.) (CNPS 2006, County of Riverside 2003). This bushy, low, grayish erect annual is monoecious the staminate and pistillate flowers occur in mixed clusters and may be found blooming from April to August (CNPS 2006). This species requires seasonal inundation or flooding for habitat rejuvenation and seed dispersal, although the duration and extent of flooding may vary substantially from year to year (USFWS 1998). San Jacinto Valley crownscale is threatened by flood control, agriculture, urbanization, vehicles, and pipeline construction (CNPS 2006).

In western Riverside County, San Jacinto Valley crownscale occurs as 11 loosely-defined populations that are primarily associated with Mystic Lake, the San Jacinto River, and Salt Creek tributary drainages. One small, isolated population has recently been discovered on Willows soils at Alberhill Creek near Lake Elsinore (County of Riverside 2003).

Atriplex parishii
Parish's brittlescale
USFWS: None
CDFG: None
CNPS 1B.1
MSHCP: Criteria Area Species

NO PHOTO AVAILABLE

Parish’s brittlescale is an annual herb belonging to the goosefoot family (Chenopodiaceae). Parish’s brittlescale is currently known only from the western Riverside County. Historically, this species was also known to occur within the counties of Los Angeles, Orange, Riverside, and San Bernardino (CNPS 2006). Habitats for this species include chenopod scrub, playas, and vernal pools at elevations ranging from

25 to 1,900 m (82 to 6,233 ft.). The obscure and small flowers bloom from June to October (CNPS 2006). Parish's brittlescale is threatened by development, agricultural conversion, and grazing (CNPS 2006).

Currently, Parish's brittlescale is known definitively from only three populations within the Salt Creek drainage west of Hemet (County of Riverside 2003). Appropriate habitat still remains at several historical sites such as on the flood plain along the San Jacinto River (last observed in 1974) (County of Riverside 2003)

Atriplex serenana var. davidsonii
Davidson's saltscale
USFWS: None
CDFG: None
CNPS 1B.2
MSHCP: Criteria Area Species

NO PHOTO AVAILABLE

Davidson's saltscale is an annual herb belonging to the goosefoot family (Chenopodiaceae). Davidson's saltbush is known to occur in cismontane southwestern California from Ventura County, western Orange County, and western Riverside County (CNPS 2006). Historically, this species has also been reported in coastal Santa Barbara, Los Angeles, Orange, and San Diego Counties (CNPS 2006, CNDDB 2005). In Riverside County, Davidson's saltbush is found in the Domino-Willows-Traver Soils series in association with the alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains at elevations ranging from 10 to 200 m (33 to 656 ft.) (CNPS 2006, County of Riverside 2003). Davidson's saltbush produces male and female flowers in separate clusters. The flowers, which bloom from April to October, are very small and obscure. In Riverside County, this species and its habitat are threatened by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood-plain dynamics, excessive flooding, channelization, off road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

Davidson's saltbush is known to occur in the upper Salt Creek drainage area west of Hemet and along the San Jacinto River floodplain from Mystic Lake south to the Ramona Expressway where it occurs in small, patchy populations. This species may also occur in the vicinity of the Nichols Road wetlands at Alberhill and Murrieta Hot Springs Area (County of Riverside 2003).

Brodiaea filifolia
Thread-leaved brodiaea
USFWS: Threatened 10/13/98
CDFG: Endangered 01/82
CNPS: 1B.1 (California endemic)
MSHCP: Criteria Area Species


© 2001 Salvatore Zimmitti

Thread-leaved brodiaea is a bulbiferous herb in the lily family (Liliaceae). This species is endemic to California and occurs only in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Thread-leaved brodiaea typically occurs on gentle hillsides, valleys, and floodplains in semi-alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native-nonnative grassland, and alkali grassland plant communities in association with clay, loamy sand, or alkaline silty-clay soils within elevations ranging from 25 to 860 m (82 to 2,821 ft.) (CNPS 2006, County of Riverside 2003). The leaves of this species are basal and often wither; its bell-shaped violet-red-purple flowers bloom from March to June (Hickman 1993, CNPS 2006). Thread-leaved brodiaea is seriously threatened by residential development, agriculture, grazing, and vehicles (CNPS 2006).

Twelve populations of thread-leaved brodiaea are known from western Riverside County along the San Jacinto River in Nuevo, Perris, and the San Jacinto Wildlife Area Salt Creek; on Salt Creek; on the Santa Rosa Plateau; and west of the Santa Rosa Plateau (County of Riverside 2003).

Centromadia pungens ssp. laevis
Smooth tarplant
USFWS: None
CDFG: None
CNPS 1B.1 (California endemic)
MSHCP: Criteria Area Species


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Smooth tarplant is an annual herb belonging to the sunflower family (Asteraceae). This species is endemic to southern California and is known to occur in Orange (extirpated), Riverside, San Bernardino, and San Diego counties. Smooth tarplant occurs in alkaline soils of chenopod scrub, playas, riparian woodland, meadows, seeps and valley, and foothill grassland habitats at elevations less than 480 m (1,574 ft.) (CNPS 2006). The majority of the populations in western Riverside County are associated with alkali vernal plains (County of Riverside 2003). Smooth tarplant produces large showy yellow flowers which bloom from April to September. In Riverside County, smooth tarplant and its habitat are threatened by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood-plain dynamics, excessive flooding, channelization, off-road vehicle activity, trampling by

cattle and sheep, weed abatement, fire suppression practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

Populations identified in western Riverside County include the San Jacinto Wildlife Area, the middle segment of the San Jacinto River, Salt Creek, and areas north of the Tres Cerritos Hills (County of Riverside 2003).

Dodecahema leptoceras
Slender-horned spineflower
USFWS: Endangered 09/28/87
CDFG: Endangered 01/82
CNPS: 1B.1 (California endemic)
MSHCP: Narrow Endemic Species


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Slender-horned spineflower is a small, spreading annual herb the buckwheat family (Polygonaceae). This species in endemic to California and occurs only in Los Angeles, Riverside, and San Bernardino counties (CNPS 2006). Slender-horned spineflower is known to occur in sandy or gravelly soils of chaparral, cismontane woodland, and coastal scrub (alluvial fan) habitats in elevations ranging from 200 to 760 m (656 to 2,493 ft.) (CNPS 2006). This species is also known to occur in association with moss, algae, and/or lichen crusts which occur on the soil surface (County of Riverside 2003). Slender-horned spineflower produces white to pink flowers which bloom from April through June. In Riverside County, this species is threatened by urbanization, off-road vehicle use, sand and gravel mining, trampling associated with recreation, flood control measures (*i.e.*, constriction of the floodplain, dams, etc.), and competition from nonnative plant species (County of Riverside 2003).

Slender-horned spineflower is known to occur within the following areas of western Riverside County: Temescal Wash at Indian Creek, upper San Jacinto River near Valle Vista and Hemet, central Bautista Creek, Arroyo Seco and Kolb Creek along the north flank of the Agua Tibia Mountains, and at Vail Lake in southern Riverside (County of Riverside 2003).

Dudleya multicaulis
Many-stemmed dudleya
USFWS: None
CDFG: None
CNPS: 1B.2 (California endemic)
MSHCP: Narrow Endemic Species


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Many-stemmed dudleya is a perennial herb in the stonecrop family (Crassulaceae). It is endemic to southwestern California and is known to occur only in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Many-stemmed dudleya is often associated with clay soils in barrens, rocky places, or thinly vegetated openings in chaparral, coastal sage scrub, and southern needlegrass grasslands at elevations

ranging from 15 to 790 m (49 to 2,591 ft. in elevation) (Munz 1974, CNPS 2006). Many-stemmed dudleya generally produces yellow flowers from April to July (CNPS 2006).

About 10 populations of many-stemmed dudleya have been reported in western Riverside County. These populations are known from the vicinity of Santa Ana Canyon, the Temescal Valley, Estelle Mountain and Lake Mathews, Alberhill near Lake Elsinore, Oak Flats in the San Mateo Wilderness, and at Vail Lake (County of Riverside 2003). A significant portion of the population has been conserved within the Lake Mathews-Estelle Mountain preserve. However, other populations are threatened by urban and transportation development, and landfill expansion (County of Riverside 2003).

Erodium macrophyllum
Round-leaved filaree
USFWS: None
CDFG: None
CNPS: 2.1
MSHCP: Criteria Area Species


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Round-leaved filaree is an herbaceous annual in the geranium family (Geraniaceae) that is found throughout California, southern Oregon and northern Baja California. It typically grows in heavy clay soils within valley and foothill grasslands and cismontane woodland habitats at elevations ranging from 15 to 1,200 m (49 to 3,937 ft.) (CNPS 2006). The white showy white flowers of this species bloom from March through May (Hickman 1993, CNPS 2006). Round leaved filaree is threatened by urbanization, vehicles, grazing, and nonnative plants (CNPS 2006).

Currently there are six populations of round-leaved filaree known to occur in Riverside County from the vicinities of Skinner Reservoir and Bachelor Mountain, Alice Mine, Temescal Wash (south of Highway 15, west of Alberhill), south of Lake Mathews and Big Oak Mountain (Vail Lake region) (CNDDB 2005).

Lasthenia glabrata ssp. coulteri
Coulter's goldfields
USFWS: None
CDFG: None
CNPS: 1B.1
MSHCP: Criteria Area Species


© 2003 Dean Wm. Taylor

Coulter's goldfields is a perennial herb in the sunflower family (Asteraceae) that is known to occur in the Counties of Orange, Riverside, Ventura, Santa Barbara, San Diego, and San Luis Obispo, as well as Santa Rosa Island and Baja California. Historically

populations of this species were known to occur in Kern, Los Angeles, and San Bernardino counties, however, today these populations are extirpated (CNPS 2006). Coulter's goldfields occur in vernal pools, playas, marshes and swamps at elevations ranging from 1 to 1,220 m (3.2 to 3,904 feet). In Riverside County, Coulter's goldfields occur primarily in floodplains dominated by alkali scrub, alkali playas, vernal pools, and, alkali grasslands associated with the Traver-Domino-Willows soils series (County of Riverside 2003). Coulter's goldfields produce orange-yellow ray flowers which may be seen blooming from February to June (CNPS 2006, Hickman 1993).This species and its habitat are threatened by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood-plain dynamics, excessive flooding, channelization, off-road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

Coulter's goldfields is known primarily from four areas in western Riverside County: Mystic Lake and the San Jacinto Wildlife Area; along the San Jacinto River from Lakeview, Nuevo, and Perris to Railroad Canyon; Salt Creek; and the alkali wetlands near Nichols Road in the City of Lake Elsinore. Small, or historic populations, have also been reported from Anza, the vicinity of Murrieta and Temecula, the lake bed of Lake Elsinore, and at Woodcrest near Mockingbird Canyon (County of Riverside 2003).

Lepechinia cardiophylla
Heart-leaved pitcher sage
USFWS: None
CDFG: None
CNPS: 1B.2
MSHCP: Criteria Area Species


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Heart-leaved pitcher sage is a shrub in the mint family (Lamiaceae) that is known to occur from the Santa Ana Mountains in Orange and Riverside counties, Iron Mountain in San Diego County and the coastal mountains of northern Baja California (County of Riverside 2003). This aromatic species is found in closed-cone coniferous forest chaparral and cismontane woodland habitats in elevations ranging form 520 to 1,370 m (1,706 to 4494 ft.) (CNPS 2006). Heart-leaved pitcher sage produces white to lavender tinged funnel shaped flowers that bloom from April through July (CNPS 2006, Hickman 1993). This species is potentially threatened by development, installation of transmission lines and fire-suppression activities (County of Riverside 2003).

In Riverside County this species is known to occur from the foothills of the Santa Ana Mountains northwest of Lake Elsinore, the hills southeast of Alberhill, Cleveland National Forest, and near the border of Orange and Riverside counties (County of Riverside 2003).

Myosurus minimus ssp. apus
little mousetail
USFWS: None
CDFG: None
CNPS: 3.1
MSHCP: Criteria Area Species


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Little mousetail is an annual herb in the buttercup family (Ranunculaceae) that is known to occur in Riverside County, San Bernardino County, San Diego County, Baja California and Oregon from sea level to 640 m (<2,100 ft.) elevation (CNPS 2006). In southern California, little mousetail occurs in association with vernal pools, as well as within the alkali vernal pools and alkali annual grassland components of alkali vernal plains (County of Riverside 2003). In Riverside County, the small greenish flowers of little mousetail bloom from April to May on the Santa Rosa Plateau and from March to April in the lowlands, but is often detectable most of the year unless disturbed (County of Riverside 2003).This species and its habitat are threatened in Riverside County by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood plain dynamics, excessive flooding, channelization, off-road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

Navarretia fossalis
USFWS: Threatened 10/13/98
CDFG: None
CNPS: 1B.1
MSHCP: Narrow Endemic Species


www.cnps.org

Spreading navarretia is an annual herb in the phlox family (Polemoniaceae). It is distributed from northwestern Los Angeles County and western Riverside County, south through coastal San Diego County, California to San Quintin in northwestern Baja California, Mexico, from near sea level to 1,300 m (<4,200 ft.). In western Riverside County, spreading navarretia has been found in relatively undisturbed and moderately disturbed vernal pools, within a larger vernal floodplains dominated by annual alkali grassland or alkali playa (County of Riverside 2003). This species produces a compact cluster of 15 to 50 small white flowers that bloom from April to June (CNPS 2006, Hickman 1993). Spreading navarretia and its habitat is threatened by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood-plain dynamics, excessive flooding, channelization, off-road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression

practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

Riverside County supports the largest remaining populations of spreading navarretia. Eleven (11) of the 12 populations in Riverside County are found in the alkali soils of two population complexes within the Upper Salt Creek drainage west of Hemet, and along the San Jacinto River extending from just west of Mystic Lake south to the Perris Valley Airport (County of Riverside 2003). Several vernal pools occupied by spreading navarretia south of the Ramona Expressway are on lands managed for conservation by the Riverside County Habitat Conservation Association (County of Riverside 2003).

Navarretia prostrata
Prostrate navarretia
USFWS: None
CDFG: None
CNPS: 1B.1 (California Endemic)
MSHCP: Criteria Area Species


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Prostrate navarretia is a California endemic annual herb species in the phlox family (Polemoniaceae) that is known to occur only from Alameda, Los Angeles, Merced, Monterey, Orange, Riverside, San Diego, San Luis Obispo, and possibly San Bernardino counties. It is found in mesic sites within valley and foothill grassland (alkaline), coastal scrub, vernal pools, meadows, and seeps at elevations ranging from 15 to 700 m (49 to 2,296 ft.) (CNPS 2006). Prostrate navarretia produces a cluster of blue to white flowers that bloom from April to July. Threats to this species include habitat degradation by nonnative plants and destruction and fragmentation from urban and agricultural development. In Riverside County this species is known from only two occurrences that are located in the Santa Rosa Plateau Ecological Reserve (CNDDB 2005).

Orcuttia californica
California orcutt grass
USFWS: Endangered 08/03/93
CDFG: Endangered 09/79
CNPS: 1B.1
MSHCP: Narrow Endemic Species


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California orcutt grass is an annual herb in the grass family (Poaceae). In California it is known to occur from Los Angeles, Riverside, San Diego, and Ventura counties. California orcutt grass is specific to vernal pool habitats found at elevations below 660 m (<2,165 ft.) (CNPS 2006). Its seeds can remain dormant for at least 3 to 4 years and possibly longer, germinating in the spring only after flooding of the vernal pools.

California orcutt grass blooms from April through August and appears to be strongly adapted to wind pollination (CNSP 2006, County of Riverside 2003). This species and its habitat is threatened by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood-plain dynamics, excessive flooding, off-road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

California orcutt grass is known to occur from three vernal pool sites in Riverside County: Upper Salt Creek west of Hemet, Skunk Hollow, and the Santa Rosa Plateau Historically, this species was also known from Salt Creek west of Menifee, and Murrieta Hot Springs (County of Riverside 2003).

Satureja chandleri
San Miguel savory
USFWS: None
CDFG: None
CNPS: 1B.2
MSHCP: Narrow Endemic Species


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San Miguel savory is a perennial herb in the mint family (Lamiaceae) that is known to occur from Orange, Riverside, San Diego counties, and Baja California. It is associated with rocky, gabbroic, and metavolcanic substrates in coastal sage scrub, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands at elevations ranging from 120 to 1,075 m (394 to 3,526 ft.) (CNPS 2006). The two-lipped white-to-lavender flowers of this species bloom from March to July (CNPS 2006, Hickman 1993). This species is threatened by agricultural conversion, urban development, and recreational activities (CNPS 2006).

Occurrences of San Miguel savory in Riverside County are known from Steele Mountain; in the vicinity of the Hogbacks; in the hills west of the Santa Rosa Plateau; on the Santa Rosa Plateau; in the Santa Ana Mountains: 1 mile west of Murrieta on Tenaja Road, 10 miles west of Murrieta (vicinity of Tenaja guard station), 3 miles south of Murrieta near De Luz Road, and 3 miles southwest of Murrieta near Warner's Ranch. A historic (1959) occurrence is known from St. Johns Canyon south of Hemet that needs verification (County of Riverside 2003).

Trichocoronis wrightii var. wrightii **NO PHOTO AVAILABLE**
Wright's trichocoronis
USFWS: None
CDFG: None
CNPS: 2.1
MSHCP: Narrow Endemic Species

Wright's trichocoronis is an annual herb in the sunflower family (Asteraceae) that has naturalized in California. It is currently only known to occur only in Merced and Riverside counties. Historically populations of this species were identified in Merced, Colusa, Sutter, and San Joaquin counties; however, today these populations are extirpated (CNPS 2006). In western Riverside County, Wright's trichocoronis is found in the alkali vernal plains and associated with alkali playa, alkali annual grassland, and alkali vernal pool habitats (County of Riverside 2003). Wright's trichocoronis produces white flower heads that bloom from May to September (CNPS 2006, Hickman 1993). This species and its habitat are threatened by habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and flood-plain dynamics, excessive flooding, channelization, off-road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression practices (including discing and plowing), and competition from alien plant species (County of Riverside 2003).

This species is known only from four locations along the San Jacinto River from the vicinity of the Ramona Expressway and San Jacinto Wildlife Area and along the northern shore of Mystic Lake. Only two locations on either side of the Ramona Expressway have been seen in recent years. This species may have once occurred at Salt Creek and possibly in the alkali wetlands near Nichols Road in the vicinity of Lake Elsinore (County of Riverside 2003).

Athene cunicularia hypugaea
Burrowing owl
USFWS: Species of Concern
CDFG: Species of Concern; Proposed
MSHCP: Criteria Area Species (MSHCP Burrowing Owl Survey Areas)

The western burrowing owl (*Athene cunicularia hypugaea*) is one of the smallest species of owls, about 9 inches length, with a short tail and very long legs, weighing only about 4 ounces. While most owls are nocturnal, burrowing owls are unique in that they are diurnal, meaning they are active both day and night, with most activity occurring at dusk and dawn. They are opportunistic feeders, mostly eating beetles, grasshoppers, and other large arthropods. Other prey animals include mice, rats, gophers, reptiles, and amphibians (Johnsgard 1988). Burrowing owls occupy grasslands, deserts sagebrush scrub, agricultural areas, earthen levees, berms, coastal uplands, and urban vacant lots,

as well as margins of airports, golf courses, and roads. They prefer low-growing vegetation and presence of existing ground-squirrel burrows (Haug *et al*. 1993).

Currently, the western burrowing owl is a federal and state species of special concern; however, a petition for its listing as threatened or endangered under the CESA was submitted to the CDFG in December 2003 by the Center for Biological Diversity. Although the petition was later found unwarranted by the California Fish and Game Commission, a new petition is expected to be submitted in 2006 and listing may be found warranted in light of new information.

The burrowing owl was formerly common in appropriate habitats throughout the state, excluding the humid northwest coastal forests and high mountains. Population numbers have markedly reduced in recent decades (County of Riverside 2003). The burrowing owl occurs within the central portion of western Riverside County; in the open lowlands (County of Riverside 2003). The primary threats to the species include the loss of natural habitat due to urban development and agriculture, and the expressed effects of insecticides and rodenticides within occupied habitat. The loss of burrowing mammal colonies (due to rodenticides or other means) and the crushing of burrows by heavy equipment and ground maintenance machinery remain problematical (County of Riverside 2003).

Specific instructions for burrowing owl surveys are included in the CDFG Burrowing Owl Survey and Monitoring Guidelines (CDFG 1993) and the Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (County of Riverside 2006).

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APPENDIX D

Animal Species Encountered

Family	Common Name	Scientific Name
	FISH	
Minnows and Relatives Cyprinidae	Common Carp	*Cyprinus carpio*
Livebearers Poeciliidae	Western Mosquitofish	*Gambusia affinis*
	AMPHIBIANS -AMPHIBIA	
Spadefoot Toads Pelobatidae	Western Spadefoot (larvae)	*Scaphiopus (Spea) hammondii*
True Toads Bufonidae	California Toad	*Bufo boreas halophilus*
Treefrogs and Relatives Hylidae	Pacific Treefrog (larvae)	*Hyla regilla*
True Frogs Ranidae	Bullfrog (larvae)	*Rana catesbeiana*
	REPTILES-REPTILIA	
Horned and Spiny Lizards Phrynosomatidae	Western Fence Lizard	*Sceloporus occidentalis*
	Side-blotched Lizard	*Uta stansburiana*
Colubrid Snakes Colubridae	California Kingsnake	*Lampropeltis getula californiae*
Vipers Viperidae	Southwestern Speckled Rattlesnake	*Crotalus mitchellii pyrrhus*
	BIRDS-AVES	
Ducks, Geese, and Swans Anatidae	Mallard	*Anas platyrhynchos*
New World Quail Odontophoridae	California Quail	*Callipepla californica*
Cormorants Phalacrocoracidae	Double-crested Cormorant	*Phalacrocorax auritus*
Herons, Bitterns, and Allies Aredeidae	Great Blue Heron	*Ardea herodias*
	Great Egret	*Ardea alba*
	Snowy Egret	*Egretta thula*
	Black-crowned Night-Heron	*Nycticorax nycticorax*
American Vultures Cathartidae	Turkey Vulture	*Cathartes aura*
Hawks, Kites, Eagles Accipitridae	White-tailed Kite	*Elanus leucurus*
	Sharp-shinned Hawk	*Accipiter striatus*
	Cooper's Hawk	*Accipiter cooperii*

Family	Common Name	Scientific Name
	Red-shouldered Hawk	*Buteo lineatus*
	Red-tailed Hawk	*Buteo jamaicensis*
Falcons Falconidae	American Kestrel	*Falco sparverius*
Rails, Gallinules, and Coots Rallidae	American Coot	*Fulica Americana*
Lapwings and Plovers Charadriidae	Killdeer	*Charadrius vociferus*
Stilts and Avocets Haematopodidae	Black-necked Stilt	*Himantopus mexicanus*
Sandpipers, Phalaropes, and Allies Scolopacidae	Greater Yellowlegs	*Tringa melanoleuca*
Skuas, Gulls, and Terns Laridae	California Gull	*Larus californicus*
Pigeons and Doves Columbidae	Rock Pigeon	*Columba livia*
	Mourning Dove	*Zenaida macroura*
Cuckoos, Roadrunners, and Anis Cuculidae	Greater Roadrunner	*Geococcyx californianus*
Swifts Apodidae	White-throated Swift	*Aeronautes saxatalis*
	Vaux's Swift	*Chaetura vauxi*
Hummingbirds Trochilidae	Black-chinned Hummingbird	*Archilochus alexandri*
	Anna's Hummingbird	*Calypte anna*
	Costa's Hummingbird	*Calypte costae*
Woodpeckers Picidae	Acorn Woodpecker	*Melanerpes formicivorus*
	Nuttall's Woodpecker	*Picoides nuttallii*
	Downy Woodpecker	*Picoides pubescens*
	Northern Flicker	*Colaptes auratus*
Tyrant flycatchers Tyrannidae	Olive-sided Flycatcher	*Contopus cooperi*
	Western Wood-pewee	*Contopus sordidulus*
	Black Phoebe	*Sayornis nigricans*
	Say's Phoebe	*Sayornis saya*
	Ash-throated Flycatcher	*Myiarchus cinerascens*
	Cassin's Kingbird	*Tyrannus vociferans*

Family	Common Name	Scientific Name
	Western Kingbird	*Tyrannus verticalis*
Vireos Vireonidae	Warbling Vireo	*Vireo gilvus*
Jays, Magpies and Crows Corvidae	Western Scrub-jay	*Aphelocoma californica*
	American Crow	*Corvus brachyrhynchos*
	Common Raven	*Corvus corax*
Larks Alaudidae	Horned Lark	*Eremophila alpestris*
Swallows Hirundinidae	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
	Cliff Swallow	*Petrochelidon pyrrhonota*
Swallows (cont.) Hirundinidae	Barn Swallow	*Hirundo rustica*
Long-tailed Tits and Bushtits Aegithalidae	Bushtit	*Psaltriparus minimus*
Wrens Troglodytidae	Rock Wren	*Salpinctes obsoletus*
	Bewick's Wren	*Thryomanes bewickii*
	House Wren	*Troglodytes aedon*
Old World Warblers and Gnatcatchers Sylviidae	Blue-gray Gnatcatcher	*Polioptila caerulea*
	Coastal California Gnatcatcher	*Polioptila californica californica*
Babblers Timaliidae	Wrentit	*Chamaea fasciata*
Mockingbirds and Thrashers Mimidae	Northern Mockingbird	*Mimus polyglottos*
Starlings Sturnidae	European Starling	*Sturnus vulgaris*
Wood-Warblers Parulidae	Orange-crowned Warbler	*Vermivora celata*
	Nashville Warbler	*Vermivora ruficapilla*
	Yellow Warbler	*Dendroica petechia*
	Yellow-rumped Warbler	*Dendroica coronata*
	Black-throated Gray Warbler	*Dendroica nigrescens*
	Common Yellowthroat	*Geothlypis trichas*
	Wilson's Warbler	*Wilsonia pusilla*

Family	Common Name	Scientific Name
Tanagers Thraupidae	Western Tanager	*Piranga ludoviciana*
Emberizines Emberizidae	Spotted Towhee	*Pipilo maculatus*
	California Towhee	*Pipilo crissalis*
	Southern California Rufous-crowned Sparrow	*Aimophila ruficeps canescens*
	Chipping Sparrow	*Spizella passerina*
	Lark Sparrow	*Chondestes grammacus*
	Bell's Sage Sparrow	*Amphispiza belli belli*
	Savannah Sparrow	*Passerculus sandwichensis*
	Song Sparrow	*Melospiza melodia*
	White-crowned Sparrow	*Zonotrichia leucophrys*
Cardinals, Saltators, and Allies Cardinalidae	Black-headed Grosbeak	*Pheucticus melanocephalus*
	Blue Grosbeak	*Passerina caerulea*
	Lazuli Bunting	*Passerina amoena*
Blackbirds and Allies Icteridae	Red-winged Blackbird	*Agelaius phoeniceus*
	Western Meadowlark	*Sturnella neglecta*
	Brewer's Blackbird	*Euphagus cyanocephalus*
	Great-tailed Grackle	*Quiscalus mexicanus*
	Hooded Oriole	*Icterus cucullatus*
	Bullock's Oriole	*Icterus bullockii*
Finches Fringillidae	House Finch	*Carpodacus mexicanus*
	Lesser Goldfinch	*Carduelis psaltria*
	Lawrence's Goldfinch	*Carduelis lawrencei*
	American Goldfinch	*Carduelis tristis*
Old World Sparrows Passeridae	House Sparrow	*Passer domesticus*
	MAMMALS-MAMMALIA	
Rabbits and Hares Leporidae	Desert Cottontail	*Sylvilagus audubonii*
Squirrels, Chipmunks, and Marmots Sciuridae	California Ground Squirrel	*Spermophilus beecheyi*
Pocket Gophers Geomyidae	Botta's Pocket Gopher (mounds)	*Thomomys bottae*

Family	Common Name	Scientific Name
Pocket Mice and Kangaroo Rats Heteromyidae	Kangaroo Rat (burrows)	*Dipodomys* sp. (likely *stephensi*)
Mice and Rats Muridae	Dusky-footed Woodrat (nest)	*Neotoma fuscipes*
	California Vole	*Microtus californicus*
Raccoons and Relatives Procyonidae	Raccoon (tracks)	*Procyon lotor*
Foxes, Wolves and Coyotes Canidae	Coyote (scat)	*Canis latrans*
Deer, Elk, and Relatives Cervidae	Black-tailed (Mule) Deer (tracks)	*Odocoileus hemionus*

Notes: Western Spadefoot larvae were observed in ephemeral pools on Pacific Clay Property
Bell's Sage Sparrows were observed on Segment K Southern California
Rufous-crowned Sparrows were observed on Segments K and M

APPENDIX E

Vegetation Communities

Appendix E
Vegetation Communities

Coastal Sage Scrub

In western Riverside County, coastal sage scrub is found both in large contiguous blocks scattered throughout the County as well as integrated with chaparral and grasslands. Coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs, and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the vegetation community; however, characteristic species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), California encelia (*Encelia californica*), and several species of sage (e.g., *Salvia mellifera*, *S. apiana*). Other common species include brittlebush (*Encelia farinosa*), lemonadeberry (*Rhus integrifolia*), sugarbush (*R. ovata*), yellow bush penstemon (*Keckiella antirrhinoides*), Mexican elderberry (*Sambucus mexicana*), sweetbush (*Bebbia juncea*), boxthorn (*Lycium* spp.), shore cactus (*Opuntia littoralis*), coastal cholla (*O. prolifera*), tall prickly-pear (*O. oricola*), and species of Dudleya (*Dudleya* spp).

A subcategory of this vegetation type includes Riversidean Sage Scrub. This habitat type is the most xeric expression of the coastal sage scrub habitat. It includes the species listed above however, occurs in much drier conditions.

Grasslands

Two general types of grasslands occur in western Riverside County: (1) non-native dominated, primarily annual grassland (non-native grassland); and (2) native dominated perennial grassland (valley and foothill grassland).

Valley and foothill grasslands typically contain the perennial bunch grasses purple needlegrass (*Nassella pulchra)* and foothill needlegrass (*N. lepida*). Lesser amounts of other native grasses, such as onion grass (*Melica* spp.), wild rye (*Leymus* spp.), Muhly (*Muhlenbergia* spp.), and cane bluestem (*Bothriochloa barbinodis*), may also be present. In addition, non-native grasses or forbs may be present to varying degrees. Native herbaceous plants commonly found within valley and foothill grasslands include yellow fiddleneck (*Amsinckia menziesii*), common calyptridium (*Calyptridium monardum*), suncup (*Camissonia* spp.), Chinese houses (*Collinsia heterophylla*), California poppy (*Eschscholzia californica*), tarweed (*Hemizonia* spp.), coast goldfields (*Lasthenia californica*), common tidy-tips (*Layia platyglossa*), lupine (*Lupinus* spp.), popcornflower (*Plagiobothrys* spp.), blue dicks (*Dichelostemma capitata*), muilla (*Muilla* spp.), blue-eyed grass (*Sisyrinchium bellum*), and dudleya (*Dudleya* spp.) (County of Riverside 2003).

Non-native grasslands are likely to be dominated by several species of grasses that have evolved to persist in concert with human agricultural practices: slender oat (*Avena barbata*), wild oat (*Avena fatua*), fox tail chess (*Bromus madritensis*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), barley (*Hordeum* spp.), rye grass (*Lolium*

multiflorum), English ryegrass (*Lolium perenne*), rat-tail fescue (*Vulpia myuros*), and Mediterranean schismus (*Schismus barbatus*) (County of Riverside 2003).

Agriculture

Agricultural lands within the MSHCP boundary include areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves/orchards (County of Riverside 2003).

Developed or Disturbed Land

Developed or disturbed lands consist of areas that have been disced, cleared, or otherwise altered. Developed lands may include roadways, existing buildings, and structures. Disturbed lands may include ornamental plantings for landscaping, escaped exotics, or ruderal vegetation dominated by non-native, weedy species such as mustard (*Brassica* sp.), fennel (*Foeniculum vulgare*), tocalote (*Centaurea melitensis*), and Russian thistle (*Salsola tragus*) (County of Riverside 2003).

Woodlands and Forest

Woodland and forest vegetation communities in western Riverside County are dominated by Engelmann oak (*Quercus engelmannii*), coast live oak (*Q. agrifolia*), canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizenii*), and black oak (*Q. kelloggii*) in the canopy, which may be continuous to intermittent or savannah-like. Four-needle pinyon (*Pinus quadrifolia*), single-leaf pinyon pine (*Pinus monophylla*) and California juniper (*Juniperus californica*) are the canopy species of peninsular juniper woodland which most commonly occur in Southern California, forming a scattered canopy from 3 to 15 m tall (County of Riverside 2003).

Many understory plants in oak woodlands are shade tolerant and include wild blackberry (*Rubus ursinus*), snowberry (*Symphoricarpos mollis*), California walnut (*Juglans californica*), California-lilac (*Ceanothus* spp.), lemonadeberry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), currant (*Ribes* spp.), toyon (*Heteromeles arbutifolia*), California bay (*Umbellularia californica*), Engelmann oak, manzanita (*Arctostaphylos* spp.), laurel sumac, poison-oak (*Toxicodendron diversilobum*) and herbaceous plants including bracken fern (*Pteridium aquilinum*), polypody fern (*Polypodium californicum*), fiesta flower (*Pholistorma auritum*) and miner's lettuce (*Claytonia perfoliata*). This vegetation community can occur on all aspects, on stream sides, canyon bottoms and flat to very steep topography (County of Riverside 2003).

Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub occurs throughout many drainages within western Riverside County. Riversidean alluvial fan sage scrub is a Mediterranean shrubland type that occurs in washes and on gently sloping alluvial fans. Alluvial scrub is made up predominantly of drought-deciduous soft-leaved shrubs, but with significant cover of larger perennial species typically found in chaparral. Scalebroom (*Lepidospartum squamatum*) generally is regarded as an indicator of Riversidean alluvial scrub. In addition to scalebroom, alluvial scrub typically is composed of white sage (*Salvia*

apiana), redberry (*Rhamnus crocea*), California buckwheat, Spanish bayonet (*Yucca whipplei*), California croton (*Croton californicus*), cholla (*Opuntia* spp.), tarragon (*Artemisia dracunculus*), yerba santa (*Eriodictyon* spp.), mule fat (*Baccharis sarothroides*), and mountain-mahogany (*Cercocarpus betuloides*). Annual species composition has not been studied but is probably similar to that found in understories of neighboring shrubland vegetation. Two sensitive annual species, slender-horned spineflower (*Dodecahema leptoceras*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) are endemic to alluvial scrub vegetation in western Riverside County (County of Riverside 2003).

Riparian Forest, Woodland, and Scrub

Riparian vegetation, including forest, woodland, and scrub subtypes, is distributed in waterways and drainages throughout much of western Riverside County. Depending on community type, a riparian community may be dominated by any of several trees/shrubs, including box elder (*Acer negundo*), bigleaf maple (*Acer macrophyllum*), coast live oak, white alder (*Alnus rhombifolia*), sycamore (*Platanus racemosa*), Fremont's cottonwood (*Populus fremontii*), California walnut, Mexican elderberry, wild grape (*Vitis girdiana*), giant reed (*Arundo donax*), mule fat (*Baccharis salicifolia*), tamarisk (*Tamarix* spp.), or any of several species of willow (*Salix* spp.). In addition, various understory herbs may be present, such as saltgrass (*Distichlis spicata*), wild cucumber (*Marah macrocarpus*), mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica dioica*), and poison-oak (County of Riverside 2003). Subcategories of these habitat types within the project area include Mule Fat Scrub, Southern Cottonwood/Willow Riparian, and Southern Sycamore/Alder Riparian Woodland.

Meadows and Marshes

Meadow and marsh vegetation communities occur in both flowing and still water. This vegetation community includes cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), sedges (*Carex* spp.), spike rushes, flatsedges (*Cyperus* spp.), smartweed (*Polygonum* spp.), watercress (*Rorippa* spp.), yerba mansa (*Anemopsis californica*) and also contains perennial and biennial herbs (e.g., *Oenothera* spp., *Polygonum* spp., *Lupinus* spp., *Potentilla* spp., and *Sidalcea* spp.) and grasses (e.g. *Agrostis* spp., Deschampsia spp., and *Muhlenbergia* spp.). Rooted aquatic plant species with floating stems and leaves also may be present, such as pennywort (*Hydrocotyle* spp.), water smartweed (*Polygonum amphibium*), pondweeds (*Potamogeton* spp.), and water-parsley (*Oenanthe sarmentosa*) (County of Riverside 2003).

Open Water

Open water habitat typically is unvegetated due to a lack of light penetration. However, open water may contain suspended organisms such as filamentous green algae, phytoplankton (including diatoms), and desmids. Floating plants such as duckweed (*Lemna* spp.), water buttercup (*Ranunculus aquatilis*), and mosquito fern (*Azolla filiculoides*) also may be present. Open water includes inland depressions, ponds, lakes, reservoirs, and stream channels containing standing water and often occur in conjunction with riparian and upland vegetation communities. Depth may vary from hundreds of feet to a few inches (County of Riverside 2003).

DRAFT
Burrowing Owl Survey Report for the Valley-Ivyglen Transmission Line Project Riverside County, California

Prepared for:
Southern California Edison Company

Prepared by:
AMEC Earth & Environmental, Inc.

December 2007
Project No. 6151000801-1005

SOUTHERN CALIFORNIA EDISON

amec





DRAFT

BURROWING OWL SURVEY REPORT FOR THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT RIVERSIDE COUNTY, CALIFORNIA

Prepared for:
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Rosemead, California 91770
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Submitted by:
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Contact: Matt Amalong

December 2007

Project No. 6151000801-1005

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ACRONYMS

AMEC	AMEC Earth & Environmental, Inc.
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CSC	California Special Concern Species
GPS	Geographic Positioning System
HCP	Habitat Conservation Plan
kV	kilovolt
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
ROW	right-of-Way
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Project:	Valley-Ivyglen Transmission Line Project
Project Proponent:	Southern California Edison
Principal Investigator:	Matt Amalong AMEC Earth & Environmental, Inc. 9210 Sky Park Court, Suite 200 San Diego, California 92123

This report presents results of focused surveys for the Burrowing Owl (*Athene cunicularia*) conducted by AMEC Earth & Environmental, Inc. (AMEC) at the request of Southern California Edison (SCE) for the proposed Valley-Ivyglen Transmission Line Project, which is designed to improve reliability and meet projected electrical load requirements in the western Riverside County area. The Valley-Ivyglen Transmission Line Project involves the construction of a new 115kV transmission line, which will connect the Valley Substation to the Ivyglen Substation. The Valley Substation is located in the southwest corner of an unincorporated area known as Romoland, adjacent to the City of Perris. The Ivyglen Substation is located in unincorporated Riverside County, south of the City of Corona, along Temescal Canyon Road and near Glen Ivy Hot Springs.

The project site is in the coverage area of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). A biological resources habitat suitability assessment was conducted in 2006 (AMEC 2006) to provide an overview-level assessment of the biological resources present and potentially present within the project area, evaluate consistency with the MSHCP, and determine what focused sensitive species surveys or wetland/jurisdictional waters delineations may be necessary for further project review. As a result of the habitat suitability assessment, it was determined that focused burrow and Burrowing Owl surveys were required for project consistency with the MSHCP.

During focused burrow surveys, numerous potential burrows (e.g., ground squirrel burrows, underneath boulders, and debris piles, etc.) were located along the alignment, but no individuals or sign were detected. Although no sign of Burrowing Owls were detected during surveys, since suitable habitat is present, pre-construction surveys are required within 30 days prior to ground disturbance to avoid direct take of Burrowing Owls. If owls are identified onsite, all mitigation measures identified herein would be applied prior to surface disturbance taking place.

1.0 INTRODUCTION

1.1 Project Description

The proposed project is located in western Riverside County (Figure 1); the proposed transmission line route traverses unincorporated Riverside County, the cities of Lake Elsinore, Corona, Perris, and Sun City, California (Figure 2). The proposed transmission line route traverses through portions of the following U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Alberhill, Lake Elsinore, and Romoland.

The Valley-Ivyglen Transmission Line Project involves the construction of a new 115 kilovolt (kV) transmission line which will connect the Valley Substation to the Ivyglen Substation (Figure 2). This transmission line will be installed in an existing right-of-way (ROW) where available, and new ROWs where none exist. The Valley Substation is located in the southwest corner of an unincorporated area known as Romoland, adjacent to the City of Perris. The Ivyglen Substation is located in the southeastern portion of unincorporated Corona, along Temescal Canyon Road and near Glen Ivy Hot Springs. The Ivyglen Substation is approximately 19 miles west of the Valley Substation.

The proposed project is in the coverage area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in western Riverside County.

1.2 Purpose and Need

According to the MSHCP, surveys for the Burrowing Owl are to be conducted as part of the environmental review process. The MSHCP Additional Surveys Needs and Procedures identify a specific Burrowing Owl survey area within the MSHCP Plan Area (Figure 3). The MSHCP also identifies species-specific objectives for the Burrowing Owl, namely Objectives 5 and 6 (below).

> **Objective 5:** Surveys for Burrowing Owl will be conducted as part of the project review process for public and private projects within the Burrowing Owl survey area where suitable habitat is present. The locations of this species determined as a result of survey efforts shall be conserved in accordance with procedures described within *Section 6.3.2* of the MSHCP and the guidance provided below:
>
> - Burrowing Owl surveys shall be conducted utilizing accepted protocols as follows. If Burrowing Owls are detected on the project site then the action(s) taken will be as follows:
> - If the site is within the Criteria Area, then at least 90 percent of the area with long-term conservation value will be included in the MSHCP Conservation Area. Otherwise:
>
> 1) If the site contains, or is part of an area supporting less than 35 acres of suitable habitat or the survey reveals that the site and the surrounding area supports fewer than three pairs of Burrowing Owls, then the on-site Burrowing Owls will be passively or actively relocated following accepted protocols.

Martin\sd06\bio\SCE\ivy_glen\mxd\focus_survey\burrowing_owl\rj_location.mxd

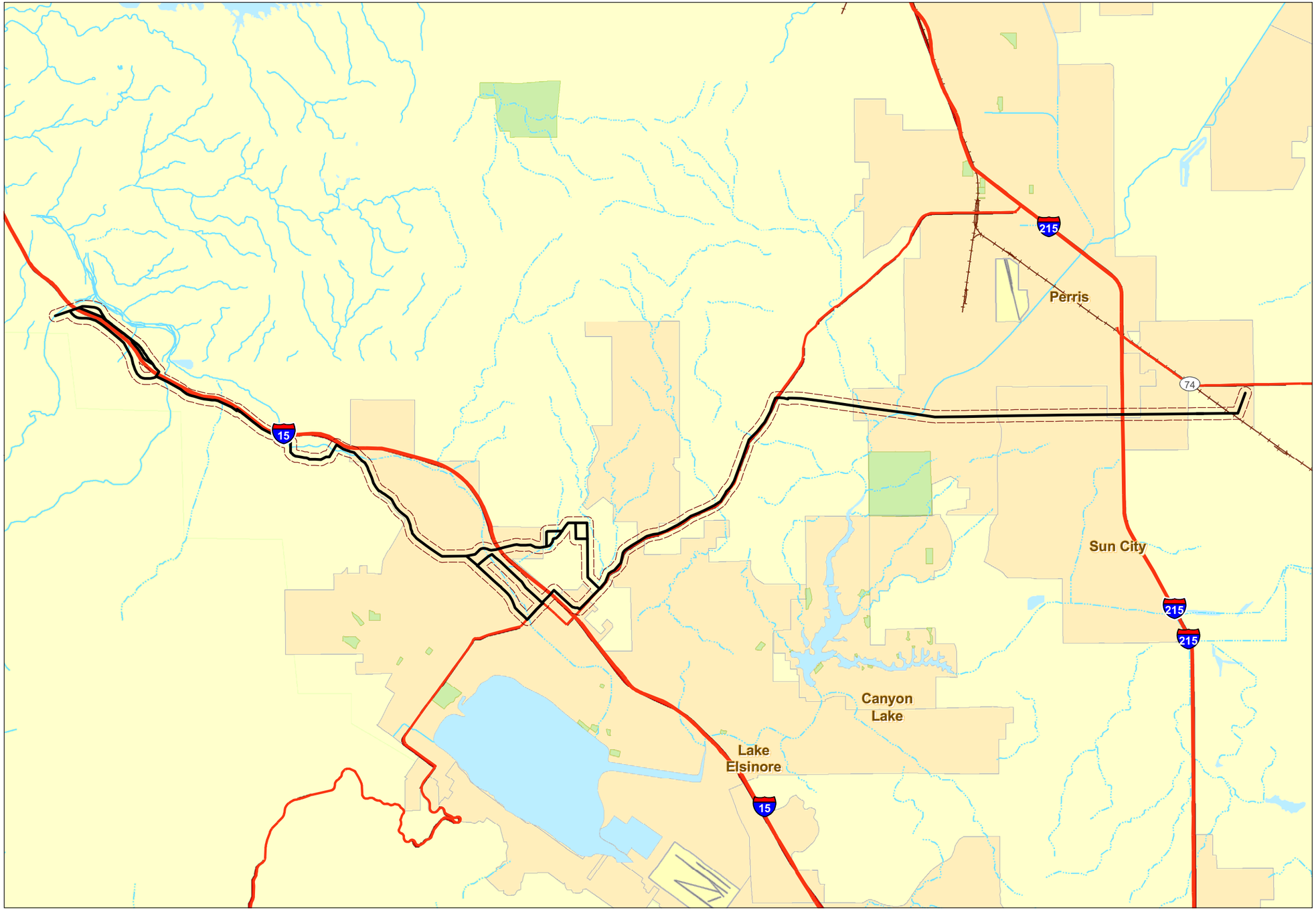
Date: 11/28/07

amec

Regional Project Location
Burrowing Owl Survey
Valley - Ivyglen Transmission Line Project, California

FIGURE

1



LEGEND

- Preferred Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

- Major Freeways
- Perennial Stream
- Intermittent Stream and Canal
- Parks and Forests
- Major Cities

LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focus_survey\burrowing_owl\
MSHCP_BUOW.mxd
Date: 11/29/2007

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

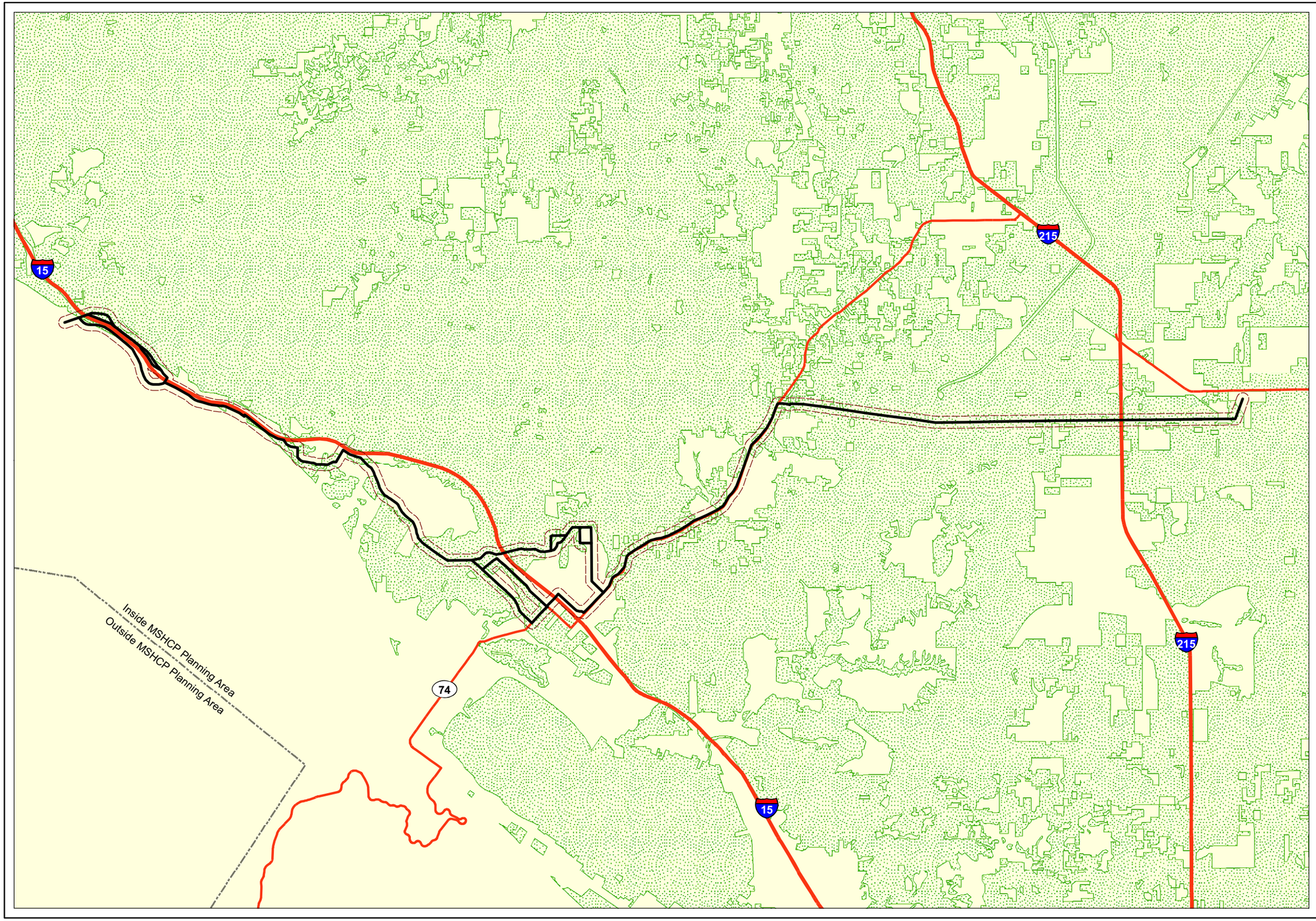
N

0 0.35 0.7 1.4 2.1 2.8 3.5
Miles

amec

Project Overview
Burrowing Owl Survey
Valley - Ivyglen Transmission Line Project, California

FIGURE
2



LEGEND

Riverside MSHCP

- MSHCP Boundary
- Burrowing Owl Survey Areas

Project Data

- Preferred Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

- Major Freeways

LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focus_survey\burrowing_owl\
MSHCP_BUOW.mxd
Date: 11/29/2007

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

0 0.35 0.7 1.4 2.1 2.8 3.5
Miles

County of Riverside Burrowing Owl Survey Areas
Burrowing Owl Survey
Valley - Ivyglen Transmission Line Project, California

FIGURE
3

2) If the site (including adjacent areas) supports three or more pairs of Burrowing Owls, supports greater than 35 acres of suitable habitat and is non-contiguous with MSHCP Conservation Area lands, at least 90 percent of the area with long-term conservation value and Burrowing Owl pairs will be conserved onsite.

Objective 6: Pre-construction presence/absence surveys for Burrowing Owl within the survey area where suitable habitat is present will be conducted for all Covered Activities through the life of the permit. Surveys will be conducted within 30 days prior to disturbance. Take of active nests will be avoided. Passive relocation (use of one way doors and collapse of burrows) will occur when owls are present outside the nesting season.

Although the MSHCP references the California Department of Fish and Game (CDFG) Staff Report (1995) which is based on the Burrowing Owl Consortium Guidelines (1993), the purpose of the following instructions is to clarify the methods necessary to obtain sufficient information to address consistency with (1) specific conservation requirements of the MSHCP as identified in species-specific Objective 5, and (2) ensure direct mortality of Burrowing Owls is avoided through implementation of species-specific Objective 6 (Pre-construction surveys). Note that surveys conducted to address Burrowing Owl species-specific Objective 5 are necessary during the project design phase while surveys to address species-specific Objective 6 are to be conducted just prior to project construction. Habitat assessments and Burrowing Owl surveys should be conducted by a biologist knowledgeable in Burrowing Owl habitat, ecology, and field identification of the species and Burrowing Owl sign.

1.3 Burrowing Owl Background

The Burrowing Owl (*Athene cunicularia*), a California Special Concern Species (CSC), uses a variety of natural and modified habitats for nesting and foraging typically characterized by low growing vegetation. Burrowing Owl habitat includes, but is not limited to, native and non-native grassland, interstitial grassland within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas.

Burrowing Owls typically use burrows made by fossorial (adapted for burrowing or digging) mammals, such as California Ground Squirrels (*Spermophilus beecheyi*) or Badgers (*Taxidea taxus*). They sometimes dig their own burrow. They often utilize manmade structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; or openings beneath cement or asphalt pavement. Burrowing Owls are often found within, under, or in close proximity to man-made structures.

2.0 METHODOLOGY

AMEC biologists knowledgeable in Burrowing Owl habitat, ecology, and field identification of the species and its sign conducted surveys on the dates shown in Table 1. The weather conditions during these surveys were conducive to observing owls outside their burrows and detecting Burrowing Owl sign (Table 1). Survey methodology adhered to the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*

(County of Riverside 2006). Data were collected using numerous techniques including hand-held Global Positioning System (GPS), standardized data forms, photographs, and aerial field maps. In addition to noting the presence/absence of burrowing owls at the site location during all survey dates, all species seen and heard were recorded along with any other animals on site (Appendix A).

Table 1. Survey Data

Date	Habitat Suitability Assessment	Focused Burrow Survey	Focused Burrowing Owl Survey	Weather Conditions			
				Time	Temp. (°F)	Last Rain Event	Wind (mph)
2006							
Apr 24	✓			n/a	n/a	n/a	n/a
Apr 25	✓			n/a	n/a	n/a	n/a
Apr 26	✓			n/a	n/a	n/a	n/a
Apr 27	✓			n/a	n/a	n/a	n/a
May 02	✓			n/a	n/a	n/a	n/a
May 03	✓			n/a	n/a	n/a	n/a
May 04	✓			n/a	n/a	n/a	n/a
2007							
May 03		✓		0830-1400	57-72	Apr 2007: 0.36 in.	5-10
May 15		✓		0800-1100	54-61	Apr 2007: 0.36 in.	0-5
Jun 11		✓		0800-1500	64-88	Apr 2007: 0.36 in.	0-5
Jun 13		✓		0730-1400	69-104	Apr 2007: 0.36 in.	0-5
Jun 14		✓		0600-1300	62-97	Apr 2007: 0.36 in.	0-3
Jul 10		✓	✓	0545-0800	64-65	Apr 2007: 0.36 in.	0-3
Jul 11			✓	0530-0800	68-69	Apr 2007: 0.36 in.	0-1
Jul 13			✓	0530-0800	57-69	Apr 2007: 0.36 in.	0-1
Jul 16			✓	0530-0800	61-72	Apr 2007: 0.36 in.	0-1
Jul 30			✓	0500-0800	70-76	Apr 2007: 0.36 in.	0-1
Jul 31			✓	0500-0800	68-70	Apr 2007: 0.36 in.	0-5
Aug 01			✓	0500-0800	69-75	Apr 2007: 0.36 in.	3-5
Aug 02			✓	0500-0800	69-75	Apr 2007: 0.36 in.	0-5

Surveyors:
Chet McGaugh; AMEC Wildlife Biologist
David Lee; AMEC Wildlife Biologist
John F. Green; AMEC Wildlife Biologist
Matt Amalong; AMEC Wildlife Biologist
Michael Wilcox; AMEC Wildlife Biologist
Nathan Moorhatch; AMEC Wildlife Biologist
Patrick McConnell; AMEC Botanist
Stephen J. Myers; AMEC Wildlife Biologist

2.1 Habitat Assessment

Habitat on each proposed transmission line route was assessed between April and May of 2006 for Burrowing Owl habitat suitability (Table 1). Areas with potential Burrowing Owl habitat, including grasslands, sage scrub, and other areas with sparse, low growing vegetation, were surveyed for potential owl burrows and owls. These surveys included ground squirrel and ground squirrel burrow surveys. Biologists walked areas of potential habitat while searching for Burrowing Owls; potential and active burrows; and owl sign such as feathers, pellets, and prey items. The survey area included a 150-meter (500-foot) buffer zone on each side of the 60-meter (200-foot) project corridor.

2.2 Focused Burrow Surveys

A focused burrow survey that included natural burrows or suitable man-made structures was conducted. A systematic survey for burrows, including owl sign, was conducted by walking through suitable habitat over the entire survey area (the proposed route and the 150-meter [500-foot] buffer zone). Pedestrian survey transects were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters (100 feet) and was reduced when necessary to account for differences in terrain, vegetation density, and ground surface visibility. The location of all suitable Burrowing Owl habitat, potential owl burrows, Burrowing Owl sign, and any owls observed were noted and mapped, including GPS coordinates.

2.3 Focused Burrowing Owl Surveys

Focused Burrowing Owl surveys, conducted in areas where suitable burrows were found during the focused burrow surveys, consisted of eight site visits covering all areas four times. Surveys were conducted in the morning 1 hour before sunrise to 2 hours after sunrise. Upon arrival at the survey area and prior to initiating the walking surveys, surveyors used binoculars and/or spotting scopes to scan all suitable habitat, location of mapped burrows, owl sign, and owls, including perch locations to ascertain owl presence. A survey for owls and owl sign was then conducted by walking through suitable habitat over the portions of the project route containing suitable burrows and within the adjacent 150-meter (500-foot) buffer zone. These pedestrian surveys followed transects spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters (100 feet) and was reduced to account for differences in terrain, vegetation density, and ground surface visibility. In areas where access was not obtained, the area adjacent to the project site was surveyed using binoculars and/or spotting scopes to determine if owls are present in areas adjacent to project route.

3.0 RESULTS

3.1 Habitat Assessment

The majority of the proposed route passes through disturbed coastal sage scrub, agricultural fields, and developed habitats. Portions of this route are also vegetated by riparian habitat.

There is a California Natural Diversity Database (CNDDB) point that indicates the historic use of Burrowing Owls along this route and adjacent to this route outside of the survey area boundary. Surveys for Burrowing Owls were conducted in these potential habitat areas intensively; however, no owls or their sign were observed. Other areas along this route which are occupied by open, nonnative grassland and agricultural fields may support this species. No Burrowing Owls or evidence of this species were identified during field investigations.

3.2 Focused Burrow Surveys

Numerous potential Burrowing Owl burrows (e.g., ground squirrel burrows, underneath boulders, etc.) were located along the alignments, but no individuals or sign were detected. Potential Burrowing Owl burrow locations along the proposed route are illustrated on Figures 4, 5, and 6.

3.3 Focused Burrowing Owl Surveys

No Burrowing Owls or Burrowing Owl sign were detected along the proposed transmission line route.

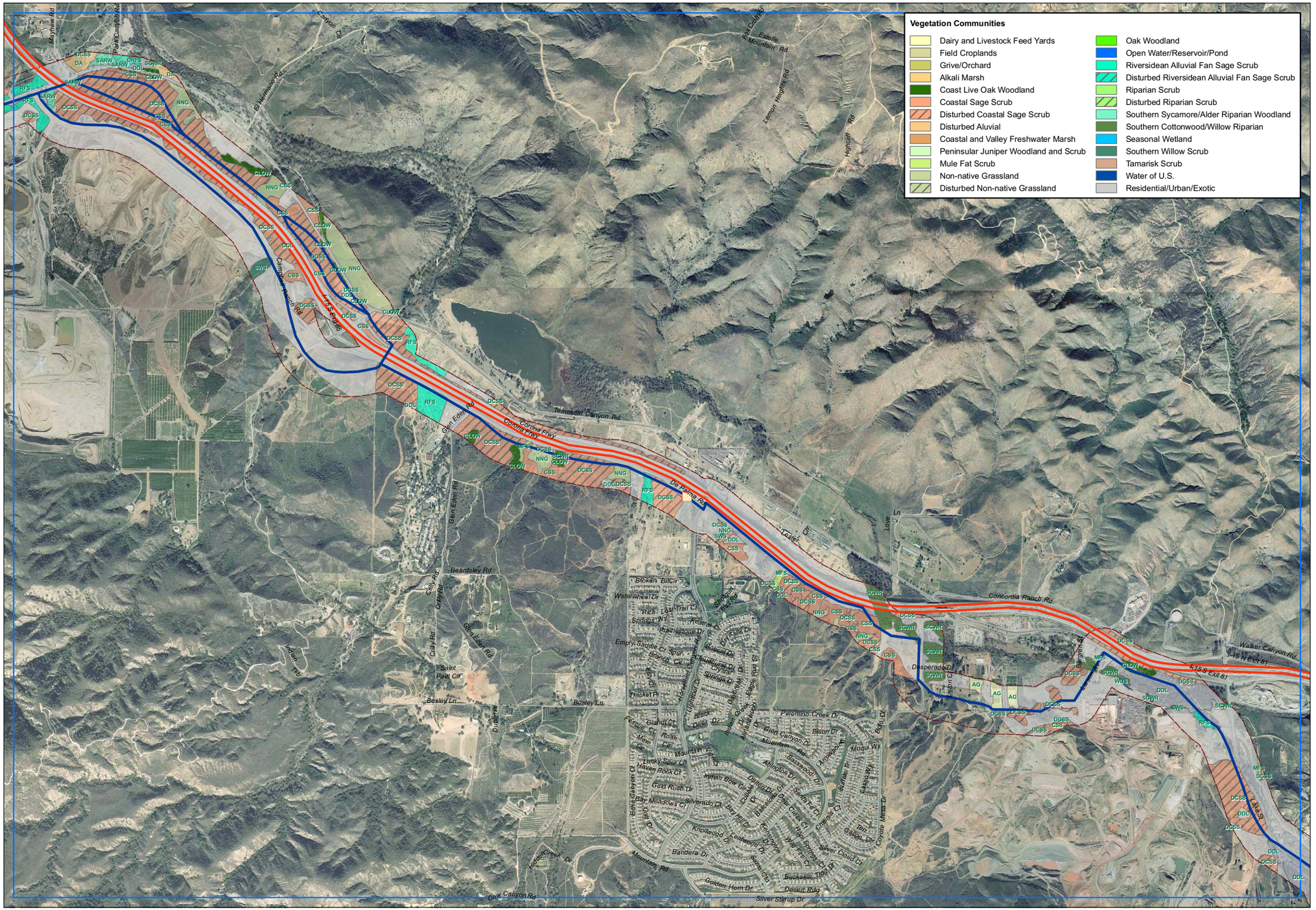
4.0 IMPACTS AND RECOMMENDATIONS

This section presents an impact analysis of the proposed Valley-Ivyglen Transmission Line project on Burrowing Owls. Because no Burrowing Owls or Burrowing Owl sign were identified during all phases of surveys, it is anticipated that impacts to Burrowing Owls will be less than significant.

Impacts are defined as activities that destroy, damage, alter, or otherwise affect biological resources in the project area. Direct biological impacts are defined as the removal and permanent loss of native plant communities functioning as wildlife habitat as well as losses of individual wildlife resulting from project implementation. Indirect impacts are those impacts resulting in decreased use of areas and/or adjacent habitats by wildlife due to increases in human-related activities. Cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for biological resources.

4.1 Thresholds for Determining Potential Significance

The primary sources for determining significance of impacts are determined by the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), Natural Communities Conservation Plan (NCCP), MSHCP, and local guidelines and ordinances. Guidelines under CEQA provide guidance and interpretation for implementing CEQA statutes. CEQA significance entails any impact to plant and wildlife species listed by federal or state



LEGEND

- Potential Burrowing Owl Burrow

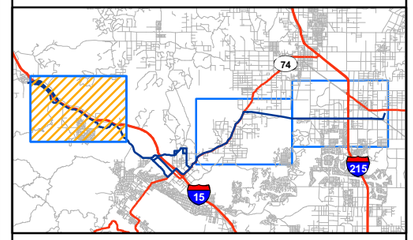
Project Data

- Proposed Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

- Major Freeways
- Roads
- Map Index

MAP INDEX



LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
AMEC - Survey Result
SCE - Alternatives, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focused_survey\survey_overview.mxd
Date: 10/16/2007

N

1 inch equals 2,000 feet

0 1,000 2,000 4,000

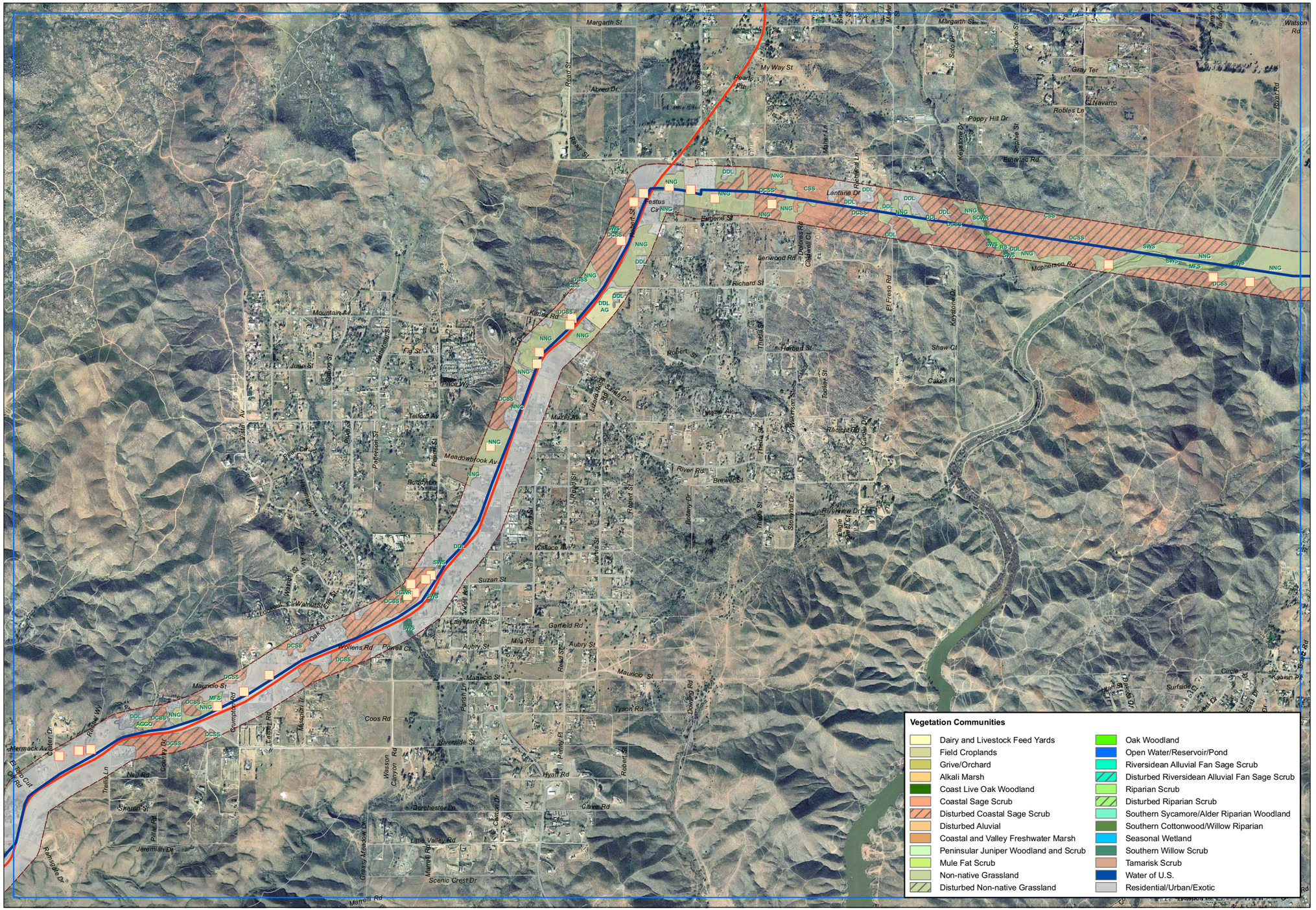
Feet

Potential Burrowing Owl Burrows
Burrowing Owl Survey
Valley - Ivyglen Transmission Line Project, California

amec

FIGURE

4



LEGEND

- Potential Burrowing Owl Burrow

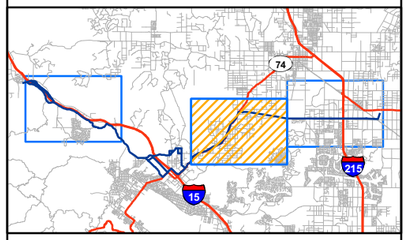
Project Data

- Proposed Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

- Major Freeways
- Roads
- Map Index

MAP INDEX



LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
AMEC - Survey Result
SCE - Alternatives, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focused_survey\survey_overview.mxd
Date: 10/16/2007

1 inch equals 2,000 feet

0 1,000 2,000 4,000

Feet

Potential Burrowing Owl Burrows
Burrowing Owl Survey
Valley - Ivyglen Transmission Line Project, California

FIGURE

5

Vegetation Communities

- Dairy and Livestock Feed Yards
- Field Croplands
- Grive/Orchard
- Alkali Marsh
- Coast Live Oak Woodland
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Disturbed Aluvial
- Coastal and Valley Freshwater Marsh
- Peninsular Juniper Woodland and Scrub
- Mule Fat Scrub
- Non-native Grassland
- Disturbed Non-native Grassland
- Oak Woodland
- Open Water/Reservoir/Pond
- Riversidean Alluvial Fan Sage Scrub
- Disturbed Riversidean Alluvial Fan Sage Scrub
- Riparian Scrub
- Disturbed Riparian Scrub
- Southern Sycamore/Alder Riparian Woodland
- Southern Cottonwood/Willow Riparian
- Seasonal Wetland
- Southern Willow Scrub
- Tamarisk Scrub
- Water of U.S.
- Residential/Urban/Exotic

LEGEND

- Potential Burrowing Owl Burrow

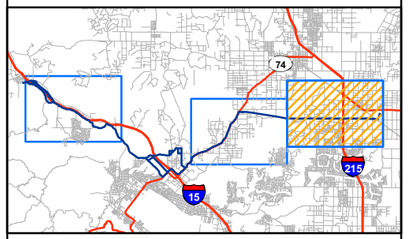
Project Data

- Proposed Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

- Major Freeways
- Roads
- Map Index

MAP INDEX



LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
AMEC - Survey Result
SCE - Alternatives, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focused_survey\survey_overview.mxd
Date: 10/16/2007

N

1 inch equals 2,000 feet

0 1,000 2,000 4,000

Feet

Potential Burrowing Owl Burrows
Burrowing Owl Survey
Valley - Ivyglen Transmission Line Project, California

FIGURE 6

agencies as threatened or endangered, or of regional or local significance. A significant impact to listed or sensitive species could be direct or indirect, with impacts to rare or sensitive habitats also considered significant.

In general, the proposed project could result in a potentially significant impact to the environment if it would:

- Substantially reduce the habitat of a plant or wildlife species
- Cause a plant or wildlife population to drop below self-sustaining levels
- Threaten to eliminate a plant or animal community
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special species in local or regional plans, policies, or regulations, or by the CDFG or U.S. Fish and Wildlife Service (USFWS)
- Reduce the number or restrict the range of an endangered, rare, or threatened species
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG, U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), or USFWS

4.2 Direct Impacts

If Burrowing Owls move into the project area, direct impacts to them as a result of project activities are possible. These possibilities include loss of foraging habitat and injury or mortality during project implementation. Mitigation measures, outlined below, would be implemented to reduce the impacts to a less than significant level.

4.3 Indirect Impacts

Because Burrowing Owls could be present in adjacent habitats, variable levels of indirect impact could occur as a result of project implementation. Examples of indirect impacts include, but are not limited to, the following:

- Human activity in areas not generally having this presence
- Attraction and/or facilitation of human-subsidized scavenger use
- Temporary and/or permanent increases in ambient night lighting as a result of the use of street, parking lot, and/or building lights
- Runoff of hazardous materials into adjacent areas
- Changes in surface drainage patterns following precipitation events
- Temporary and/or permanent noise increases
- Increases in fugitive dust that may accumulate on off-site plants and habitats
- The introduction of exotic or invasive plants or animals

Human activity can alter wildlife behavior patterns. Increases in noise can disrupt the normal behavior patterns of wildlife, sometimes resulting in displacement or attraction of some wildlife. Temporary and permanent changes in ambient night lighting can result in higher predation rates upon wildlife by nocturnal predators because of increased visibility during nighttime hours. Runoff of hazardous materials can adversely affect special status plants and animals, as well as more commonly occurring species. The water table in general, which supports off-site plants and animals, can similarly be affected. Surface drainage changes can alter the extent and health of native plant communities. Fugitive dust accumulation can result in a decreased reproductive viability of affected plants, sometimes resulting in the reduction of available food and cover sources for wildlife. The introduction of exotic and/or invasive species can likewise degrade off-site habitats, alter wildlife behavior patterns, and/or result in animal displacement, injury or mortality in affected areas.

4.4 Cumulative Impacts

Impacts associated with the project, when considered individually, may not be considered significant. However, when considered collectively with other past, present, and future projects in the region, these project impacts may contribute incrementally to the loss of Burrowing Owl habitat or individuals. If the project's incremental contribution were to be substantial, then the project could be considered to have significant cumulative impacts.

The project will not reduce the amount of available habitat for Burrowing Owls since the ROW has already been established. Providing mitigation measures described below to minimize the effects of project activities on Burrowing Owls will reduce the project's potential cumulative biological impacts to a level that is less than significant.

4.5 Avoidance and Mitigation Measures

All project sites containing burrows or suitable habitat, whether owls were found or not, require pre-construction surveys that shall be conducted within 30 days prior to ground disturbance to ensure no Burrowing Owls have established territories on site between initial surveys and receipt of all project approvals, and to avoid direct take of Burrowing Owls (MSHCP Species-Specific Objective 6). If Burrowing Owls are identified on site, all mitigation measures identified herein, as well as in proponents environmental assessment prepared for this project, would be applied prior to surface disturbance taking place.

4.5.1 Off-Site Habitat Compensation

The CDFG requires a minimum of 6.5 acres of foraging habitat permanently protected per pair or unpaired resident birds to offset the associated loss of foraging and burrowing habitat. The protected land would be located adjacent to occupied Burrowing Owl habitat in a locality acceptable to the CDFG.

An implementation agreement with a mitigation banking and land management entity (e.g., a third-party entity approved by CDFG) would be secured to acquire 6.5 acres of replacement Burrowing Owl habitat for each pair/unpaired bird, initially enhance, and manage the acquired land over the long term for the benefit of the species.

4.5.2 Habitat Restoration

All Burrowing Owl habitats temporarily disturbed through project activities will be revegetated and restored in accordance with project-specific Habitat Restoration mitigation measures.

4.5.3 Specific Impact Minimization Measures

1. Occupied burrows would not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

2. A buffer zone of 75 meters (250 feet) around an active nest should be established, appropriately flagged, and monitored by a qualified biologist.

3. When destruction of occupied burrows is unavoidable, existing unsuitable burrows would be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

4. If Burrowing Owls must be moved away from the disturbance area, passive relocation techniques would be used rather than actual avian trapping. At least one or more weeks would be necessary to accomplish this and allow the birds to acclimate to alternate burrows.

5. The project would provide funding for long-term management and monitoring of the protected lands acquired for Burrowing Owl impacts. This monitoring would include an annual report submittal to the CDFG.

5.0 REFERENCES

AMEC Earth and Environmental, Inc. 2006. Final Biological Technical Report for the Valley-Ivyglen Transmission Line Project, Riverside County, California. Volumes I and II.

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines.

California Department of Fish and Game. 1995. Staff Report on Burrowing Owl Mitigation.

County of Riverside. 2003. Western Riverside County Multiple Species Conservation Plan (MSHCP). Volume I: The Plan. Accessed online at: http://www.rctlma.org/mshcp/index.html.

County of Riverside. 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Environmental Programs Department.

Appendix A
Other Species Observed or Heard During Survey Effort

Appendix A
Other Species Observed or Heard During Survey Effort

This list includes all species of birds detected during Burrowing Owl surveys conducted in 2007. Nomenclature and taxonomy follow the American Ornithologists' Union (1998), and supplements through 2006.	
[1] California Special Concern species	
[2] Non-native species	
Anatidae	**Ducks, Geese, and Swans**
Mallard	*Anas platyrhynchos*
Odontophoridae	**New World Quail**
California Quail	*Callipepla californica*
Ardeidae	**Herons and Bitterns**
Great Blue Heron	*Ardea herodias*
Great Egret	*Ardea alba*
Black-crowned Night-Heron	*Nycticorax nycticorax*
Cathartidae	**Vultures**
Turkey Vulture	*Cathartes aura*
Acciptridae	**Hawks, Kites, and allies**
[1]Cooper's Hawk	*Accipiter cooperii*
Red-shouldered Hawk	*Buteo lineatus*
Red-tailed Hawk	*Buteo jamaicensis*
Falconidae	**Falcons and Caracaras**
American Kestrel	*Falco sparverius*
Charadriidae	**Plovers and allies**
Killdeer	*Charadrius vociferus*
Recurvirostridae	**Stilts and Avocets**
American Avocet	*Recurvirostra americana*

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[2] Non-native species	
Columbidae	**Pigeons and Doves**
[2]Rock Pigeon	*Columba livia*
[2]Eurasian Collared-Dove	*Streptopelia decaocto*
Mourning Dove	*Zenaida macroura*
Strigidae	**Typical Owls**
Great Horned Owl	*Bubo virginianus*
Caprimulgidae	**Goatsuckers**
Lesser Nighthawk	*Chordeiles acutipennis*
Apodidae	**Swifts**
[1]Vaux's Swift	*Chaetura vauxi*
Trochilidae	**Hummingbirds**
Anna's Hummingbird	*Calypte anna*
Costa's Hummingbird	*Calypte costae*
Picidae	**Woodpeckers**
Nuttall's Woodpecker	*Picoides nuttallii*
Tyrannidae	**Tyrant Flycatchers**
Black Phoebe	*Sayornis nigricans*
Say's Phoebe	*Sayornis saya*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Cassin's Kingbird	*Tyrannus vociferans*
Western Kingbird	*Tyrannus verticalis*

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[1] California Special Concern species	
[2] Non-native species	
Laniidae	**Shrikes**
[1]Loggerhead Shrike	*Lanius ludovicianus*
Corvidae	**Jays, Crows, and allies**
Western Scrub-Jay	*Aphelocoma californica*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*
Alaudidae	**Larks**
[1]California Horned Lark	*Eremophila alpestris actia*
Hirundinidae	**Swallows**
Tree Swallow	*Tachycineta bicolor*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Cliff Swallow	*Petrochelidon pyrrhonota*
Barn Swallow	*Hirundo rustica*
Aegithalidae	**Bushtits**
Bushtit	*Psaltriparus minimus*
Troglodytidae	**Wrens**
House Wren	*Troglodytes aedon*
Mimidae	**Mockingbirds and Thrashers**
Northern Mockingbird	*Mimus polyglottos*

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[1] California Special Concern species	
[2] Non-native species	
Sturnidae	**Starlings and Mynas**
[2]European Starling	*Sturnus vulgaris*
Parulidae	**Warblers**
[1]Yellow Warbler	*Dendroica petechia brewsteri*
Common Yellowthroat	*Geothlypis trichas*
Emberizidae	**Towhees and Sparrows**
[1]Spotted Towhee	*Pipilo maculatus*
California Towhee	*Pipilo crissalis*
Lark Sparrow	*Chondestes grammacus*
Savannah Sparrow	*Passerculus sandwichensis*
Song Sparrow	*Melospiza melodia*
Cardinalidae	**Cardinals, Grosbeaks, Buntings**
Blue Grosbeak	*Passerina caerulea*
Lazuli Bunting	*Passerina amoena*
Icteridae	**Blackbirds, Cowbirds, Grackles, Orioles**
Red-winged Blackbird	*Agelaius phoeniceus*
Western Meadowlark	*Sturnella neglecta*
Brewer's Blackbird	*Euphagus cyanocephalus*
Brown-headed Cowbird	*Molothrus ater*
Hooded Oriole	*Icterus cucullatus*
Bullock's Oriole	*Icterus bullockii*

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[1] California Special Concern species	
[2] Non-native species	
Fringillidae	**Finches and allies**
House Finch	*Carpodacus mexicanus*
Lesser Goldfinch	*Carduelis psaltria*
American Goldfinch	*Carduelis tristis*
Passeridae	**Old World Sparrows**
[2]House Sparrow	*Passer domesticus*

DRAFT

Focused Surveys for the Least Bell's Vireo, Southwestern Willow Fly Catcher, and Western Yellow-Billed Cuckoo for the Valley-Ivyglen Transmission Line Project

Prepared for:
Southern California Edison Company

Prepared by:
AMEC Earth & Environmental, Inc.

December 2007
Project No. 6151000801

SOUTHERN CALIFORNIA EDISON

amec





DRAFT

FOCUSED SURVEYS FOR THE LEAST BELL'S VIREO, SOUTHWESTERN WILLOW FLYCATCHER, AND WESTERN YELLOW-BILLED CUCKOO FOR THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT

Prepared for:
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(626) 695-2868
Contact: Kristi Boken

Submitted by:
AMEC Earth & Environmental, Inc.
9210 Sky Park Court, Suite 200
San Diego, California 92123
(858) 300-4300

December 2007

Project No. 6151000801

Stephen J. Myers
Wildlife Biologist/Ornithologist

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1.0 INTRODUCTION

This report presents the findings of focused surveys for the Least Bell's Vireo (*Vireo belli pusillus*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) at suitable habitat patches along the Valley-Ivyglen Transmission Line Project. These habitat patches occur along or near the San Jacinto River and Temescal Wash, in Riverside County, California (Figure 1). Areas considered to contain suitable habitat along the project route are:

San Jacinto River area: approximate UTM at east end of survey area: Zone 11, 477600E, 3733000N (NAD27); approximate UTM at west end of survey area: Zone 11, 476300E, 3732800N (NAD27); USGS 7.5 minute Romoland, Calif. and Lake Elsinore, Calif. quadrangles (Figure 2).

Nichols Road area (Temescal Wash): approximate UTM at north end of survey area: Zone 11, 466400E, 3730700N (NAD27); approximate UTM at south end of survey area: Zone 11, 466800E, 3729200N (NAD27); USGS 7.5 minute Lake Elsinore, Calif. quadrangle (Figure 3).

Lake Street area (Temescal Wash): approximate UTM at east end of survey area: Zone 11, 463600E, 3732000N (NAD27); approximate UTM at west end of survey area: Zone 11, 462700E, 3732300N (NAD27); USGS 7.5 minute Alberhill, Calif. quadrangle (Figure 4).

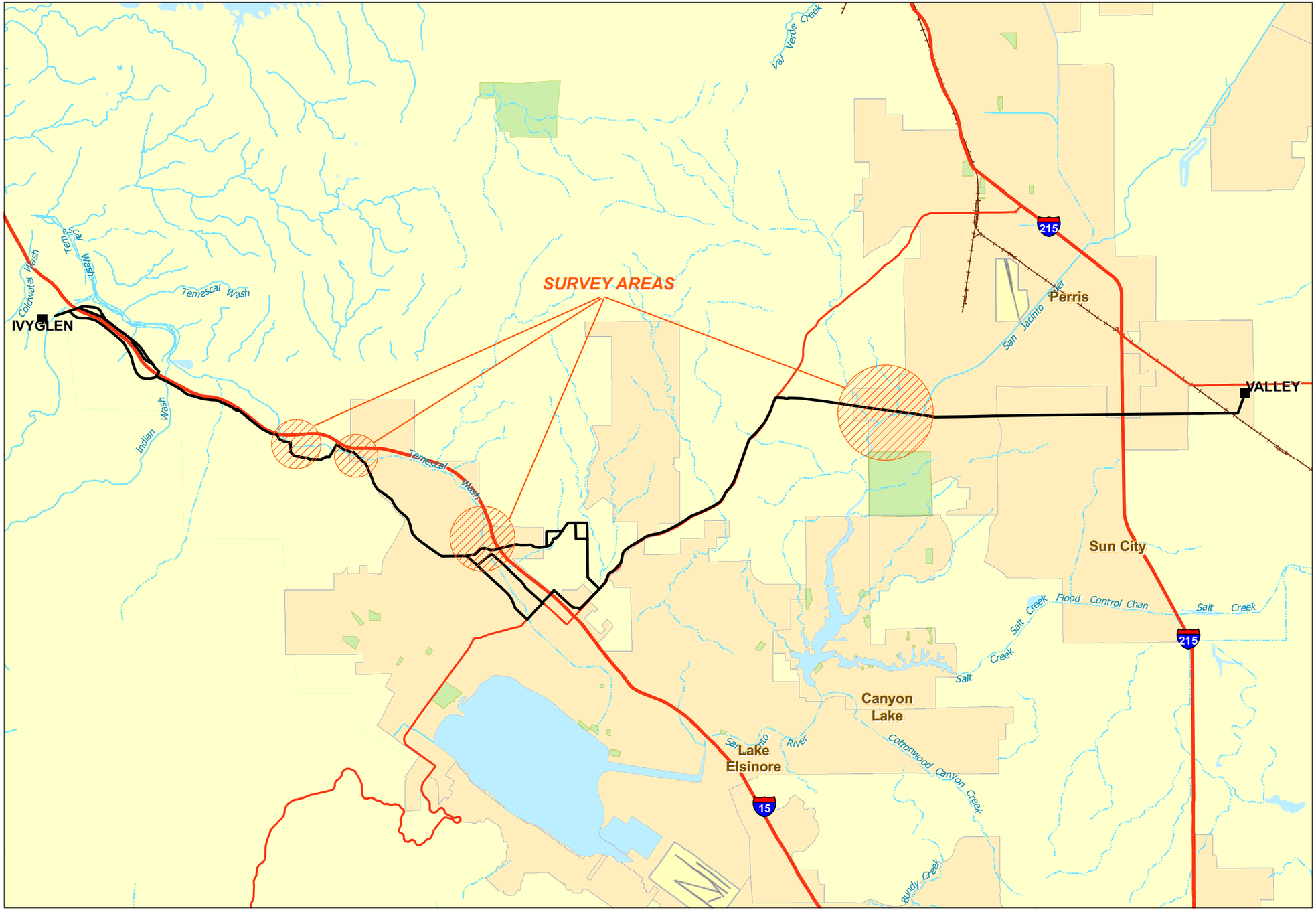
Hostettler Road area (Temescal Wash): approximate UTM at east end of survey area: Zone 11, 462700E, 3732300N (NAD27); approximate UTM at west end of survey area: Zone 11, 461400E, 3732600N (NAD27); USGS 7.5 minute Alberhill, Calif. quadrangle (Figure 5).

The proposed project is in the coverage area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in western Riverside County.

1.1 Project Description

The Valley-Ivyglen Transmission Line Project involves the construction of a new 115kV transmission line which will connect the Valley Substation to the Ivyglen Substation. This transmission line will be installed in an existing right-of-way (ROW) where available, and new ROWs where none exist. The Valley Substation is located in the southwest corner of an unincorporated area known as Romoland, adjacent to the city of Perris. The Ivyglen Substation is located in the southeastern portion of unincorporated Corona, along Temescal Canyon Road and near the Glen Ivy Hot Springs (Figure 2). The Ivyglen Substation is approximately 19 miles west of the Valley Substation.

The proposed project is located in western Riverside County; the proposed transmission line routes also traverse unincorporated Riverside County, and the cities of Lake Elsinore, Corona, Perris, Sun City, and Canyon Lake, California. The proposed routes also traverse through portions of the following U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Corona South, Lake Matthews, Steele Peak, Perris, Lakeview, Santiago Peak, Alberhill, Lake Elsinore, Romoland, Winchester, Sitton Peak, and Wildomar.



LEGEND

- Substations
- Preferred Route (Updated on 08/16/2007)

Base Data

- Major Freeways
- Perennial Stream
- Intermittent Stream and Canal
- Parks and Forests
- Major Cities

LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focus_survey\bird_survey\
prj_vicinity.mxd
Date: 12/04/2007

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

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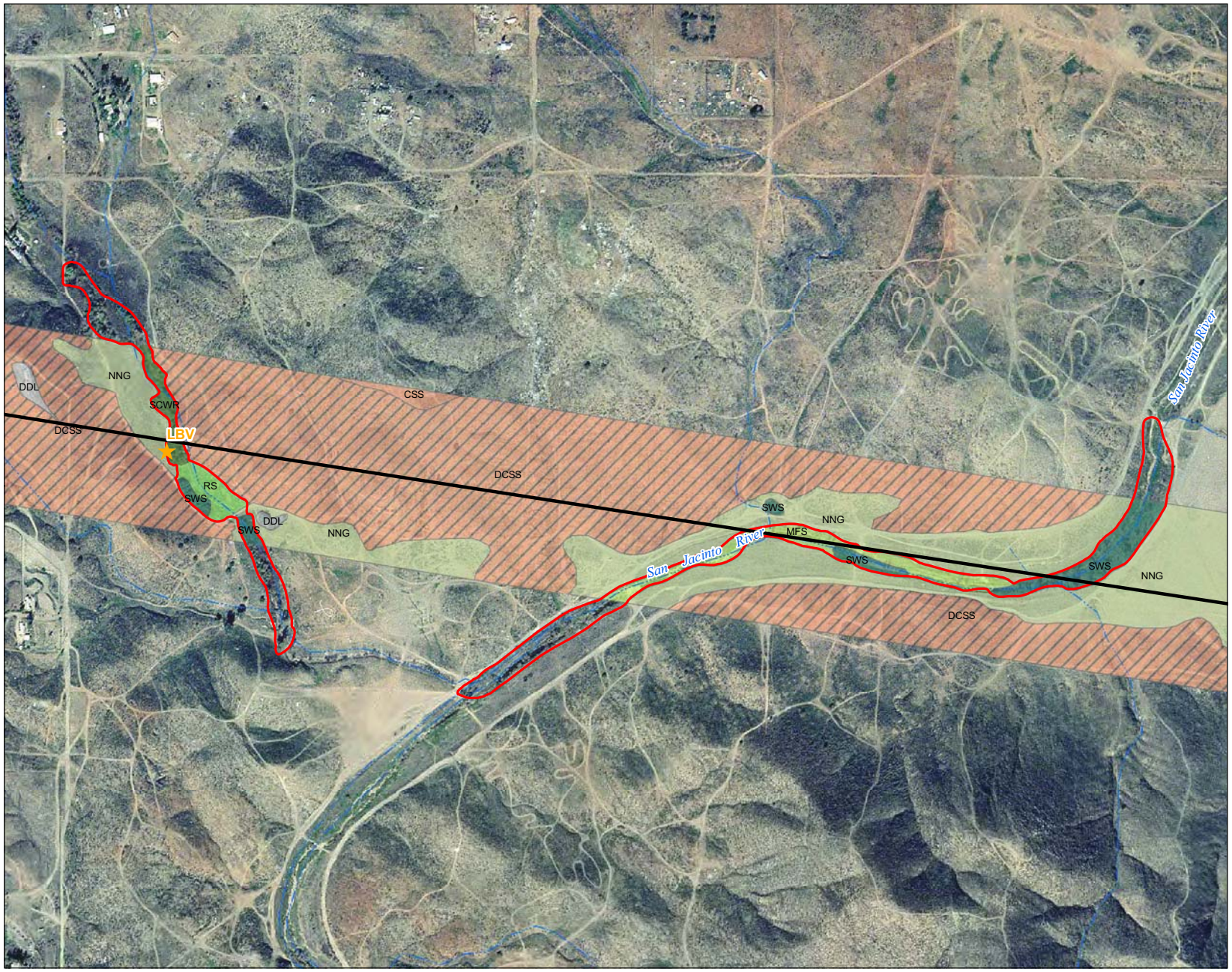
0 0.35 0.7 1.4 2.1 2.8 3.5
Miles

amec

Valley-Ivyglen Transmission Line Project
Least Bell's Vireo, Southwestern Willow Flycatcher, and Western Yellow-billed Cuckoo Surveys
Project Location and Vicinity Map

FIGURE 1



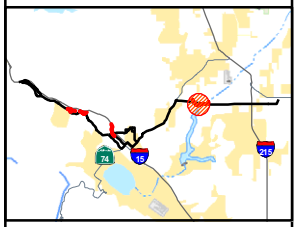
Legend

- Least Bell's Vireo (LBV)
- Proposed Route (Updated on 08/16/2007)
- Stream/River
- Survey Area

Vegetation Communities

CSS - Coastal Sage Scrub
DCSS - Disturbed Coastal Sage Scrub
DDL - Residential/Urban/Exotic
MFS - Mule Fat Scrub
NNG - Non-native Grassland
RS - Riparian Scrub
SCWR - Southern Cottonwood /Willow Riparian
SWS - Southern Willow Scrub

Map Location



Map Notes

Data Source:
Species - AMEC 2007
Survey Area - AMEC 2007
Vegetation - AMEC 2006
Aerial - AirphotoUSA 2006

Projection
State Plane, Calfironia 406, NAD 83, Feet
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Date: 12/04/2007

N

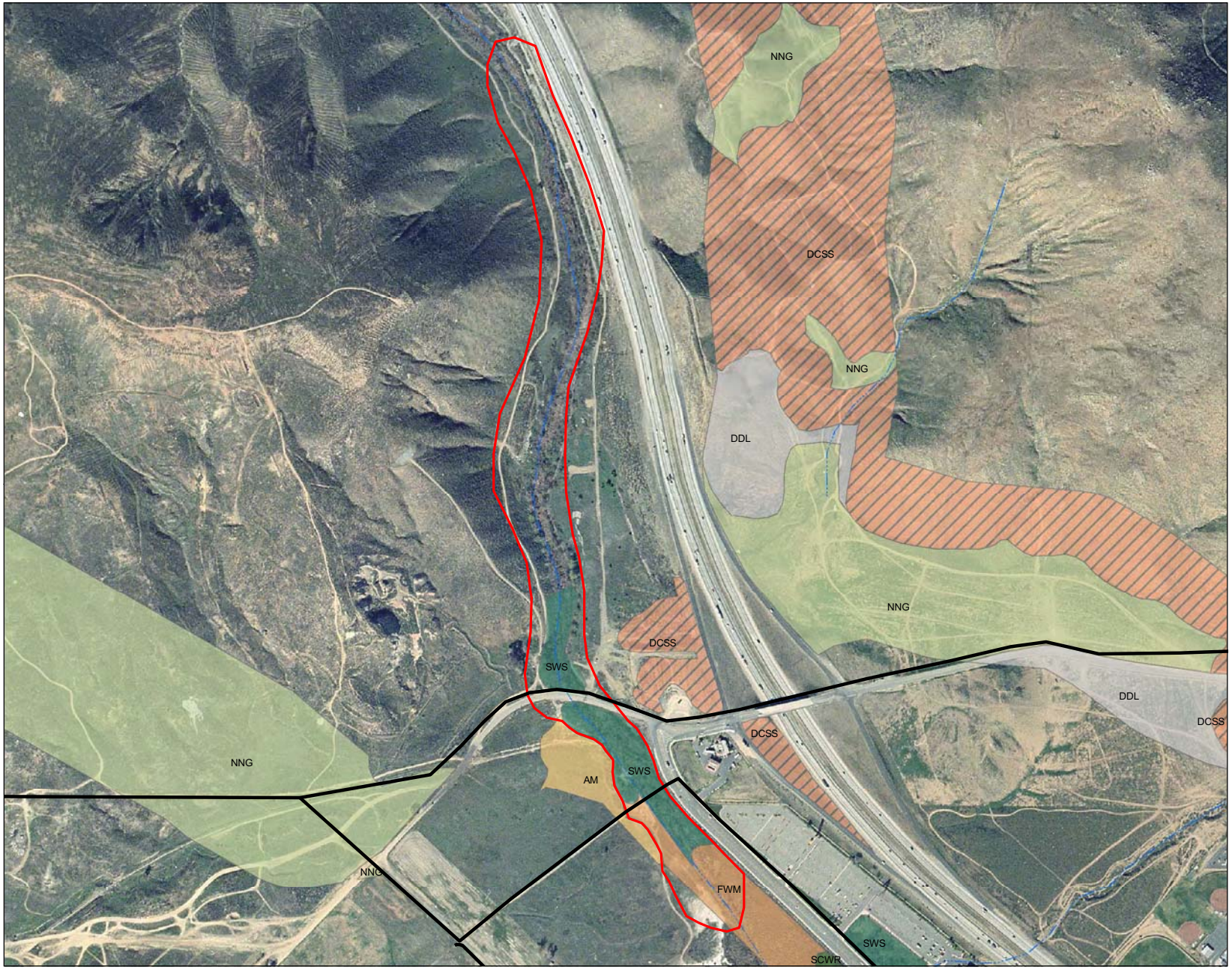
1 inch equals 800 feet

0 200 400 800 Feet

amec

Valley-Ivyglen Transmission Line Project
Least Bell's Vireo, Southwestern Willow Flycatcher, and Western Yellow-billed Cuckoo Surveys
San Jacinto River Survey Area

FIGURE
2



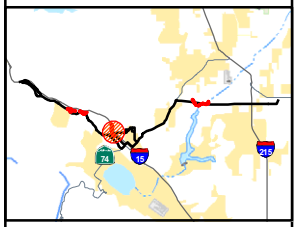
Legend

- Proposed Route (Updated on 08/16/2007)
- Stream/River
- Survey Area

Vegetation Communities

AM - Alkali Marsh
DCSS - Disturbed Coastal Sage Scrub
DDL - Residential/Urban/Exotic
FWM - Coastal and Valley Freshwater Marsh
NNG - Non-native Grassland
SCWR - Southern Cottonwood /Willow Riparian
SWS - Southern Willow Scrub

Map Location



Map Notes

Data Source:
Species - AMEC 2007
Survey Area - AMEC 2007
Vegetation - AMEC 2006
Aerial - AirphotoUSA 2006

Projection
State Plane, Calfironia 406, NAD 83, Feet
Path: \Martin\sd06\Biology\SCE 06\ivyglan\mxd\focus_survey\bird_survey\nichols_rd.mxd
Date: 12/04/2007

N

1 inch equals 800 feet

0 200 400 800 Feet

Valley-Ivyglen Transmission Line Project
Least Bell's Vireo, Southwestern Willow Flycatcher, and Western Yellow-billed Cuckoo Surveys
Nichols Road Survey Area

FIGURE 3

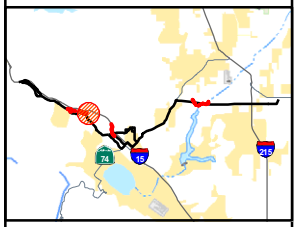
Legend

- Proposed Route (Updated on 08/16/2007)
- Stream/River
- Survey Area

Vegetation Communities

CSS - Coastal Sage Scrub
DCSS - Disturbed Coastal Sage Scrub
DDL - Residential/Urban/Exotic
MFS - Mule Fat Scrub
NNG - Non-native Grassland
SCWR - Southern Cottonwood /Willow Riparian

Map Location



Map Notes

Data Source:
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Survey Area - AMEC 2007
Vegetation - AMEC 2006
Aerial - AirphotoUSA 2006

Projection
State Plane, Calfironia 406, NAD 83, Feet
Path: \Martin\sd06\Biology\ SCE 06\ivyglan\mxd\ focus_survey\bird_survey\ lake_street.mxd
Date: 12/04/2007

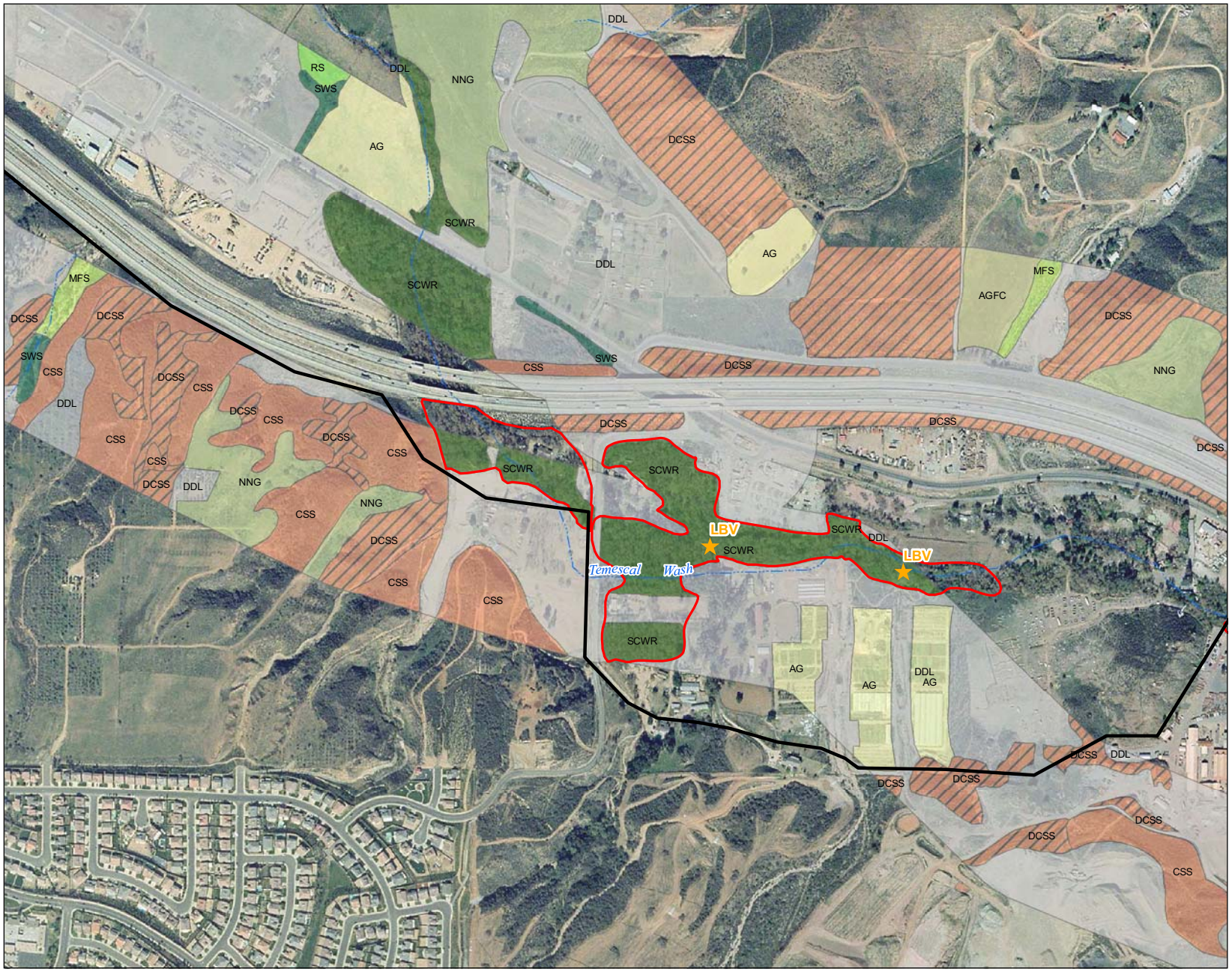
N

1 inch equals 800 feet

0 200 400 800 Feet

Valley-Ivyglen Transmission Line Project
Least Bell's Vireo, Southwestern Willow Flycatcher, and Western Yellow-billed Cuckoo Surveys
Lake Street Survey Area

FIGURE
4



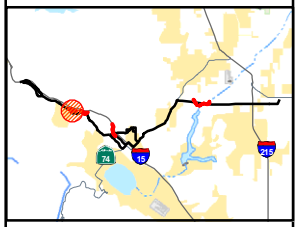
Legend

- Least Bell's Vireo (LBV)
- Proposed Route (Updated on 08/16/2007)
- Stream/River
- Survey Area

Vegetation Communities

AG - Dairy and Livestock Field Yards
CSS - Coastal Sage Scrub
DCSS - Disturbed Coastal Sage Scrub
DDL - Residential/Urban/Exotic
MFS - Mule Fat Scrub
NNG - Non-native Grassland
RS - Riparian Scrub
SCWR - Southern Cottonwood /Willow Riparian
SWS - Southen Willow Scrub

Map Location



Map Notes

Data Source:
Species - AMEC 2007
Survey Area - AMEC 2007
Vegetation - AMEC 2006
Aerial - AirphotoUSA 2006

Projection
State Plane, Calfironia 406, NAD 83, Feet
Path: \Martin\sd06\Biology\ SCE 06\ivyglan\mxd\ focus_survey\bird_survey\ hostettler_rd.mxd
Date: 12/04/2007

N

1 inch equals 800 feet

0 200 400 800 Feet

amec

Valley-Ivyglen Transmission Line Project
Least Bell's Vireo, Southwestern Willow Flycatcher, and Western Yellow-billed Cuckoo Surveys
Hostettler Road Survey Area

FIGURE
5

1.2 Background on the Least Bell's Vireo

Least Bell's Vireo (LBV) is a small, migratory, insectivorous bird which occurs in willow-dominated riparian habitats. Although this bird is drab in plumage and can be secretive within its densely vegetated habitat, males are nonetheless easy to detect on the breeding grounds due to their conspicuous and diagnostic song. Nesting habitat of this species is restricted to willow and/or mulefat dominated riparian scrub along permanent or nearly permanent streams (Grinnell and Miller 1944, Goldwasser 1978, Franzreb 1987, Garrett and Dunn 1981).

Least Bell's Vireos were formerly widespread and common throughout low-lying riparian habitats of central and southern California, but are now restricted to a limited number of locations in southern California. Habitat reduction has contributed to this species' significant population declines. Nest parasitism by Brown-headed Cowbirds (*Molothrus ater*) has also seriously impacted reproductive success by Least Bell's Vireo, as well as many other species which build cup nests (Goldwasser 1978). Least Bell's Vireo is listed as Endangered by the California Department of Fish and Game (CDFG) and by the U.S. Fish and Wildlife Service (USFWS).

1.3 Background on Southwestern Willow Flycatcher

The Southwestern Willow Flycatcher (SWFL) is a small, brownish-olive flycatcher that was formerly considered a common summer resident in southern California's lowland willow thickets and in mountain canyons (Garrett and Dunn 1981). Following the large-scale invasion of southern California by Brown-headed Cowbirds in the 1920s, along with loss of willow riparian habitat, this subspecies was nearly extirpated from southern California. The Willow Flycatcher was listed by the State of California as endangered in 1990. The subspecies *E. t. extimus* (Southwestern Willow Flycatcher) is listed as endangered by the U.S. Fish and Wildlife Service (USFWS). A final determination of critical habitat was made in October 2005 (USFWS 2005).

Recent surveys have revealed populations along the Santa Margarita and San Luis Rey rivers in San Diego County, in the San Bernardino Mountains and along the Mojave River in San Bernardino County, the Santa Ynez River in Santa Barbara County, the Santa Clara River in Los Angeles and Ventura counties, and the South Fork of the Kern River in Kern County (Unitt 1987, Marshall 2000). This subspecies also persists in the Lower Colorado River Valley (Marshall 2000, R. McKernan, San Bernardino County Museum, pers. comm.).

The Southwestern Willow Flycatcher breeds in dense riparian habitats near surface water or saturated soil. Plant composition and habitat structure can vary greatly depending on the site, but willows often make up much of the understory. Populations along the Colorado River are known to use thickets dominated by both native and nonnative plants (especially Salt-Cedar [*Tamarix* spp.]). Dense patches of understory vegetation are a critical component of occupied habitat (Sogge et al. 1997).

1.4 Western Yellow-billed Cuckoo

The Western Yellow-billed Cuckoo (WYBC) is an extremely rare bird in California, with less than 50 pairs found during a statewide survey in 1986-1987, and no indication of more recent population increases. Most of California's Yellow-billed Cuckoos are found in two areas: along

the Sacramento River between Red Bluff and Colusa, and along the South Fork Kern River near Weldon (Laymon 1998). Western Yellow-billed Cuckoo was listed as Endangered by the State of California in 1988.

Western Yellow-billed Cuckoos are long distance migrants and return to California from their South American wintering areas in late May and June. Occupied riparian forests are usually larger than 25 acres. Detection of Western Yellow-billed Cuckoos is difficult as they have large home ranges in dense willow and cottonwood forests and call infrequently. Recorded playback of the species' calls is the recommended method for conducting surveys.

2.0 METHODS

In accordance with the currently accepted survey protocol for the Least Bell's Vireo (USFWS 2001), the sites were surveyed at least eight times by AMEC Earth and Environmental (AMEC) ornithologists. The SWFL protocol requires five surveys, and that the first survey be performed between 15 May and 31 May, the second between 1 June and 21 June, and that three visits be conducted between 22 June and 17 July (Sogge et al. 1997). The LBV protocol requires at least eight surveys between 10 April and 31 July.

Three of the sites (Nichols Road area, Lake Street area, and Hostettler Road area) contained habitat suitable for the Western Yellow-billed Cuckoo, and were surveyed for that species. The survey methodology for the cuckoo requires a minimum of four visits at each site, with the surveys at least 12 days apart. The methodology specifies that one visit be conducted during each of these four periods: 10 to 30 June, 1 to 21 July, 22 July to 11 August, and 12 August to 2 September.

The surveys consisted of slowly moving through the habitat while listening for the songs and calls of the three target species. During the surveys performed for the SWFL, taped recordings of their vocalizations were broadcast, a method consistent with the protocol, and likewise for the Western Yellow-billed Cuckoo. The SWFL protocol requires that vocalizations be played every 20 to 30 meters through the habitat, and the WYBC protocol requires intervals of 100 meters. All bird species detected during the surveys were recorded in field notes.

Initially, it was determined that two biologist/mornings were required to cover the suitable habitat patches at Hostettler Road. However, during the first two surveys some unsuitable patches within the habitat were identified, and logistics were refined; thereafter, the area was covered in a single morning. SWFL surveys were performed by Chet McGaugh (federal Endangered Species Permit TE836517-5), Stephen J. Myers (TE804203-7), John F. Green (TE785148-7), and Mike San Miguel (TE831910-1). Tables 1 through 4 summarize the surveys.

Table 1. Survey Data for San Jacinto River Area

Date	Observer	Time	Temp. (°F)	Wind (mph)	Sky (% cover)
18 April 2007	Stephen J. Myers	0705-1135	52-65	1-5	20-70
3 May 2007	Chet McGaugh	0625-1100	55-76	-	-
14 May 2007	Stephen J. Myers	0715-1135	60-78	0-3	0
24 May 2007†	Chet McGaugh	0620-1055	50-77	-	-
5 June 2007†	Chet McGaugh	0625-1110	66-74	-	-
22 June 2007†	Chet McGaugh	0635-1015	64-80	-	0
3 July 2007†	John F. Green	0550-0815	61-75	0-3	0
17 July 2007†	Stephen J. Myers	0700-1100	68-86	0-3	0

† SWF and LBV surveys conducted concurrently. Other surveys were for LBV only.

Table 2. Survey Data for Nichols Road Area

Date	Observer	Time	Temp. (°F)	Wind (mph)	Sky (% cover)
19 April 2007	Stephen J. Myers	0730-1120	52-70	0-3	0-10
1 May 2007	Stephen J. Myers	0705-1110	60-72	0-2	100
11 May 2007	John F. Green	0705-1045	60-79	0-3	0
22 May 2007†	Chet McGaugh	0550-0900	58-62	0-4	100
1 June 2007†	Chet McGaugh	0620-0920	54-?	-	100
22 June 2007†‡	Stephen J. Myers	0700-1000	69-84	0	0
2 July 2007†	Chet McGaugh	0640-1050	54-80	0	0
13 July 2007†‡	Chet McGaugh	0555-1030	52-78	0	0
25 July 2007‡	Stephen J. Myers	0700-1015	74-88	0	0
21 Aug 2007‡	Chet McGaugh	0645-1005	75-87	0-3	0

† SWF and LBV surveys conducted concurrently. ‡Western Yellow-billed Cuckoo surveys also conducted on these days. Other surveys were for LBV only.

Table 3. Survey Data for Lake Street Area

Date	Observer	Time	Temp. (°F)	Wind (mph)	Sky (% cover)
30 April 2007	Stephen J. Myers	0700-1120	59-74	0-3	100-60
10 May 2007	Chet McGaugh	0615-0915	50-78	0	0
21 May 2007†	Chet McGaugh	0635-0930	57-58	0	100
1 June 2007†	Stephen J. Myers	0640-1015	57-66	0	100-70
12 June 2007‡	Chet McGaugh	0610-0910	warm	0	0
25 June 2007‡†	Stephen J. Myers	0705-1020	64-74	0	0
5 July 2007†	Chet McGaugh	0640-1000	72-82	-	-
15 July 2007†	Mike San Miguel	0700-1000	67-82	0-2	0
24 July 2007‡	Chet McGaugh	0630-0915	66-78	0	0
23 Aug 2007	Chet McGaugh	0625-1000	69-82	0	0

† SWF and LBV surveys conducted concurrently. ‡Western Yellow-billed Cuckoo surveys also conducted on these days. Other surveys were for LBV only.

Table 4. Survey Data for Hostettler Road Area

Date	Observer	Time	Temp. (°F)	Wind (mph)	Sky (% cover)
17 May 2007	Stephen J. Myers	0700-1115	57-73	0-4	100-0
18 May 2007*	John F. Green	0705-0910	57-63	0-3	100-0
29 May 2007*†	John F. Green Chet McGaugh	0615-0830	55-60	3-5	100-0
8 June 2007†	John F. Green	0545-0950	52-65	0-5	0
19 June 2007‡	Stephen J. Myers	0600-1050	58-81	0	0
29 June 2007†	Chet McGaugh	0620-1000	60-74	0	0
10 July 2007†	Stephen J. Myers	0520-0910	66-73	0	100
17 July 2007†	John F. Green	0635-0955	63-72	3-8	70-0
20 July 2007‡	Chet McGaugh	0630-1020	-	-	-
30 July 2007‡	Chet McGaugh	0650-1025	64-78	-	-
27 Aug 2007‡	Stephen J. Myers	0645-0950	70-84	0-1	0
17 July 2007†	John F. Green	0635-0955	63-72	3-8	70-0
20 July 2007‡	Chet McGaugh	0630-1020	-	-	-

* During the first two surveys the area was surveyed over two survey days, but as logistics and habitat suitability were refined, it became possible to survey the area during a single morning. † SWF and LBV surveys conducted concurrently. ‡Western Yellow-billed Cuckoo surveys also conducted on these days. Other surveys were for LBV only.

3.0 RESULTS

3.1 Habitat Descriptions

3.1.1 San Jacinto River Area

In this area the transmission line route roughly parallels the San Jacinto River. The river banks are lined with lined with narrow strips of intermittent willows (*Salix* spp.), Mulefat (*Baccharis salicifolia*), and widely scattered Fremont Cottonwoods (*Populus fremontii*). The river contained surface water at the time of the surveys. In addition to the river, surveys were performed on a short tributary at the survey area's western end. This tributary is lined with fairly dense willow scrub and woodland, and contained surface water.

3.1.2 Nichols Road Area

Both north and south of Nichols Road, Temescal Wash contains willow dominated riparian woodland and scrub, along with alkaline marsh habitat. The stream flowed through this area during the entire survey period.

3.1.3 Lake Street Area

Temescal Wash in the area of Lake Street is lined with a mixture of native and nonnative vegetation. Gum trees (*Eucalyptus* spp.) are dominant, with intermittent thickets of willows and scattered Fremont Cottonwoods. Surface water appeared to be perennial in this area.

3.1.4 Hostettler Road Area

This area is along Temescal Wash, and is down stream and nearly contiguous with the Lake Street area. Some Eucalyptus occurs, but most of the vegetation is native willows, cottonwoods, and Coast Live Oaks (*Quercus agrifolia*). The creek was flowing throughout the survey period.

3.2 Survey Results

At all sites combined, 125 bird species were detected. Among the most frequently detected species were the following birds that are typical of lowland riparian habitats in southern California: Mourning Dove (*Zenaida macroura*), Black-chinned Hummingbird (*Archilochus alexandri*), Nuttall's Woodpecker (*Picoides nuttallii*), Black Phoebe (*Sayornis nigricans*), Bushtit (*Psaltriparus minimus*), House Wren (*Troglodytes aedon*), Yellow Warbler (*Dendroica petechia*), Common Yellowthroat (*Geothlypis trichas*), Song Sparrow (*Melospiza melodia*), and Lesser Goldfinch (*Carduelis psaltria*). A few, non-sensitive species of interest were found, including several nesting pairs of Purple Finches (*Carpodacus purpurascens*, uncommon in lowland riparian habitats), one pair of Mountain Chickadees (*Poecile gambeli*, uncommon away from coniferous forests), and a singing male Summer Tanager (*Piranga rubra*, uncommon in summer in cismontane southern California).

3.2.1 Southwestern Willow Flycatcher

No Southwestern Willow Flycatchers were detected at any of the survey areas. On 17 and 18 May, four Willow Flycatchers were observed and heard in the Hostettler Road survey area.

On 14 May, a Willow Flycatcher was found at the San Jacinto River survey area. These dates coincide with the peak period of spring migration of the species in southern California, and the birds were not found on subsequent surveys. Therefore, AMEC concludes that these birds were migrants of a more northerly subspecies, and not Southwestern Willow Flycatchers.

3.2.2 Least Bell's Vireo

A singing Least Bell's Vireo was detected at the San Jacinto River survey area on 3 May, and remained throughout the survey period. A female was not observed, and it may have been a territorial, unmated male. The territory was along the tributary at the west end of the survey area (refer to Figure 2).

At Hostettler Road, a singing Least Bell's Vireo was found on 17 July, but was not present before or after that date (refer to Figure 5). Two observations were made during the morning's survey, most likely of the same bird. Presumably, this bird dispersed from either up stream or down stream, and may have been an unmated male.

No Least Bell's Vireos were detected at Nichols Road or Lake Street.

3.2.3 Western Yellow-billed Cuckoo

No Western Yellow-billed Cuckoos were detected at any of the survey areas.

3.2.4 Critical Habitat

The project area is not within designated Critical Habitat for either the Least Bell's Vireo or Southwestern Willow Flycatcher.

4.0 LITERATURE CITED

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Appendix A
Bird Species List

Appendix A
Bird Species List

This list includes all species of birds detected during focused surveys conducted in spring-summer 2007. Nomenclature and taxonomy follows the American Ornithologists' Union (1998), and supplements through 2006.

Family	Common Name	Scientific Name
Anatidae - Ducks, Geese, and Swans	Wood Duck	*(Aix sponsa)*
	Gadwall	*(Anas strepera)*
	Mallard	*(Anas platyrhynchos)*
	Cinnamon Teal	*(Anas cyanoptera)*
	Green-winged Teal	*(Anas crecca)*
Odontophoridae – New World Quail	California Quai	*(Callipepla californica)*
Podicipedidae – Grebes	Pied-billed Grebe	*(Podilymbus podiceps)*
Phalacrocoracidae - Cormorants	Double-crested Cormorant	*(Phalacrocorax auritus)*
Ardeidae - Herons and Bitterns	Great Blue Heron	*(Ardea herodias)*
	Great Egret	*(Ardea alba)*
	Snowy Egret	*(Egretta thula)*
	Green Heron	*(Butorides virescens)*
	Black-crowned Night-Heron	*(Nycticorax nycticorax)*
Cathartidae - Vultures	Turkey Vulture	*(Cathartes aura)*
Acciptridae - Hawks, Kites, and allies	Sharp-shinned Hawk	*(Accipiter striatus)*
	Cooper's Hawk	*(Accipiter cooperii)*
	Red-shouldered Hawk	*(Buteo lineatus)*
	Red-tailed Hawk	*(Buteo jamaicensis)*
Falconidae - Falcons and Caracaras	American Kestrel	*(Falco sparverius)*
Rallidae – Rails, Gallinules, and Coots	Virginia Rail	*(Rallus limicola)*
	Sora	*(Porzana carolina)*
	American Coot	*(Fulica americana)*
Charadriidae - Plovers and allies	Killdeer	*(Charadrius vociferous)*
Recurvirostridae – Stilts and Avocets	Black-necked Stilt	*(Himantopus mexicanus)*
	American Avocet	*(Recurvirostra americana)*
Scolopacidae – Sandpipers and Phalaropes	Solitary Sandpiper	*(Tringa solitaria)*
	Least Sandpiper	*(Calidris minutilla)*
	Long-billed Dowitcher	*(Limnodromus scolopaceus)*
	Wilson's Snipe	*(Gallinago delicate)*
Laridae - Gulls and Terns	Caspian Tern	*(Sterna caspia)*

Family	Common Name	Scientific Name
Columbidae - Pigeons and Doves	Rock Pigeon	*(Columba livia)* – Nonnative
	Eurasian Collared-Dove	*(Streptopelia decaocto)* - Nonnative
	Mourning Dove	*(Zenaida macroura)*
	Common Ground-Dove	*(Columbina passerine)*
Cuculidae – Cuckoos	Greater Roadrunner	*(Geococcyx californianus)*
Apodidae - Swifts	White-throated Swift	*(Aeronautes saxatalis)*
	Vaux's Swift	*(Chaetura vauxi)*
Trochilidae - Hummingbirds	Black-chinned Hummingbird	*(Archilochus alexandri)*
	Anna's Hummingbird	*(Calypte anna)*
	Costa's Hummingbird	*(Calypte costae)*
	Allen's Hummingbird	*(Selasphorus sasin)*
Alcedinadae – Kingfishers	Belted Kingfisher	*(Ceryle alcyon)*
Picidae - Woodpeckers	Nuttall's Woodpecker	*(Picoides nuttallii)*
	Downy Woodpecker	*(Picoides pubsecens)*
	Northern Flicker	*(Colaptes auratus)*
Tyrannidae - Tyrant Flycatchers	Western Wood-Pewee	*(Contopus sordidulus)*
	Willow Flycatcher	*(Empidonax traillii)*
	Hammond's Flycatcher	*(Empidonax hammondii)*
	Pacific-slope Flycatcher	*(Empidonax difficilis)*
	Black Phoebe	*(Sayornis nigricans)*
	Say's Phoebe	*(Sayornis saya)*
	Ash-throated Flycatcher	*(Myiarchus cinerascens)*
	Cassin's Kingbird	*(Tyrannus vociferans)*
	Western Kingbird	*(Tyrannus verticalis)*
Laniidae – Shrikes	Loggerhead Shrike	*(Lanius ludovicianus)*
Vireonidae - Vireos	Least Bell's Vireo	*(Vireo bellii pusillus)*
	Cassin's Vireo	*(Vireo cassinii)*
	Warbling Vireo	*(Vireo gilvus)*
Corvidae - Jays, Crows, and allies	Western Scrub-Jay	*(Aphelocoma californica)*
	American Crow	*(Corvus brachyrhynchos)*
	Common Raven	*(Corvus corax)*
Hirundinidae - Swallows	Purple Martin	*(Progne subis)*
	Tree Swallow	*(Tachycineta bicolor)*
	Violet-green Swallow	*(Tachycineta thalassina)*
	Northern Rough-winged Swallow	*(Stelgidopteryx serripennis)*
	Cliff Swallow	*(Petrochelidon pyrrhonota)*

Family	Common Name	Scientific Name
	Barn Swallow	*(Hirundo rustica)*
Paridae – Titmice and Chickadees	Mountain Chickadee	*(Poecile gambeli)*
	Oak Titmouse	*(Baeolophus inornatus)*
Aegithalidae - Bushtits	Bushtit	*(Psaltriparus minimus)*
Sittidae – Nuthatches	White-breasted Nuthatch	*(Sitta carolinensis)*
Troglodytidae - Wrens	Bewick's Wren	*(Thryomanes bewickii)*
	House Wren	*(Troglodytes aedon)*
	Marsh Wren	*(Cistothorus palustris)*
Sylviidae – Old World Warblers and Gnatcatchers	Blue-gray Gnatcatcher	*(Polioptila caerulea)*
	California Gnatcatcher	*(Polioptila californica)*
Turdidae - Thrushes	Swainson's Thrush	*(Catharus ustulatus)*
	American Robin	*(Turdus migratorius)*
Timaliidae – Babblers	Wrentit	*(Chamaea fasciata)*
Mimidae – Mockingbirds and Thrashers	Northern Mockingbird	*(Mimus polyglottos)*
	California Thrasher	*(Toxostoma redivivum)*
Sturnidae - Starlings and Mynas	European Starling	*(Sturnus vulgaris)* - Nonnative
Motacillidae – Wagtails and Pipits	American Pipit	*(Anthus rubescens)*
Ptilogonatidae - Silky-Flycatchers	Phainopepla	*(Phainopepla nitens)*
Parulidae - Warblers	Orange-crowned Warbler	*(Vermivora celata)*
	Nashville Warbler	*(Vermivora ruficapilla)*
	Yellow Warbler	*(Dendroica petechia)*
	Black-throated Gray Warbler	*(Dendroica nigrescens)*
	Townsend's Warbler	*(Dendroica townsendi)*
	Hermit Warbler	*(Dendroica occidentalis)*
	MacGillivray's Warbler	*(Oporornis tolmiei)*
	Common Yellowthroat	*(Geothlypis trichas)*
	Wilson's Warbler	*(Wilsonia pusilla)*
	Yellow-breasted Chat	*(Icteria virens)*
	Summer Tanager	*(Piranga rubra)*
Thraupidae – Tanagers	Western Tanager	*(Piranga ludoviciana)*
Emberizidae - Towhees and Sparrows	Spotted Towhee	*(Pipilo maculatus)*
	California Towhee	*(Pipilo crissalis)*
	Southern California Rufous-crowned Sparrow	*(Aimophila ruficeps canescens)*
	Chipping Sparrow	*(Spizella passerine)*
	Brewer's Sparrow	*(Spizella breweri)*
	Vesper Sparrow	*(Pooecetes gramineus)*

Family	Common Name	Scientific Name
	Lark Sparrow	*(Chondestes grammacus)*
	Bell's Sage Sparrow	*(Amphispiza belli belli)*
	Savannah Sparrow	*(Passerculus sandwichensis)*
	Fox Sparrow	*(Passerella iliaca)*
	Song Sparrow	*(Melospiza melodia)*
	Lincoln's Sparrow	*(Melospiza lincolnii)*
	White-crowned Sparrow	*(Zonotrichia leucophrys)*
	Golden-crowned Sparrow	*(Zonotrichia atricapilla)*
Cardinalidae - Cardinals, Grosbeaks, Buntings	Black-headed Grosbeak	*(Pheucticus melanocephalus)*
	Blue Grosbeak	*(Passerina caerulea)*
	Lazuli Bunting	*(Passerina amoena)*
Icteridae - Blackbirds, Cowbirds, Grackles, Orioles	Red-winged Blackbird	*(Agelaius phoeniceus)*
	Western Meadowlark	*(Sturnella neglecta)*
	Brewer's Blackbird	*(Euphagus cyanocephalus)*
	Great-tailed Grackle	*(Quiscalus mexicanus)*
	Brown-headed Cowbird	*(Molothrus ater)*
	Hooded Oriole	*(Icterus cucullatus)*
	Bullock's Oriole	*(Icterus bullockii)*
Fringillidae - Finches and allies	Purple Finch	*(Carpodacus purpurascens)*
	House Finch	*(Carpodacus mexicanus)*
	Lesser Goldfinch	*(Carduelis psaltria)*
	Lawrence's Goldfinch	*(Carduelis lawrencei)*
	American Goldfinch	*(Carduelis tristis)*
Passeridae - Old World Sparrows	House Sparrow	*(Passer domesticus)* – Nonnative

Appendix B
SWF Survey Forms

To be provided.

DRAFT

MSHCP NARROW ENDEMIC AND CRITERIA AREA PLANT SPECIES SURVEYS FOR THE VALLEY-TO-IVYGLEN TRANSMISSION LINE PROJECT RIVERSIDE COUNTY, CALIFORNIA

Prepared for:
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, California 91770

Submitted by:
AMEC Earth & Environmental, Inc.
9210 Sky Park Court, Suite 200
San Diego, California 92123
(858) 300-4300

January 2008

Project No. 6151000801-1005

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1.0 INTRODUCTION

At the request of Southern California Edison (SCE), AMEC Earth & Environmental, Inc. (AMEC) conducted a special-status plant species survey for the proposed Valley-Ivyglen Transmission Line Project which is designed to improve reliability and meet projected electrical load requirements in the western Riverside County area.

The proposed project is located in western Riverside County; the proposed transmission line route traverses unincorporated Riverside County, the cities of Lake Elsinore, Corona, Perris, and Sun City, California (Figure 1). The proposed transmission line route traverses portions of the following U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Alberhill, Lake Elsinore, and Romoland.

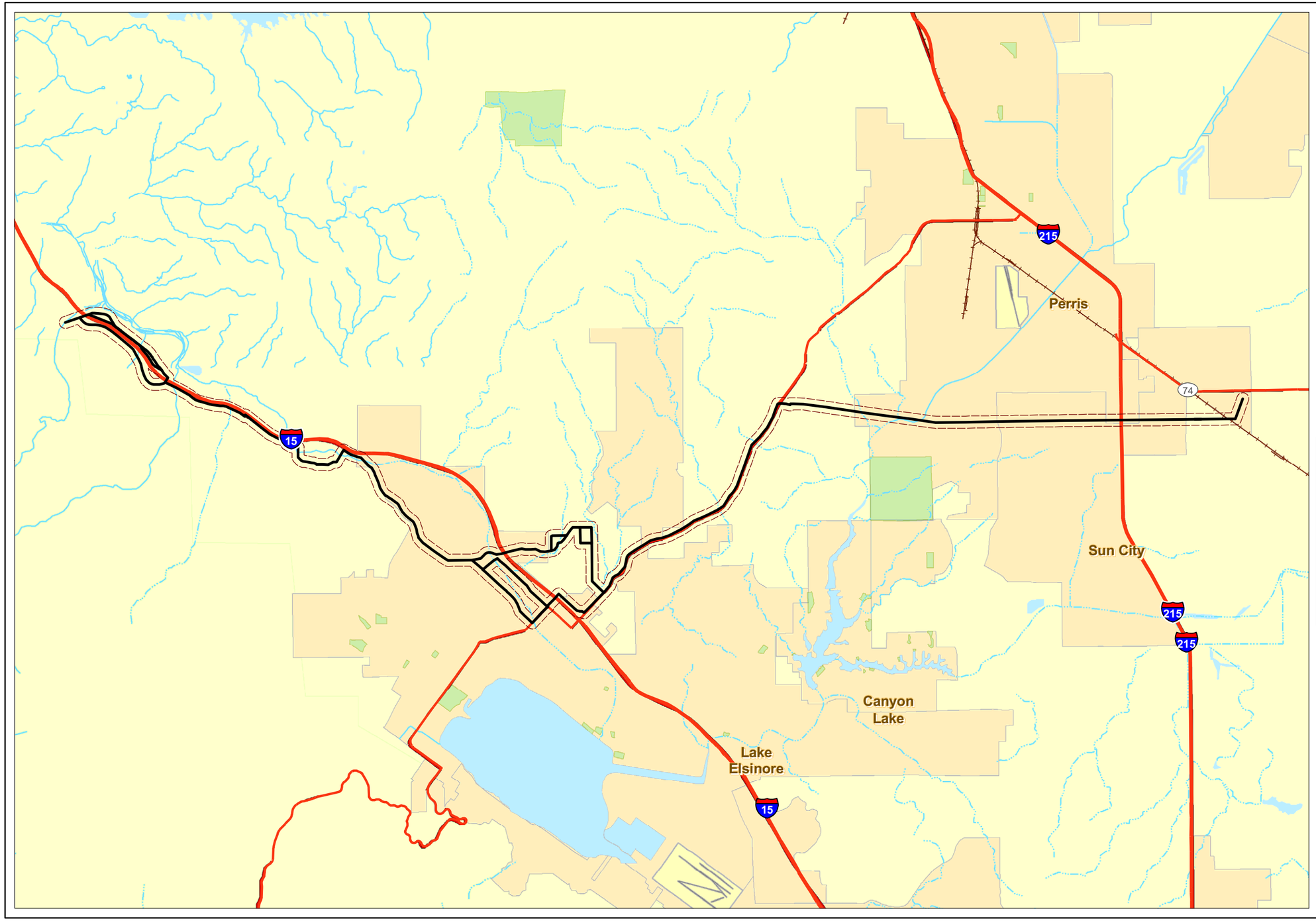
The Valley-Ivyglen Transmission Line Project involves the construction of a new 115 kilovolt (kV) transmission line which will connect the Valley Substation to the Ivyglen Substation (Figure 1). The Valley Substation is located in the southwest corner of an unincorporated area known as Romoland, adjacent to the City of Perris. The Ivyglen Substation is located in the southeastern portion of unincorporated Corona, along Temescal Canyon Road and near Glen Ivy Hot Springs.

1.1 Project Background

The proposed Valley-Ivyglen Transmission Line Project is in the coverage area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of species and their associated habitats in western Riverside County.

The MSHCP provides a conservation area for 146 special-status species, including federal- and state-listed endangered and threatened species, and provides incidental take permits for development projects that impact these conserved “*covered*” species. Under the MSHCP, the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) (collectively known as the “Wildlife Agencies”) will grant "*Take Authorization*" for otherwise lawful actions, such as public and private development that may incidentally take or harm individual species or their habitat outside of the MSHCP Conservation Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area.

Of the 146 species covered by the MSHCP, no surveys are required by applicants for public and private projects for 106 of these covered species. There are 14 narrow endemic plants and 13 other sensitive plants within the Criteria Area. Of these species, surveys will be required within suitable habitat areas in locations identified on MSHCP survey maps (Section 6.0 of the MSHCP) and avoidance and minimization measures implemented in accordance with the species-specific objectives for those species. The possibility exists that surveys may be avoided if the project is designed to avoid identified species and their associated habitats.



LEGEND

- Preferred Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

- Major Freeways
- Perennial Stream
- Intermittent Stream and Canal
- Parks and Forests
- Major Cities

LOCATION MAP

MAP NOTE

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Proposed Segment, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
focus_survey\plant_survey\
prj_vicinity.mxd
Date: 01/14/2008

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

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Project Vicinity
Plant Survey
Valley - Ivyglen Transmission Line Project, California

FIGURE

1

The Valley-Ivyglen Transmission Line Project lies within identified MSHCP Narrow Endemic Plant Species Survey Areas (Figure 2). Within these areas, site-specific focused surveys for Narrow Endemic Plant Species (Table 1) is required for all public and private projects where appropriate habitat is present.

In addition to the Narrow Endemic Plant Species, other surveys are needed for specific species "*Criteria Area Species*" (Table 1) in conjunction with the MSHCP. The *Additional Survey Needs and Procedures* policies presented in Section 6.3.2 of the MSHCP outlines these habitats and species. Additional surveys shall be conducted within suitable habitat for these species in the MSHCP Criteria Area (Figure 2).

The proposed Valley-Ivyglen Transmission Line Project would also involve the construction of a new communication path, which would connect the Ivyglen Substation to the Valley Substation. This communication path is required for communication and monitoring of the substation and subtransmission line equipment. Along most of the telecommunication route, fiber optic cable will be installed overhead on the new Valley-Ivyglen 115 kV structures. The telecommunication line construction activities would begin subsequent to the construction of the new Valley-Ivyglen 115 kV subtransmission lines. Some sections of the fiber optic line will be installed underground by the use of trenching and/or boring methods. The following sites where underground activities will occur were individually surveyed for sensitive species:

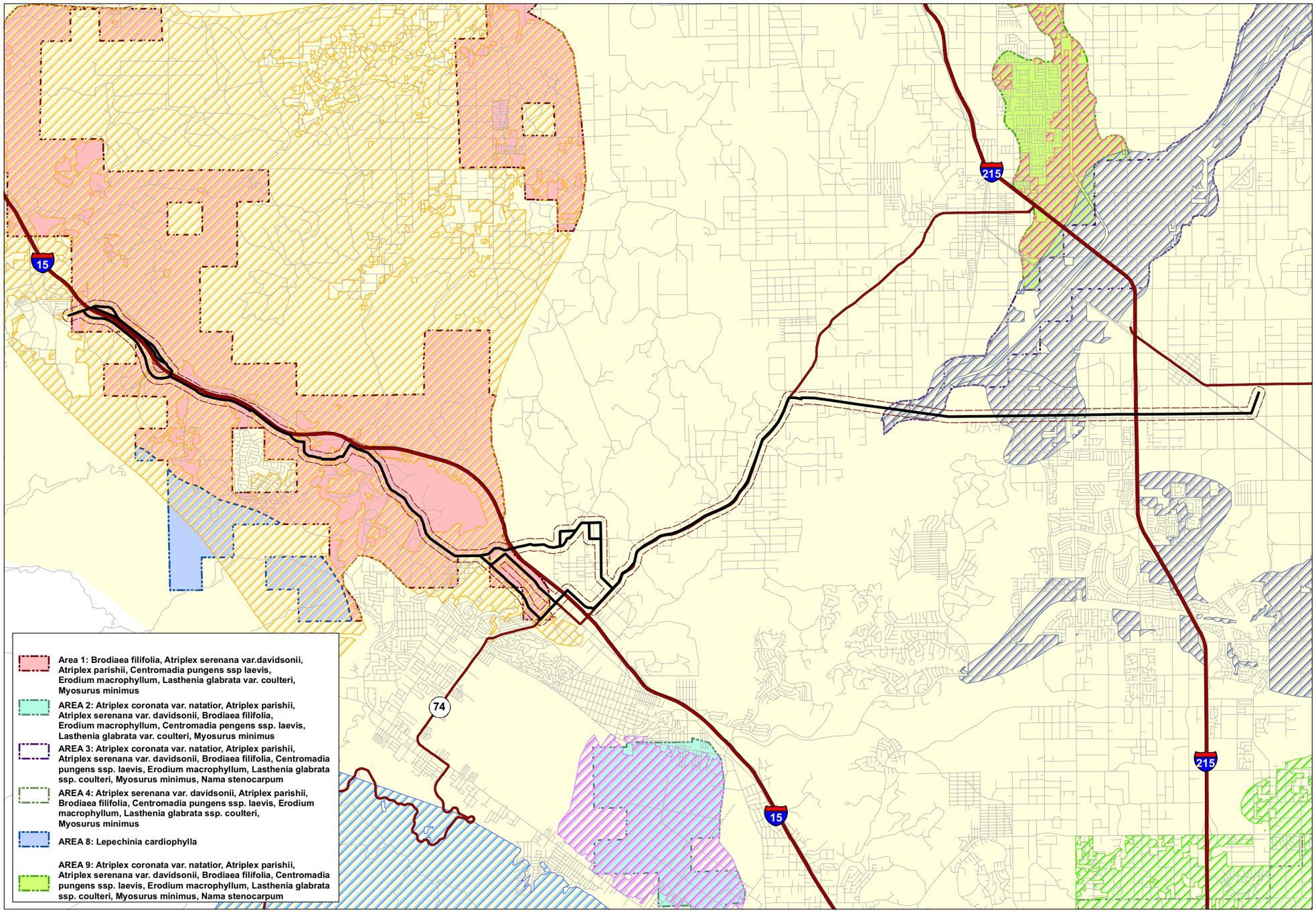
a. Valley Substation – the trenched area includes approximately 500 feet from the substation fence to the Valley-Ivyglen Transmission Line riser pole (Map 1).

b. Crossing at existing Elsinore-Ivyglen 115kV line and Lake Street – the trenched area includes approximately 500 feet beneath Lake Street (Map 29).

c. Crossing I-15 at Hostettler Road – the trenched area includes approximately 500 feet beneath the freeway along Hostettler Road (Map 31).

d. Crossing Existing Elsinore-Ivyglen 115 kV line at Temescal Canyon Road – the trenched area includes approximately 500 feet at crossing beneath Temescal Canyon Road (Map 31).

e. Ivyglen Substation – the trenched area includes approximately 1,500 feet along Temescal Canyon Road beneath the freeway, from Mayhew Road to the Ivyglen Substation (Map 23).



LEGEND

Riverside MSHCP

MSHCP Boundary

Narrow Endemic Plant Species Survey

Allium munzii, Ambrosia pumila, Dodecahema leptoceras, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Satureja chandleri, Sibaropsis hammittii, Trichocoronis wrightii var. wrightii

Allium munzii, Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Sibaropsis Hammittii, Trichocoronis wrightii var wrightii

Allium munzii, Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Trichocoronis wrightii var wrightii

Allium munzii, Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Trichocoronis wrightii var. wrightii

Dudleya multicaulis, Orcuttia californica, Navarretia fossalis, Satureja chandleri, Sibaropsis hammittii, Trichocoronis wrightii var. wrightii

Ambrosia pumila, Dudleya multicaulis, Navarretia fossalis, Orcuttia californica, Trichocoronis wrightii var wrightii

Project Data

Preferred Route (Updated on 08/16/2007)

Survey Boundary

Base Data

Major Freeways

Roads

Area 1: Brodiaea filifolia, Atriplex serenana var.davidsonii, Atriplex parishii, Centromadia pungens ssp laevis, Erodium macrophyllum, Lasthenia glabrata var. coulteri, Myosurus minimus

AREA 2: Atriplex coronata var. natatior, Atriplex parishii, Atriplex serenana var. davidsonii, Brodiaea filifolia, Erodium macrophyllum, Centromadia pengens ssp. laevis, Lasthenia glabrata var. coulteri, Myosurus minimus

AREA 3: Atriplex coronata var. natatior, Atriplex parishii, Atriplex serenana var. davidsonii, Brodiaea filifolia, Centromadia pungens ssp. laevis, Erodium macrophyllum, Lasthenia glabrata ssp. coulteri, Myosurus minimus, Nama stenocarpum

AREA 4: Atriplex serenana var. davidsonii, Atriplex parishii, Brodiaea filifolia, Centromadia pungens ssp. laevis, Erodium macrophyllum, Lasthenia glabrata ssp. coulteri, Myosurus minimus

AREA 8: Lepechinia cardiophylla

AREA 9: Atriplex coronata var. natatior, Atriplex parishii, Atriplex serenana var. davidsonii, Brodiaea filifolia, Centromadia pungens ssp. laevis, Erodium macrophyllum, Lasthenia glabrata ssp. coulteri, Myosurus minimus, Nama stenocarpum

MAP NOTES

Data Source:
AMEC - Project Boundary
RCIP - Riverside MSHCP
SCE - Preferred Route, Base Data

Projection: State Plane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
\focus_survey\Plant_survey
\MSHCP_NESSA.mxd
Date: 01/14/2008

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Narrow Endemic Species and Criteria Area Species Survey Area
Valley - Ivyglen Transmission Line Project, California

FIGURE
2

Table 1. MSHCP Narrow Endemic and Additional Criteria Area Species

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Narrow Endemic Plant Species				
Allium marvinii	Yucaipa Onion	List 1B.1 CA-Endemic	Chaparral (clay, openings) 760 – 1,065 m	Apr-May
Allium munzii	Munz's Onion	List 1B.1 CA-Endemic ST 1/90 FE 10/98	Chaparral, Cismontane woodland, Coastal scrub Pinyon and juniper woodland Valley and foothill grassland /mesic, clay 300 – 1,070 m	Mar-May
Ambrosia pumila	San Diego Ambrosia	List 1B.1 FE 7/02	Chaparral , Coastal scrub Valley and foothill grassland Vernal pools/often in disturbed areas, sometimes alkaline 20 – 415 m	Apr-Oct
Arabis johnstonii	Johnston's Rockcress	List 1B.2 CA-Endemic	Chaparral , Lower montane coniferous forest/often on eroded clay 1350 – 2,150 m	Feb-Jun
Calochortus palmeri var. *munzii*	Munz's Mariposa lily	List 1B.2 CA-Endemic	Chaparral , Lower montane coniferous forest 1200 – 2,200 m	Jun-Jul
Dodecahema leptoceras	Slender-Horned Spine Flower	List 1B.1 CA-Endemic SE 1/82 FE 9/87	Chaparral, Cismontane woodland, Coastal scrub (alluvial fan)/sandy 200 – 760 m	Apr-Jun
Dudleya multicaulis	Many-Stemmed Dudleya	List 1B.2 CA-Endemic	Chaparral, Coastal Scrub, Valley & Foothill grassland/often clay 15 – 790 m	Apr-Jul
Galium angustifolium ssp. *jacinticum*	San Jacinto Mountains Bedstraw	List 1B.3 CA-Endemic	Lower montane coniferous forest 1,350 – 2,100 m	Jun-Aug

Table 1. MSHCP Narrow Endemic and Additional Criteria Area Species

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Navarretia fossalis	Spreading Navarretia	List 1B.1 FE 10/98	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools	Apr-Jun
Orcuttia californica	California Orcutt Grass	List 1B.1 SE 9/79 FE 8/93	Vernal pools 15 – 660 m	Apr-Aug
Phacelia stellaris	Brands Phacelia	List 1B.1 FC	Coastal dunes, Coastal scrub 1 – 400 m	Mar-Jun
Satureja chandleri	San Miguel Savory	List 1B.2	Chaparral , Cismontane woodland, Coastal scrub Riparian woodland, Valley and foothill grassland/rocky, gabbroic or metavolcanic 120 – 1,075 m	Mar-Jul
Sibaropsis hammittii	Hammitt's Clay-Cress	List 1B.2	Chaparral(openings), Valley and foothill grassland/clay 720 – 1,065 m	Mar-Apr
Trichocoronis wrightii var. *wrightii*	Wright's Trichocoronis	List 2.1	Meadows and seeps, Marshes and swamps, Riparian forest Vernal pools/alkaline 5 – 435 m	May- Sep
Criteria Area Species				
Atriplex coronata var. *notatior*	San Jacinto Valley Crownscale	List 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley & Foothill grassland/alkaline or clay 3 – 460 m	Mar-Oct
Atriplex parishii	Parish's Brittlescale	List 1B.1	Chenopod scrub, Playas, Vernal pools 25 – 1,900 m	Jun-Oct
Atriplex serenana var. *davidsonii*	Davidson's Saltscale	List 1B.2	Coastal bluff scrub, Coastal scrub/alkaline 10 – 200 m	Apr-Oct

Table 1. MSHCP Narrow Endemic and Additional Criteria Area Species

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Berberis nevinii	Nevin's Barberry	List 1B.1 CA-Endemic SE 01/87 FE 10/13/98	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub/sandy or gravelly 295 – 825 m	Mar-Apr
Brodiaea filifolia	Thread-Leaved Brodiaea	1B.1 SE 01/82 FT 10/13/98	Chaparral, cismontane woodland, coastal scrub, playas, Valley & Foothill 25 – 860 m	Mar-Jun
California macrophyllum	Round-Leaved Filaree	List 1B.1	Cismontane woodland, Valley & Foothill grassland/clay 15 – 1,200 m	Mar-May
Ceanothus ophiochilus	Vail Lake Ceanothus	List 1B.1 CA-Endemic SE 1/94 FT 10/98	Chaparral(gabbroic or pyroxenite-rich outcrops) 580 – 1,065 m	Feb-Mar
Centromadia pungens	Smooth Tarplant	List1B.1 CA-Endemic	Chenopod scrub, meadows, playas, riparian woodland, Valley & Foothill grassland 0 – 480 m	Apr-Sept
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	List 1B.1	Marshes and swamps(coastal salt), Playas, Vernal pools 1 – 1,220 m	Feb-Jun
Lepechinia cardiophylla	Heart-Leaved Pitcher Sage	List 1B.2	Closed-cone coniferous forest, Chaparral, Cismontane woodland 520 – 1,370 m	Apr-Jun
Myosurus minimus	Little Mousetail	List 3.1	Valley and foothill grassland, Vernal pools (alkaline) 20 – 640 m	Mar-Jun

Table 1. MSHCP Narrow Endemic and Additional Criteria Area Species

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Nama stenocarpum	Mud Nama	List 2.2	Marshes and swamps (lake margins, riverbanks) 5 – 500 m	Jan-Jul
Navarretia prostrata	Prostrate Navarretia	List 1B.1 CA-Endemic	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools/mesic 125 – 700 m	Apr-Jul

2.0 METHODOLOGY

Prior to field surveys, records from the CDFG California Natural Diversity Database (CNDDB) *RareFind3* (CNDDB 2007) and the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plant*s (CNPS 2007) were reviewed for potential occurrence of any sensitive species or habitats within the quadrangles wherein the proposed Valley-Ivyglen Transmission Line Project lies. In addition, two previous studies conducted in association with the project, *Draft Biological Resources Report Valley-Ivyglen Transmission Line Project Riverside County, California* (Entrix, Inc. 2006) and *Final Biological Technical Report for the Valley-Ivyglen Transmission Line Project Riverside County, California* (AMEC 2006), were reviewed.

Field maps were created prior to field visits (1 inch = 400 feet) which depicted the aerial view of the proposed transmission line route, known sensitive species points from CNDDB (2007) data and previous survey efforts (Entrix 2005 and AMEC 2006), and vegetation communities that were mapped during 2006 field surveys (AMEC 2006).

Between 28 May and 5 June 2007, AMEC biologists conducted surveys for MSHCP Narrow Endemic and Criteria Area plant species within the preferred transmission line route. Surveyed areas included a 200-foot-wide corridor centered on the transmission line route. Botanical surveys were conducted following the CDFG *Guidelines for Assessing the Effects of Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2006) and the CNPS *Botanical Survey Guidelines* (CNPS 2001). Botanical surveys were performed when most plant species would be detectable. Areas with potential habitat for special-status species (i.e., mesic sites, rocky outcrops, clay or alkaline soils, etc.) were surveyed on foot. Other areas were surveyed by vehicle in areas where there was little to no potential for special-status species to occur or in highly disturbed areas. All plant species encountered during the field surveys were identified and recorded (Appendix A). Species that could not be identified immediately were brought into the laboratory for further investigation. Scientific and common names of plants follow *The Jepson Manual* (Hickman 1993) or more recently published taxonomical revisions of genera.

As part of the proposed project, a telecommunication route will also be installed along the proposed transmission line route. Areas where telecommunication construction activities will involve trenching and/or boring activities associated with the installation of the telecommunication line were also surveyed.

Biological survey data was collected by numerous techniques including the use of a hand-held Global Positioning System (GPS), standardized data forms, photographs, and aerial field maps. Surveys were conducted according to Table 2, which indicates survey dates.

Table 2. Survey Personnel and Dates

Date	Habitat Assessment	Focused MSHCP Plant Surveys
2006		
April 24	✓	
April 25	✓	
April 26	✓	
April 27	✓	
May 02	✓	
May 03	✓	
May 04	✓	
2007		
May 28		✓
May 29		✓
May 30		✓
May 31		✓
June 1		✓
June 4		✓
June 5		✓

Surveyors:
Matt Amalong; AMEC Biologist
John F. Green; AMEC Botanist/Biologist
Nathan Moorhatch; AMEC Biologist
Patrick McConnell; AMEC Botanist

3.0 EXISTING BIOLOGICAL SETTING

The topography in the study area is generally gentle rolling hills. The approximately 58 miles of study area contains a combination of agricultural, municipal, private, and reserve land, most with previous disturbance.

3.1 Climate

The study area is located within a Mediterranean climate region consisting of warm, dry summers and mild, wet winters. In summer, temperatures often reach 100º F and winter temperatures fall into the 30s, with an occasional freeze. Average annual temperature ranges are fairly moderate for the area, ranging from 49.3º F to 79.5º F. Average total precipitation for the area is approximately 10 to 15 inches per year (Western Regional Climate Center 2005).

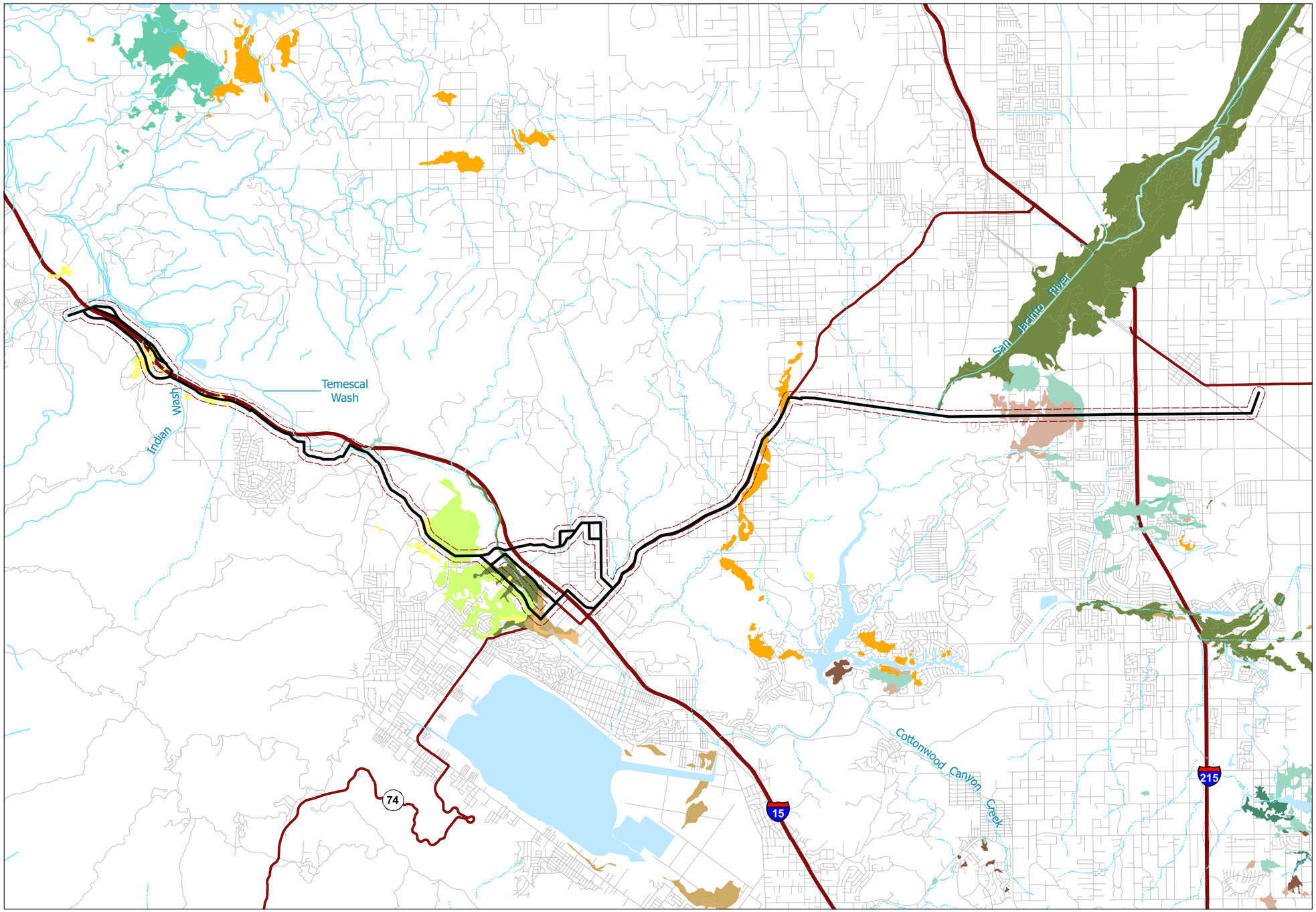
3.1.1 2006/2007 Rain Season

The 2006/2007 rain season (September 2006 through May 2007) was one of the driest winters on record for the Riverside region. The Elsinore station is the closest weather station to the project site with reliable monthly rainfall totals for the 2006/2007 rain season (i.e., no missing days during this period) (DRI 2007). The total rainfall for the 2006/2007 rain season to date was 0.44 inches (in) (1.11 centimeters [cm]), which falls extremely short of the yearly average (11.25 in [28.57 cm]) at this weather station by approximately 10.81 in (27.46 cm) (DRI 2007).

3.2 Soils

The project area is located on predominantly flat areas that have historically been used for grazing and agriculture. Soils in the study area are primarily in the Monserate-Arlington-Exeter and Traver-Domino-Willows associations. These soils are characterized as level to moderately steep soils that have a surface layer of sandy loam often with a hardpan. The soils can range from very shallow to relatively deep (USDA 1971). The soils in the area do not generally have a high clay component; however, there are “lenses” of clay soils in the study area.

The Traver-Domino-Willows association is considered a MSHCP sensitive soil type and includes saline-alkali soils largely located along floodplain areas of the San Jacinto River (Figure 3). Sensitive plants which may be supported by the Traver-Domino-Willows soil association include two federally listed species: San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) and spreading navarretia (*Navarretia fossalis*). Other sensitive plant species found in this association include Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var*. davidsonii*), and vernal barley (*Hordeum intercedens*) (County of Riverside 2003).



LEGEND

MSHCP Sensitive Soil Groups

- Altamont clay
- Altamont cobbly clay
- Auld clay
- Auld cobbly clay
- Bosanko clay
- Porterville clay
- Porterville cobbly clay
- Porterville gravelly clay
- Traver fine sandy loam
- Traver loamy fine sand
- Willows silty clay

Project Data

- Preferred Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

Rivers and Streams

- Perennial Stream
- Intermittent Stream
- Lake

Road Classification

- Major Freeways
- Roads

MAP NOTE

Data Source:
AMEC - Survey Boundary
RCIP - Riverside MSHCP
SCE - Preferred Route, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
\focus_survey\plant_survey\soilmxd
Date: 01/09/2008

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MSHCP Sensitive Soils
Valley - Ivyglen Transmission Line Project, California

FIGURE 3

Clay soils may support several listed threatened or endangered species: Munz's onion (*Allium munzii*), thread-leaved brodiaea (*Brodiaea filifolia*), and San Diego button celery (*Eryngium aristulatum* var. *parishii*). Other sensitive plant species occurring on clay soils include, Orcutt's brodiaea (*Brodiaea orcuttii*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), small-flowered morning glory (*Convolvulus simulans*), many-stemmed dudleya (*Dudleya multicaulis*), Palmer's grapplinghook (*Harpagonella palmeri*), graceful tarplant (*Holocarpha virgata* ssp*. elongata*), and small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) (County of Riverside 2003).

3.3 Vegetation Communities

The vegetation communities and land cover types in the Valley-Ivyglen Transmission Line Project area are primarily coastal sage scrub, grasslands, agriculture, and developed disturbed land (ruderal habitat). Additional plant communities found within the study area include oak woodlands, Riversidean alluvial fan sage scrub, riparian scrub/woodland/forest, and wetlands (Table 3). Previous agriculture, grazing, fire suppression, and invasion of nonnative plant species have contributed to the disturbed condition of many vegetation communities in the study area.

The vegetation communities which were identified in the Valley-Ivyglen Transmission Line Project area are described below. These communities are classified using the plant community definitions in the Western Riverside County MSHCP which is based on the vegetation communities presented in the *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986).

3.3.1 Coastal Sage Scrub

In western Riverside County, coastal sage scrub is found both in large contiguous blocks scattered throughout the county as well as integrated with chaparral and grasslands. Coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs, and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the vegetation community; however, characteristic species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), California encelia (*Encelia californica*), and several species of sage (e.g., *Salvia mellifera*, *S. apiana*). Other common species include brittlebush (*Encelia farinosa*), lemonadeberry (*Rhus integrifolia*), sugarbush (*R. ovata*), yellow bush penstemon (*Keckiella antirrhinoides*), Mexican elderberry (*Sambucus mexicana*), sweetbush (*Bebbia juncea*), boxthorn (*Lycium* spp.), shore cactus (*Opuntia littoralis*), coastal cholla (*O. prolifera*), tall prickly-pear (*O. oricola*), and species of Dudleya (*Dudleya* spp).

A subcategory of this vegetation type includes Riversidean sage scrub. This habitat type is the most xeric expression of the coastal sage scrub habitat. It includes the species listed above; however, it occurs in much drier conditions.

Table 3. Preferred Route Vegetation Communities

Vegetation Community		Acreage
Coastal Sage Scrub	Undisturbed	123.24
	Disturbed	666.58
Agriculture		15.87
Agriculture Field Crop		8.81
Agriculture Grove/Orchard		1.52
Disturbed/Developed		1703.78
Nonnative Grassland	Undisturbed	743.09
	Disturbed	38.10
Coast Live Oak Woodland		12.10
Riversidean Alluvial Sage Scrub	Undisturbed	30.09
	Disturbed	2.00
Alkali Marsh		22.75
Open Water		6.76
Seasonal Wetland		0.56
Riparian Scrub, Woodland, Forest	Southern Cottonwood/Willow Riparian Forest	57.12
	Southern Sycamore/Alder Riparian Woodland	4.82
	Southern Willow Scrub	55.83
	Mule Fat Scrub	12.06
	Riparian Scrub	1.31
	Tamarisk Scrub	0.77

3.3.2 Grasslands

Two general types of grasslands occur in western Riverside County: (1) nonnative dominated, primarily annual grassland (nonnative grassland); and (2) native dominated perennial grassland (valley and foothill grassland).

Valley and foothill grasslands typically contain the perennial bunch grasses purple needlegrass (*Nassella pulchra)* and foothill needlegrass (*N. lepida*). Lesser amounts of other native grasses, such as onion grass (*Melica* spp.), wild rye (*Leymus* spp.), muhly (*Muhlenbergia* spp.), and cane bluestem (*Bothriochloa barbinodis*), may also be present. In addition, nonnative grasses or forbs may be present to varying degrees. Native herbaceous plants commonly found within valley and foothill grasslands include yellow fiddleneck (*Amsinckia menziesii*), common calyptridium (*Calyptridium monardum*), suncup (*Camissonia* spp.), Chinese houses (*Collinsia heterophylla*), California poppy (*Eschscholzia californica*),

tarweed (*Hemizonia* spp.), coast goldfields (*Lasthenia californica*), common tidy-tips (*Layia platyglossa*), lupine (*Lupinus* spp.), popcornflower (*Plagiobothrys* spp.), blue dicks (*Dichelostemma capitata*), muilla (*Muilla* spp.), blue-eyed grass (*Sisyrinchium bellum*), and dudleya (*Dudleya* spp.) (County of Riverside 2003).

Nonnative grasslands are likely to be dominated by several species of grasses that have evolved to persist in concert with human agricultural practices: slender oat (*Avena barbata*), wild oat (*Avena fatua*), fox tail chess (*Bromus madritensis*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), barley (*Hordeum* spp.), rye grass (*Lolium multiflorum*), English ryegrass (*Lolium perenne*), rat-tail fescue (*Vulpia myuros*), and Mediterranean schismus (*Schismus barbatus*) (County of Riverside 2003).

3.3.3 Agriculture

Agricultural lands within the MSHCP boundary include areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves/orchards (County of Riverside 2003).

3.3.4 Developed or Disturbed Land

Developed or disturbed lands consist of areas that have been disced, cleared, or otherwise altered. Developed lands may include roadways, existing buildings, and structures. Disturbed lands may include ornamental plantings for landscaping, escaped exotics, or ruderal vegetation dominated by nonnative, weedy species such as mustard (*Brassica* sp.), fennel (*Foeniculum vulgare*), tocalote (*Centaurea melitensis*), and Russian thistle (*Salsola tragus*) (County of Riverside 2003).

3.3.5 Woodlands and Forest

Woodland and forest vegetation communities in western Riverside County are dominated by Engelmann oak (*Quercus engelmannii*), coast live oak (*Q. agrifolia*), canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizenii*), and black oak (*Q. kelloggii*) in the canopy, which may be continuous to intermittent or savannah-like. Four-needle pinyon (*Pinus quadrifolia*), single-leaf pinyon pine (*Pinus monophylla*), and California juniper (*Juniperus californica*) are the canopy species of peninsular juniper woodland which most commonly occur in Southern California, forming a scattered canopy from 3 to 15 meters (m) tall (County of Riverside 2003).

3.3.6 Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub occurs throughout many drainages within western Riverside County. Riversidean alluvial fan sage scrub is a Mediterranean shrubland type that occurs in washes and on gently sloping alluvial fans. Alluvial scrub is made up predominantly of drought-deciduous soft-leaved shrubs, but with significant cover of larger perennial species typically found in chaparral. Scalebroom (*Lepidospartum squamatum*) generally is regarded as an indicator of Riversidean alluvial scrub. In addition to scalebroom, alluvial scrub typically is composed of white sage (*Salvia apiana*), redberry (*Rhamnus crocea*),

California buckwheat, Spanish bayonet (*Yucca whipplei*), California croton (*Croton californicus*), cholla (*Opuntia* spp.), tarragon (*Artemisia dracunculus*), yerba santa (*Eriodictyon* spp.), mule fat (*Baccharis sarothroides*), and mountain-mahogany (*Cercocarpus betuloides*). Annual species composition has not been studied but is probably similar to that found in understories of neighboring shrubland vegetation. Two sensitive annual species, slender-horned spineflower (*Dodecahema leptoceras*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) are endemic to alluvial scrub vegetation in western Riverside County (County of Riverside 2003).

3.3.7 Riparian Forest, Woodland, and Scrub

Riparian vegetation, including forest, woodland, and scrub subtypes, is distributed in waterways and drainages throughout much of western Riverside County. Depending on community type, a riparian community may be dominated by any of several trees/shrubs, including box elder (*Acer negundo*), bigleaf maple (*Acer macrophyllum*), coast live oak, white alder (*Alnus rhombifolia*), sycamore (*Platanus racemosa*), Fremont's cottonwood (*Populus fremontii*), California walnut, Mexican elderberry, wild grape (*Vitis girdiana*), giant reed (*Arundo donax*), mule fat (*Baccharis salicifolia*), tamarisk (*Tamarix* spp.), or any of several species of willow (*Salix* spp.). In addition, various understory herbs may be present, such as saltgrass (*Distichlis spicata*), wild cucumber (*Marah macrocarpus*), mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica dioica*), and poison-oak (County of Riverside 2003). Subcategories of these habitat types within the project area include mule fat scrub, southern cottonwood/willow riparian, and southern sycamore/alder riparian woodland.

3.3.8 Meadows and Marshes

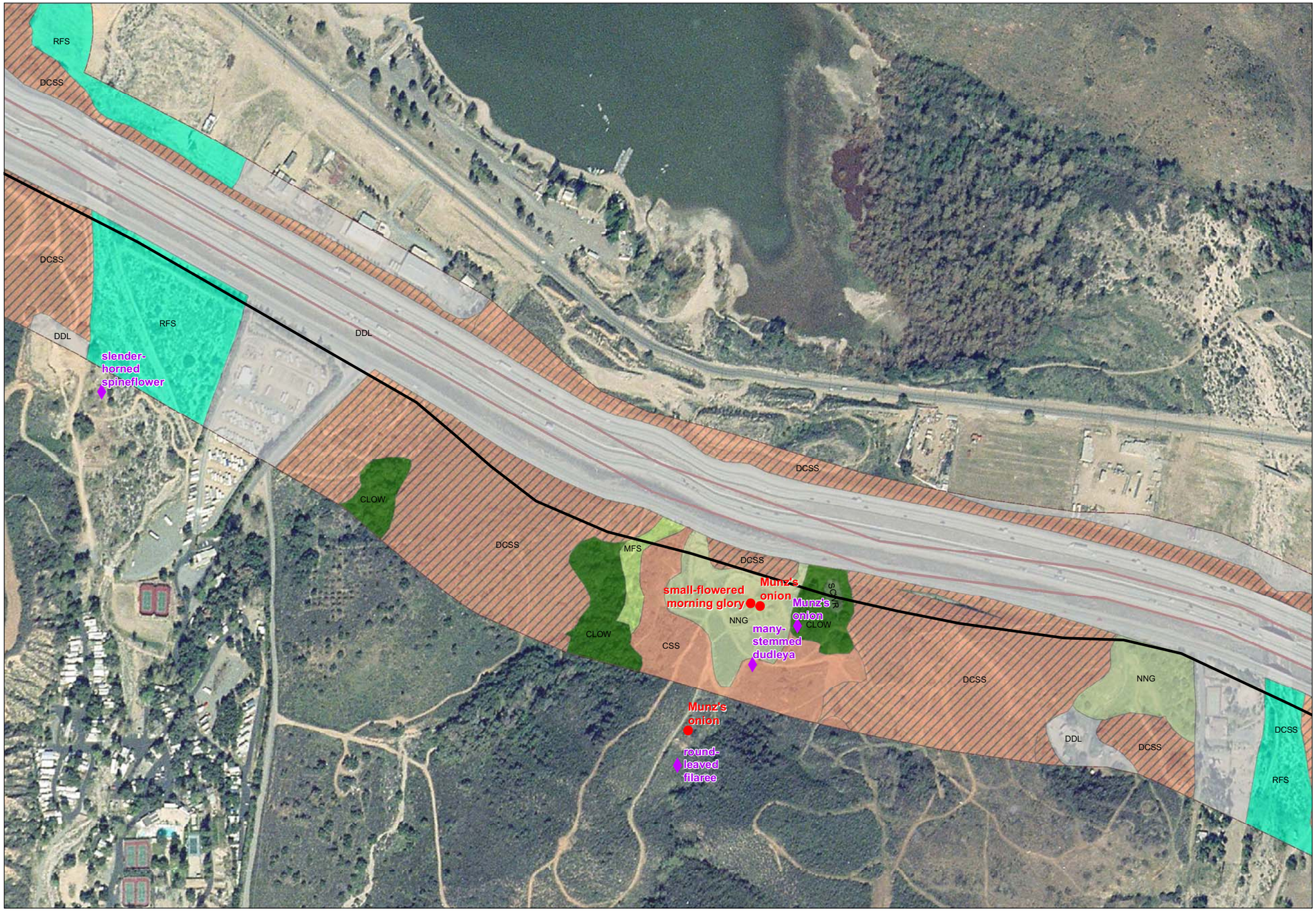
Meadow and marsh vegetation communities occur in both flowing and still water. This vegetation community includes cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), sedges (*Carex* spp.), spike rushes, flatsedges (*Cyperus* spp.), smartweed (*Polygonum* spp.), watercress (*Rorippa* spp.), yerba mansa (*Anemopsis californica*). It also contains perennial and biennial herbs (e.g., *Oenothera* spp., *Polygonum* spp., *Lupinus* spp., *Potentilla* spp., and *Sidalcea* spp.) and grasses (e.g., *Agrostis* spp., *Deschampsia* spp., and *Muhlenbergia* spp.). Rooted aquatic plant species with floating stems and leaves, such as pennywort (*Hydrocotyle* spp.), water smartweed (*Polygonum amphibium*), pondweeds (*Potamogeton* spp.), and water-parsley (*Oenanthe sarmentosa*) may also be present (County of Riverside 2003).

4.0 RESULTS

4.1 MSHCP Narrow Endemic and Criteria Area Plant Species

Two populations of Munz's onion (Map 32), a MSHCP Narrow Endemic Plant Species, and a population of small-flowered morning glory (*Convolvulus simulans*), a MSHCP Covered Species were identified during surveys conducted in 2006 (AMEC 2006) in association with clay soils along this route (Figure 4). Both populations were revisited during 2007 surveys; the population of small-flowered morning glory was identified within this area; however, Munz' onion was not identified. Entrix, Inc. (2006) additionally identified populations of smooth tarplant and San Diego ambrosia along this route (Figure 5); however, these species were not identified during AMEC's 2006 or 2007 field investigations. No additional MSHCP Narrow Endemic, Criteria Area or other special-status plant species were identified during the botanical surveys of this transmission line route.

Small-flowered morning-glory is restricted to clay soils and serpentine seeps and ridges, occurring below elevations of 700 m in southern valley needlegrass grassland, mixed native and nonnative grasslands and open Riversidian sage scrub (County of Riverside 2003). Small-flowered morning glory is designated as a MSHCP Group 2 species because the species is known from several MSHCP Core Areas and is restricted to particular soils series within the MSHCP area. Although the species has a scattered distribution (Lake Mathews, Alberhill, Santa Rosa Plateau, Murrieta Hot Springs, Vail Lake, Lake Skinner, East Hemet), populations appear to be concentrated in the vicinity of Vail Lake (County of Riverside 2003).



LEGEND

- Sensitive Species (AMEC)
- CNDDB Points (December 2007)

Vegetation Communities

- Coast Live Oak Woodland
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Mule Fat Scrub
- Non-native Grassland
- Disturbed Non-native Grassland
- Riversidean Alluvial Fan Sage Scrub
- Southern Cottonwood/Willow Riparian
- Residential/Urban/Exotic

Project Data

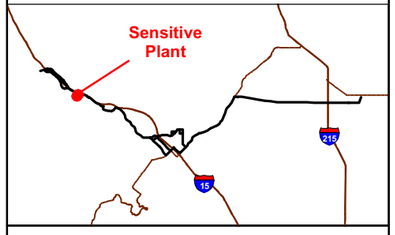
- Preferred Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

Road Classification

- Major Freeways
- Roads

Note:
The small-flowered morning glory was identified in 2006 and 2007; the Munz' onion only in 2006.



MAP NOTE

Data Source:
AMEC - Survey Boundary
RCIP - Riverside MSHCP
SCE - Preferred Route, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
\focus_survey\plant_survey\plant_1.mxd
Date: 01/14/2008

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

1 inch equals 400 feet

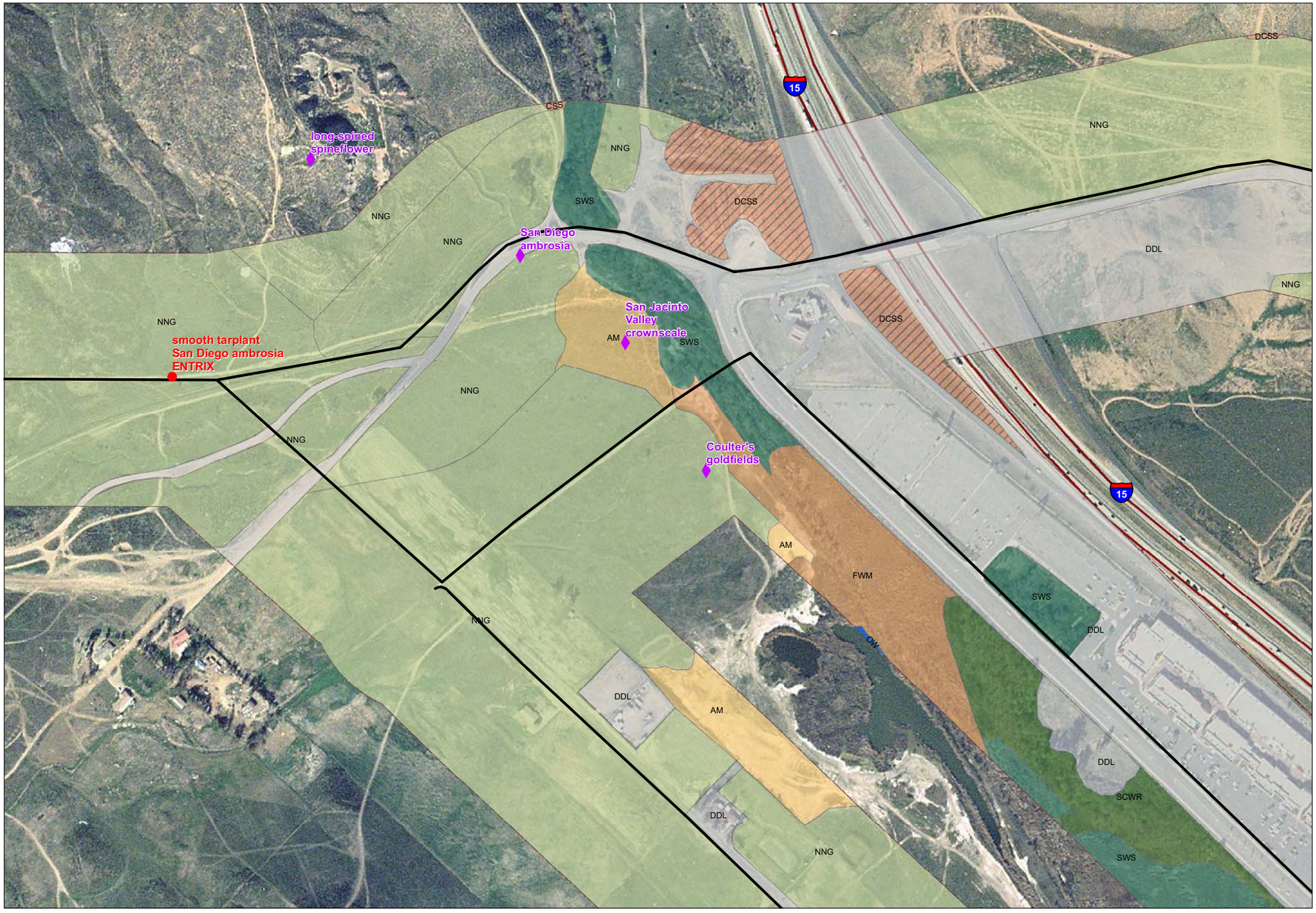
0 200 400 800 Feet

amec

Munz's Onion and Small-Flowered Morning Glory
Valley - Ivyglen Transmission Line Project, California

FIGURE

4



LEGEND

- Sensitive Species (AMEC)
- cnddbpnt

Vegetation Communities

- Alkali Marsh
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal and Valley Freshwater Marsh
- Non-native Grassland
- Open Water/Reservoir/Pond
- Southern Cottonwood/Willow Riparian
- Southern Willow Scrub
- Residential/Urban/Exotic

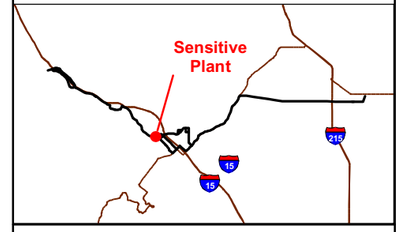
Project Data

- Preferred Route (Updated on 08/16/2007)
- Survey Boundary

Base Data

Road Classification

- Major Freeways
- Roads



MAP NOTE

Data Source:
AMEC - Plant Species Surveyed
SCE - Preferred Route, Base Data

Projection: Stateplane, California 406
NAD 83, Feet
Path: w\sd06\bio\SCE\ivy_glen\mxd\
\focus_survey\plant_survey\plant_2.mxd
Date: 01/14/2008

PROTECTED MATERIALS - Contains Critical Energy Infrastructure Information.

N

1 inch equals 400 feet

0 200 400 800 Feet

Smooth Tarplant and San Diego Ambrosia
Valley - Ivyglen Transmission Line Project, California

FIGURE

5

5.0 RECOMMENDED ADDITIONAL ASSESSMENTS AND SURVEYS

Field surveys of the proposed Valley-Ivyglen Transmission Line Project were conducted during late spring of 2007 (May and June). Additional focused botanical surveys during the spring of 2008 are recommended due to the limited rainfall that was received within the 2006/2007 rain season. These surveys would have to be properly timed to determine the presence or absence of these species with a monthly site visit beginning in March to determine optimal blooming period for peak vegetative analysis.

6.0 REFERENCES

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Appendix A
Plant Species Encountered

Appendix A
Plant Species Encountered

Family	Scientific Name	Common Name	Native/Exotic
Aizoaceae Fig-Marigold			
	Mesembryanthemum nodiflorum	Little Ice Plant	N
	Sesuvium verrucosum	Sea-Purslane	E
Amaranthaceae Amaranth			
	Amaranthus albus	White Tumbleweed	N
	Amaranthus blitoides	Prostrate Amaranth	N
Anacardiaceae Sumac			
	Malosma (Rhus) laurina	Laurel Sumac	N
	Rhus integrifolia	Lemonadeberry	N
	Rhus ovata	Sugar Bush	N
	Schinus molle	Brazilian Pepper Tree	E
	Toxicodendron diversilobum	Poison Oak	N
Apiaceae (Umbelliferae) Carrot			
	Apiastrum angustifolium	Mock Parsley	N
	Daucus pusillus	Wild Carrot	N
	Lomatium utriculatum	Bladder Parsnip	N
Asteraceae (Compositae) Sunflower			
	Ambrosia acanthicarpa	Sand Bur	N
	Ambrosia psilostachya	Western Ragweed	N
	Anthemis cotula	Mayweed	E
	Artemisia californica	California Sagebrush	N
	Artemisia douglasiana	Douglas' Mugwort	N
	Artemisia dracunculus	Tarragon	N
	Baccharis salicifolia	Mule Fat	N
	Baccharis sarothroides	Broom Baccharis	N
	Bebbia juncea	Sweetbrush	N
	Centaurea melitensis	Tocalote	E
	Cnicus benedictus	Blessed Thistle	E
	Conyza canadensis	Horseweed	N
	Conyza coulteri s	Fleabane	E
	Cotula coronopifolia	African Brass Buttons	E

Family	Scientific Name	Common Name	Native/Exotic
	Encelia californica	California Encelia	N
	Encelia farinosa	Brittlebush	N
	Deinandra (Hemizonia) fasciculata	Fascicled Tarplant	N
	Ericameria palmeri var. pachylepis	Box Spring Goldenbush	N
	Erigeron foliosus var. *foliosus*	Leafy Daisy	N
	Eriophyllum confertiflorum	Flat-Topped Goldern Yarrow	N
	Filago californica	Fluffweed	E
	Filago gallica	Narrow Leaf Filago	E
	Gnaphalium californicum	California Everlasting	N
	Gnaphalium luteo-album	Everlasting	E
	Gnaphalium palustre	Lowland Cudweed	N
	Gutierrezia californica	California Matchweed	N
	Hedypnois cretica	Hedypnois	E
	Helianthus annuus	Western Sunflower	N
	Helianthus gracilentis	Slender Sunflower	N
	Heterotheca grandiflora	Telegraph Weed	N
	Iva axillaris	Poverty Weed	N
	Lactuca serriola	Prickly Lettuce	E
	Lepidospartum squamatum	Scale Broom	N
	Lessingia filaginifolia	San Diego Sand Aster	N
	Matricaria globifera	Cattle Bush	E
	Matricaria matricarioides	Pineapple Weed	E
	Osmadenia tenella	Osmadenia	N
	Picris echioides	Bristly Ox-Tongue	E
	Pluchea sericea	Arrow Weed	N
	Rafinesquia sp.	Chickory	N
	Senecio flaccidus	Butterweed	N
	Silybum marianum	Milk Thistle	E
	Sonchus asper	Prickly Sow Thistle	E
	Sonchus oleraceus	Common Sow Thistle	E
	Stephanomeria virgata	San Diego Wreath Plant	N
	Stylocline gnaphalioides	Everlasting Nest Straw	N
	Tetradymia comosa	Cotton-Thorn	N
	Uropappus lindelyi	Silver Puffs	N
	Xanthium strumarium	Cocklebur	N
Boraginaceae Borage			

Family	Scientific Name	Common Name	Native/Exotic
	Heliotropium curassavicum	Salt Heliotrope	N
	Pectocarya linearis	Comb-Bur	N
Brassicaceae (Cruciferae) Mustard			
	Athysanus pusillus	Dwarf Athysanus	N
	Brassica geniculata	Mediterranean Mustard	E
	Brassica rapa	Field Mustard	E
	Capsella bursa-pastoris	Shephard's Purse	E
	Hirschfeldia incana	Short-Pod Mustard	E
	Lepidium nitidum	Peppergrass	E
	Lepidium dictyotum var. dictyotum	Peppergrass	N
	Lepidium latifolium	Broad-Leaved Peppergrass	E
	Raphanus sativus	Wild Radish	E
	Rorippa nasturtium-aquaticum	Watercress	N
	Sisymbrium irio	London Rocket	E
Cactaceae Cactus			
	Cylindropuntia parryi	Cholla	N
	Opuntia ficus-indica	Mission Prickly Pear	E
	Opuntia littoralis	Coastal Prickly Pair	N
Caprifoliaceae Honeysuckle			
	Sambucus mexicana	Blue Elderberry	N
Caryophyllaceae Pink			
	Spergularia bocconii	Boccone's Sandspurry	E
	Spergularia rubra	Ruby Sand Spurry	E
Chenopodiaceae Goosefoot			
	Atriplex argentea	Silverscale Saltbush	N
	Atriplex rosea	Tumbling Oracle	E
	Atriplex semibaccata	Australian Saltbush	E
	Atriplex suberecta	Peregrine Saltbush	E
	Bassia hyssopifolia	Fivehook	E
	Chenopodium californicum	California Pigweed	N
	Chenopodium murale	Nettle-Leaved Goosefoot	E
	Chenopodium pumili	Clammy Goosefoot	E

Family	Scientific Name	Common Name	Native/Exotic
	Salsola tragus	Russian Thistle	E
Convolvulaceae Morning Glory			
	Calystegia macrostegia	Morning Glory	N
	Convolvulus arvensis	Field Bindweed	E
	Convolvulus simulans	Small-Flowered Bindweed	N CNPS list 4.2/MSHCP
	Cressa truxillensis	Alkali Weed	N
Cuscutaceae Dodder			
	Cuscuta californica	California Dodder	N
	Cuscuta salina	Salt Marsh Dodder	N
Crassulaceae Stonecrop			
	Crassula connata	Sand Pygmyweed	N
	Dudleya lanceolata	Live-Forever	N
	Dudleya pulverulenta	Chalk Live-Forever	N
Cyperaceae Sedge			
	Carex sp.	Sedge	N
	Cyperus eragrostis	Tall Flatsedge	N
	Cyperus	Bearded	N
	Eleocharis macrostachya	Common Spikerush	N
	Scirpus acutus	Hardstem Bulrush	N
	Scirpus californicus	California Bulrush	N
Euphorbiaceae Spurge			
	Croton californicus	California Croton	N
	Chamaesyce albomarginata	Rattlesnake Weed	N
	Chamaesyce polycarpa	Ground Spurge	N
	Eremocarpus setiger	Doveweed	N
	Ricinus communis	Castor Bean	E
	Stillingia linearifolia	Linear-Leaf Stillingia	N
Fabaceae (Leguminosae) Pea			
	Astragalus pomonensis	Pomona Rattleweed	N
	Lotus hamatus	Small-Flowered Lotus	N

Family	Scientific Name	Common Name	Native/Exotic
	Lotus purshianus	Spanish Clover	N
	Lotus salsuginosus	Alkali Lotus	N
	Lotus scoparius ssp. *brevialatus*	Deerweed	N
	Lotus strigosus	Strigose Bird's Foot Treifoil	N
	Lupinus bicolor	Miniature Lotus	N
	Lupinus excubitus	Grape Soda Lupine	N
	Lupinus succulentus	Collar Lupine	N
	Medicago polymorpha	Bur-Clover	E
	Parkinsonia aculeata	Mexican Palo Verde	E
	Trifolium obtusiflorum	Clammy Clover	N
	Vicia benghalensis	Purple Vetch	E
Fagaceae Oak			
	Quercus agrifolia var. agrifolia	Coast Live Oak	N
	Quercus berberidifolia	Scrub Oak	N
Frankeniaceae Frankenia			
	Frankenia salina	Alkali Heath	N
Gentianaceae Gentian			
	Centaurium venustum	Canchalagua	N
Geraniaceae Geranium			
	Erodium botrys	Long-Beak Filaree	E
	Erodium cicutarium	Red-Stem Filaree	E
Hydrophyllaceae Waterleaf			
	Phacelia distans	Wild Heliotrope	N
	Phacelia minor	California Bluebells	N
	Phacelia ramosissima var. *latifolia*	Branching Phacelia	N
Juncaceae Rush			
	Juncus bufonius	Toad Rush	N
	Juncus mexicanus	Mexican Rush	N
Lamiaceae (Labiatae) Mint			
	Lamium ampexicaule	Henbit	E

Family	Scientific Name	Common Name	Native/Exotic
	Marrubium vulgare	Horehound	E
	Robinia sp.	Black Locust	E
	Salvia apiana	Cleveland Sedg	N
	Salvia mellifera	Black Sage	N
	Stachys ajugoides	Hedge Nettle	N
Liliaceae Lily			
	Chlorogalum parviflorum	Small Flower Soap Plant	N
Lythraceae Loosestrife			
	Lythrum californicum	California Loosestrife	N
	Lythrum hyssopifolia	Grass Poly	E
Malvaceae Mallow			
	Malacothamnus fasciculatus	Bush Mallow	N
	Malva parviflora	Cheeseweed	E
	Malvella leprosa	Alkali Mallow	N
Onagraceae Evening Primrose			
	Camissonia bistorta	Southern Sun Cup	N
	Camissonia californica	False Mustard	N
	Epilobium ciliatum	Willow Herb	N
Papaveraceae Poppy			
	Eschscholzia californica	California Poppy	N
	Romneya coulteri	Matilija Poppy	N
Plantaginaceae Plantain			
	Plantago erecta	California Plantain	N
	Plantago lanceolata	Narrow-Leaf Plantain	E
	Plantago major	Plantain	E
Platanaceae Plane Tree			
	Platanus racemosa	Western Sycamore	N
Poaceae (Gramineae) Grass			
	Arundo donax	Giant Reed	E

Family	Scientific Name	Common Name	Native/Exotic
	Avena fatua	Wild Oat	E
	Bromus catharticus	Rescue Grass	E
	Bromus diandrus	Ripgut Grass	E
	Bromus hordeaceus	Soft Chess	E
	Bromus madritensis ssp. rubens	Red Brome	E
	Distichlis spicata	Saltgrass	N
	Elymus condensatus	Giant Wild Rye	N
	Hordeum marinum	Mediterranean Barley	E
	Lolium multiflorum	Italian Ryegrass	E
	Lolium perenne	Perennial Ryegrass	E
	Phalaris paradoxa	Canary Grass	E
	Polypogon monspeliensis	Rabbitfoot Grass	E
	Bromus	Ripgut	E
	Bromus	Ripgut	E
Polygonaceae Buckwheat			
	Chorizanthe staticoides	Turkish Rugging	N
	Eriogonum elongatum	Long-Stemmed Eriogonum	N
	Eriogonum fasciculatum var. *foliolosum*	Leafy Buckwheat	N
	Eriogonum gracile	Slender Buckwheat	N
	Polygonum aviculare	Prostrate Knotweed	E
	Rumex crispus	Curly Dock	E
	Rumex salicifolius	Willow-Leaved Dock	N
Portulaceae Purslane			
	Anagallis arvensis	Scarlet Pimpernel	E
Primulaceae Primrose			
	Ceanothus crassifolius	Hoaryleaf Ceanothus	N
	Rhamnus crocea	Red-Berry	N
Rosaceae Rose			
	Adenostoma fasciculatum	Chamise	N
Salicaceae Willow			
	Salix gooddingii	Goodding's Willow	N

Family	Scientific Name	Common Name	Native/Exotic
Scrophulariaceae Figwort			
	Keckiella antirrhinoides	Chaparral Beard-Tongue	N
	Mimulus brevipes	Hillside Monkeyflower	N
	Mimulus cardinalis	Scarlet Monkeyflower	N
	Mimulus guttatus	Common-Monkey Flower	N
Selaginellaceae Spike Moss Fmily			
	Selaginella bigelovii	Bigelow's Spikemoss	N
Simaroubaceae Quassia			
	Ailanthus altissima	Tree Of Heaven	E
Solanaceae Nightshade Family			
	Datura wrightii	Jimson Weed	N
	Nicotiana quadrivalvis	Indian Tobacco	E
	Solanum douglasii	White Nightshade	N
Saururaceae Lizard-Tail			
	Anemopsis californica	Yerba Mansa	N
Urticaceae Nettle			
	Urtica dioica	Stinging Nettle	N
Verbenaceae Vervain			
	Verbena lasiostachys	Weedy Verbena	N