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California Energy Commission
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AUG 27 2012

Cogentrix Quail Brush Generation Project - Docket Number 11-AFC-03: Draft Biological Resources Survey Report, Cogentrix Quail Brush Generation Project City of San Diego, San Diego County, California, Appendix F

Docket Clerk:

Pursuant to the provisions of Title 20, California Code of Regulations, and on behalf of Quail Brush Genco, LLC, a wholly owned subsidiary of Cogentrix Energy, LLC, Tetra Tech hereby submits the *Draft Biological Resources Survey Report Cogentrix Quail Brush Generation Project City of San Diego, San Diego County, California, Appendix F*. Appendix F provides a set of 87 biological resources maps previously requested by the CEC. The Quail Brush generation Project is a 100 megawatt natural gas fired electric generation peaking facility to be located in the City of San Diego, California.

The topics addressed in this letter include the following:

- Biological Resources

If you have any questions regarding this submittal, please contact Rick Neff at (704) 525-3800 or me at (303) 980.3653.

Sincerely,

Constance E. Farmer
Project Manager/Tetra Tech

cc: Lori Ziebart, Cogentrix
John Collins, Cogentrix
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Proof of Service List

TETRA TECH EC, INC.



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION
FOR THE *QUAIL BRUSH GENERATION PROJECT***

**DOCKET NO. 11-AFC-03
PROOF OF SERVICE
(Revised 8/14/2012)**

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DECLARATION OF SERVICE

I, Constance E. Farmer, declare that on August 24, 2012, I served and filed a copy of the attached: Draft Biological Resources Survey Report, Cogentrix Quail Brush Generation Project City of San Diego, San Diego County, California, Appendix F (Docket Number 11-AFC-03), dated August 24, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: <http://www.energy.ca.gov/sitingcases/quailbrush/index.html>.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

- ☐ Served electronically to all e-mail addresses on the Proof of Service list;
- ☒ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked "hard copy required" or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

- ☒ by sending an electronic copy to the e-mail address below (preferred method); *OR*
- ☐ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION - DOCKET UNIT
Attn: Docket No. 11-AFC-03
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OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

- ☐ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Constance E. Farmer

Biological Resources Survey Report
Cogentrix Quail Brush Generation Project
City of San Diego, San Diego County, California

La Mesa, California, USGS 7.5-minute Topographic Quadrangle Map
Township 15 South, Range 1 West, Section 7, Township 15 South, Range 2 West,
Section 12 and Unsectioned portions of El Cajon and Mission San Diego Land Grants

Prepared for:



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Report Date: August 6, 2012

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SUMMARY OF FINDINGS

Michael Brandman Associates (MBA) conducted biological surveys at the Quail Brush Project site as part of the California Environmental Quality Act (CEQA) requirements for assessing potentially significant impacts to sensitive biological resources within the project site. The purpose of the surveys is to document current biological conditions and provide information to assist in determining if significant impacts will occur during future project construction activities. The proposed project consists of a 100-megawatt gas-fired intermediate/peaking plant (herein referred to as the power plant site), a 138-kilovolt (kV) generation tie-line (gen tie), an utility switchyard, an 8-inch underground natural gas pipeline, temporary construction laydown area, and an offsite parking area. The proposed project site encompasses all project facilities described above. The project site is located in the eastern portion of the City of San Diego, California just south of the Sycamore Landfill. The project site is currently undeveloped with minimal disturbance throughout the project site. In addition to the project site, several additional parcels were included in the biological resources study as buffer areas to the proposed project or potential mitigation areas. The potential mitigation areas and the buffer areas along with the project site make up the overall biological resources survey area, hereafter referred to as survey area.

Biological resources surveys were conducted for the proposed project as required by the City of San Diego (City) in application for a Zone Change as well as by the California Energy Commission (CEC) for their Application for Certification (AFC). Biological surveys were conducted within the survey area, in the late spring and summer of 2011. Due to a project design change, the survey area expanded and additional surveys were conducted during the spring and summer of 2012 (Supplement 2 and 3).

MBA biologists¹ conducted multiple surveys to document the current existing conditions within the biological survey area including focused surveys for sensitive plants (MBA 2011a, 2012a), coastal California gnatcatcher (MBA 2011b and 2012b), Quino Checkerspot butterfly (MBA 2012c), Hermes copper butterfly, and a jurisdictional delineation of waters of the United States (MBA 2011c). The biological survey area occurs within the City of San Diego Subarea Plan of the Multiple Species Conservation Program (MSCP), partially within and immediately adjacent to the Multiple Habitat Planning Area (MHPA). The biological survey area was evaluated for consistency with the goals and objectives of the City of San Diego Subarea Plan of the MSCP (Subarea Plan).

The initial reconnaissance-level survey in 2011 determined that the survey area provides marginal to suitable habitat for 15 special-status plant species. Five special-status plant species were found within the biological survey area: San Diego barrel cactus (*Ferocactus viridescens*), variegated dudleya (*Dudleya variegata*), heart-leaved pitcher sage (*Lepichina cardiophylla*), San Diego goldstars (*Muilla clevelandii*), and willow monardella (*Monardella viminea*). Therefore, these five special-status

¹ See Appendix G, Biologist Resumes.

species are considered present in the biological survey area. San Diego barrel cactus and variegated dudleya are the only sensitive plants species within the project site and will likely be impacted by project development. All five species are covered under the Subarea Plan, and are considered adequately conserved, if the conditions described in Appendix A of the Subarea Plan are implemented.

Based on the existing conditions within the survey area and records of special-status wildlife species known to occur in the region, 17 special-status wildlife species were determined to have a moderate to high potential to occur within the biological survey area. These species include: Hermes copper butterfly (*Lycaena hermes*), orange-throated whiptail (*Aspidoscelis hyperythrus*), northern red-diamond rattlesnake (*Crotalus ruber ruber*), Coronado Island skink (*Plestiodon skiltonianus interparietalis*), Cooper's hawk (*Accipiter cooperi*), white-tailed kite (*Elanus leucurus*), Bell's sage sparrow (*Amphispiza belli belli*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), yellow warbler (*Dendroica petechia brewsteri*), California horned lark (*Eremophila alpestris actia*), yellow-breasted chat (*Icteria virens*), least bittern (*Ixobrychus exilis*), coastal California gnatcatcher (*Poliophtila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego black-tailed jackrabbit (*Lepus californicus*).

The orange-throated whiptail, northern red-diamond rattlesnake, Coronado Island skink, California horned lark, yellow-breasted chat, least bittern, Dulzura pocket mouse, northwestern San Diego pocket mouse, black-tailed jackrabbit are not covered under the Subarea Plan; however, project-related impacts to these California species of special concern, will be limited and will not result in a significant decline to the species population to less than a self-sustaining level. The only sensitive wildlife species observed within the project site was the Coronado Island skink and only a single individual was observed. Project-related impacts to the vegetation communities within the project site is considered minimal in comparison to the surrounding undeveloped areas. Mitigation parcels that will be set aside for impacts to vegetation communities will more than reduce the impacts to the Coronado Island skink to a level of less than significant. The remaining sensitive wildlife species are not likely to be impacted. Avoidance measures and biological monitoring is recommended during initial vegetation removal.

The biological survey area also contains suitable nesting and foraging habitat for resident and migratory birds and raptors that are protected under the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game (CFG) Code (Appendix A – Fauna Compendium). Breeding season avoidance and minimization measures are prescribed herein to reduce any potential project-related impacts to bird species protected under the MBTA and CFG Code to less than significant.

The biological survey area contains one drainage feature subject to the jurisdiction of the United States Army Corps of Engineers (USACE), the San Diego Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG). The drainage contains 1.88

acres of non-wetland waters of the United States, of which 0.02 acre is wetland, while a total 2.17 acres of streambed may be subject to CDFG jurisdiction. The main drainage feature within the survey area is associated with Spring Canyon on the western side of the biological survey area and eventually connects to the San Diego River, a relatively permanent water, at an off site location (approximately one mile to the south). This drainage feature is not within the project site and will not be impacted. A letter report from the USACE concurs that the proposed biological survey area contains a drainage feature that will likely be considered jurisdictional by the USACE; therefore, this drainage feature will be completely avoided so as not to require any USACE permitting.

SECTION 1: INTRODUCTION

At the request of Tetra Tech EC, Inc., MBA conducted a biological resources survey for the Cogentrix Quail Brush Generation Project. The proposed project consists of a 100-megawatt gas-fired intermediate/peaking plant, hereafter referred to as power plant site or site, and associated facilities, located in the City of San Diego, San Diego County, California. A 425.31-acre biological resource survey area was established for the project that encompasses all parcels for which anticipated facilities are proposed in addition to potential mitigation parcels, staging area, and additional parking area. The general biological resource surveys described in this document were conducted on the entire 425.31-acre biological survey area.

The project applicant, Quail Brush Genco, LLC, is also submitting an Application for Certification to the California Energy Commission (CEC) for approval of the proposed project. Thus, Quail Brush Genco, LLC is required to provide a thorough analysis of all potential onsite and offsite impacts through demonstration of project consistency with the City of San Diego Subarea Plan of the MSCP, and preparation of a CEQA-level biological resources study. To fulfill the biological resources requirements for the processing and approval of the proposed project, this Biological Resources Survey Report was prepared. The Biological Resources Survey Report documents the current existing conditions within the biological survey area and includes a technical analysis of potential project impacts to sensitive plant and wildlife species, native vegetation, or other sensitive biological resources, and provides recommendations to mitigate for significant project-related impacts to a level of less than significant, if applicable. The existing conditions documented in this report can be used for two years without reassessing the existing conditions.

1.1 - Project Site Location

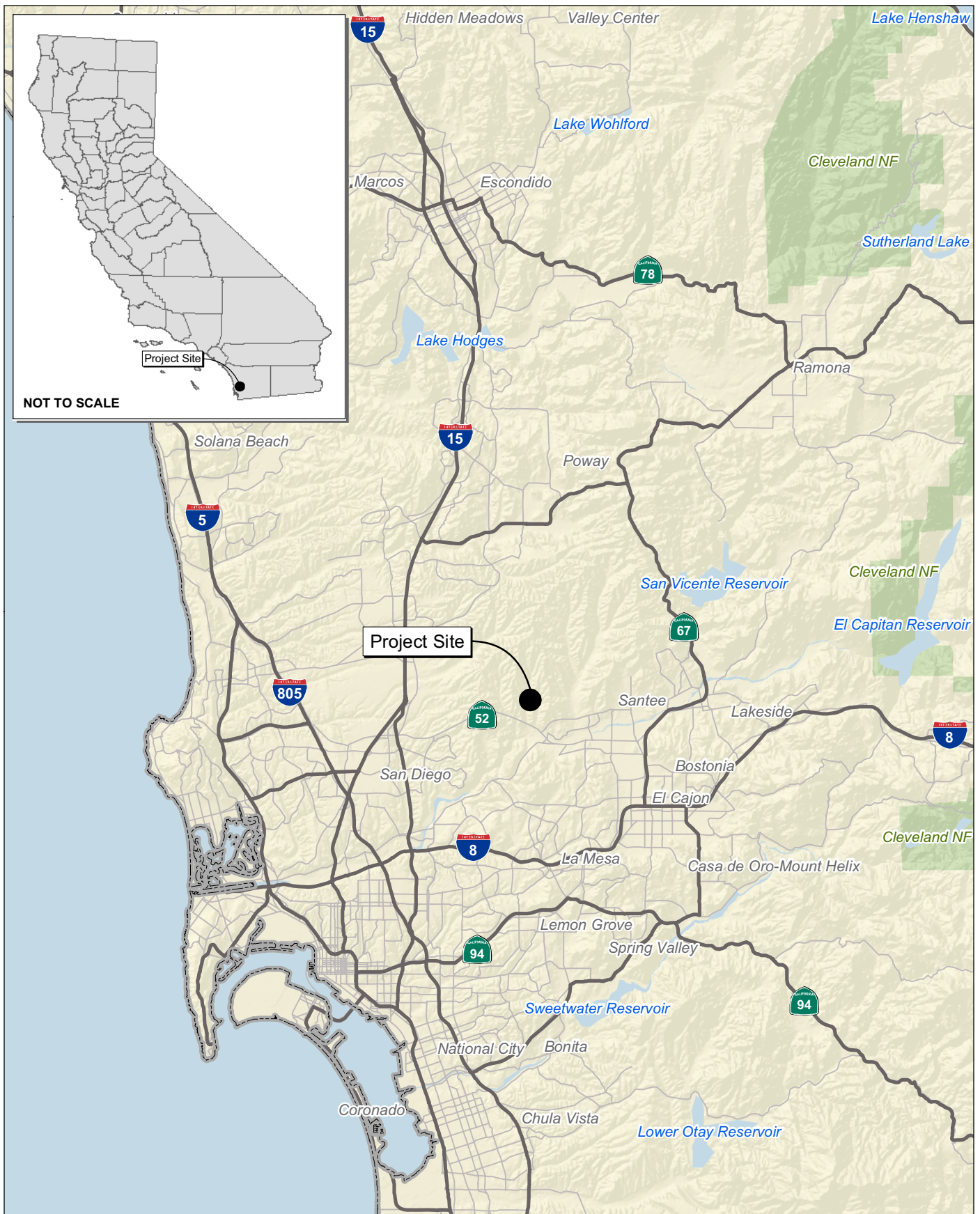
The project site is generally located north of Interstate (I) 8, south of State Route (SR) 78, east of I - 15, and west of SR-67 in the City of San Diego, California (Exhibit 1). The project site is located within Township 15 South, Range 1 West, Section 7, Township 15 South, Range 2 West, Section 12, and unsectioned portions of El Cajon and Mission San Diego Land Grants, within the La Mesa, California, United States Geological Survey (USGS) 7.5-minute topographic quadrangle map (Exhibit 2). The project site is specifically located north of San Clemente Canyon Freeway (SR-52), east of Medina Drive, and east of Sycamore Landfill Road adjacent to the Sycamore Canyon Landfill (Exhibit 3).

The project site occurs within the boundaries of the City of San Diego Subarea Plan (Subarea Plan) of the MSCP, and portions of the project site occur within the MHPA. Some portion of the proposed mitigation parcels also fall within the existing MHPA as well as an Environmentally Sensitive Area (Exhibit 6). The MHPA continues to the south, east, and west of the biological survey area, within

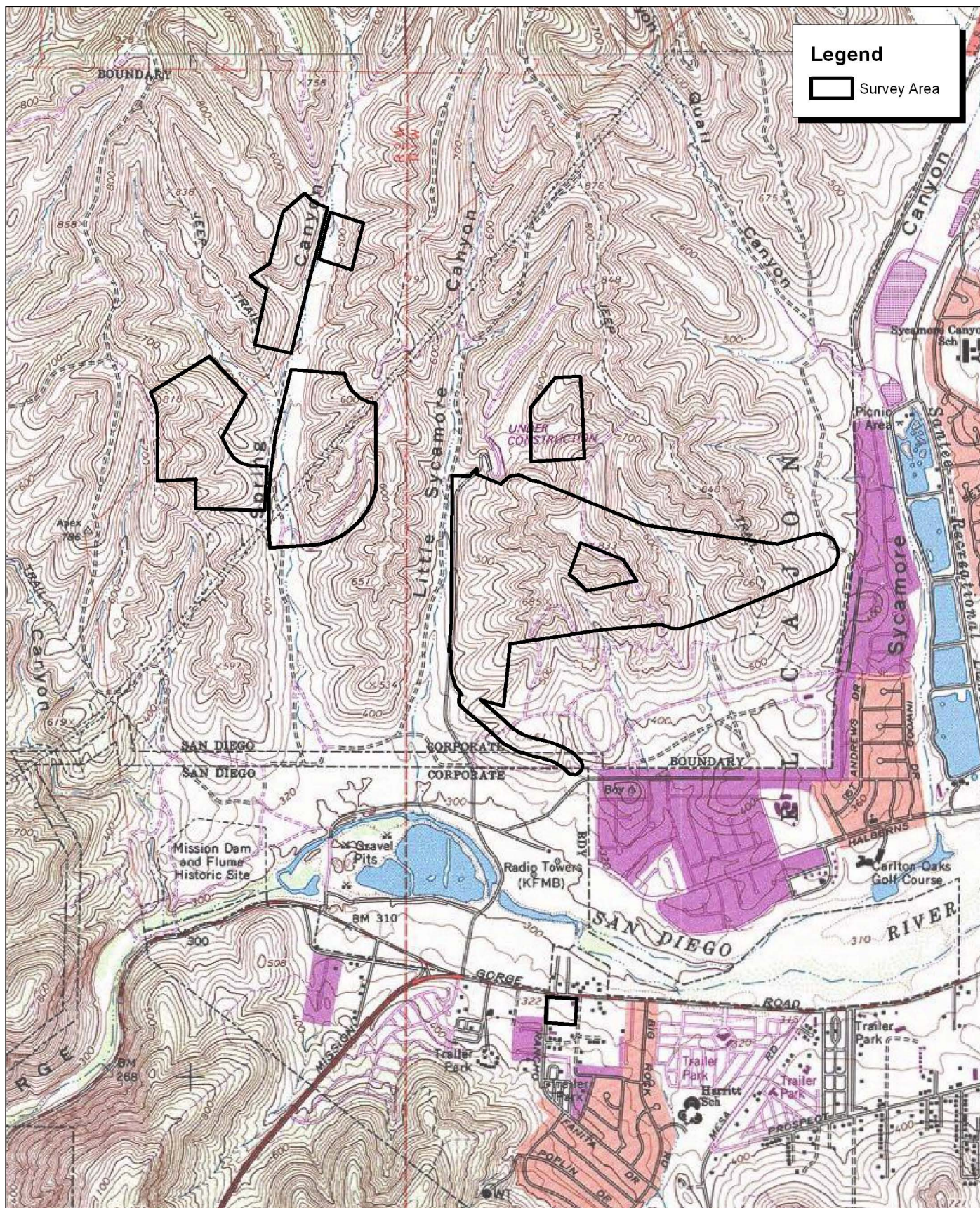
undeveloped open space areas around the landfill. The ESA is specifically associated with the drainage feature within Spring Canyon.

The biological survey area is associated with the entire or portions of the following Assessor's Parcel Numbers (APNs):

- | | | | |
|--------------|--------------|--------------|--------------|
| • 366-03-031 | • 366-03-035 | • 366-03-036 | • 366-03-039 |
| • 366-03-047 | • 366-03-112 | • 366-04-101 | • 366-07-030 |
| • 366-07-031 | • 366-07-034 | • 366-07-048 | • 366-07-065 |
| • 366-08-016 | • 366-08-022 | • 366-08-024 | • 366-08-025 |
| • 366-08-026 | • 366-08-027 | • 366-08-028 | • 366-08-028 |
| • 366-08-029 | • 366-08-030 | • 366-08-031 | • 366-08-057 |
| • 366-08-102 | • 366-08-103 | • 366-08-104 | • 366-08-105 |
| • 366-08-119 | • 366-08-120 | • 366-08-125 | • 366-08-127 |
| • 366-07-130 | • 366-07-131 | • 366-08-132 | • 366-09-023 |
| • 366-09-024 | • 366-09-025 | • 366-09-29 | |



Source: Census 2000 Data, The CaSIL, MBA GIS 2012.



Source: ESRI USA Topo USGS La Mesa, CA (1994) and Poway, CA (1996) 7.5' DRG.



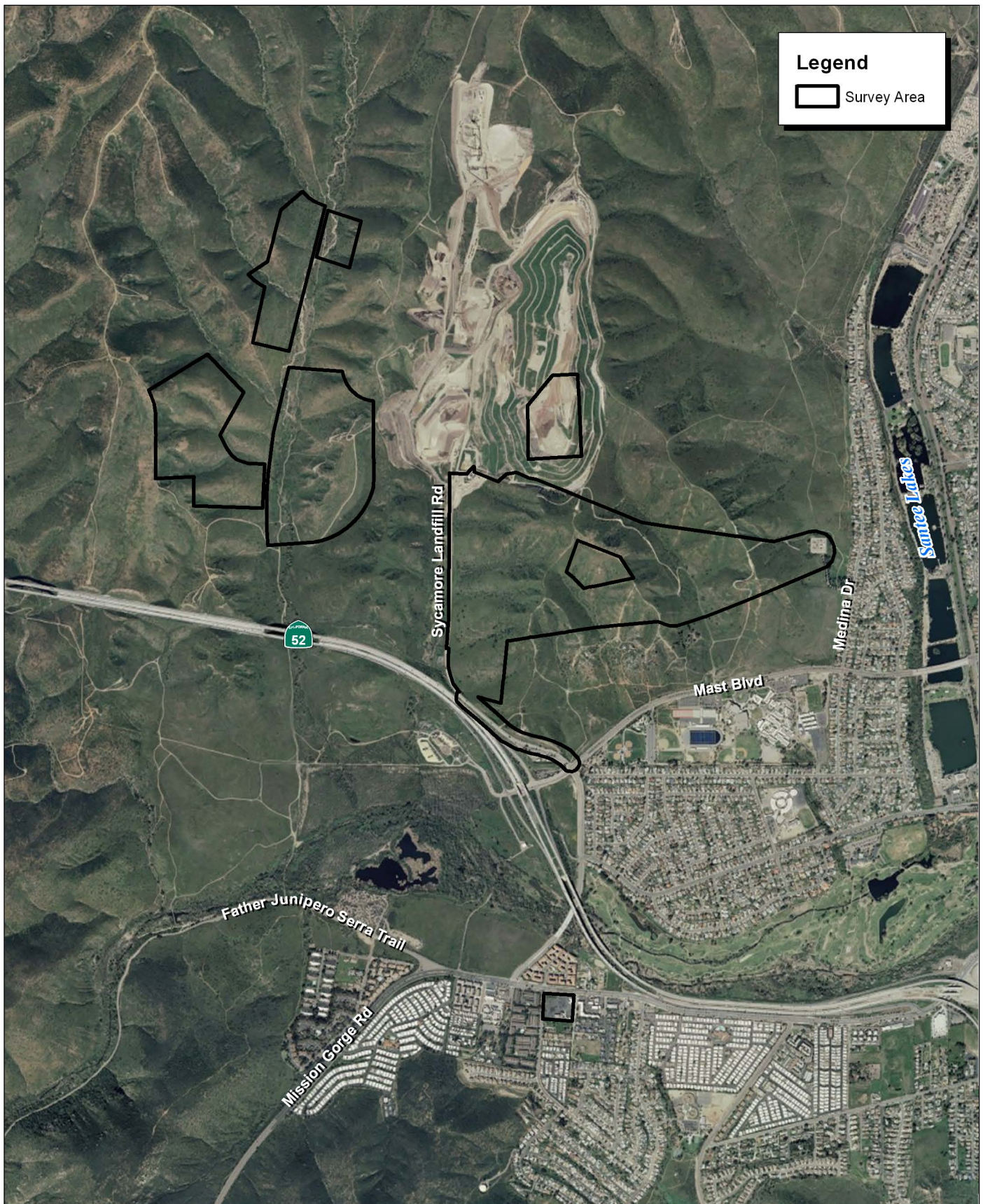
Michael Brandman Associates

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Exhibit 2 Local Vicinity Map Topographic Base

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT



Source: ESRI Aerial Imagery, MBA Field Survey and GIS Data, 2012.



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Exhibit 3 Local Vicinity Map Aerial Base

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT

1.2 - Project Description

Quail Brush Genco, LLC recently signed a long-term power-purchase agreement with San Diego Gas & Electric (SDG&E) to deliver power to homes and businesses in San Diego. This proposed project was one of three projects selected by SDG&E to meet their 2009 solicitation for conventional generation. Natural gas power plants are a major goal of the San Diego Association of Governments (SANDAG) Regional Energy Strategy 2009. Goal 2 of the SANDAG Regional Energy Strategy 2030 is to increase in-county energy generation. The Quail Brush Generation Project is consistent with these strategies.

The proposed project consists of 6 main project components, the construction and operation of the following facilities:

- A 100-MW peaker plant.
- A 138 kV transmission line.
- Utility Switchyard.
- An 8-inch underground natural gas pipeline.
- Temporary Construction Laydown Area.
- Off-Site Parking Area.

A preliminary project design was submitted as part of the original AFC. Following the first set of Data Requested received from the CEC, a subsequent project was designed to reduce the amount of biological resource impacts and utilize the existing SDG&E substation. This updated version of the project site is referred to as Supplement 2. More recently, a third version of the project site was designed to reduce even more biological resources and is referred to as Supplement 3. In order to better understand the affects of project site modification, a description of each project design is included below. The biological resource survey area was set to encompass the Supplement 2 and Supplement 3 project designs, which includes the footprints of all project facilities, associated buffer areas, and potential mitigation parcels.

1.2.1 - AFC-Design

- A 100-MW peaker plant. Located just south of the Sycamore Land Fill.
- A 230 kV transmission line. Approximately 1-mile long, traversing north and west of the site to SDG&E's Migeul to Mission 230kV transmission line.
- A 230 kV Utility Switchyard. Located along the ridge line between Spring Canyon and Sycamore Canyon.
- An 8-inch underground natural gas pipeline. Travels from Mast Street to Sycamore Landfill Road to the power plant site.

- Temporary Construction Laydown Area. Located within the existing Sycamore Land Fill.
- Offsite Parking Area. Located south of the Mast Street.

1.2.2 - Supplement 2 Design

- A 100-MW peaker plant. Located just south of the Sycamore Land Fill.
- A 138 kV transmission line. Travels north to the Sycamore Land Fill, then east to connect with the existing SDG&E Substation.
- A Switchyard. Located in the existing SDG&E Substation.
- An 8-inch underground natural gas pipeline. Travels from Mast Street to Sycamore Landfill Road to the power plant site.
- Temporary Construction Laydown Area. Located within the existing Sycamore Land Fill.
- Offsite Parking Area. Located south of the Mast Street.

1.2.3 - Supplement 3 Design

- A 100-MW peaker plant. Located 50-feet south of the AFC and Supplement 2 power plant site location.
- A 138 kV transmission line. Is a loop line that travels north to the southern portion of the Sycamore Land Fill, connects to the existing SDG&E line and travels back to the power plant site.
- A Switchyard. Located immediately northeast of the power plant site.
- An 8-inch underground natural gas pipeline. Travels from Mast Street to Sycamore Landfill Road to the power plant site.
- Temporary Construction Laydown Area. Located within the existing Sycamore Land Fill.
- Offsite Parking Area. Located south of the Mast Street.

The location of the proposed project was selected because of its close proximity to the existing landfill and existing electric transmission and natural gas lines. The proposed project will be located on a 21.7-acre privately-owned parcel optioned by Development Land Holdings, LLC. The parcel is located in an area currently zoned RS-1-8 (single-family residential use). Development Land Holdings and the project company Quail Brush Genco, LLC, are wholly owned subsidiaries of Cogentrix Energy, LLC, and the project owner/operator.

SECTION 2: METHODOLOGY

This section includes a discussion of the methodology practiced as part of a literature review and biological resources survey for the proposed project. Potential project-related effects to biological resources were analyzed in accordance with CEQA, the federal Endangered Species Act (ESA), the California State Endangered Species Act (CESA), and all other relevant environmental policies and regulations that are provided in Appendix A, Regulatory Framework.

2.1 - Literature Review

Prior to conducting biological resource surveys, a literature review was conducted of the environmental and regulatory setting for the biological survey area. The literature review provides a baseline from which to evaluate the biological resources potentially occurring within the biological survey area, and the local and regional vicinity.

The literature review began with a thorough review of aerial imagery of the biological survey area and vicinity, as well as the topographic electronic and hard copies of the La Mesa and Poway, California USGS 7.5-minute topographic quadrangle maps. Aerial imagery provided by Google Earth (Google 2011) was used to confirm the current locations of developed and undeveloped land, as well as verifying mapping efforts conducted for the local area.

A list of special status plant and wildlife species and their habitats, known to occur near the project site was compiled primarily from the CDFG's California Natural Diversity Database (CNDDDB), a sensitive species, and plant community account database. MBA conducted a query of the CNDDDB records based on a 10-mile radius surrounding the project site that included the Del Mar, El Cajon, Jamul Mountains, La Jolla, La Mesa, National City, Point Loma, Poway, and San Vicente Reservoir, California USGS 7.5-minute topographic quadrangle maps. The CNDDDB GIS database together with ArcGIS software, was used to confirm the locations of CNDDDB records. The California Native Plant Society (CNPS) online inventory database and Consortium of California Herbaria were also queried for the project site and vicinity. The CNPS online inventory provided additional sensitive species information for many species that have not been reported to the CNDDDB database. The locations of previously documented observations for sensitive plant and wildlife species were identified and plotted onto aerial and topographic maps to determine connectivity of suitable habitat and/or likely dispersing routes between the locations of observations and the project site.

Primary references used for the definitions of vegetation communities and habitat types include the Preliminary Descriptions of the Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions (Oberbauer 1996) and A Manual of California Vegetation (Sawyer, Keeler-Wolf, and Evens. 2009). Other references used extensively for the subject analysis include Rare Plants of San Diego County by Craig Rieser, posted for the San Diego Chapter of the Sierra Club's website (<http://sandiego.sierraclub.org/rareplants/>), and San Diego Native Plants (Lightner 2006).

The literature review also included a thorough review of the regulatory setting for the proposed project, including all relevant federal, state, and local policy pertaining to biological resources and pursuant to CEQA review. The Subarea Plan was also thoroughly reviewed. This includes the 80 species covered under the plan as identified in the Subarea Plan document's Section 1.3 "Covered Species List." These 80 species were reviewed for habitat assessment requirements as well as habitat suitability elements in determining their potential to occur in the area. The City of San Diego Municipal Code and the City of San Diego Biological Review References were reviewed for all applicable local regulatory policy and potential mitigation requirements for the project. The Biological Technical Report of the Sycamore Landfill Expansion Project (2012) was also reviewed for relevant information regarding long-term biological surveys within the immediate vicinity of the project site.

2.2 - Vegetation Community Mapping

Plant communities were mapped using recent aerial photography and plant community descriptions based on respected sources (Holland 1986, Oberbauer 1996, and Sawyer, Keeler-Wolf, and Evens. 2009). The entire biological survey area was walked in order to classify each vegetation community. A series of 10-meter wide transects were walked during focused plant surveys covering the entire survey area. Biologists periodically stopped to map the vegetation communities. A minimum mapping unit of 0.10 of an acre was used for upland areas. The standard mapping unit for a project of this size is 0.25 acre based on the City of San Diego Biology Guidelines.

Vegetation community classification began with a general overview of the common plants and wildlife species that occur within the survey area. The function and value of the vegetation community was taken into consideration when determining the appropriate vegetation community designation.

Aerial photograph prints were taken into the field to verify the edges of the vegetation communities. Generally, the vegetation community boundaries are easily identifiable. In areas where vegetation communities were difficult to determine—such as an ecotone—the function of the vegetation community was taken into consideration in determining the appropriate vegetation communities. In the most difficult areas, with obscure boundary lines, such as the edges between native and non-native grasslands, a Trimble GPS unit was used to mark the edges of the vegetation communities during the surveys.

When more than one vegetative community was present in an area, the vegetative community with more than 50 percent cover was used as the designation for that area. For example, an area containing 75 percent Diegan sage scrub and 25 percent grassland was designated as Diegan sage scrub. Likewise, if a grassland area contained 75 percent grasses and only 25 percent shrub cover, it was designated as grassland because it functions as grassland, even though some shrubs were present. In this example, the dominant vegetation and wildlife species are most closely associated with the

grassland community. In some instances, the vegetation community was designated as an ecotone with no distinction between two communities.

Native grasslands are an extremely rare plant community in the City of San Diego, and special attention was taken in determining the location and classification of native grasslands. For the purposes of this assessment, native grassland areas were determined based on a minimum of 20 percent vegetative cover of native grasses and annual forbs within an area larger than 0.1 of an acre.

2.3 - Habitat Assessment Survey

In the field, the biologist referred to aerial photographs with the biological survey area outlined for reference while conducting the survey. Plant communities were mapped using recent aerial photography and plant community descriptions based on respected sources (Holland 1986 and Sawyer, Keeler-Wolf, and Evens. 2009).

Parameters assessed regarding the habitat requirements for special status plant and wildlife species known to occur in the area include the presence of suitable physical characteristics (slope, aspect, and hydrology), vegetation and plant community compositions, and soil substrates. Additionally, the presence of suitable habitat for nesting, roosting, foraging, basking, dispersing, or other behavioral actions was assessed. Any evidence of previous disturbance on the project site was carefully noted and documented.

2.3.1 - General Flora

Common plant species observed during the site survey were identified by visual characteristics and morphology and recorded in a field notebook. Less familiar plants were identified off site using taxonomical guides. Taxonomic nomenclature used in this study follows Baldwin et al. (2012). Common plant names, when not available from Baldwin (2012), were taken from Munz (1974) or Roberts (1998). General plant studies were conducted during the early spring to mid-summer. Plant lists were also generated during many of the focused surveys conducted within the biological survey area. In this report, scientific names are provided immediately following common names for the first reference only. A list of all plants species observed onsite is provided in Appendix B.

2.3.2 - General Fauna

Wildlife species were detected during the survey by sight, calls, tracks, scat, and other signs. All wildlife species detected were recorded in a field notebook. Notations were made regarding general habitat conditions for sensitive species potentially occurring on the project site, based on preliminary literature review. The behavior of all species observed during surveys was carefully noted in an attempt to understand which species may be using the site for breeding, foraging, dispersal or otherwise. A list of all wildlife species detected during the field survey is provided in Appendix B.

Field guides were used to assist with identification of species during surveys and included Stebbins (1996) for amphibians and reptiles, National Geographic Society Field Guide to the Birds of North America (1987) for birds, and Burt and Grossenheider (1980) for mammals. Since common names of wildlife species are fairly well standardized, scientific names are not generally used in this report but are provided in Appendix A for reference. Appendix A lists all vertebrate wildlife and butterfly species observed or detected in the survey area during this survey.

General wildlife surveys were conducted during daylight hours. The object of these surveys was to ascertain general conditions and identify habitat areas that could be suitable for various common and special status species. Common species are generally considered potentially present in the project site if suitable habitat is present and the area lies within a species geographic range. Surveyors inspected habitat areas for diagnostic wildlife sign such as nests, burrows, tracks, vocalizations, and noted all direct observations. Surveyors also inspected surface litter, and turned over stones, fallen bark, and tree branches to look for secretive herpetiles (reptiles and amphibians). Observations of diagnostic signs were used to provide evidence of occurrence of these species. Conclusions regarding potential occurrence were based on consideration of habitat suitability factors.

Surveys for nesting raptors (birds of prey) were conducted simultaneously with other field surveys. Efforts included direct and incidental observation of raptor nests, owl pellets, and the identification of soaring (or perched) raptor species observed during surveys. Observed raptor species, as well as diagnostic sign, were recorded in field notes.

2.3.3 - Special Status Species

MBA biologists conducted focused surveys for several sensitive species of plants and animals, including special status plants species, Quino checkerspot butterfly, California gnatcatcher, and Hermes Copper. During focused surveys, investigators also recorded any notable wildlife observations, special status plant specimens, and significant habitat information as appropriate. All surveys were conducted on foot within all portions of the biological survey area that support suitable habitat for sensitive species.

Coastal sage scrub and non-native grasslands areas considered suitable for Quino checkerspot butterfly and California gnatcatcher were surveyed. This was determined by identifying whether the characteristic habitat requirements (i.e., diagnostic habitat elements), are present and by considering other ecological and abiotic factors relevant to particular species (e.g., elevation, topography, known distribution).

The potential for special status species to occur in the biological survey area was rated as follows:

- **Unlikely.** There are no recent or historical records of the species' occurrence in the general area and no potentially suitable habitat occurs in the survey area or near vicinity. The species is not expected to occur.

- **Low.** There are historical records of the species having occurred in the vicinity, but the survey lacks potentially suitable habitat areas. The species is not expected to occur but the possibility of an unusual occurrence cannot be ruled out.
- **Moderate.** The diagnostic habitat elements associated with the species occur in the survey area, but the species has not been recorded in the immediate vicinity. The species could occur but is not expected since it has not been reported previously.
- **High.** The species has been recorded in the vicinity and the diagnostic habitat elements associated with the species occur in the survey area. Although the species has not been identified on the project site, it is expected to occur.
- **Observed.** Individuals of the species, or its recent diagnostic sign, were reported by a competent, qualified observer on the project survey area, indicating its presence.

Special Status Plant Surveys

Plant species studied for this project include several species listed under the federal and/or state endangered species acts, as well as numerous other non-listed special plants that are designated as rare or otherwise significant or sensitive by the USFWS, CDFG, or CNPS. MBA's review of these records produced a preliminary list of 32 special status plant species that are known from records in the general vicinity (within 10 miles) including an additional species specifically requested by CDFG that was not included in the CNDDDB. MBA biologists considered the range and habitat needs of each of these 32 species to determine which taxa (species, subspecies, or varieties) warranted field surveys.

Ten species were determined to be unlikely to occur within the biological survey area or were considered to have a low potential for occurrence due to a lack of suitable habitat or were more than 5 miles from the survey area. Although we cannot completely rule out the possibility of these species occurring within the biological survey area, the chances of these species occurring are extremely low.

Of the 35 sensitive species, 25 taxa were selected for consideration because the biological survey area is within the species' known (or postulated) range and suitable habitat was found within the biological survey area. Five of these species were observed during field surveys at some point during the 2 years of focused surveys (2011 and 2012). Surveys were directed at locating specimens of these 25 plants or identifying areas with suitable habitat characteristics.

Table 1 in Appendix D list each species considered by this study along with its current status, characteristic habitat associations, and its potential occurrence rating as determined by MBA. Surveys were conducted by Scott Crawford on May 10, 11, 12 and July 7, 2011. A change in the project design altered the biological survey area in 2012. Additional surveys were conducted by Scott Crawford and Dale Hameister on May 9, 11, 17, 23, 30, and June 13, 2012.

The USFWS Service designated critical habitat areas for listed plant species was also consulted for the biological survey area.

Special Status Wildlife Surveys

Thirty-one (31) sensitive wildlife species were determined to have a potential to occur within the project area. A discussion of each special status species recognized by the CNDDDB and MBA as present or potentially present on the site is listed in Table D-2 of Appendix D. Federal and/or state listed species that have a moderate, or high potential to occur within the biological survey area and for which focused surveys were conducted include: Quino checkerspot butterfly and California gnatcatcher. In addition, some sensitive wildlife species are often surveyed for anticipation of being listed. The Hermes Copper is a rare butterfly species, that has yet to be federally or state listed, but may be in the immediate future. Details of these focused surveys are described below.

Quino Checkerspot Butterfly

Protocol surveys for the Quino checkerspot butterfly were conducted by Scott Crawford under USFWS Section 10(a)(1)(A) permit number TE-019947-4. Methods employed were in conformance with the Quino Checkerspot Butterfly Survey Protocol Information, issued by the USFWS in February 2002. A minimum of 5 surveys are required at least one week apart, during the entire flight season, between 0900 hours and 1400 hours, within all suitable Quino checkerspot butterfly habitat, which includes coastal sage scrub, non-native grasslands, and ecotones between these two plant communities.

The biologist slowly traversed the biological survey area, stopping at approximately 100-foot intervals scanning for Quino checkerspot butterfly and possible host plant and nectar sources. Surveys were not conducted during poor weather conditions.

Coastal California Gnatcatcher

USFWS approved protocol surveys for the coastal California gnatcatcher (breeding season) were conducted by Scott Crawford under USFWS Section 10(a)(1)(A) Permit Number TE-019947-4. Under the County of San Diego Multiple Species Conservation Plan (MSHCP) and City of San Diego Subarea Plan, a minimum of three surveys are required to document presence/absence of the species. However, due to the marginal quality habitat on most of the project site, additional surveys were included to better understand the usage of the project site by the coastal California gnatcatcher. Methods employed were in conformance with USFWS Coastal California Gnatcatcher Presence/Absence Survey Guidelines, issued July 28, 1997 (USFWS 1997). Six surveys were conducted at least 1 week apart, between March 15 and June 30, 2011, between 0600 hours and 1200 hours, within all suitable habitat for coastal California gnatcatcher, which was approximately 20 acres. Additional surveys were conducted in 2012 because of project design change. Six surveys were conducted at least 1 week apart, between March 22 and May 9, 2012 within approximately 80 acres of suitable habitat in the survey area.

The biologist slowly traversed the biological survey area, stopping at approximately 100-foot intervals, uttering pishing sounds, and playing an audio tape of recorded coastal California gnatcatcher vocalizations. The tape was played for several seconds at each interval, followed by a brief pause to listen for a response. If any coastal California gnatcatcher individuals were noted, additional observations, including sex, age, breeding status, and behavioral characteristics, would be documented, consistent with protocol requirements.

Herme's Copper

Focused surveys for the Herme's Copper were conducted within suitable habitat in 2011 and 2012. These surveys were performed in conformance with current County of San Diego survey guidelines by MBA biologists Scott Crawford. In both 2011 and 2012, four (4) surveys were performed from the third week of May to first week of July, at least 8 to 14 days apart. All surveys were conducted between 0600 and 1100 hours.

Surveys were conducted when temperatures were between 70 and 95 degrees Fahrenheit. Surveys were not conducted during adverse weather conditions such as fog, drizzle, rain, or cloud cover greater than 25 percent or during sustained winds greater than 15 miles per hour measured 4 to 6 feet above ground level.

SECTION 3: RESULTS**3.1 - Weather Conditions**

General habitat assessment surveys were performed on foot by qualified MBA Senior Biologists Scott Crawford, Kelly Rios, and Diana Lloyd on May 10, June 15, 22, 30, and July 7, 2011. Additional surveys were also conducted by Scott Crawford and Dale Hameister on February 23, March 1, April 5, June 9, 23, and 30, and June 4, 2012. These general surveys do not include the separate protocol surveys conducted for coastal California gnatcatcher, Quino checkerspot butterfly, sensitive plant species, Hermes copper, and jurisdictional delineation. With the focused surveys included, 30 survey days were spent documenting existing conditions during the 2012 survey season.

The biological surveys were conducted during an above-average rainfall year in 2011 (18.83 inches) and below-average rainfall year in 2012 (9.52 inches). Because of a brush fire disturbance in 2003 and inconsistent weather conditions, the results of these surveys may not represent an exhaustive list of all plant and wildlife species occurring within the biological survey area, but does provide a general overview of the typical site conditions and species diversity.

Table 1: Reconnaissance-Level Survey Weather Conditions

Survey	Surveyors	Date	Time		Temperature (°F)	Cloud Cover (%)	Wind Speed Average (MPH)
			Begin	End			
1	S. Crawford D. Lloyd	5/10/11	0700	1300	62	20	3
2	S. Crawford D. Lloyd	6/15/11	0730	1430	78	100	1
3	S. Crawford D. Lloyd	6/22/11	0600	1300	72	100	1
4	S. Crawford D. Lloyd	6/30/11	0700	1350	62	0	3
5	S. Crawford	7/7/11	0730	1300	82	0	5
6	S. Crawford	2/23/12	0900	1630	72	0	1
7	S. Crawford K. Rios	3/01/12	0920	1600	65	0	5
8	S. Crawford K. Rios	4/05/12	1100	1630	73	30	2
9	S. Crawford	5/09/12	0700	1300	62	100	3
10	S. Crawford	5/23/12	0700	1300	72	100	2
11	S. Crawford D. Hameister	5/30/12	0630	1230	65	100	1
12	S. Crawford D. Hameister	6/04/12	0600	1330	62	100	4

3.2 - Existing Conditions

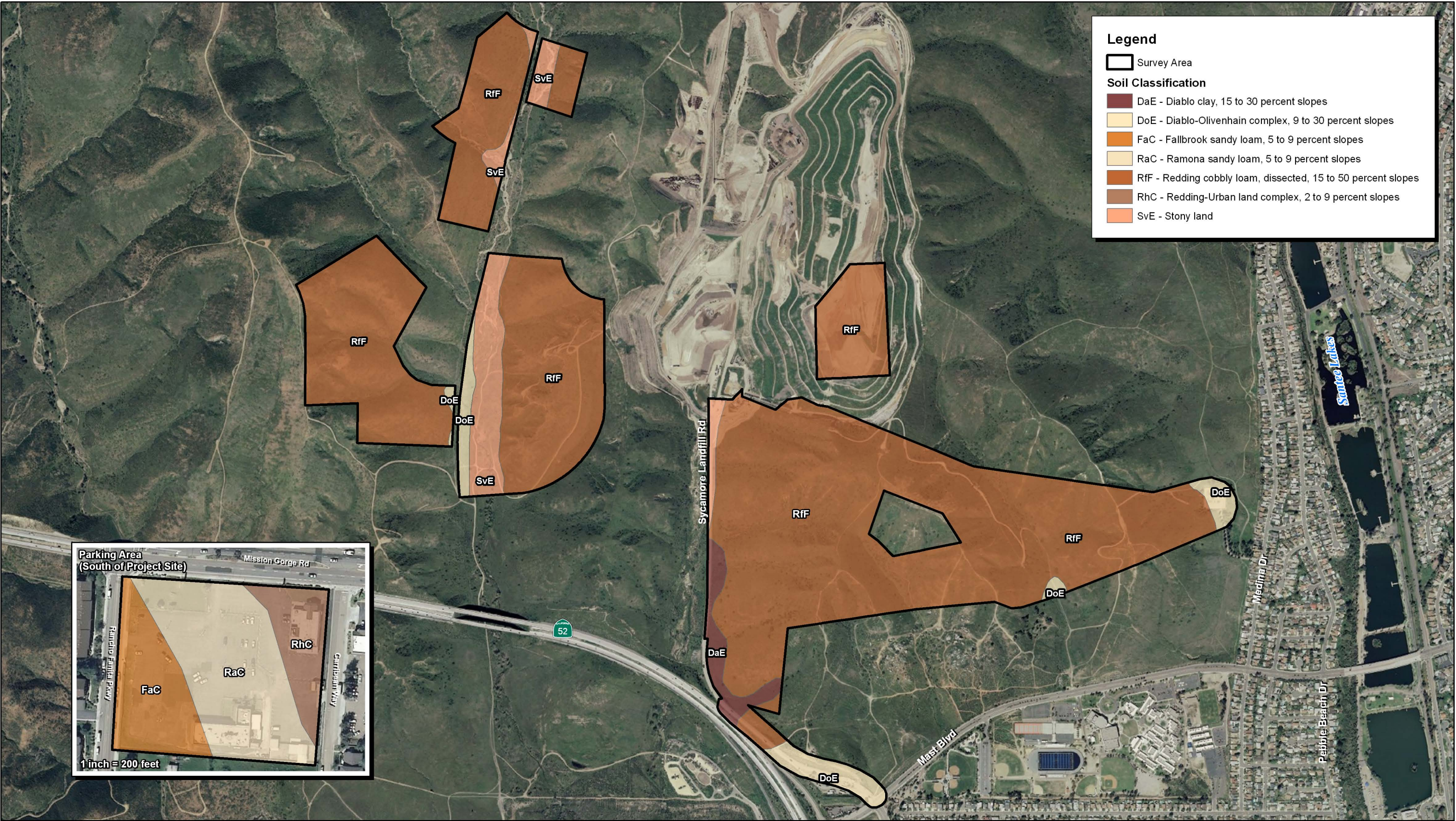
The biological survey area occurs within gently rolling to steep hillsides dominated with a mix of shrub and grassland vegetation communities. The survey area was completely burned in 2003, and is naturally re-vegetating to a pre-burn condition. A single blue-line stream, Spring Canyon Creek, is depicted within the survey area on the La Mesa, California, USGS 7.5-minute topographic quadrangle map. General land use adjacent to the power plant site generally consists of the existing Sycamore Landfill and Hanson aggregate mine to the north, and open undeveloped hillsides to the south, east, and west. Previous disturbances on the site include the development and maintenance of the Sycamore Landfill access road, Carlton Hills Substation, and SDG&E transmission line access roads.

The biological survey area contains undeveloped land that was recently disturbed by a brush fire in 2003. Based on historic aerial photographs (1953, 1964, 1968, 1980, 1989, 2003, and 2005), the biological survey area has been relatively undeveloped (HistoricAerials.com).

3.2.1 - Topography and Soils

The biological survey area is located east of Quail Canyon and extends west to Spring Canyon, which are two north-south trending canyons that range from 400 to 800 feet above mean sea level. These two canyons flow directly into the San Diego River just south of the survey area. The power plant site occurs on a gently sloping west-facing hillside on the east side of Little Sycamore Canyon, east of the existing access road. The gas transmission line for both Supplement 2 and Supplement 3 begins at the power plant site within gently rolling hills that increase in elevation to the north. Supplement 2 continues to the east, also within gently rolling hills, until it reaches the Carlton Hills Substation. The surrounding land consists of rolling grassland hills with scattered shrub cover in all directions. Shrub cover increases with higher elevations in off site areas around the survey area. The Mission Trails Park is located to the southwest of the survey area.

Based on the USDA Soil Survey, the biological survey area contains four soil mapping units, including Diablo clay, Diablo-Olivenhain complex, Redding cobbly loam, and stony land (Exhibit 4). Many sensitive plant species commonly occur on soils that have specific characteristics, such as clay soils, sandy soils, and/or saline soils. The majority of the survey area consists of Redding cobbly loam. The Diablo clay is located along the main access road to the Sycamore landfill. The Diablo-Olivenhain complex is located along the western edge of Spring Canyon with some smaller inclusions along the proposed gas line as well as the existing SDG&E substation in the eastern portion of the project site. The offsite parking area contains Fallbrook sandy loam, Ramona sandy loam, and Redding-Urban land complex.



Source: ESRI Aerial Imagery, USDA Soils Data, MBA Field Survey and GIS Data, 2012.

3.2.2 - Disturbance

Existing direct disturbances to the biological survey area include constant truck traffic associated with the paved access road used to access the existing landfill and aggregate mine. Additionally, brush fires within the last five years have greatly disturbed vegetation growth within the coastal sage scrub areas, which vary in quality and total vegetative cover. Existing Indirect disturbances to the survey area are limited to those pertaining to recreational hikers and nighttime lighting and noise because of the activities associated with the adjacent landfill.

3.2.3 - Habitat Types/Vegetation Communities

The biological survey area is located within a previously burned area that is naturally revegetating to its previous state. Although there is still evidence of burned vegetation, the vegetation has nearly recovered and vegetative cover is close to pre-burn conditions based on historic aerial photos. The majority of the power plant site contains a dense stand of non-native grasslands (California annual grassland series) with a single patch of remnant Diegan coastal sage scrub habitat (California buckwheat-white sage series). There are also several ecotones, which are areas with overlapping vegetation communities. The most common species observed is deer weed (*Lotus scoparius*). Isolated individual plants scattered within the patch of deer weed include California buckwheat (*Eriogonum fasciculatum*) and white sage (*Salvia apiana*).

The proposed transmission loop-line route alternatives will be located between the power plant site and the existing SDG&E 138 kilovolt (kV) line, which is located on landfill property near the southern portion of the landfill. The route will occur along the ridgeline between Little Sycamore Canyon and Quail Canyon. This area also contains a dense stand of non-native grasslands (California annual grassland series) with patches of Diegan coastal sage scrub and Diegan coastal sage scrub/non-native grassland mix).

Nine vegetation communities/habitat types occur within the biological survey area (Exhibit 5). These vegetation communities/habitat types include: Diegan coastal sage scrub, Diegan coastal sage scrub with non-native grassland, disturbed habitat, granitic chamise chaparral, granitic chamise chaparral with non-native grassland, native grassland, non-native grasslands, non-vegetated channel, and urban/developed areas.

The Vegetation Communities Maps (Exhibit 5a-5h) provides detailed mapping of these communities in relation to the power plant site and biological survey area. A complete description of each community based on Holland and Oberbauer, and extent to which it occurs on and in the immediate vicinity of the project site, is provided below. Community descriptions were also cross-referenced with the City of San Diego habitat types (i.e. Tier I, Tier II, Tier IIIa, or Tier IIIb) as provided in the City of San Diego Land Development Code Biology Guidelines, Table 3. The respective Holland codes for each community are provided in parenthesis below following each community section name. The closest associated Sawyer Keller-Wolf Evens vegetation community is included at the end of each description.

A complete list of plant species observed on and in the immediate vicinity of the project site during the survey is provided in Appendix B. Site photographs of representative vegetation communities are included in Appendix C.

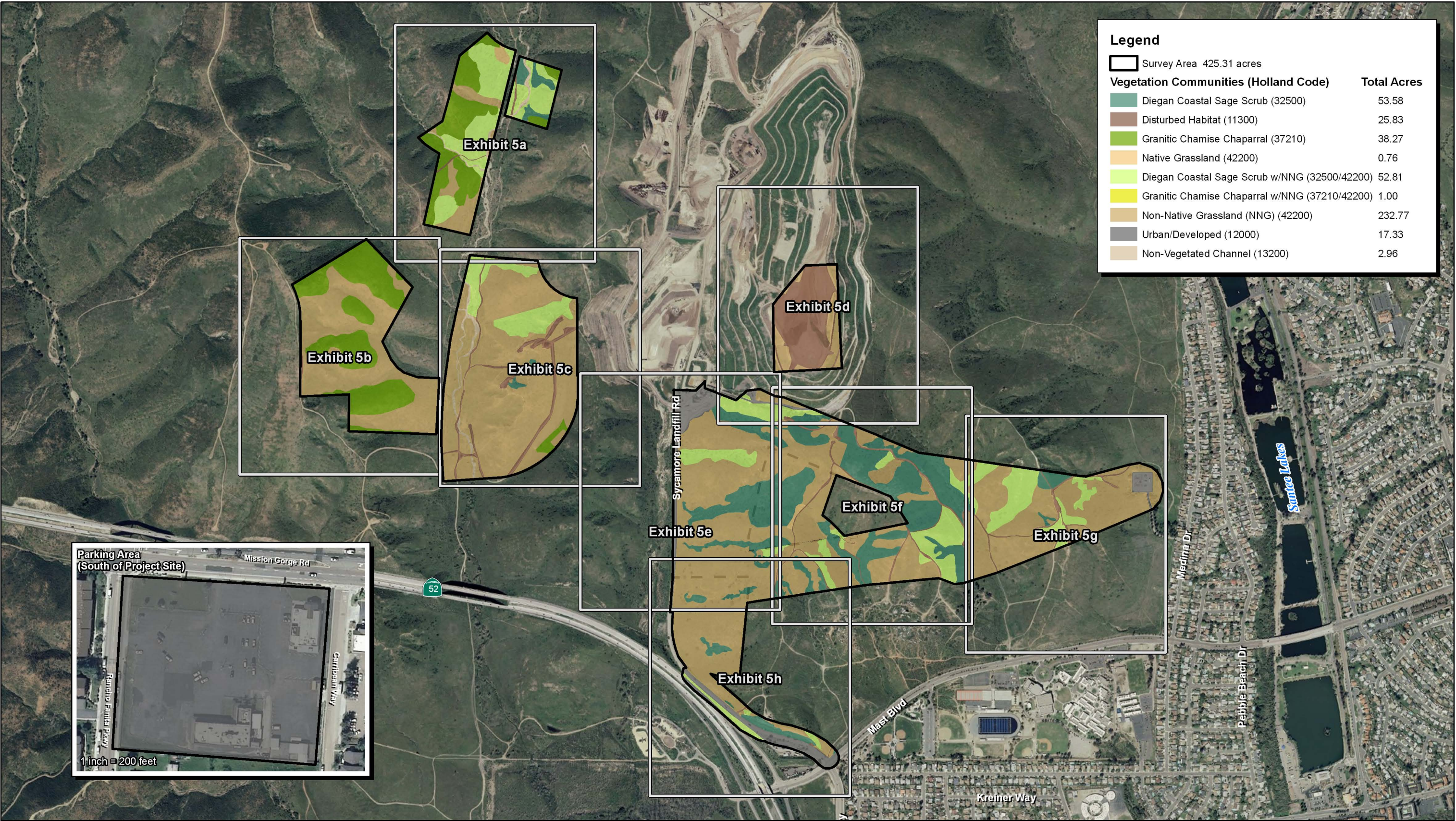
Table 2: Habitat Types/Vegetation Communities

Habitat / Vegetation Community	Existing Acres	Percent (%) of Biological Survey area
Diegan Coastal Sage Scrub	53.58	12.6
Diegan Coastal Sage Scrub/non-native grassland	52.81	12.4
Disturbed Habitat	25.83	6.1
Granitic Chamise Chaparral	38.27	9
Granitic Chamise Chaparral/non-native grassland	1.00	0.2
Native Grassland	0.76	0.2
Non-Native Grassland	232.77	54.7
Non-Vegetated Channel	2.96	0.7
Urban/Developed	17.33	4.1
Total	425.31	100

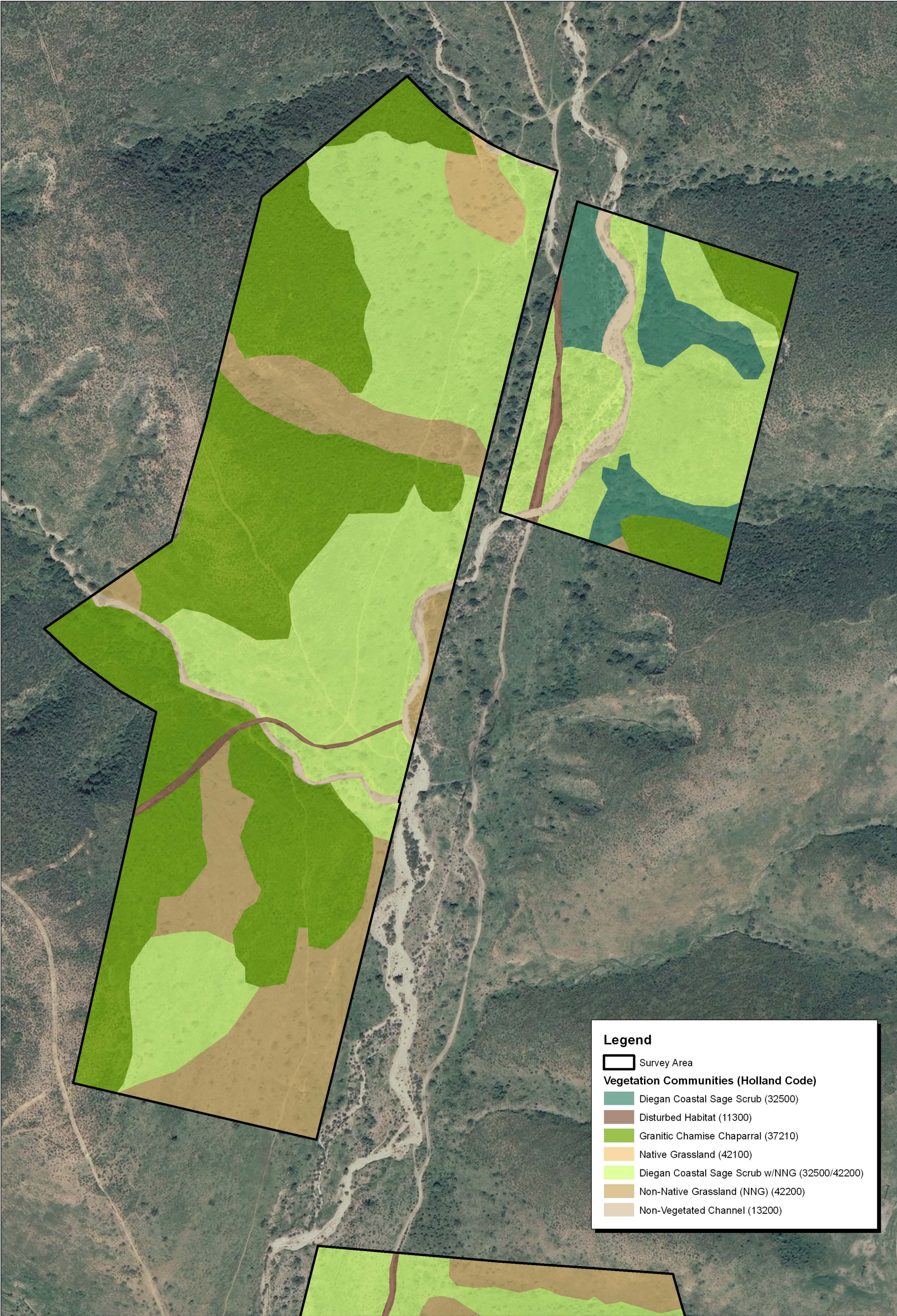
Diegan Coastal Sage Scrub (32500)

Diegan coastal sage scrub is a coastal sage scrub type that is widespread in coastal southern California from Los Angeles south into Baja California. This community typically consists of low-growing, soft woody subshrubs, up to 1 meter in height, that bloom in the winter and early spring. The community commonly occurs on low moisture availability sites characterized by steep xeric slopes or clay rich soils that have high water retention. This community type intergrades with chaparral type habitats in higher elevations, and Riversidean sage scrub in drier inland areas. Typical dominants of this community are facultative drought-deciduous and include species such as California sagebrush (*Artemisia californica*), California buckwheat, laurel sumac (*Malosma laurina*), and white sage. Diegan coastal sage scrub is considered a Tier II Habitat under the City Subarea Plan.

A total of 53.58 acres of this community occur within the biological survey area (Exhibit 5). Dominant species observed within the coastal sage scrub include deer weed, California buckwheat, black sage (*Salvia mellifera*), and chamise (*Adenostoma fasciculatum*). A few native species comprised the understory such as chia (*Salvia columbariae*) and popcorn flower (*Cryptantha* sp.). This community has a sparse vegetative cover and provides low quality habitat for sensitive plant and wildlife species. The Sawyer Keeler Wolf Evens equivalent is California buckwheat-white sage series.

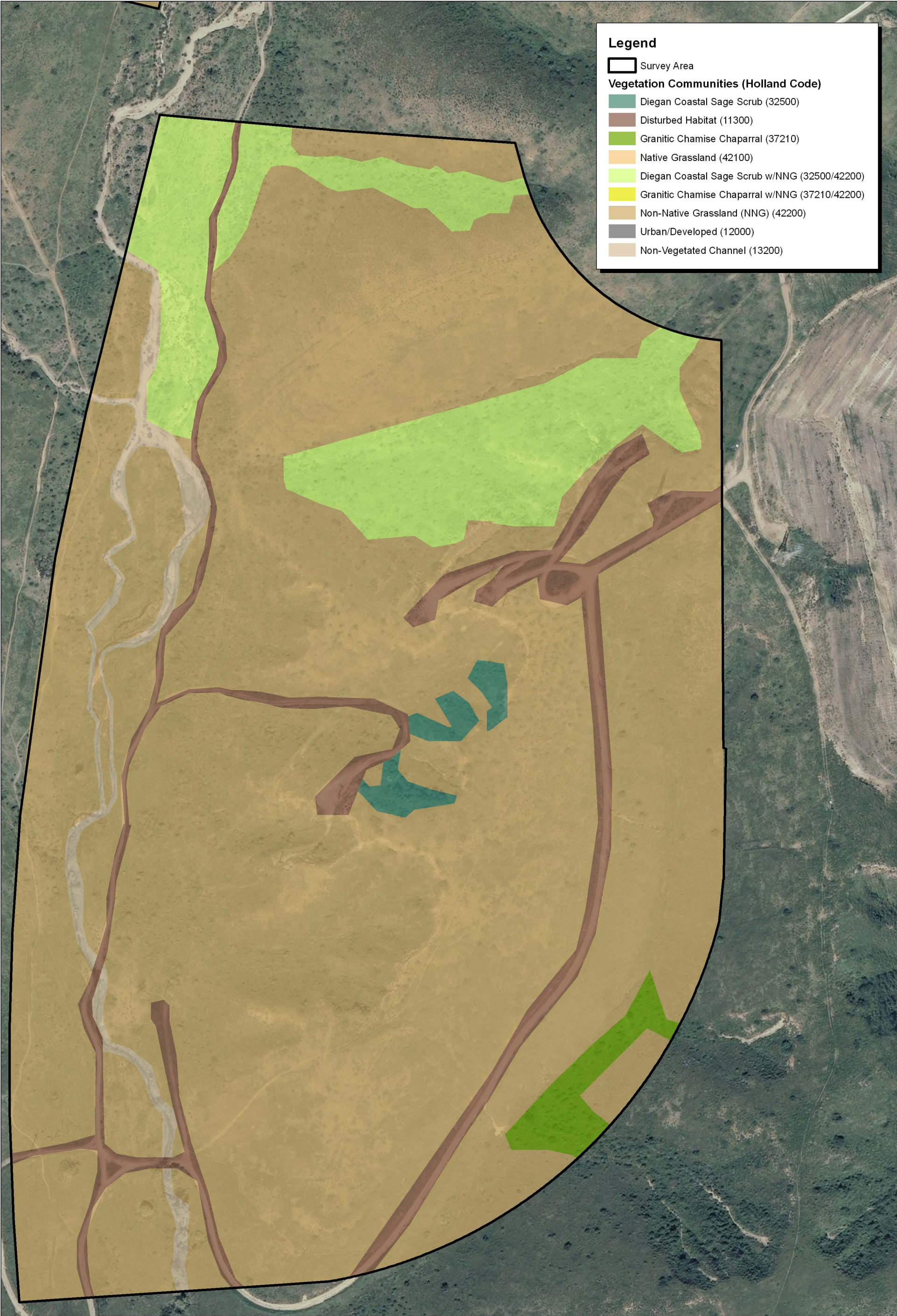


Source: ESRI Aerial Imagery, MBA Field Survey and GIS Data, 2012.



Source: Source: ESRI Aerial Imagery. MBA Field Survey and GIS Data, 2012.





Source: Source: ESRI Aerial Imagery. MBA Field Survey and GIS Data, 2012.

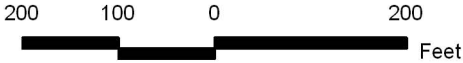


Exhibit 5c Vegetation Communities Map



Source: Source: ESRI Aerial Imagery. MBA Field Survey and GIS Data, 2012.





Source: Source: ESRI Aerial Imagery. MBA Field Survey and GIS Data, 2012.

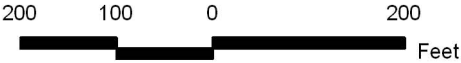
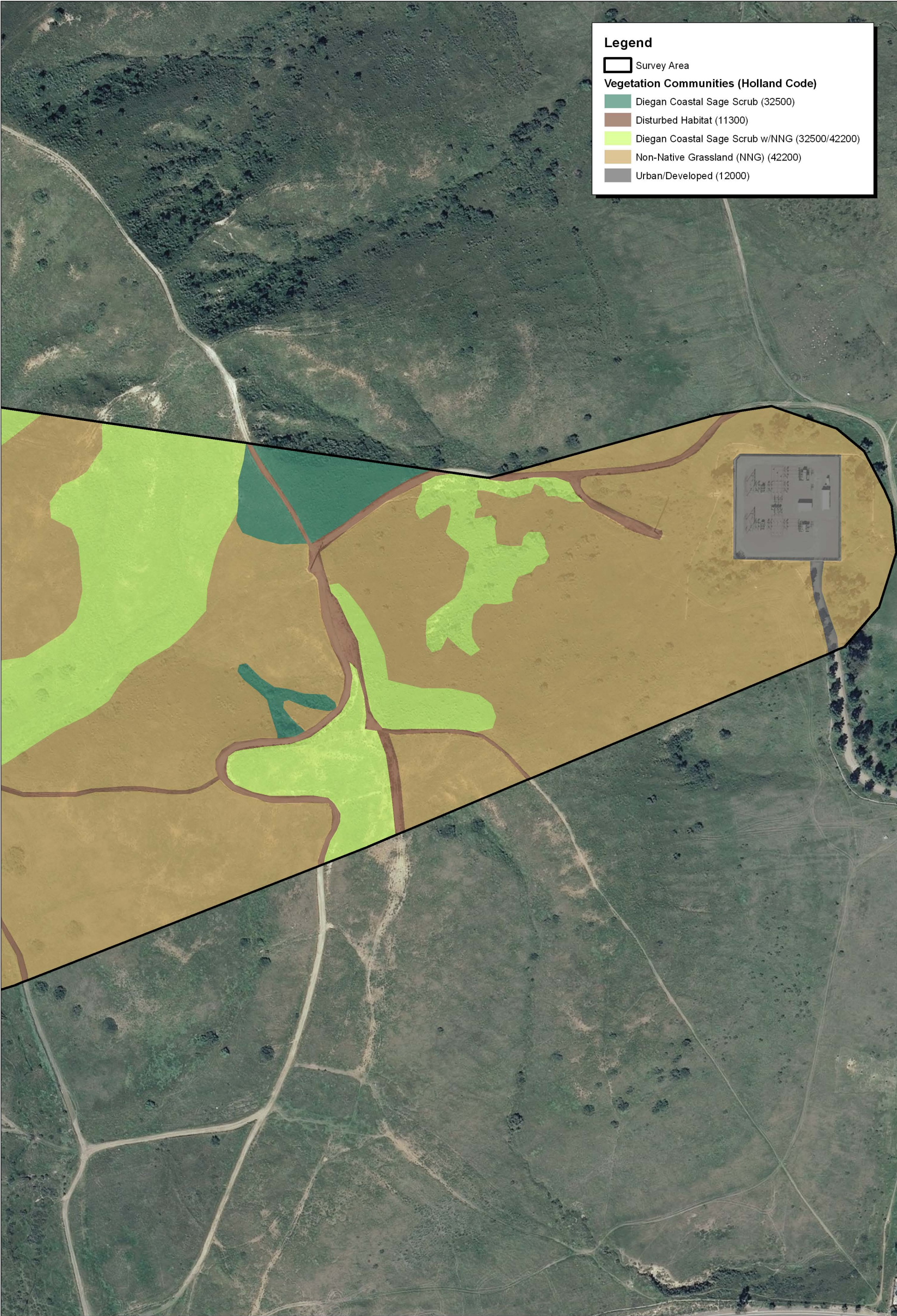


Exhibit 5f
Vegetation Communities Map



Source: Source: ESRI Aerial Imagery. MBA Field Survey and GIS Data, 2012.

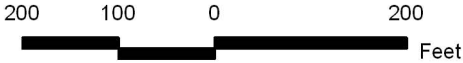
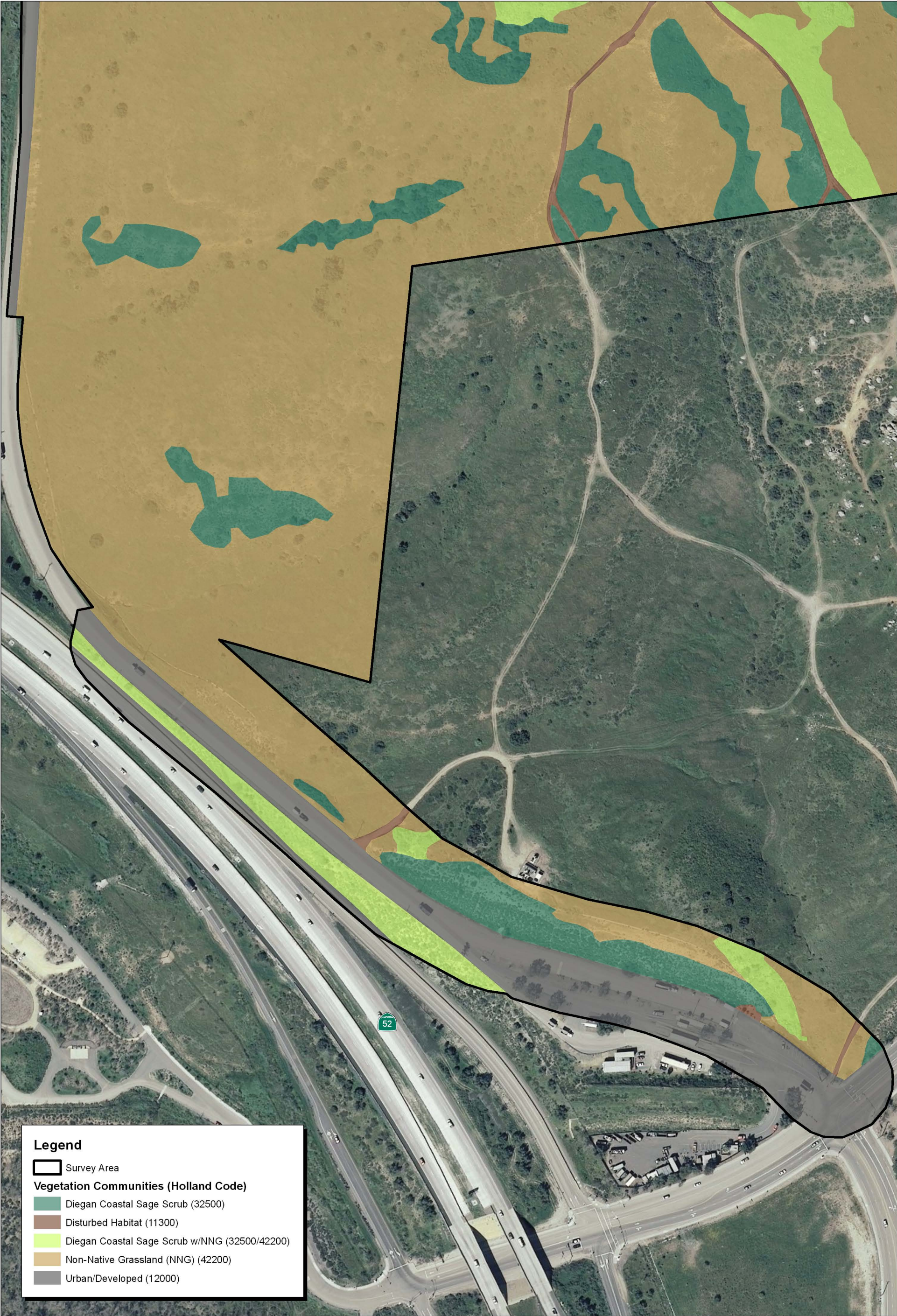


Exhibit 5g
Vegetation Communities Map



Source: Source: ESRI Aerial Imagery. MBA Field Survey and GIS Data, 2012.



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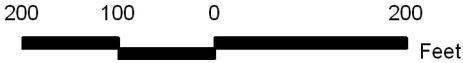


Exhibit 5h
Vegetation Communities Map

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The majority of this plant community is located in the southeastern portion of the biological survey area along the south-facing slopes. Lower quality habitat consisting of sparse vegetative cover dominated by deer weed, occurs within the power plant site and habitat quality increases at higher elevations. The low to moderate quality Diegan coastal sage scrub on site is connected to contiguous habitat that extends off site. The habitat quality increases at higher elevations in off site locations to the east. There is a small patch of Diegan coastal sage scrub in the northwestern corner of the biological survey area, but it is completely isolated from any contiguous habitat.

Diegan Coastal Sage Scrub with Non-Native Grassland (32500)

This vegetation community is an ecotone of Diegan coastal sage scrub habitat with an understory dominated by non-native grassland vegetation. This vegetation community is similar to Diegan coastal sage scrub habitat in height and species composition, with similar dominant species, but contains a higher diversity of non-native grasses such as brome (*Bromus* sp.) and Mediterranean grass (*Schismus* sp.). Generally, this community has been subject to additional disturbances, which have resulted in the introduction of non-native grasses. Diegan coastal sage scrub with non-native grassland is considered a Tier II Habitat under the City Subarea Plan.

A total of 52.81 acres of this community occur within the biological survey area (Exhibit 5). Dominant species observed within the coastal sage scrub include deer weed, California buckwheat, black sage and chamise. The understory of this community is dominated by non-native grasses such as wild oats (*Avena barbata*), red brome (*Bromus rubens*), shortpod mustard (*Hirschfeldia incana*), red-stem filaree (*Erodium cicutarium*), and fiddleneck (*Amsinckia intermedia*). This vegetation community provides low quality habitat for sensitive plant and wildlife species. There is no Sawyer Keeler Wolf Evens equivalent for this community.

This plant community is located in the western and central portion of the biological survey area along the north facing slopes. This vegetation community appears to have an elevation limited of 600 feet above mean sea level within the biological survey area. This plant community is replaced by chamise chaparral at higher elevations. This community is considered low to moderate quality habitat and contains an open canopy with a non-native grassland understory. Species diversity noticeably decreases in comparison to Diegan sage scrub communities.

Disturbed Habitat (11300)

Disturbed habitat includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops). These areas often contain evidence of soil surface disturbance and compaction from previous legal human activity. In addition, where the vegetative cover is greater than 10 percent, there is often soil surface compaction associated with the disturbed nature of the site. In addition, this also includes the presence of building foundations and debris (e.g. irrigation piping, fencing, old wells, abandoned farming or mining equipment) resulting from legal activities (as opposed to illegal dumping). Vegetation commonly observed within disturbed habitat will have a high predominance of non-native or weedy species that are indicators of soil disturbance.

Common species observed include Russian thistle (*Salsola tragus*), telegraph weed (*Heterotheca grandiflora*), horehound (*Marrubium vulgare*), and sow thistle (*Sonchus oleraceus*), and a sub-dominance of non-native grasses. Disturbed habitat is considered an upland Tier IV Habitat under the Subarea Plan.

A total of 25.83 acres of disturbed habitat occur within the biological survey area. These areas occur mainly within dirt access roads and associated turnouts. This habitat type is dominated by bare ground and scattered ruderal (weedy) species. The disturbed habitat on site provides poor quality habitat for plant and wildlife species. There is no Sawyer Keeler Wolf Evens equivalent for this community.

The majority of the disturbed areas within the biological survey area are associated with the Sycamore Land Fill in the central portion of the biological survey area as well as numerous access roads located throughout the biological survey area. The remaining portions of the project site are relatively undisturbed.

Granitic Chamise Chaparral (37210)

Granitic chamise chaparral is a relatively sparse 1 to 3 meter tall chaparral community strongly dominated by chamise and supported by granitic substrates. Mature chamise chaparral stands are often densely interwoven with very low species compositions and little herbaceous understory or litter. This community is adapted to repeated fires by stump sprouting. Chamise chaparral often occurs on xeric slopes and ridges, with adjacent more mesic sites mantled by upper sonoran mixed chaparrals and northern mixed chaparrals. It is similar to upper sonoran mixed chaparral, but on shallower, drier soils or at somewhat lower elevations. Granitic chamise chaparral commonly occurs throughout mid-elevations in the southern California region. Granitic chamise chaparral is considered a Tier IIIa Habitat under the City Subarea Plan.

A total of 38.27 acres of granitic chamise chaparral habitat occur within the biological survey area. This vegetation community exhibits mostly a homogeneous cover of chamise. Other shrub species observed includes a single sugar bush (*Rhus ovata*) and a few low quality California buckwheat shrubs. In general, the habitat quality of the chamise chaparral in the survey area is considered low to moderate, and provides limited nesting and foraging opportunities for common wildlife species. This community is locally and regionally widespread is generally not associated with any endemic species that are narrowly distributed or rare. The Sawyer Keeler Wolf Evens equivalent for this community is chamise series.

This plant community is located in the northern portion of the biological survey area along the north facing slopes. This vegetation community appears to have a lower elevation limited of 600 feet above mean sea level within the biological survey area. This plant community is replaced by Dieagan coastal sage scrub at lower elevations. This community is considered moderate quality habitat and contains an open canopy with little to no understory. Species diversity noticeably decreases in

comparison to Diegan sage scrub communities. This monotype vegetation community is common following a severe brush fire and should naturally diversify over time.

Granitic Chamise Chaparral with Non-Native Grassland (37210)

This vegetation community is an ecotone of granitic chamise chaparral habitat with an understory dominated by non-native grassland vegetation. This vegetation community is similar to granitic chamise chaparral habitat in height and species composition, with similar dominant species, but contains a higher diversity of non-native grasses such as brome and Mediterranean grass. Generally, this community has been subject to additional disturbances, which have resulted in the introduction of non-native grasses. Granitic chamise chaparral with non-native grassland is considered a Tier IIIa Habitat under the City Subarea Plan.

A total of 1.00 acre of granitic chamise chaparral with non-native grassland habitat occur within the biological survey area (Exhibit 5). Dominant species observed within this community ecotone include chamise with an understory dominated by non-native grasses such as red brome, ripgut brome (*Bromus diandrus*), wild oats, red-stem filaree, and fiddleneck. This community ecotone provides low quality habitat for sensitive plant and wildlife species. There is no Sawyer Keeler Wolf Evens equivalent for this community.

This plant community is located in the northern portion of the biological survey area along the base of the foothills at the canyon floor of Spring Canyon. This vegetation community occurs at lower elevations than chamise chaparral. This community is considered low to moderate quality habitat and contains a more open canopy with a dense stand of non-native grasslands in the understory. Species diversity noticeably increases in comparison to chamise chaparral, but not as diverse as Diegan sage scrub.

Native Grassland (42100)

A mid-height (to 2 feet) grassland dominated by perennial, tussock-forming (*Stipa pulchra*). Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. With regard to species cover, any areas with an estimated percent cover of native grasses greater than 20 percent vegetative cover of native grasses and annual forbs within an area larger than 0.1 acre. Native Grassland is considered a Tier I habitat under the SubArea Plan.

A total of 0.76 acre of this community occurs within the biological survey area (Exhibit 5). Native grasslands usually occur on fine-textured (often clay) soils, moist or even waterlogged during winter, but very dry in summer. Common species observed within the project site include: slender oats (*Avena fatua*), California goldstars (*Bloomeria crocea*), purple clarkia (*Clarkia purpurea*), valley needlegrass (*Stipa cernua*), and blue-eyed grass (*Sysirynchum bellum*).

This vegetation community was observed at two locations within the survey area. The first area is located in the central portion of Parcel 366-080-28 along the existing dirt access road. The second

area is located on the northern edge of Parcel 366-030-31. Both of these parcels are potential mitigation areas.

Non-Native Grassland (42200)

Non-native grassland, a prevalent community throughout San Diego County, is generally characterized by a dense to sparse cover of non-native annual grasses often associated with numerous weedy species and native annual forbs (wildflowers), especially in years with plentiful rain. Seed germination occurs with the onset of winter rains. Some plant growth occurs in winter, but most growth and flowering occurs in the spring. Plants then die in the summer, and persist as seeds in the uppermost layers of soil until the next rainy season. Dominant plant genera typically found within non-native grasslands include brome, wild oat, fescue (*Vulpia* sp.), and barley (*Hordeum* sp.). Non-native grassland is considered an upland Tier IIIb Habitat under the Subarea Plan.

A total of 232.77 acres of this community occurs within the biological survey area (Exhibit 5). Non-native grassland occurs primarily along the slopes throughout the project site and adjacent to disturbed areas. The community is dominated by non-native annual grasses such as soft chess (*Bromus hordeaceus*), Italian rye grass (*Lolium multiflorum*), ripgut brome, purple needle grass (*Nassella pulchra*), and common goldstars (*Bloomeria crocea*). Additional plants commonly observed in this community include wild oats, red brome, red-stem filaree, and fiddleneck. This vegetation community provides a low to moderate quality habitat for sensitive plant and wildlife species. The Sawyer Keeler Wolf Evens equivalent for this community is California annual grassland series.

This plant community is located throughout the entire biological survey area and is dominant plant community within the power plant site. This vegetation community is extremely dense and is likely the result of the recent fire coupled with above average rainfall. Generally, this non-native community is considered low to moderate quality, but varies based on the amount of native forbs. The lower quality habitat occurs in the southern portion of the project site associated with the power plant site. Higher quality habitat occurs in the northern portion of the biological survey area. There are portions of this community with native grasses and native shrubs, but not a sufficient amount to be considered a separate plant community.

Non-Vegetated Channel (64200)

Non-vegetated channel is a habitat type that is virtually devoid of vegetation due to continual scouring from a flowing channel. Generally, vegetation occurs along the periphery of this habitat, often transitioning into a riparian associated scrub community. Due to continued scouring, the sparse vegetation that does occur often consists of short grasses or hydrophytic vegetation adapted to unstable environments. This habitat is considered landscape feature and therefore does not have a designation under the MSCP Subarea Plan.

Non-vegetated channel occurs within the western portion of the biological survey area and accounts for 2.96 acres of habitat within the biological survey area. This observed habitat contains mainly cobbles and boulders along the channel bottom and banks. The substrate contains sparse sandy deposits with limited vegetative cover and therefore provides low quality habitat for sensitive plant and wildlife species. There is no Sawyer Keeler Wolf Evens equivalent for this community.

The non-vegetated channel occurs along the western side of the biological survey area associated with the Spring Canyon drainage feature.

Urban/Developed (12000)

The survey area contains land that has been permanently disturbed by paving or building construction. These portions of the site provide no suitable habitat for any wildlife and plants. These areas lack vegetation and the likelihood of vegetation reestablishing within those areas is very low. These areas are often associated with permanent removal of habitat. The urban/developed portions of the study area are associated with paved roads, the SDG&E substation, and portions of Sycamore Landfill. A total of 17.33 acres of this community occurs within the biological survey area (Exhibit 5).

3.2.4 - General Wildlife

Wildlife species observed or otherwise detected during the survey include common species typically found in grassland, scrub, uplands and disturbed habitats. Invertebrate species commonly observed within the survey area include mylitta crescent (*Phyciodes mylitta*), Gabb's checkerspot butterfly (*Melitaea gabbii gabbii*), Behr's metalmark (*Apodemia mormo virgulti*), cabbage white (*Pieris rapae*), and tarantula hawk (*Pepsis chrysothemis*). Reptile species observed within the project site include western skink (*Eumeces skiltonianus interparietalis*), western whiptail (*Aspidoscelis tigris*), and western fence lizard (*Sceloporus occidentalis*). Avian species observed or otherwise detected include house finch (*Carpodacus mexicanus*), lesser goldfinch (*Carduelis psaltria*), black phoebe (*Sayornis nigra*), bushtit (*Psaltiriparus minimus*), wrentit (*Chamaea fasciata*), Anna's hummingbird (*Calypte anna*), and California towhee (*Pipilo crissalis*). Mammal species were observed or otherwise detected during the survey include desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit, and California ground squirrel (*Spermophilus beecheyi*). A complete list of all plant species observed during the habitat assessment for the biological survey area is provided in Appendix B of this document.

SECTION 4: SENSITIVE BIOLOGICAL RESOURCES

4.1 - Special-Status Species

An analysis of potential project-related impacts to special-status plant and wildlife species was conducted for the project. The analysis was based on a comprehensive list of sensitive plant and wildlife species derived from Section 1.3 “Covered Species List” of the Subarea Plan. A list of special-status plant and wildlife species included in the analysis is in Appendix D of this report. Additionally, the list included the results of CNDDDB and CNPS database searches, included in Appendix E, for the Del Mar, El Cajon, Jamul Mountains, La Jolla, La Mesa, National City, Point Loma, Poway, and San Vicente Reservoir, California USGS 7.5-minute topographic quadrangle, and local knowledge of the biological survey area. A map is also included in Appendix F, as required by the California Energy Commission.

4.1.1 - Special-Status Plant Species

After a review of all special-status plant species that have a potential to occur within the vicinity of the project and based on the existing conditions on site, it was determined that the biological survey area provides suitable habitat to support 22 special-status plant species, listed in Appendix B, Floral and Faunal Compendia. A discussion of each species identified as potentially occurring with the survey is included in a table in Appendix D. MBA Senior Biologist Scott Crawford and Dale Hameister conducted a focused survey for all 22 special-status plant species from May 10 to June 23, 2011 and from May 9 to June 14, 2012. The results are included in separate survey reports for sensitive plants (MBA 2011a and 2012a). Five special-status plant species were found within the biological survey area during the surveys: San Diego barrel cactus a CNPS List 2.1 species, variegated dudleya a CNPS List 1B.2 species, heart-leaved pitcher sage, a CNPS List 1B.2, San Diego goldstars, a CNPS List 1B.1, and willowy monardella a federal and state listed endangered species. Therefore, these five special-status plant species are considered present within selected portions of the biological survey area (Exhibit 6). San Diego barrel cactus is the only sensitive plant species within the power plant site. Variegated dudleya and San Diego barrel cactus are the sensitive plant species within a portion of both Supplement 2 and Supplement 3 projects’ gen tie transmission line routes. The Supplement 2 gen tie route could also impact the San Diego goldstars. There is no sensitive plant species associated with the natural gas pipeline, the additional parking area, or the temporary construction laydown area.

Willowy monardella was found in three of the proposed mitigation parcels located west of the project site and will not be impacted by project construction. A population of heart-leaved pitcher sage was also observed in one of the proposed mitigation parcels west of the project site.

Large populations of San Diego barrel cactus, variegated dudleya, and San Diego goldstars were observed within the designated Sycamore Landfill conservation area for these species (Exhibit 6).

The conservation area is not anticipated to be impacted during project construction. This portion of the survey area is associated with the Supplement 2 gen tie that would connect to the existing SDG&E substation to the east of the project site. This area would not be impacted under the Supplement 3 project design.

No other special-status plant species known to occur in the region are present or have a moderate to high potential to occur on the project site.

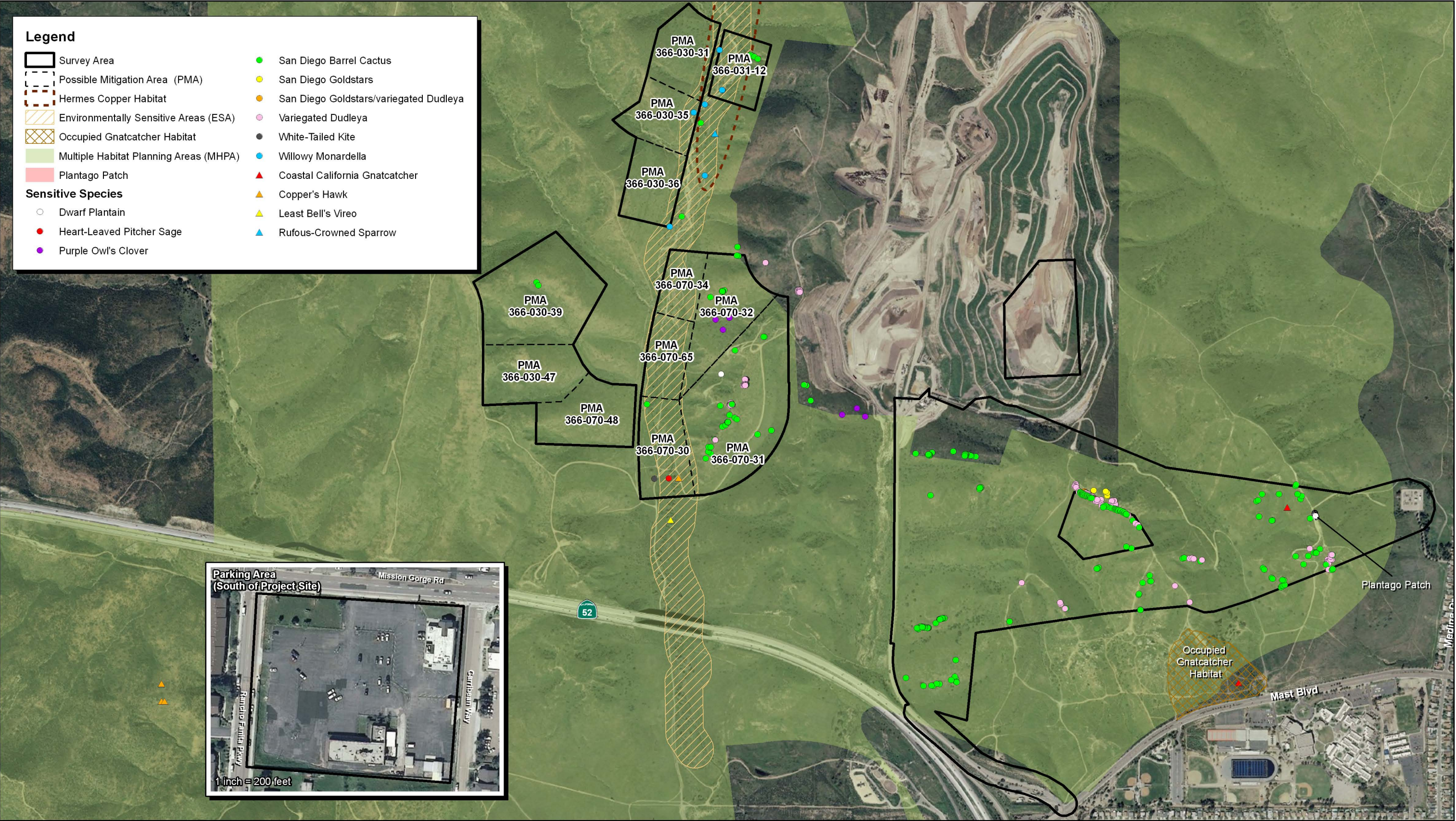
4.1.2 - Special-Status Wildlife Species

Based on the existing conditions in the survey area and record of special-status wildlife species known to occur in the region, 17 special-status wildlife species were determined to have a moderate to high potential to occur in the survey area. These species include: Quino checkerspot butterfly (*Euphydryas editha quino*) a FE species, coastal California gnatcatcher a federally listed threatened (FT) species and California species of concern (CSC), least Bell's vireo a federally and state listed endangered (FE, SE) species, Hermes copper butterfly a federal candidate species, orange-throated whiptail, northern red-diamond rattlesnake, Coronado Island skink, Cooper's hawk, white-tailed kite, Bell's sage sparrow, Southern California rufous-crowned sparrow, yellow warbler, California horned lark, yellow-breasted chat, least bittern, Dulzura pocket mouse, northwestern San Diego pocket mouse, and San Diego black-tailed jackrabbit are all considered CSC. Focused biological survey area generally required for threatened and endangered species that potentially occur within a project site. In addition, a golden eagle assessment was conducted to identify any suitable nesting areas within the vicinity of the project site.

Quino Checkerspot Butterfly

The federally endangered Quino checkerspot butterfly (QCB) was listed by the USFWS in 1997. Currently, QCB is known only from scattered locations in San Diego and western Riverside counties, and northwestern Baja California, Mexico. The range of this species has been reduced by over 95 percent (USFWS 2003). The reasons for decline and current threats to this species include urban and agricultural development, invasion by non-native plant species, off-road vehicle use, grazing, and fire management practices. Other ongoing factors that contribute to the decline of the species include enhanced nitrogen deposition, elevated atmospheric carbon dioxide concentrations, and climate change (USFWS 2003).

Nitrogen deposition is the input of nitrogen oxide (NO_x) and ammonia (NH₃) derived pollutants, primarily nitric acid (HNO₃), from the atmosphere to the biosphere. Mechanisms by which nitrogen deposition can lead to impacts on sensitive species include direct toxicity, changes in species composition among native plants, and enhancement of invasive species (Fenn et al. 2003; Weiss 2006). The increased dominance and growth of invasive annual grasses is especially prevalent in low-biomass vegetation communities that are naturally nitrogen-limited.



Source: ESRI Aerial Imagery, MBA Field Survey and GIS Data, 2012.

The larvae of the QCB feed primarily on dwarf plantain (*Plantago erecta*), but also use owl's clover (*Orthocarpus purpurascens*), Chinese houses (*Collinsia heterophylla*), birds beak (*Cordylanthus rigidus*), and woolly plantain (*Plantago ovata*). The QCB is found only in areas where there are dense stands of one or both of the larvae's food plants.

The QCB exists in low elevation (sea level to 3,000 ft.) open grasslands and sunny openings within shrubland habitats, and is usually associated with clay soils or deposits of cryptogamic plants. The cryptogamic plants develop a hard crust, which is occupied by low growing herbaceous annuals including the QCB larvae's primary food plant, dwarf plantain and the larvae's additional food plant, owl's clover. Courtship behavior consists of male butterflies hilltopping on open or sparsely vegetated rounded hilltops, ridgelines, and rocky outcrops.

The biological survey area is located within the recommended survey area for QCB (USFWS 2002). An initial habitat assessment demonstrated that the biological survey area does not contain the key constituent habitat elements necessary to support a population of QCB. Although the survey area does contain some sparse sage scrub and grassland communities, it does not contain a sufficient amount of host plants to support a population of this species.

In addition, there were no cryptogamic crusts within the areas of sparse Diegan coastal sage scrub and non-native grasslands. A total of six individual dwarf plantain and purple owl's clover were observed on the side of a 10-foot road cut, in what is now an offsite location. A small patch of sparse plantago was observed along the ridgeline west of the existing SDG&E electrical substation (Exhibit 6). Also, the biological survey area does not contain sparsely vegetated rounded hilltops or rocky outcrops, which are also commonly observed habitat components for this species. Therefore, the biological survey area is not considered suitable habitat for this species, which is unlikely to occur within the biological survey area.

Only limited areas in the recommended survey areas are not subject to the survey requirements. The following areas are exclusionary for QCB surveys:

- Orchards, developed areas, or small in-fill parcels (plots smaller than an acre completely surrounded by urban development) largely dominated by non-native vegetation.
- Active/in-use agricultural fields without natural or remnant inclusions of native vegetation (i.e., fields completely without any fallow sections, unplowed areas, and/or rocky outcrops).
- Closed-canopy forests or riparian areas, dense chaparral, and small openings (less than an acre) completely enclosed within dense chaparral.

Since the project site does not meet any of the criteria necessary for exclusion from surveys, the biological survey area required surveys for butterflies, regardless of QCB host plant presence, absence, and/or density. The QCB is generally associated with sage scrub, open chaparral,

grasslands, and vernal pools. Within these communities they are usually observed in open or sparsely vegetated areas (including trails and dirt roads), and on hilltops and ridgelines. Protocol surveys were conducted between February 23, 2012 and April 5, 2012. No QCB was observed during the recent protocol surveys, as well as previous surveys conducted in the local vicinity (Recon 2012).

Therefore, this species is considered absent from the survey area.

Coastal California Gnatcatcher

A focused protocol survey for coastal California gnatcatcher was conducted within suitable coastal sage scrub habitat throughout the biological survey area by USFWS permitted biologist Scott Crawford (Permit Number TE-019947-4) between May 25 and June 30, 2011 and March 22 and May 9, 2012. Approximately 25 acres of suitable habitat was surveyed for coastal California gnatcatcher in 2011 and approximately 80 acres was surveyed in 2012. Suitable habitat was determined based on a moderate to dense cover of Diegan sage scrub on relatively gentle slopes. Areas dominated by non-native grasslands (shrub cover less than 30 percent) or areas with steep slopes (slopes that were difficult to walk up) were excluded from surveys as coastal California gnatcatchers are not typically found in these areas. A single coastal California gnatcatcher was observed within the eastern portion of the Supplement 2 gen tie alternative, just west of the SDG&E substation. A single gnatcatcher was observed foraging within the survey area during the first survey on March 22, 2012. No other observations of gnatcatchers were recorded within the survey area for the remaining 5 surveys. However, a single pair of gnatcatchers was observed south of the survey area in high quality coastal sage scrub. Based on the bird's behavior, it is believed that an area of approximately 5 to 6 acres is used as the pair home range and periodically may forage outside of this area (MBA 2012c). This area is 2,000 feet east of the proposed project site and will be avoided during all construction-related activities. Therefore, this species is currently present within portions of the biological survey area, but is presumed absent from the project site. The results of the survey are included in a separate report (MBA 2011b and 2012b).

Least Bell's Vireo

Least Bell's vireo (LBV) is a FE and SE and commonly occurs in riparian areas associated with perennial or intermittent streams with open to dense stands of willow riparian forest. The proposed project site does not contain any suitable habitat for this species. However, a small stand of willow scrub occurs along the west side of the main access road to the Sycamore Landfill in an offsite area not included in the survey area. This area is 400 feet from the proposed project site. Another suitable habitat area occurs south of the mitigation parcels in the western portion of the survey area. LBV were recorded within Little Sycamore Canyon, west of the project site (Recon 2012). LBV was also recorded to occur south of the mitigation parcels during the 2011 biological surveys, but was not observed during any of the 2012 surveys. Based on the recorded observations of this species, LBV is considered absent from the project site, but is known to occur in the vicinity. Surveys were not conducted due to a lack of suitable habitat within the project site and no potential for indirect impacts.

Hermes Copper

A focused survey for Hermes copper was conducted within suitable habitat within biological survey area by biologist Scott Crawford between May 25 and July 7, 2011 and between May 9 and July 9, 2012. Approximately 20 acres of suitable habitat was surveyed, which consisted of areas with spiny redberry and California buckwheat. No Hermes copper were observed in the survey area during the surveys. Therefore, this species is currently presumed absent from the survey area. A separate stand-alone report is not required for this species.

Orange-throated Whiptail

The orange-throated whiptail is a CSC that occurs throughout Southern California. It inhabits coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats, from sea level to 3,000 feet (900m). This species forages near perennial plants for a variety of small arthropods, especially termites. They take cover in dense vegetation when pursued, and seek cover under rocks, logs, decaying vegetation, and boards. Breeding activity for this whiptail begins in April and ends in September. This species population has declined in California due to development of suitable habitat areas.

Several orange-throated whiptails were observed within the proposed mitigation parcels in the western portion of the survey area. No orange-throated whiptails were observed within the project site or the immediate vicinity of any area where disturbance will occur. Therefore, this species is considered present within portions of the survey area, but is not likely to be impacted by project related activities.

Northern Red-diamond Rattlesnake

The northern red diamond rattlesnake is a California Species of Special Concern that inhabits arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland, and cultivated areas. This species is found in southwestern California, from the Morongo Valley west to the coast, and south along the peninsular ranges to mid Baja California. The northern red-diamond rattlesnake bears live young between July and September. No northern red-diamond rattlesnakes were observed within the survey area, although several Pacific rattlesnakes were observed during the surveys. The northern red-diamond rattlesnake is therefore considered absent from the survey area and no further action is required.

Coronado Island Skink

Coronado Island skink is a CSC that feeds on insects, and other small invertebrates, especially spiders and sow bugs. This subspecies is found in inland Southern California south through the north Pacific coast region of northern Baja California. This species occurs in grassland, woodlands, pine forests, chaparral, especially in open sunny areas such as clearings and the edges of creeks and rivers. This species prefers rocky areas near streams with lots of vegetation. It is also found in areas away from water. Young skinks have a bright blue tail with color that fades with age. This skink is diurnal during warm-seasons. During summer, most activity is concentrated in the morning and late

afternoon. Where summer temperatures are not extreme, activity extends throughout the day. Adult skinks usually become inactive by early fall but juveniles extend their period of activity several weeks. A single Coronado Island skink was observed within the project site during a single site visit. This species is considered present within the project site, but the population size is considered small because apart from the single individual observed during one site visit, no other Coronado Island skinks have been observed on the site during the numerous other surveys that have been conducted..

Cooper's Hawk

The Cooper's hawk is a CSC and is known to occur in riparian forests and woodlands throughout California. Adults have short broad wings and a long round-ended tail with dark bands. Most prey are mid-sized birds such as jays, starlings, and doves, but they also consume small rodents. The species capture prey from cover or while flying quickly through dense vegetation, relying on surprise. The Cooper's hawk provides a beneficial service in helping maintain the balance in wild populations of birds and rodents. Threats include habitat loss due to development.

An active Cooper's hawk nest was observed within a sycamore tree along the unvegetated channel within proposed mitigation parcel 366-070-30. During the 2011 survey season, 3 chicks fledged the nest. No nesting activity was observed during 2012. This parcel is being considered for mitigation, and no facilities are anticipated to be located in that parcel or in the immediate vicinity of that parcel.. No other Cooper's hawk were observed within the survey area.

White-tailed Kite

The white-tailed kite is a California Fully Protected species that is found in agricultural areas, grasslands, marshes, savannas, and other open land or sparsely wooded areas from the West Coast and Gulf Coast of the United States into Central America and eastern South America. White-tailed kite preys on small mammals such as mice and voles, but will also occasionally hunt birds, reptiles, and amphibians. A single white-tailed kite was observed soaring over the southwestern portion of the survey area outside the project site. No suitable nesting habitat, which consists of sparse to dense riparian habitats, occurs within the project site or within the immediate vicinity. Marginal suitable foraging habitat occurs within the biological survey area. Because of the presence of foraging habitat, this species is considered present; however, it does not nest within the survey area or in the immediate vicinity.

Southern California Rufous-crowned Sparrow

The Southern California rufous-crowned sparrow is a CSC that inhabits coastal sage scrub and sparse mixed chaparral habitats, but will also frequent relatively steep, rocky hillsides with grass and forb patches. It forages in the litter beneath shrubs, oak trees, and herbaceous cover. Threats include loss of habitat due to agricultural and urban development.

A single rufous-crowned sparrow was observed within the sparse Diegan Sage Scrub/Non-native Grassland habitat located in the western portion of the survey area. This species was observed flying

through the habitat within the survey area to higher quality habitat outside the survey area and is not likely considered a resident because it was not observed using the project site for foraging or nesting activities.

Yellow Warbler

Yellow warbler is a CSC and commonly occurs in riparian areas associated with perennial or intermittent streams with open to dense stands of willow riparian forest. The only potentially suitable habitat occurs in the western portion of the survey area, outside of the project site. Additionally, a small stand of willow scrub occurs along the west side of the main access road to the Sycamore Landfill in an offsite area not included in the survey area. No yellow warblers were observed during the surveys.

California Horned Lark

California horned larks are CSC and breed widely throughout North America, from northern Alaska to southern Mexico. They retreat from northern latitudes and higher elevations in autumn, wintering from southern Canada southward across the United States and Mexico.

In certain parts of California, the horned lark is a serious crop pest. The damage occurs mostly in the interior valleys from Sacramento south to the Imperial Valley, and along the coast from San Francisco south to San Diego. Damage also occurs to crops in the Mojave Desert region and other desert valleys in southeastern California. Resident populations of horned larks are found in the stubble, grass, and fallow lands near cultivated fields. The majority of the birds live in the wide expanses of the deserts, foothills, and dry grasslands that encircle the farming areas. No California horned larks were observed during the surveys. This species is considered absent from the project site.

Yellow-breasted Chat

Yellow-breasted chat is a CSC and commonly occur in riparian areas associated with perennial or intermittent streams with open to dense stands of willow riparian forest. The only potentially suitable habitat occurs in the western portion of the survey area, outside of the project site. Additionally, a small stand of willow scrub occurs along the west side of the main access road to the Sycamore Landfill in an offsite area not included in the survey area.

Least Bittern

The least bittern is a tiny heron and is a well-camouflaged CSC. The least bittern is one of the most difficult North American marsh birds to spot. Despite its inconspicuousness; however, the species can be common within appropriate habitat in its breeding range. This species commonly occurs near freshwater or brackish marshes with tall emergent vegetation. Marginally suitable habitat occurs in the riparian areas located along Little Sycamore and Spring Creeks. This species was not observed within the survey area and is not expected to occur within the project site.

Dulzura Pocket Mouse

The Dulzura pocket mouse is a CSC. The preferred habitat of this pocket mouse is chaparral, occasionally venturing into desert grassland areas. Suitable habitat for this species occurs in the proposed mitigation parcels in the western portion of the survey area. This species is not expected to occur within the project area due to a lack of suitable habitat.

Northwestern San Diego Pocket Mouse

The San Diego pocket mouse is a CSC and is known to occur in chaparral, grasslands, sage scrub, forests, and deserts. This species prefers low-growing vegetation or rocky outcroppings, and sandy soil for burrowing. This species is not expected to occur within the survey area due to a lack of suitable sandy soil habitat.

San Diego Black-tailed Jackrabbit

The San Diego black-tailed jackrabbit is a California Species of Special Concern and is a subspecies of the black-tailed jackrabbit. The San Diego black-tailed jackrabbit occurs only on the coastal side of the southern California mountains. Black-tailed jackrabbit is herbivorous and feeds on a variety of grasses, forbs, and shrubs. This species was observed within dense non-native grasslands and Diegan coastal sage scrub/non-native grassland habitat in the western portion of the survey area. No San Diego black-tailed jackrabbits were observed within the project site.

Golden Eagle

The golden eagle is a California Fully Protected species and an assessment was conducted based on the Interim Golden Eagle Inventory and Monitoring protocols and other Recommendations (February 2010). Based on the most current version of the CNDDDB, the closest known recorded nesting golden eagle is a little more than 10 miles northeast of the power plant site. The nesting area occurs within a steep cliff area surrounded by undisturbed open space and is clearly visible on Google Earth aerial photographs. Based on the requirements within the interim protocol, detailed nesting monitoring is required for project sites within 10 miles of a known recorded nest. Based on the assessment, the power plant site is not within the 10-mile survey buffer. The biological survey area does not provide suitable habitat for nesting golden eagles and therefore is not likely to significantly affect any golden eagle nests. In addition, an assessment was also conducted within the 10-mile buffer area to identify other areas that may be suitable for golden eagle nesting. No other suitable nesting areas were identified within 10 miles of the project site. Additional suitable nesting habitat continues further to the northeast beyond the known recorded occurrence. The project site may be used as foraging habitat since it is contiguous with open space areas surrounding the biological survey area.

4.2 - Nesting Birds

The Migratory Bird Treaty Act (MBTA) protects all native wild birds found in the United States. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone

to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs, without a permit.

Section 3503 of the California Fish and Game Code (CFG Code) makes it illegal to destroy any birds' nest or any birds' eggs that are protected under the MBTA without a permit. Section 3503.5 further protects all birds in the orders Falconiformes and Strigiformes, birds of prey, such as hawks and owls, and their eggs and nests from any form of take.

The biological survey area and immediate vicinity supports suitable nesting and foraging habitat for a number of resident and migratory bird species, including raptors, protected under the MBTA and CFG Code. A list of a species observed within the project survey area is provided in Appendix B.

The coastal sage scrub surrounding the project site provides marginal nesting and foraging habitat for common resident species such as California towhee, wrenit, and spotted towhee (*Pipilo maculatus*). A few isolated trees line the existing unvegetated channel, which provides suitable nesting habitat for raptors such as Cooper's hawk and common yellowthroat (*Geothlypis trichas*).

4.3 - Jurisdictional Waters and Wetlands

MBA Senior Biologist Scott Crawford conducted a jurisdictional delineation on June 15, 22, 30 and July 7, 2011, to identify any potentially jurisdictional features located within the biological survey area. The results of the survey are included in the "Preliminary Jurisdictional Delineation" report for the project site (MBA 2011b). The survey determined that the biological survey area contains a single drainage features that transport natural flows from north to south within relatively undisturbed canyon areas. The drainage feature within the survey area is associated with the proposed mitigation parcels located in Spring Canyon.

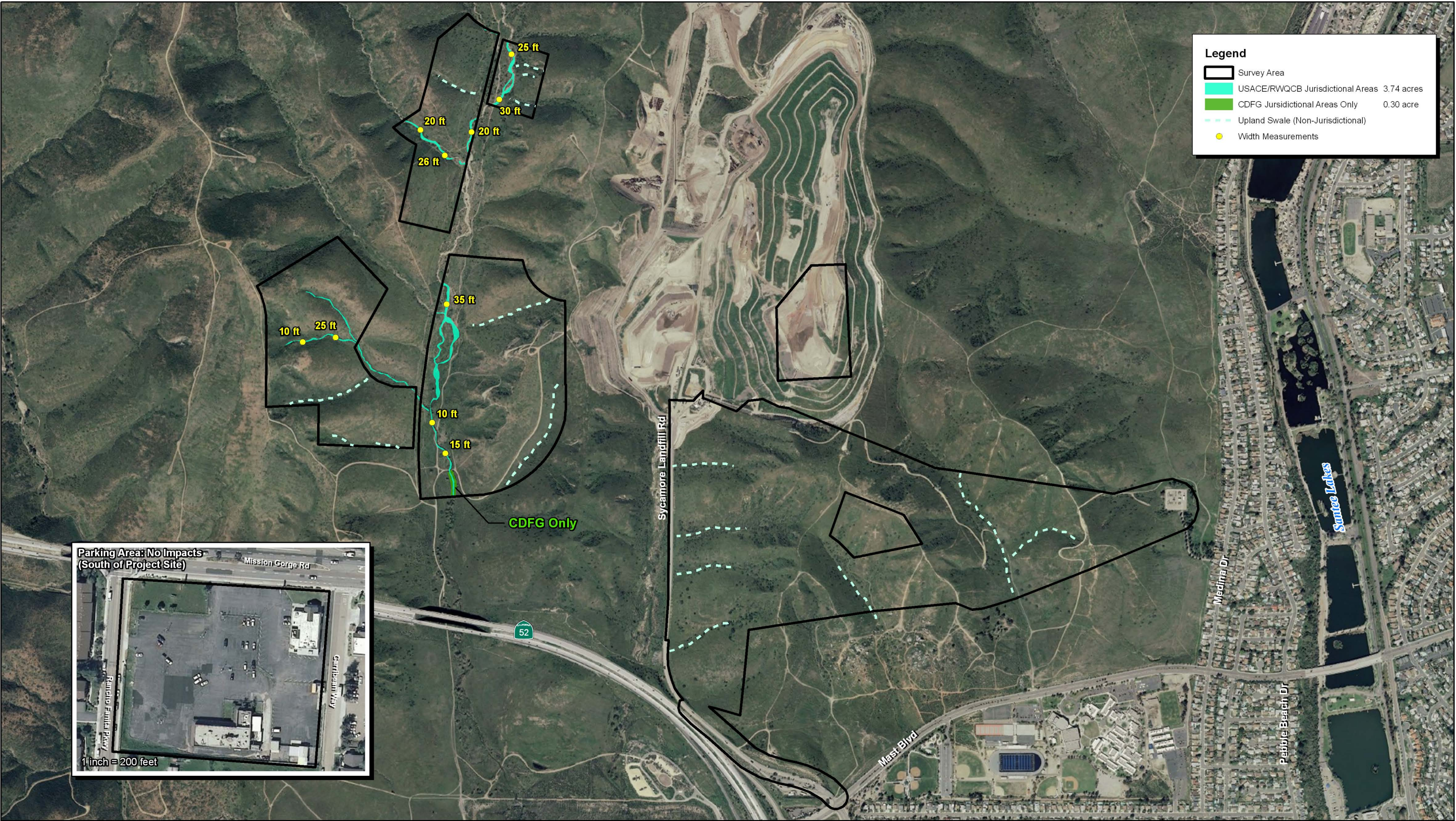
A total 1.88 acres, of which 0.02 acre is an adjacent wetland, may be subject to USACE and RWQCB jurisdiction, while a total 2.17 acres of streambed may be subject to CDFG jurisdiction. The main drainage feature on site is associated with Spring Canyon and eventually connects to the San Diego River, a relatively permanent water, at an off site location (approximately 1 mile to the south). Based on the findings of MBA's jurisdictional delineation, the drainage features in the survey area contains the minimum requirements to be considered jurisdictional by the USACE, RWQCB, and/or CDFG. The jurisdictional feature is not located within the project site and will be fully avoided during project construction. A letter of concurrence from USACE was obtained to document project avoidance of drainage features under USACE jurisdiction. Although a letter from CDFG was not obtained, the same areas mentioned above also contain CDFG jurisdictional areas and are similarly avoided.

4.4 - Wildlife Corridors and Linkages

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by

urbanization creates isolated “islands” of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967, Soule 1987, Harris and Gallagher 1989, Bennett 1990). Corridors effectively act as links between different populations of a species. A group of smaller populations (termed “demes”) linked together via a system of corridors is termed a “metapopulation.” The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health.

Corridors mitigate the effects of habitat fragmentation by (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987, Harris and Gallagher 1989).



Source: ESRI Aerial Imagery, MBA Field Survey and GIS Data, 2012.

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as “wildlife corridor,” “travel route,” “habitat linkage,” and “wildlife crossing” to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

- Travel Route:** A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relative direct link between target habitat areas.
- Wildlife Corridor:** A piece of habitat, usually linear in nature that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.
- Wildlife Crossing:** A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

4.4.1 - Wildlife Movement within the Study Area

The focus of this study is to determine if the alteration of current land use on the subject property will have significant impacts on the regional movement of wildlife. With the increasing development in the immediate vicinity (proposed residential development to the east), this becomes even more important to examine. This study did not include the use of track plates, camera stations, scent stations, or snares. MBA decided that these methods would produce undue stress on wildlife. Instead, notation was made during all site visits of road kill, general locations of animal sign, and inspection

of resource maps for the vicinity. These conclusions are based on the knowledge of desired topography and resource requirements for wildlife potentially utilizing the project site.

Regional linkages/corridors may include land that contains topography that serves to allow for the movement of all sizes of wildlife and is used by wildlife, including large animals on a regional scale; and contains adequate vegetation cover providing visual continuity to encourage the use of the corridor by wildlife. These lands may also be identified as the primary linkage/corridor between the regional populations of wildlife species, most notably in San Diego County, the coastal California gnatcatcher.

The project site is located within and immediately adjacent to the MHPA as identified by the Subarea Plan (Exhibit 6). The MHPA is comprised of linkages and corridors that connect several large areas of habitat within the County of San Diego.

The proposed project is limited in size, particularly when compared to existing development within 1 mile of the project site (i.e., Sycamore Landfill, commercial and residential development). The operational requirements of the proposed project are minimal as well, particularly because portions of the project will be contained within existing disturbed areas associated with dirt and paved access roads, low-quality habitat, and existing power lines. The project site and immediate vicinity is already impacted by existing aboveground hindrances (such as power lines and landfill facilities), or impacts associated with noise and movement (trucks, landfill operations, movement of landfill personnel); therefore, the proposed project is not anticipated to significantly impact any travel route or wildlife movement corridor, beyond that which already exists. Potential indirect impacts from noise or lighting area also minimized by these existing uses. Although the habitat within the biological survey area demonstrates connectivity with higher quality undeveloped habitat in the vicinity, the power plant site itself is located between an existing landfill to the north and major roads and urban developed to the south, such as SR-52.

Currently within the survey area, wildlife have nearly uninhibited movement across the survey area within little Sycamore Canyon and adjacent canyons to the east and west. Outside of the project site and within the survey area, wildlife movement would be limited to the western portion of the survey area for opportunistic species. Opportunistic wildlife species such as coyote (*Canis latrans*), raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*) and bobcat (*Lynx rufus*) may try to take advantage of the few resources within the survey area boundary. Wildlife utilization within the project site is expected to be fairly low based on the high volume of truck traffic from the adjacent landfill and close proximity to residential development to the east and south. Also, the northern portion of the survey area is bordered by the Sycamore Landfill, which limits wildlife movement.

Wildlife utilization within the project site is also expected to be low due to the limited availability of water and the low species diversity. Spring Canyon, located in the western portion of the survey area,

is associated with the riparian habitat within the proposed mitigation parcels. It is likely that a wildlife corridor occurs in the southwestern portion of the survey area, but not within the project site.

Regionally, the undeveloped habitat located further to the northwest and northeast, within offsite areas, may function to facilitate wildlife movement for wildlife species potentially occupying or moving through the area. No significant impacts will occur to this adjacent habitat, and no developments are proposed that would pose a significant indirect impact to the function of the adjacent areas as a potential linkage or corridor. Furthermore, development of the proposed project would not conflict with the assemblage and function of any future resource planning pertaining to regional or local corridors or linkages for the area.

4.5 - Urban Wildlands Interface / Adjacency Management Issues

An urban/wildlands interface is generally defined as land that presently contains, or will contain, as a result of a proposed action, both elements of an urban setting and raw undeveloped land or protected land. This land is situated as such to present a sharply defined physical contrast between the two, potentially creating an adverse edge effect resulting from direct and/or indirect impacts derived from the urban elements. An urban/wildlands interface may be most recognizable in larger multi-use developments that occur within or immediately adjacent to completely undeveloped and undisturbed land that provides habitat for plant and wildlife species in the area.

No design elements are proposed that would result in any significant indirect impacts to any adjacent land or any wildlife potentially using the project vicinity beyond that which already exists and currently results from the existing development in the area (i.e., Sycamore Landfill and SR-52). The majority of the proposed project site is located within non-native grassland and existing disturbed and developed land, thereby reducing potential impacts resulting from any above ground physical hindrances beyond that which already exist, and minimizing potential indirect impacts from noise or lighting.

4.6 - City of San Diego MSCP Subarea Plan

The project site is within the City of San Diego Subarea Plan, which is part of the larger San Diego County Multiple Species Conservation Plan. The biological survey area is located within and immediately adjacent to the City of San Diego MHPA as identified under the Subarea Plan (Exhibit 8).

The MHPA encompasses priority areas for conservation that provide suitable habitat, corridors, and linkages for sensitive flora and fauna species known to occur in the region. Portions of the MHPA that are public land, or private land with conservation easements are considered part of the “preserve.” Because the power plant site parcel is private land with no conservation easements, the power plant site is not considered part of the “preserve” even though it is within the MHPA.

Based on the City of San Diego Land Development Manual, all proposed development within an MHPA must be located on the least sensitive portions of the project site. The project site will be constructed within an area that is located between an existing landfill to the north and residential development and SR-52 to the south, thereby reducing potential impacts to high quality contiguous habitat located further to the northeast and northwest.

However, due to the close proximity of the project site to existing MHPA designated areas, the Adjacency Management Guidelines discussed in Section 5.2 below are recommended to further reduce any potential indirect impacts to resources adjacent to the project site to less than significant. The survey area also contains portions of an Environmentally Sensitive Area (ESA). The ESA is a specific environmentally sensitive area that provides habitat for sensitive plant and wildlife species and is typically associated with riparian habitats or drainage features. In this case, the drainage feature and associated riparian habitat associated with Spring Canyon is considered an ESA and is located along the western side of the biological survey area. Based on the current site design, the ESA will be completely avoided during project installation. This ESA may be within several of the proposed mitigation parcels.

4.6.1 - MSCP Compliance

The majority of the proposed project is located within the existing MHPA. Portions of the proposed gas line, along with some of the proposed gen tie transmission lines and proposed towers, occur outside of the MHPA boundary. A total of 365.73 acres of the survey area occurs within the existing MHPA boundary, with 59.59 acres located outside of the boundary. It is assumed that in the future, along with the adjacent Sycamore Landfill, the proposed project would be reclaimed as an open space preserve or passive park.

4.6.2 - MHPA Preservation

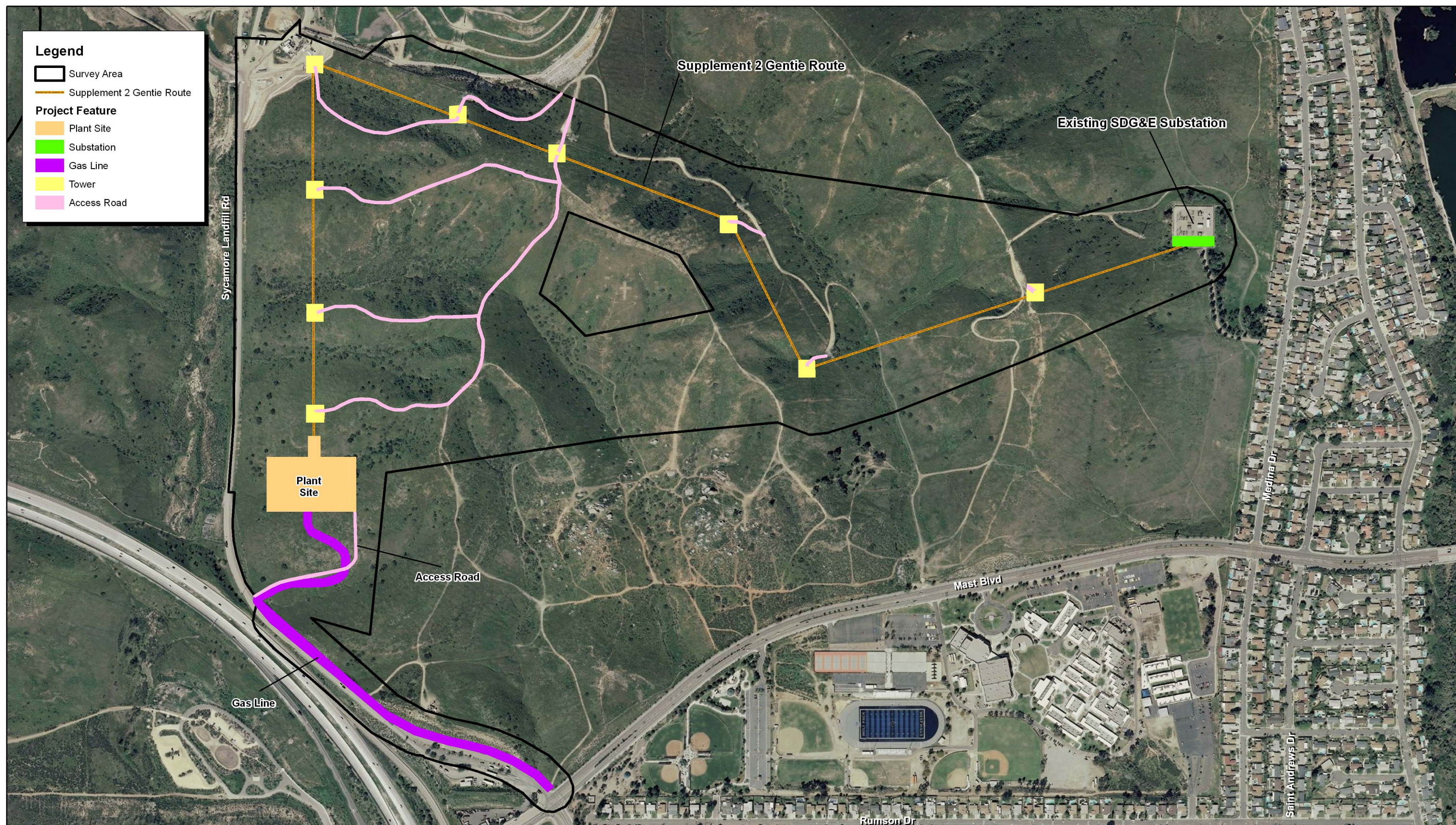
The portion of Supplement 2 project site that would encroach into the existing MHPA is 29.01 acres of the total 222.54 acres within the existing parcels associated with the proposed project. In addition, the Supplement 3.1 project site would encroach 33.94 acres into the existing MHPA of the total 102.76 acres within the existing parcels and the Supplement 3.2 project site would encroach 27.62 acres into the existing MHPA of the total 102.76 acres within the existing parcels.

Impacts within the MHPA are generally required to be limited to 25 percent development area of the parcel and must be sited on the least sensitive portion of the premises (City of San Diego, Land Development Code, Biology Guidelines, 2004).

The Supplement 2 project design would encroach upon 13 percent of the total parcel area. This is below the allowed 25 percent MHPA encroachment limit permitted by the Biology Guidelines. Also, the project site is located immediately adjacent to the existing landfill and SDG&E facilities, which are spread out along larger area than Supplement 3, thus limiting the potential for edge effects as a result of the proposed development. The proposed tower locations must be located on ridge tops in

order to convey the transmission lines over the rough topography west of the landfill. The grading design for necessary access roads has been minimized as much as possible in order to limit impacts to sensitive areas. Thus, the project encroachment impacts to the MHPA would be less than significant with regard to Supplement 2.

The Supplement 3 project design would encroach upon 33 percent of the total parcel area. This is above the allowed 25 percent MHPA encroachment limit permitted by the Biology Guidelines. The project site is located immediately adjacent to the existing landfill, but is contained within a smaller parcel footprint than Supplement 2, thus increasing the percentage of the overall impact area. The grading design for necessary access roads has been minimized as much as possible in order to limit overall project area. Thus, the project encroachment impacts to the MHPA would be significant with regard to Supplement 3. Habitat replacement for impacts to areas with the MHPA will be negotiated with the City of San Diego staff to provide a suitable mitigation area.



Source: ESRI Aerial Imagery, Tetra Tech 2012, MBA Field Survey and GIS Data, 2012.

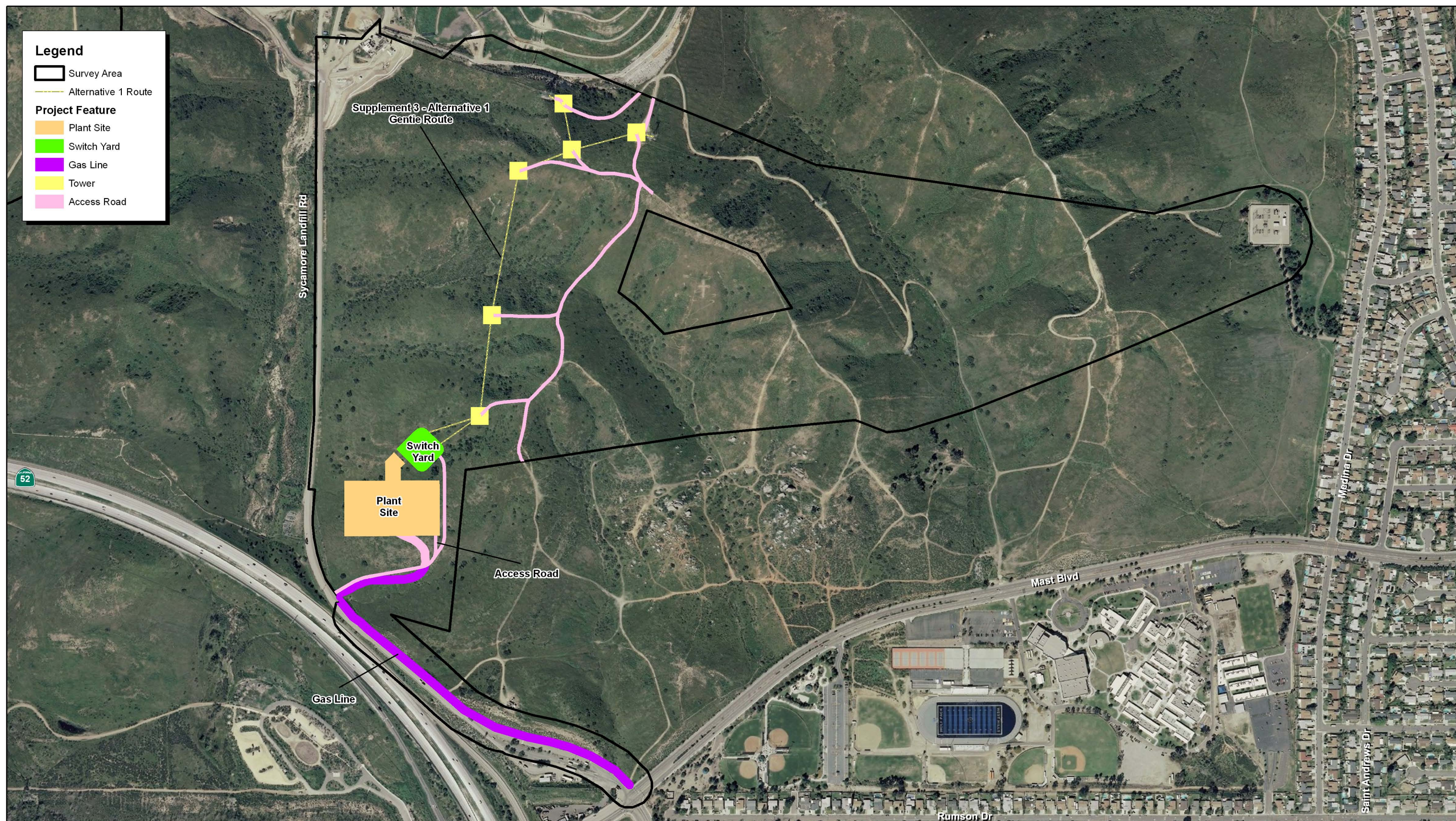


Michael Brandman Associates

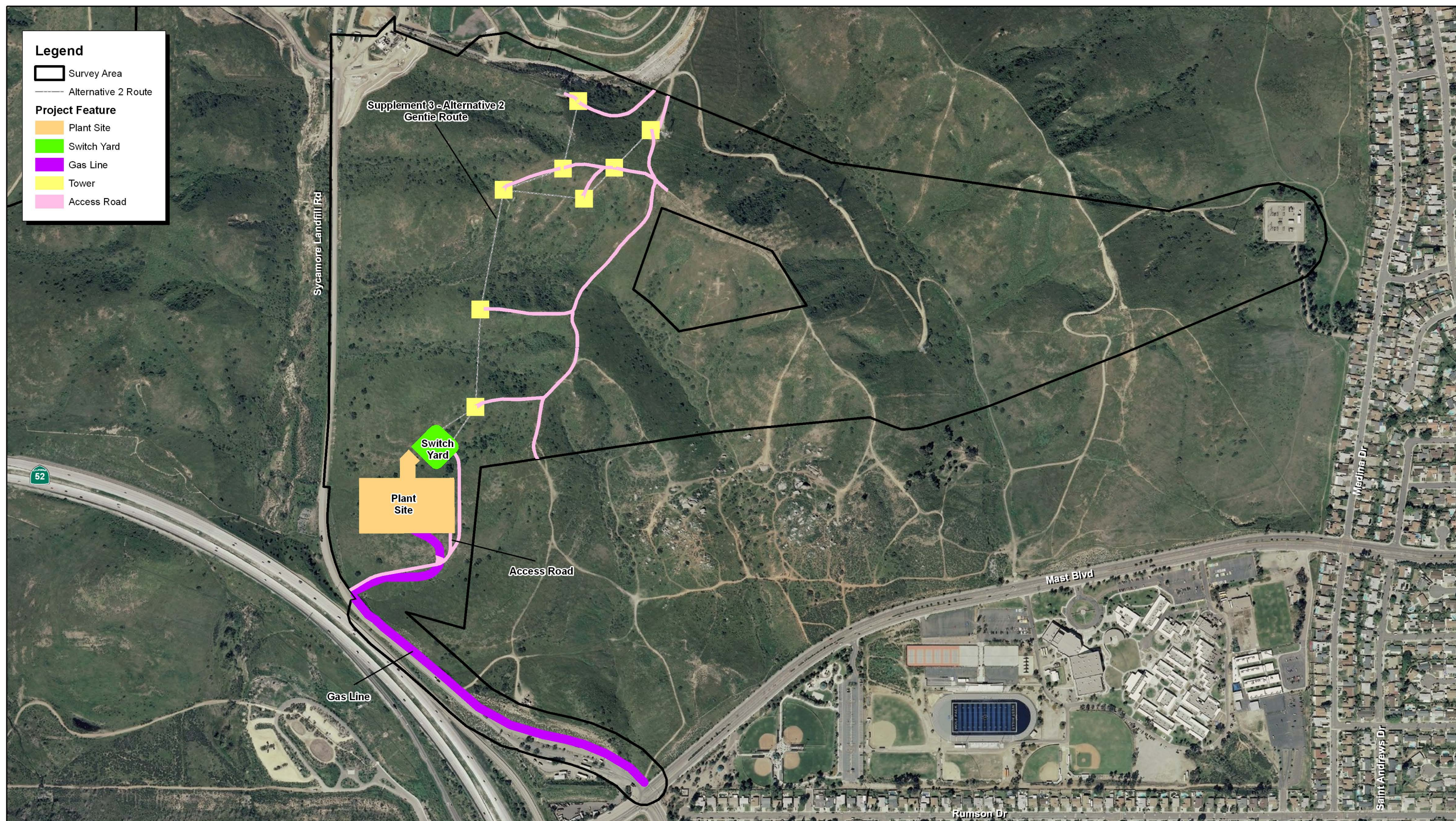
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Exhibit 8a Supplement 2 - Facilities Map

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Source: ESRI Aerial Imagery, Tetra Tech 2012, MBA Field Survey and GIS Data, 2012.



Source: ESRI Aerial Imagery, Tetra Tech 2012, MBA Field Survey and GIS Data, 2012.



Michael Brandman Associates

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Exhibit 8b-2 Supplement 3 - Facilities Map Alternative 2

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SECTION 5: SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

5.1 - Impact Analysis

This section of the report provides a discussion of potential project-related impacts to four proposed project designs. Table 3 below includes general impacts associated with the proposed project design from the original AFC. This table was included to compare project related impacts to other project design alternatives. The new project alternatives were designed to reduce the total project-related impacts and avoid sensitive biological resources. Mitigation to reduce potential biological resources impacts to less than significant is provided in Section 5.2, Special Status Species, below.

5.1.1 - Habitats/Vegetation Communities

The existing acres within the biological survey area and total impact acres resulting from construction of the project to each habitat type are outlined in Table 4 below. The impacts are based on the Supplement 3 Alternative 1 project design. Estimated project related impacts are also included for the original AFC project design (Table 3). A more detailed assessment of the project related impacts are included in Tables 4, 5, and 6 with regard to Supplement 2, Supplement 3 - Alternative 1 (3.1), and Supplement 3 - Alternative 2 (3.2) project designs respectively.

**Table 3: Habitat Types/Vegetation Communities and Impacts
Based on the original AFC Project Design)**

Habitat/Vegetation Community	Tier Habitat According to City Subarea Plan	Existing Acres	Percent (%) of Survey Area	Total Project Related Impacts Acres
Diegan Coastal Sage Scrub (32500)	Tier II	13.80	5	1.53
Diegan Coastal Sage Scrub with Non-Native Grassland (32500)	Tier II	11.83	4	0.17
Disturbed Habitat (11300)	Tier IV	10.29	4	0.82
Granitic Chamise Chaparral (37210)	Tier IIIa	32.34	12	2.36
Granitic Chamise Chaparral with Non-Native Grassland (37210)	Tier IIIa	9.77	4	0.14
Granitic Southern Mixed Chaparral with Non-Native Grassland (31721)	Tier III	1.00	<1	0.00
Non-Native Grassland (42200)	Tier IIIb	183.16	69	27.20
Non-Vegetated Channel (64200)	N/A	1.80	1	0.00
Southern Sycamore-Alder Riparian Woodland (62400)	Tier I	0.57	<1	0.00
Total		264.56	100	32.22

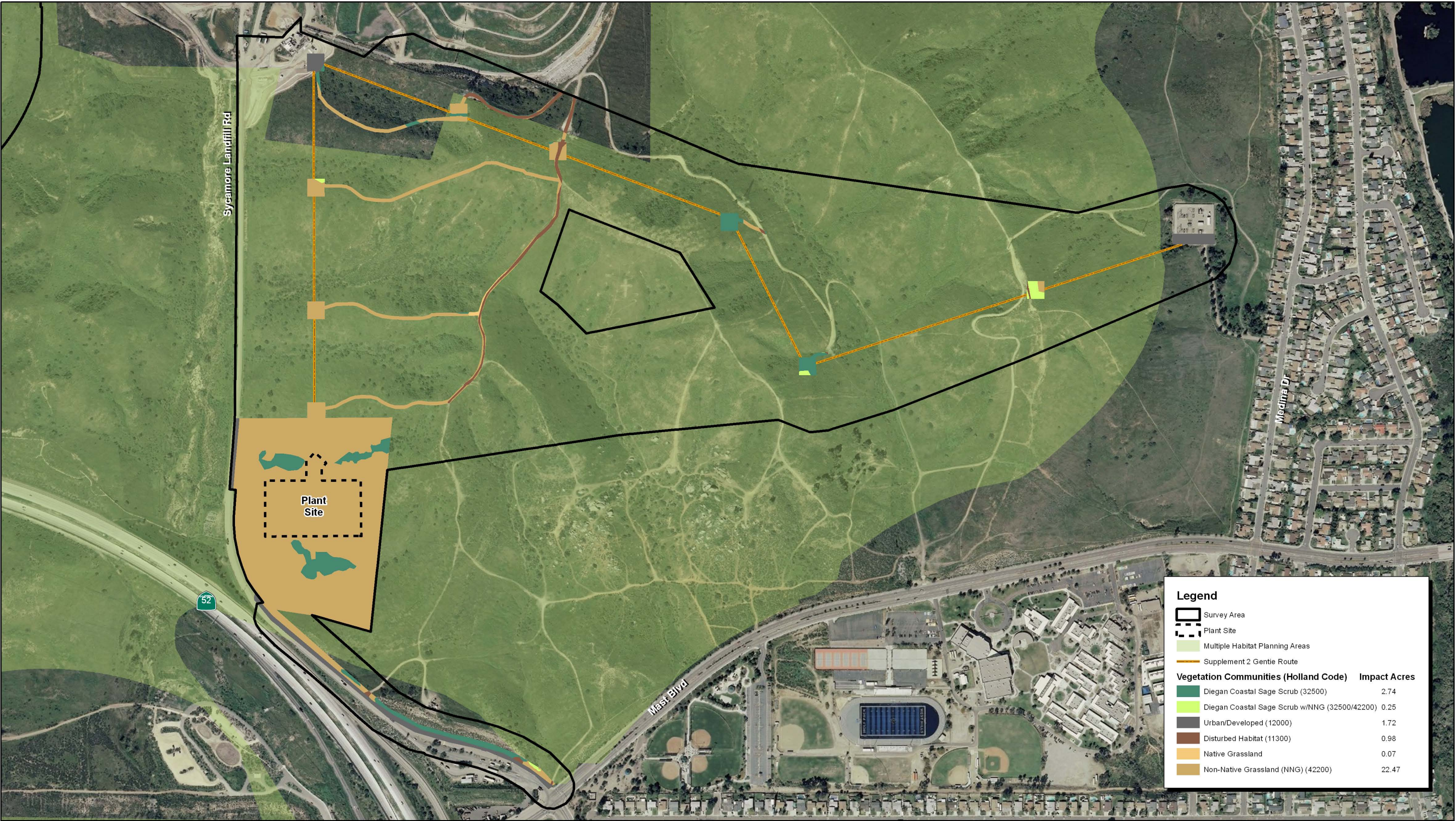
**Table 4: Habitat Types/Vegetation Communities and Impacts
(Based on Supplement 3.1 Design)**

Habitat / Vegetation Community	Existing Acres	Percent (%) of Survey Area	Permanent Impacts	Temporary Impacts
Diegan Coastal Sage Scrub	53.58	12.6	0.47	2.41
Diegan Coastal Sage Scrub/non-native grassland	52.81	12.4	0	0.03
Disturbed Habitat	25.83	6.1	0.97	1.18
Granitic Chamise Chaparral	38.27	9.0	0.00	0
Granitic Chamise Chaparral/non-native grassland	1.00	0.2	0.00	0
Native Grassland	0.76	0.2	0.64	0
Non-Native Grassland	232.77	54.7	6.81	22.15
Non-Vegetated Channel	2.96	0.7	0.00	0
Urban/Developed	17.33	4.1	0.00	0.00
Total	425.31	100	8.89	25.77

As currently designed (Supplement 3, Alternative 1), the power plant site will permanently impact 4.67 acres of the 22-acre parcel, which includes 4.54 acres of non-native grasslands and 0.13 acre of Diegan coastal sage scrub. The power plant site also includes temporary impacts to 1.17 acres of Diegan coastal sage scrub and 12.31 acres of non-native grassland.

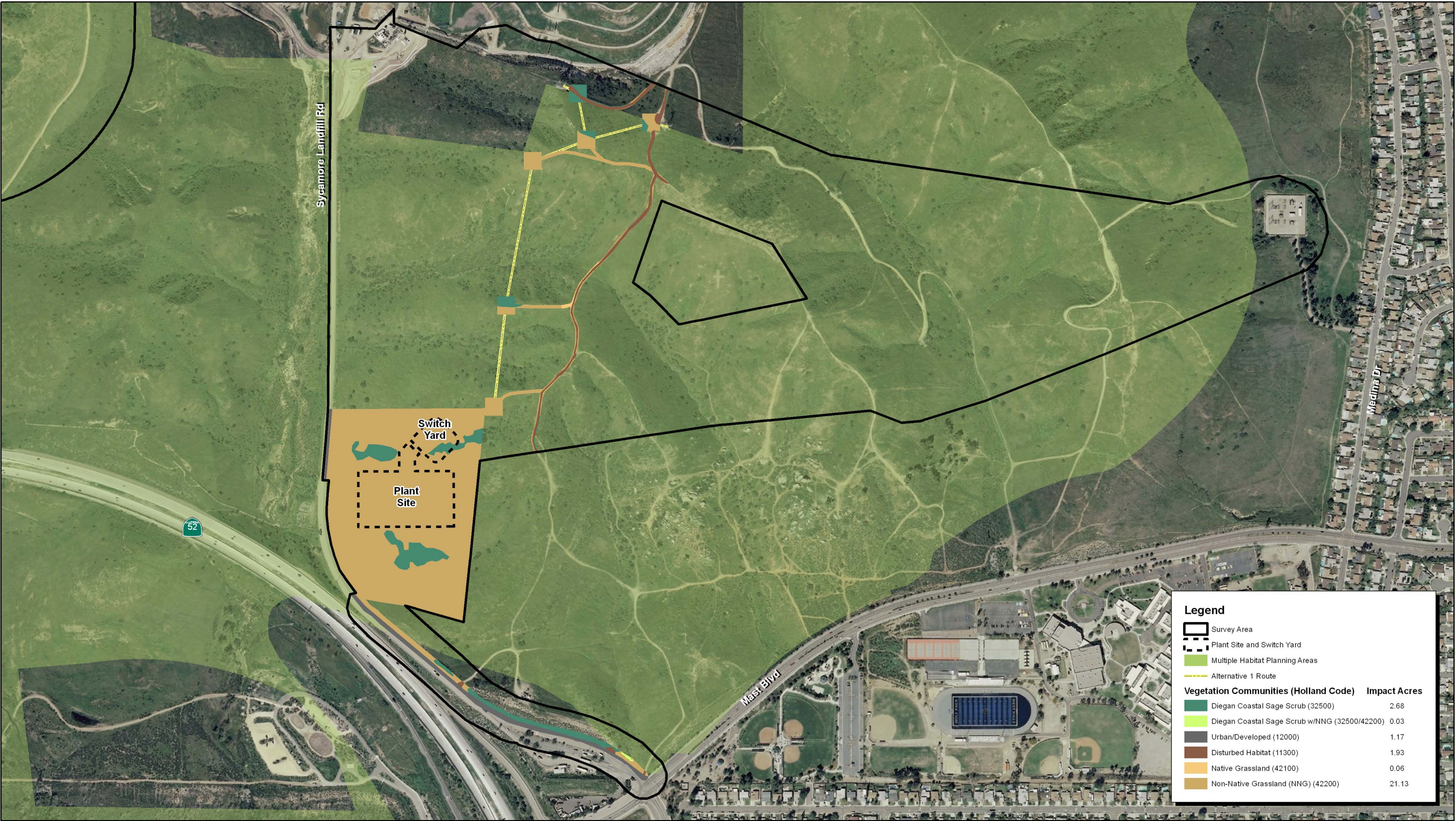
The preferred switchyard is immediately adjacent (northeast) to the power plant site and will include 1.21 acres of permanent impacts (0.15 acre of Diegan sage scrub and 1.06 acres of non-native grasslands). The gen tie portion of the project site will include up to 6 new towers and access roads, which includes 4.41 acres of total impacts (3.13 permanent and 1.28 temporary). Permanent impacts include 0.18 acre of Diegan coastal sage scrub, 1.83 acres of disturbed habitat, 0.06 acre of native grasslands, and 1.06 acres of non-native grasslands. Temporary impacts associated with the preferred gen tie include 0.39 acre of Diegan coastal sage scrub, 0.05 acre of disturbed habitat, and 0.84 acres of non-native grasslands.

The natural gas pipeline installation will temporarily impact 0.66 acre of Diegan coastal sage scrub, 0.03 acre of Diegan coastal sage scrub/non-native grasslands, 1.13 acres of disturbed habitat, and 1.32 acres of non-native grasslands (Exhibit 9a, Exhibit 9b-1, and Exhibit 9b-2).



Source: ESRI Aerial Imagery. Tetra Tech 2012, MBA Field Survey and GIS Data, 2012.





Source: ESRI Aerial Imagery. Tetra Tech 2012, MBA Field Survey and GIS Data, 2012.



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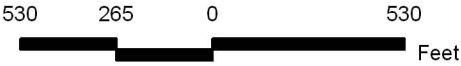


Exhibit 9b-1
Vegetation Communities Impacts Map
Supplement 3 (Alternative 1) - Project Design

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Source: ESRI Aerial Imagery. Tetra Tech 2012, MBA Field Survey and GIS Data, 2012.



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Exhibit 9b-2
Vegetation Communities Impacts Map
Supplement 3 (Alternative 2) - Project Design

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Table 5: Supplement 2 - Vegetation Community Impacts per Project Element (in Acres)

Impacts	Habitat / Vegetation Community	Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub/non-native grassland	Developed/ Disturbed Habitat	Native Grassland	Non-Native Grassland	Total
Permanent	Power Plant (W/ Access Road)	0.57	0	0	0	3.75	4.32
	Gen Tie	0.23	0.04	0.93	0.07	2.22	3.91
	SubStation	0	0	0.33	0	0	0.33
	Natural Gas Pipeline	0	0	0	0	0	0
Sub Total		0.80	0.04	1.26	0.07	5.97	8.14
Temporary	Power Plant	0.86	0	0.09	0	13.91	14.86
	Gen Tie	0.41	0.18	0.22	0	0.93	1.74
	SubStation	0	0	0	0	0	0
	Natural Gas Pipeline	0.67	0.03	1.13	0	1.66	3.49
Sub Total		1.94	0.21	1.44	0	16.50	20.09
Total		2.74	0.25	2.70	0.07	22.47	28.23

Table 6: Supplement 3 (Alternative 1) - Vegetation Community Impacts per Project Element (in Acres)

Impacts	Habitat / Vegetation Community	Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub/non-native grassland	Developed/ Disturbed Habitat	Native Grassland	Non-Native Grassland	Totals
Permanent	Power Plant (W/ Access Road)	0.13	0	0	0	4.67	4.67
	Gen Tie	0.18	0	1.83	0.06	1.06	3.13
	Switchyard	0.15	0	0	0	1.06	1.21
	Natural Gas Pipeline	0	0	0	0	0	0
Sub Total		0.46	0	1.83	0.06	6.66	9.01
Temporary	Power Plant	1.17	0	0.09	0	12.31	13.57
	Gen Tie	0.39	0	0.05	0	0.84	1.28
	Switchyard	0	0	0	0	0	0
	Natural Gas Pipeline	0.66	0.03	1.13	0	1.32	3.14
Sub Total		2.22	0.03	1.27	0	14.47	17.99
Total		2.68	0.03	3.10	0.06	21.13	27.00

Table 7: Supplement 3 (Alternative 2) - Vegetation Community Impacts per Project Element (in Acres)

Impacts	Habitat / Vegetation Community	Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub/non-native grassland	Developed/ Disturbed Habitat	Native Grassland	Non-Native Grassland	Total
Permanent	Power Plant (W/ Access Road)	0.13	0	0	0	4.67	4.80
	Gen Tie	0.25	0	1.53	0.06	1.49	3.33
	Switchyard	0.15	0	0	0	1.05	1.20
	Natural Gas Pipeline	0	0	0	0	0	0
Sub Total		0.53	0	1.53	0.06	7.21	9.33
Temporary	Power Plant	1.17	0	0.09	0	12.30	15.81
	Gen Tie	0.29	0.01	0.05	0	1.26	0.34
	Switchyard	0	0	0	0	0	0
	Natural Gas Pipeline	0.63	0.03	1.13	0	1.10	2.89
Sub Total		2.09	0.04	1.27	0	14.66	18.06
Total		2.62	0.04	2.80	0.06	21.87	27.39

Under the MSCP, mitigation requirements are set based upon the level of impacts to certain Tier Habitat identified in the City Subarea Plan. Native grassland is considered a Tier I habitat type and Diegan coastal sage scrub is considered a Tier II Habitat under the City Subarea Plan. Also granitic chamise chaparral and non-native grasslands area considered Tier IIIA and IIIB respectively. Project-related impacts that result in less than 0.10 acre of impacts to sensitive upland Tiers I, II, IIIA, and IIIB are not considered significant and do not require compensatory mitigation. Disturbed habitat and urban/developed land are considered Tier IV Habitats under the City Subarea Plan. No compensatory mitigation is required for project-related impacts to Tier IV Habitat. The Diegan sage scrub/non-native grassland ecotone areas are not acknowledged as separate vegetation communities under the City of San Diego Subarea Plan, however, for the purpose of proposed mitigation, these areas are treated the same as Diegan coastal sage scrub as a Tier II Habitat. Recommendation for project-related mitigation measures associated with impacts to native vegetation and habitat is discussed in Mitigation Measure BIO-1. The proposed mitigation ratios are consistent with the City of San Diego Municipal Code.

5.1.2 - Special Status Species

It was determined that that the proposed project has the potential to impact three special status plant species (San Diego barrel cactus, San Diego goldstars, and variegated dudleya) and five special-status wildlife species (coastal California gnatcatcher, Coronado Island skink, Cooper's hawk, southern rufous crowned sparrow, and San Diego black-tailed jackrabbit). Quino checkerspot butterfly is not anticipated to occur on site due to lack of constituent habitat elements and negative findings during the 2012 protocol survey conducted within areas of suitable habitat.

Special Status Plant Species

San Diego Barrel Cactus

The power plant site is anticipated to directly impact approximately 39 San Diego barrel cactus for Supplement 2 and Supplement 3 (both alternatives). One of the access roads for the proposed gen tie route for Supplement 2 is also anticipated to directly impact an additional 6 individuals. Project-related impacts to San Diego barrel cactus are considered a significant impact. Mitigation Measure BIO-2, provided below, will reduce potential project impacts to San Diego barrel cactus to less than significant.

Variegated Dudleya

The power plant site is not anticipated to directly impact any variegated dudleya. The proposed access road improvements associated with the gen tie right-of-way, is anticipated to potentially impact approximately 1 individual for both the Supplement 2 and Supplement 3 (both alternatives). Project-related impacts to variegated dudleya are considered a significant impact. Mitigation Measure BIO-2 provided below will reduce potential project impacts to variegated dudleya to less than significant.

San Diego Goldstars

The power plant site is not anticipated to directly impact any San Diego goldstars. The proposed gen tie under Supplement 2 may potentially impact portions of the Sycamore Landfill conservation area on which San Diego goldstars have been observed. This area would not be impacted with implementation of the Supplement 3 project. Mitigation Measure BIO-2 provided below will reduce potential project impacts to San Diego goldstars to less than significant.

Special Status Wildlife Species

Quino Checkerspot Butterfly (QCB)

USFWS protocol surveys were conducted for this species during the 2012 Quino checkerspot butterfly flight season. The surveys were negative and Quino checkerspot butterfly are considered absent from the survey area.

The project site is located within three miles of the Mission Trails population of QCB. This population was completely lost in the 2003 fire and remains absent from the area (USFWS personal communication). Based on the existing habitat characteristics within the biological survey area and the loss of the closest recorded population, it is highly unlikely that this species occurs on site or in the immediate vicinity. Based on the findings documented in the Sycamore Landfill Expansion Project EIR, Quino checkerspot butterfly is considered absent from the adjacent properties and has not been observed during previous surveys conduct in 1998, 2005, and 2010. Due to the history of negative surveys in immediate vicinity, plus the negative surveys within the project site during the 2012 flight season, this species is not likely to occur within the project survey area.

A potentially significant indirect impact on QCB is nitrogen deposition on occupied habitat. Nitrogen deposition has been linked to habitat degradation for QCB. Given that the survey area does not include any occupied habitat, there should be no impact to QCB due to nitrogen deposition. However, when air modeling for Supplement 3 is completed, a further analysis of potential levels of nitrogen deposition will be made and the potential significance of such deposition will be evaluated. The results of this analysis will be presented in a separate document.

Protocol surveys were conducted during the 2012 flight season. Although the 2012 flight season was less than optimal, with a below average annual rainfall, several known populations of Quino checkerspot butterfly were identified during the 2012 flight season and listed on the USFWS Quino checkerspot website. The sporadic rainfall allowed for an early flight season that extended over a longer period. The surveys conducted on the site were negative and no Quino checkerspot butterflies were observed during the survey. The project site is not located within any USFWS designated critical habitat. Therefore, there are no significant or potentially significant impacts associated with Quino checkerspot butterfly.

Coastal California Gnatcatcher

A single coastal California gnatcatcher was observed within the eastern portion of the Supplement 2 gen tie just west of the SDG&E substation. Based on the bird's behavior, it was determined that an area of approximately 5 acres, located just offsite from the survey area, is utilized as the gnatcatcher pair's home range and that the pair periodically may forage outside of this area and onto the survey area (MBA 2012b). The home range area will be avoided during all construction related activities. Therefore, this species currently forages in specific locations within the survey area, but is presumed absent from the Supplement 3 project site and impacts to this species are less than significant. If the Supplement 2 design is selected, impacts may result in a significant impact to dispersing or foraging individuals. The project site is not located within any USFWS designated critical habitat. The results of the survey are included in a separate report (MBA 2011b and 2012b).

Least Bell's Vireo

There is no suitable LBV habitat within the project site; therefore, there will be no direct project related impacts on this species. However, there have been recorded occurrences of this species within the vicinity of the project site. The proposed project site is more than 500 linear feet from any known occupied habitat and therefore, the project will not directly impact this area. There is a possibility that construction noise could indirectly impact this area. However, the noise associated the constant truck traffic from the adjacent landfill will continue during project construction and is located between the project and the occupied habitat. Therefore, project related construction activities will not indirectly impact this species.

Hermes Copper

Hermes copper protocol surveys were conducted during the 2011 and 2012 flight season. The surveys were negative and Hermes copper is considered absent from the survey area. Therefore, the project will not impact Hermes copper..

Orange-throated Whiptail

Several orange-throated whiptails were observed within the proposed mitigation parcels in the western portion of the survey area. No orange-throated whiptails were observed within the project site. Given the distance between the observed individuals and the proposed construction activity, the project will not directly or indirectly impact orange-throated whiptails.

Northern Red-diamond Rattlesnake

The northern red-diamond rattlesnake was not observed during any of the reconnaissance-level surveys and/or focused surveys for other sensitive plant and wildlife species. This species is considered absent and the project will have no impact on northern red-diamond rattlesnake.

Coronado Island Skink

A single Coronado Island skink was observed foraging within dense non-native grasslands within the northern portion of the power plant site. This portion of the power plant site will be directly impacted by project development. Coronado Island skink is not a Covered Species under the City of San Diego

Subarea Plan of the MSCP. Therefore, this species requires a separate analysis, independent of the MSCP to determine significance under the CEQA process. Impacts to this species is potentially significant if a large population of Coronado Island skink occurs within the project site and the loss of individuals within the project site will result in the decline of the population to a less than self-sustaining level.

The project is likely to only have a minimal impact to Coronado Island skink. Project impacts to non-native grassland habitats, the primary habitats of the skink, is minimal and would not represent a substantial impact to the Coronado Island skink. Furthermore, grassland habitat would be preserved as mitigation for loss of this habitat as part of the proposed project.

A population study has not conducted and therefore the total number of individuals within the project site is not determinable. However, because only one individual was observed and the number of site visits conducted within the project site during the reconnaissance-level surveys as well as focused surveys for other sensitive plant and wildlife species, it was determined that there is not a large population of Coronado Island skink on the project site. The loss of any individual Coronado Island skink as a result of project activities would not impact this species' self-sustaining population level. Impacts to this species are not considered significant.

Cooper's Hawk

This species was observed nesting in the southern willow-alder riparian woodland in the southwestern portion of the biological survey area, not on the project site. This area will not be directly impacted by project development. In addition, no suitable habitat for this species occurs within any of the proposed project related impact areas. Cooper's hawk is a Covered Species under the City of San Diego Subarea Plan of the MSCP. Therefore, this species is considered adequately conserved if conditions are implemented, as described in Appendix A, Species Evaluated For Coverage Under the MSCP, of the Subarea Plan. However, the Cooper's hawk is further protected under the MBTA and CFG Code during its appropriate nesting season, and further recommendation for protection is discussed in Mitigation Measure BIO-4.

White-tailed Kite

This species was observed flying over the southwestern portion of the biological survey area during the reconnaissance-level survey. This portion of the survey area will not be directly impacted by project development. In addition, no suitable nesting habitat for this species occurs within any of the proposed project related impact areas. The project site does include marginal foraging habitat. Due to the surrounding open space areas within the vicinity of the survey area, the loss of foraging habitat associated with the proposed project is not sufficient to cause a take to any white-tailed kite individuals. Implementation of the proposed project is not considered a significant impact with regard to the loss of foraging habitat.

White-tailed kite is a California fully protected species not Covered Species under the City of San Diego Subarea Plan of the MSCP. Because of the fully protected status, there is no incidental take authority regarding this species. Therefore, any impact to this species is considered significant. This species is further protected under the MBTA and CFG Code during its appropriate nesting season. Since the species is known to occur within portions of the survey area, there is a potential for project-related impacts, although a small potential. Therefore, project-related impacts are considered potentially significant and further recommendation for protection is discussed in Mitigation Measure BIO-4.

Southern California Rufous Crowned Sparrow

This species was observed foraging in the Diegan coastal sage scrub/non-native grassland area along the western portion of the biological survey area. This portion of the survey area will not be directly impacted by project development. This species is currently absent from the project site. The project site does have marginal quality foraging habitat, but the loss of foraging habitat would not be considered a significant impact. Southern rufous crowned sparrow is a Covered Species under the City of San Diego Subarea Plan of the MSCP. Therefore, this species is considered adequately conserved if conditions are implemented, as described in Appendix A “Species Evaluated For Coverage Under the MSCP” of the Subarea Plan. However, the southern rufous crowned sparrow is further protected under the MBTA and CFG Code during its appropriate nesting season, and further recommendation for protection is discussed in Mitigation Measure BIO-4.

Yellow Warbler

No yellow warblers were observed within the riparian habitat associated with Little Sycamore or Springs Creeks, the only potentially suitable habitat in the survey area. Therefore, this species is considered absent from the project site and no impacts to this species will occur.

California Horned Lark

No California horned larks were observed within the open grassland habitat, the only suitable habitat in the survey area. Therefore, this species is considered absent from the project site and no impacts to this species will occur.

Yellow-breasted Chat

No yellow-breasted chat were observed within the riparian habitat associated with Little Sycamore or Springs Creeks, the only potentially suitable habitat in the survey area. Therefore, this species is considered absent from the project site and no impacts to this species will occur.

Least Bittern

No least bittern were observed within the riparian habitat associated with Little Sycamore or Springs Creeks, the only potentially suitable habitat in the survey area. Therefore, this species is considered absent from the project site and no impacts to this species will occur..

Dulzura Pocket Mouse

The preferred habitat of this pocket mouse is chaparral, occasionally venturing into desert grassland areas. Suitable habitat for this species occurs in the proposed mitigation parcels in the western portion of the survey area, but this area will not be impacted by the project. No Dulzura pocket mouse habitat occurs within the project site. Therefore, this species is considered absent from the project site and no impacts to this species will occur.

Northwestern San Diego Pocket Mouse

The San Diego pocket is known to occur in chaparral, grasslands, sage scrub, forests, and deserts. This species prefers low growing vegetation or rocky outcroppings, and sandy soil for burrowing. This species is not expected to occur within the project site due to a lack of suitable habitat and no impacts to this species will therefore occur.

San Diego Black-tailed Jackrabbit

This species was observed within dense non-native grasslands and Diegan coastal sage scrub/non-native grassland habitat in the western portion of the biological survey area, within the floor of Spring Canyon. This species was not observed within the proposed project site and is not likely to be directly impacted by project related activities. San Diego black-tailed jackrabbit is not a Covered Species under the City of San Diego Subarea Plan of the MSCP. Therefore, this species requires a separate analysis to determine significance under the CEQA process. Project impacts to grassland habitats, the primary habitats of the San Diego jackrabbits, are minimal and would not represent a substantial impact to the San Diego jackrabbits, since they were not observed in the project site portion of the survey area. Furthermore, grassland habitat would be preserved as mitigation for loss of this habitat as part of the proposed project. Therefore, there are no anticipated impacts to the San Diego jackrabbits.

Golden Eagle (Aquila chrysaetos)

The closest known recorded nesting golden eagle is a little more than 10 miles northeast of the power plant site. The nesting area occurs within a steep cliff area surrounded by undisturbed open space and is clearly visible on Google Earth aerial photographs. Based on the assessment, the power plant site is not within the 10-mile survey buffer area. The project site may be utilized as foraging habitat since it is contiguous with open space areas surrounding the biological survey area. Due to the surrounding open space areas within the vicinity of the survey area, the loss of foraging habitat associated with the proposed project is not sufficient to cause a take to any golden eagle individuals. Implementation of the proposed project is not considered a significant impact with regard to the loss of foraging habitat. However, the golden eagle is further protected under the MBTA and CFG Code during its appropriate nesting season. Since there is no evidence of any nests or nesting habitat, there are no anticipated impacts to golden eagle.

5.1.3 - Nesting Birds

The native shrubs and trees located on and within the immediate vicinity of the biological survey area provide suitable nesting habitat for resident and migratory bird and raptor species protected under the MBTA and CFG Code. Therefore, construction of the proposed project may result in significant impacts to nesting birds protected under the MBTA and CFG Code, if construction activities commence during the general breeding season (February through August).

Potential project impacts to species protected under the MBTA and CFG Code are considered significant. Mitigation Measure BIO-4 provided below will reduce potential project impacts to nesting bird species to less than significant.

5.1.4 - MHPA Boundary Adjustment

The parcel that the power plant site will be located on is currently within the boundary of the MHPA established by the City Subarea Plan. Because the plant will require development beyond the 25 percent development limit imposed for private land within the MHPA, a boundary adjustment to the MHPA will be required.

Section 5.4.2 of the MSCP Plan provides a process for adjustments to the boundaries of the MHPA. Adjustments to the MHPA boundaries may be made without the need to amend the City Subarea Plan if the adjustment will result in the same or higher biological value of the [MHPA]. The City of San Diego will determine the biological value of the proposed change, with the concurrence of the USFWS and CDFG.

The MSCP Plan's Section 5.4.2 Plan provides six biological factors to use to evaluate biological value in a boundary change process. These factors are listed in Table 8 along with an evaluation of these factors with respect to the project site. Quail Brush Genco, LLC will work closely with City of San Diego planning staff to determine the most appropriate mitigation parcel based on the factors in Table 8.

Table 8: MSCP Biological Evaluation Factors

Factor Listed in MSCP Section 5.4.2	Power Plant Site Parcel Evaluation
Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly or sufficiently conserved habitats, as defined in [the MSCP Plan] Section 4.2.4.	The power plant site is located within a dense stand of low to moderate quality non-native grasslands between the Sycamore Land Fill to the north and adjacent development to the south. There are few small patches of low quality Diegan coastal sage scrub along the south-facing slopes. The exchange will increase the value of the MHPA by conserving a higher quality piece of the MHPA.
Effects to covered species (i.e., the exchange maintains or increases the conservation of covered species);	Covered species located on the project site are limited to the San Diego barrel cactus and variegated dudleya and will be transplanted to the preserved portion of the biological survey area.

Table 8 (cont.): MSCP Biological Evaluation Factors

Factor Listed in MSCP Section 5.4.2	Power Plant Site Parcel Evaluation
Effects on habitat linkages and function of preserve areas (i.e., the exchange maintains or improves a habitat linkage or wildlife corridor);	The exchange greatly increases the function of the preserve by conserving higher value habitat, while disturbing lower quality habitat that is not associated with any wildlife corridor.
Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection for biological resources);	The exchange preserves a more efficient parcel of land that is necessary for the function and value of the preserve.
Effects on ecotones or other conditions affecting species diversity (i.e., the exchange maintains topographic and structural diversity and habitat interfaces of the preserve); and/or	The exchange increases the amount of ecotone habitat within the preserved. The project site has little to no ecotone and provides minimal species diversity.
Effects to species of concern not on the covered species list (i.e., the exchange does not significantly increase the likelihood that an uncovered species will meet the criteria for listing under either the federal or state Endangered Species Acts).	The exchange will greatly benefit the covered species identified within the project site by conserving suitable habitat. The project site provides minimal habitat for a couple of sensitive plant species, but the exchange parcel provides suitable habitat and foraging opportunities for a number of sensitive wildlife species.

By satisfying the requirements of an MHPA boundary line adjustment, the project will ensure no significant impacts to the MHPA

5.1.5 - Adjacency Management Guidelines

Due to the existing developments adjacent to the project site, design of the project to stay predominantly within low-quality habitat, and location of the project site within non-contiguous habitat, impacts to an urban/wildlands interface are expected to be less than significant and no mitigation measures are recommended.

However, once the parcel for the power plant site is removed from the MHPA boundary, that parcel and other project features will be located immediately adjacent to the MHPA. The City Subarea Plan provides specific guidelines to reduce project related impacts associated with project immediately adjacent to the MHPA. Adjacency Management Guidelines (discussed in Section 5.2.5 of this document) are designed to reduce any potential indirect impacts, relating from the construction and maintenance of the proposed project, to resources adjacent to the project to less than significant.

5.2 - Proposed Mitigation

The following is a list of recommended mitigation measures that will reduce potential project-related impacts to biological resources to less than significant levels. The proposed mitigation measures are based on the Supplement 3 - Alternative 1 project design.

5.2.1 - Loss of Vegetation Communities and Wildlife Habitat

The following will reduce potential project-related impacts to the sensitive plant communities known to occur on the project site to less than significant.

MM BIO-1 Based on the City of San Diego Municipal Code, Table 3: Upland Mitigation Ratios, the City has adopted a pre-determined mitigation ratio for project related impacts to plant communities determined to be of conservation value. The following mitigation ratios will be used to calculate the minimum habitat compensation for impacts associated with the proposed project. Tier I habitats will be mitigated at a 2:1 ratio, Tier II, IIIa, and IIIb habitats will be mitigated at a 1:1 ratio. Impacts to Tier IV habitats require no mitigation compensation. Therefore, project-related impacts to 0.06 acre of native grasslands will be mitigated by the preservation or creation of 0.12 acre of native grasslands. Impacts to 2.71 acres of Diegan sage scrub and Diegan sage scrub/non-native grassland will be mitigated by the preservation or creation of 2.71 acres of Diegan sage scrub. Impacts to 21.13 acres of non-native grasslands will be mitigated by the creation or restoration of 21.13 acres. Total mitigation for project related impacts to plant communities is 23.96 acres to offset potentially significant impacts to natural plant communities.

All temporary impacts will be restored with native vegetation as appropriate within the proposed project development such as disturbed graded slopes and temporary work areas. Revegetation of temporary impact areas may be considered as part of the overall mitigation if a restoration plan is prepared to ensure proper restoration and restoration efforts meet design requirements as approved by the City of San Diego.

Several potential mitigation parcels were included in the biological resources surveys in order to determine the biological value of the mitigation parcels. The mitigation parcels selected must be of higher biological resource value than the project site. Based on the findings of the biological resource surveys, all mitigation parcels surveyed have a higher biological resource value than the proposed project site.

Table 9: Vegetation Communities within Potential Mitigation Parcels

Habitat / Vegetation Community	36603031	36603035	36603036	36603039	36603047	36603112	36607030	36607031	36607032	36607034	36607048	36607065	36608027
Diegan Coastal Sage Scrub	0	0	0	0	0	2.16	0	0.72	4.43	0	0	0	5.49
Diegan Coastal Sage Scrub/non-native grassland	5.22	4.68	1.81	0	0	4.44	0	1.31	0	2.99	0	0	0
Disturbed Habitat	0	0	0.21	0	0.14	0.24	1.12	3.16	0.11	0.25	0	0.36	0.75
Granitic Chamise Chaparral	4.14	4.6	4.75	13.01	5.02	1.07	0	0	0	0	5.71	0	0
Granitic Chamise Chaparral/non-Native Grassland	0	0	0	0	0	0	0	1.00	0	0	0	0	0
Native Grassland	0.61	0	0	0	0	0	0	0	0	0	0	0	0
Non-native Grassland	1.48	0.33	3.81	13.20	9.26	0.25	10.50	29.94	11.50	3.36	8.54	7.39	67.86
Non-Vegetated Channel	0.3	0.44	0.05	0	0	0.56	0.65	0	0	0.30	0	0.94	0
Total	11.75	10.05	10.63	26.21	14.42	8.72	12.27	36.13	16.04	6.9	14.25	8.69	74.1

5.2.2 - Sensitive Plant Species

The following will reduce potential project-related impacts to the 5 special-status plant species known to occur on the project site to less than significant.

MM BIO-2 The project has been designed to avoid sensitive plant species to the extent possible by locating the project on lower quality habitat. However, the installation of the power plant site will still impact approximately 15 individual barrel cactus and a single variegated dudleya. To minimize the impacts to San Diego barrel cactus and variegated dudleya, a Sensitive Plant Relocation plan will be prepared similar to the existing plan currently approved for the adjacent Sycamore Landfill. The sensitive plants will be relocated to the existing Sycamore Landfill relocation site or to the proposed mitigation parcel or other suitable habitat area as deemed appropriate by the City of San Diego. This will result in a no net-loss of sensitive plant species.

5.2.3 - Sensitive Wildlife Species

The following will reduce potential project-related impacts to special status wildlife species to less than significant.

MM BIO-3 To avoid any direct or indirect impacts to sensitive wildlife species a wildlife biologist will be required to monitor construction activities specifically associated with initial vegetation removal. A wildlife biologist will be required during all vegetation removal activities. Biological monitoring can be spaced out following the vegetation removal during grading operations due to the minimal potential for impacts to wildlife species. The monitoring frequency will be based on the biological monitor's recommendation, but is typically daily to weekly depending on the habitat.

Construction activities can be scheduled to avoid the coastal California gnatcatcher nesting season. Since the Alternative Gen Tie/Substation plan is the only project design that has the potential to impact coastal California gnatcatchers, avoidance of the nesting season for project grading will reduce the potential for individual take of this species.

Air quality mitigation measure may also be required to reduce emissions that may potentially affect native vegetation communities within the biological survey area. These mitigation measures will be covered under the air quality portion of the CEQA document.

5.2.4 - Nesting Birds

The following will reduce potential project impacts to nesting birds protected under CDFG Code and the MBTA to less than significant.

MM BIO-4 To avoid any direct and indirect impacts to raptors and/or any migratory birds, removal of habitat that may support active nests should occur outside of the combined breeding season of mid-February to the end of August for these species. In addition, construction activities adjacent to nesting habitat should also occur outside of the breeding season for these species. If the removal of habitat and/or construction activities adjacent to nesting habitat must occur during the breeding season, the applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on and within 300 feet of the construction area and nesting raptors within 500 feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, the results of which must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected by the City-approved biologist, a biological monitor should be present on-site during construction to minimize construction impacts and ensure that no nest is removed or disturbed until all young have fledged.

5.2.5 - Adjacency Management Guidelines

The project will be required to adhere to the set Adjacency Guidelines in the City of San Diego MSCP Subarea Plan, which are intended to address indirect effects associated with locating new development in proximity to the MHPA or an environmentally sensitive area. The Adjacency Guidelines are discussed below as Mitigation Measure BIO-5, and will be incorporated into the project to ensure that potential indirect project-related impacts involving drainage, toxics, lighting, noise, barriers, invasives, brush management, and grading/land development, are avoided or minimized.

MM BIO-5 **Drainage.** Project drainages should be directed onto natural detention basins, grass swales, mechanical trapping devices, or other remedial project elements and away from the MHPA, and should be maintained to ensure proper function. Projects should develop and implement urban runoff and drainage plans to minimize or eliminate potential impacts to adjacent preserve areas. All new development projects will be required to meet National Pollutant Discharge Elimination System (NPDES) standards and incorporate Best Management Practices (BMPs) as defined by the City's Standard Urban Storm Mitigation Plan (SUSMP).

Pursuant to San Diego Regional Water Quality Control Board Municipal Permit, and the City of San Diego Storm Water Management Standards Requirements Manual, which includes SUSMP, all development and redevelopment located within or directly adjacent to or discharging directly to an environmentally sensitive area are required to implement site design, source control, and treatment control BMPs, and shall at minimum, include the BMPs listed in Section 7.5.2 of the Plan. All NPDES-

regulated projects shall implement a combination of BMPs as close to potential pollutant sources as feasible.

The project shall implement physical stabilization and sediment control BMPs in order to prevent or reduce to the maximum extent practicable erosion from exposed slopes directed toward the Preserve. Perimeter protection and resource protection methods shall be used during the construction phase of the proposed project. Sediment ingress and discharge in sheet flows should be prevented to the maximum extent practicable by the establishment of silt fences, fiber rolls, or sand bag barriers in downslope positions directing potential discharge away from the preserve. These BMPs shall be properly installed prior to construction initiation by qualified personnel, and shall remain in place through the duration of construction activities adjacent to the Preserve. Sufficient materials needed to install standby erosion and sediment control BMPs necessary to protect exposed portions of the site from potential erosion and to prevent potential sediment discharges into the preserve shall be stored on-site.

Toxic Substances. No project design elements, such as landscaping elements or agricultural uses, are proposed. The proposed project may have the potential to cause the release of hazardous materials from construction-related activities, such as the release of fuel or other substances from equipment, which may be potentially toxic, or result in adverse impacts to natural resources adjacent to the site. To reduce potential impacts caused by the application and/or drainage of such materials into the Preserve, the project shall stage and re-fuel all equipment away from the preserve area and use BMPs with regard to equipment use and staging. Methods shall be consistent with requirements of the Regional Water Quality Control Board (RWQCB) and NPDES standards.

Lighting. Lighting for the project should be directed away from any preserve areas wherever feasible and consistent with public safety. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the Preserve and sensitive species from night lighting. Consideration should be given to the use of low-pressure sodium lighting.

Noise. Uses in or adjacent to the preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to preserve areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the preserve. Excessive noisy uses or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction

measures or be curtailed during the breeding season of sensitive bird species, consistent with Table 3-5 of the MSCP Subregional Plan.

Portions of the proposed project occurs in the vicinity of suitable nesting and/or foraging habitat for the coastal California gnatcatcher, and other migratory bird species. The proposed project includes limited equipment that will be housed within a noise-reducing cabinet located away from nesting habitat, and no noise impacts are expected to result during the operational phase of the proposed project. However, the proposed project may result in noise impacts during the construction phase. Where noise associated with clearing, grubbing or grading will negatively impact an occupied coastal California gnatcatcher and/or any other migratory bird nest between February 15 and August 31, clearing, grubbing, or grading activities will be modified if necessary to prevent noise from negatively impacting the breeding success of any coastal California gnatcatcher, nesting raptor, and/or other migratory bird species. Noise reduction techniques shall be implemented into the construction phase of the project if any active coastal California gnatcatcher and/or other migratory bird nests are observed. Further measures to reduce impacts to nesting birds covered under the MBTA and CFG Code are discussed in Mitigation Measure BIO-2.

Barriers. New development adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate location and reduce domestic animal predation.

Invasives. No invasive non-native plant species shall be introduced into areas immediately adjacent to the MHPA.

Brush Management. Proposed project development located adjacent to and topographically above the MHPA must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zones 2 and 3 will be combined into one zone (Zone 2) and may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA. Zone 2 will be increased by 30 feet, except in areas with a low fire hazard severity rating where no Zone 2 would be required. Brush management zones will not be greater in size that is currently required by the City's regulations. The amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done. Vegetation clearing shall be done consistent with City standards and shall avoid/minimize impacts to covered species to the maximum extent possible. For all new development, regardless of the ownership, the brush

management in the Zone 2 will be the responsibility of the landowner or other private property.

Grading/Land Development. Manufactured slopes associated with the site development shall be included within the development footprint for projects within or adjacent to the MHPA.

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Appendix A: Regulatory Framework

REGULATORY BACKGROUND

Sensitive Plant and Wildlife Species

Sensitive species are native species that have been accorded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Endangered Species Act

The USFWS administers the Federal Endangered Species Act (ESA). The ESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The ESA defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A “threatened” species is a species that is likely to become endangered. A “proposed” species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

ESA Section 9 prohibits “take” of threatened or endangered species. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Take can include disturbance to habitats used by a threatened or endangered species during any portion of its life history. The presence of any federally threatened or endangered species in a biological survey area generally imposes severe constraints on development, particularly if development would result in “take” of the species or its habitat. Under the regulations of the ESA, the USFWS may authorize “take” when it is incidental to, but not the purpose of, an otherwise lawful act.

California Endangered Species Act

The California Department of Fish and Game (CDFG) administers the California Endangered Species Act (CESA). The State of California considers an “endangered” species one whose prospects of survival and reproduction are in immediate jeopardy. A “threatened” species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A “rare” species is one present in such small numbers throughout its portion of its known geographic range that it may become endangered if its present environment worsens. The rare species designation applies to California native plants. State threatened and endangered species are fully protected against take, as defined above. The term “species of special concern” is an informal designation used by CDFG for some declining wildlife species that are not state candidates for listing. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFG.

California Native Plant Society

The California Native Plant Society (CNPS) is a California resource conservation organization that has developed an inventory of California's sensitive plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered sensitive by the state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of sensitivity is based on the number and size of remaining occurrences as well as recognized threats.

Migratory Bird Treaty Act

The MBTA protects all common wild birds found in the United States (U.S.) except the house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, and wild turkey. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs.

California Fish and Game Code - Section 3503 and Section 3511

The California Department of Fish and Game (CDFG) administers the CFG Code. There are particular sections of the CFG Code that are applicable to natural resource management. For example, Section 3503 of the CFG Code states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird that is protected under the MBTA. CFG Code Section 3503.5 further protects all birds in the orders Falconiformes and Strigiformes, birds of prey such as hawks and owls, and their eggs and nests from any form of take. CFG Code Section 3511 lists fully protected bird species where the CDFG is unable to authorize the issuance of permits or licenses to take these species.

Jurisdictional Waters and Wetlands

Impacts to natural drainage features and wetland areas are regulated by the USACE, Regional Water Quality Control Board (RWQCB), and CDFG based upon the policies and regulations discussed below.

United States Army Corp of Engineers Regulations

Federal Clean Water Act - Section 404

The USACE administers Section 404 of the federal Clean Water Act (CWA). This section regulates the discharge of dredge and fill material into waters of the U.S. USACE has established a series of nationwide permits that authorize certain activities in waters of the U.S., if a proposed activity can demonstrate compliance with standard conditions. Normally, USACE requires an individual permit for an activity that will affect an area equal to or in excess of 0.5 acre of waters of the U.S. Projects that result in impacts to less than 0.5 acre can normally be conducted pursuant to one of the

nationwide permits, if consistent with the standard permit conditions. USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Waters of the United States

Waters of the U.S., as defined in the Code of Federal Regulations (CFR) Section 328.3, include all waters or tributaries to waters such as lakes, rivers, intermittent and perennial streams, mudflats, sand-flats, natural ponds, wetlands, wet meadows, and other aquatic habitats. Frequently, waters of the U.S., with at least intermittently flowing water or tidal influences are demarcated by an ordinary high water mark (OHWM). The OHWM is defined in CFR Section 328.3(e) as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. In this region, the OHWM is typically indicated by the presence of an incised streambed with defined bank shelving.

In June 2001, the USACE South Pacific Division has issued Guidelines for Jurisdictional Delineations for Waters of the United States in the Arid Southwest. The purpose of this document was to provide background information concerning physical characteristics of dry land drainage systems. These guidelines were reviewed and used to identify jurisdictional drainage features within the biological survey area.

Wetlands

According to the USACE Wetlands Delineation Manual, Technical Report, three criteria must be satisfied to classify an area as a jurisdictional wetland:

1. A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation)
2. Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils)
3. Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology)

Wetland vegetation is characterized by vegetation in which more than 50 percent of the composition of dominant plant species are obligate wetland, facultative wetland, and/or facultative species that occur in wetlands. As a result of the 2001 Solid Waste Agency of North Cook County (SWANCC) case, a wetland must show connectivity to a stream course in order for such a feature to be considered jurisdictional. Although wetland criteria was used to identify if areas were considered wetlands, the exact limits of jurisdiction were not measured based on the standard wetland delineation protocol as described in the 1987 USACE manual.

United States Army Corp of Engineers Regulated Activities

The USACE regulates the discharge of dredged or fill material, including, but not limited to, grading, placing of rip-rap for erosion control, pouring concrete, laying sod, and stockpiling excavated material. Activities that generally do not involve a regulated discharge, if performed specifically in a manner to avoid discharges, include driving pilings, drainage channel maintenance, temporary mining and farm/forest roads, and excavating without stockpiling.

Regional Water Quality Control Board Regulations

Clean Water Act - Section 401

According to section 401 of the CWA, “any applicant for a Federal permit for activities that involve a discharge to waters of the State, shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act.” Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the RWQCB.

Porter-Cologne Water Quality Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the water of the state” (water code §13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (water code Section 13050 (e)).

Regional Water Quality Control Board Regulated Activities

Under Section 401 of the CWA, the RWQCB regulates all activities that are regulated by the USACE. Additionally, under the Porter-Cologne Water Quality Act, the RWQCB regulates all activities, including dredging, filling, or discharge of materials into waters of the state that are not regulated by the USACE due to a lack of connectivity with a navigable water body and/or lack of an OHWM.

California Department of Fish and Game Regulations

California Fish and Game Code Section 1600 to Section 16003

The CFG Code mandates that “it is unlawful for any person to substantially divert or obstruct the natural flow or substantially changes the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.” CDFG jurisdiction includes ephemeral, intermittent, and perennial watercourses, including dry washes, characterized by the presence of hydrophytic vegetation, the location of definable bed and banks, and the presence of existing fish or wildlife resources.

Furthermore, CDFG jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function as part of the riparian system. Historic court cases have further extended CDFG jurisdiction to include watercourses that seemingly disappear, but re-emerge elsewhere. Under the CDFG definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdiction. However, CDFG does not regulate isolated wetlands; that is, those that are not associated with a river, stream, or lake.

California Department of Fish and Game Regulated Activities

The CDFG regulates activities that involve diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources.

City of San Diego Wetland Requirements

All areas persistently or periodically containing naturally occurring wetland vegetation communities characteristically dominated by hydrophytic vegetation, including but not limited to salt marsh, brackish marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodlands, riparian scrub, and vernal pools;

- Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities because human activities have removed the historic wetland vegetation or catastrophic or recurring natural events or processes have acted to preclude the establishment of wetland vegetation as in the case of salt pannes and mudflats;
- Areas lacking wetland vegetation communities, hydric soils and wetland hydrology due to non-permitted filling of previously existing wetlands;
- Areas mapped as wetlands on Map No. C-713 as shown in Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone).

It is intended for this definition to differentiate for the purposes of delineating wetlands, between naturally occurring wetlands and wetlands intentionally created by human actions, from areas with wetlands characteristics unintentionally resulting from human activities in historically non-wetland areas. With the exception of wetlands created for the purpose of providing wetland habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating wetland characteristics, which are artificially created are not considered wetlands by this definition. Taking into account regional precipitation cycles, all adopted scientific, regulator, and technological information available from the State and Federal resource agencies shall be used for guidance on the identification of hydrophytic vegetation, hydric soils and wetland hydrology.

Appendix B: Floral and Faunal Compendia

Flora Compendia

Selaginellaceae		Spike-Moss Family
<i>Selaginella</i>	<i>bigelovii</i>	Bigelow's spike-moss
Pteridaceae		Brake Family
<i>Adiantum</i>	<i>capillus-veneris</i>	southern maiden-hair
<i>Pellaea</i>	<i>andromedifolia</i>	coffee fern
<i>Pentagramma</i>	<i>triangularis</i>	goldenback fern
Adoxaceae		Honeysuckle Family
<i>Sambucus</i>	<i>mexicana</i>	blue elderberry
Anacardiaceae		Sumac or Cashew Family
<i>Malosma</i>	<i>laurina</i>	laurel sumac
<i>Rhus</i>	<i>integrifolia</i>	lemonadeberry
<i>Toxicodendron</i>	<i>diversilobum</i>	poison oak
Apiaceae		Carrot Family
<i>Bowlesia</i>	<i>incana</i>	bowlesia
<i>Daucus</i>	<i>pusillus</i>	American wild carrot
<i>Foeniculum</i>	<i>vulgare</i>	fennel
<i>Lomatium</i>	<i>lucidum</i>	shiny lomatium
<i>Sanicula</i>	<i>bipinnatifida</i>	purple sancile
Apocynaceae		Dogbane Family
<i>Nerium</i>	<i>oleander</i>	oleander
Asteraceae		Sunflower Family
<i>Acourtia</i>	<i>microcephala</i>	sacapellote
<i>Agoseris</i>	<i>sp.</i>	unknown dandelion species
<i>Ambrosia</i>	<i>psilostachya</i>	western ragweed
<i>Artemisia</i>	<i>californica</i>	California sagebrush
<i>Bahiopsis</i>	<i>laciniata</i>	San Diego County viguiera
<i>Brickellia</i>	<i>californica</i>	California brickellbush
<i>Carduus</i>	<i>pycnocephalus</i>	Italian thistle
<i>Centaurea</i>	<i>solstitialis</i>	yellow star-thistle
<i>Chamomilla</i>	<i>suaveolens</i>	pineapple weed
<i>Conyza</i>	<i>canadensis</i>	horseweed
<i>Corethrogyne</i>	<i>filaginifolia</i>	California aster
<i>Cynara</i>	<i>cardunculus</i>	cardoon
<i>Deinandra</i>	<i>fasciculata</i>	clustered tarweed
<i>Ericameria</i>	<i>arborescens</i>	goldenfleece
<i>Ericameria</i>	<i>cuneata</i>	cliff goldenbush
<i>Eriophyllum</i>	<i>confertiflorum</i>	golden yarrow
<i>Gnaphalium</i>	<i>bicolor</i>	bicolored cudweed
<i>Gnaphalium</i>	<i>californicum</i>	California everlasting
<i>Grindelia</i>	<i>hirsutula</i>	hairy gumweed

Flora Compendia

<i>Helianthus</i>	<i>annuus</i>	common sunflower
<i>Helminthotheca</i>	<i>echioides</i>	bristly ox-tongue
<i>Hypochaeris</i>	<i>glabra</i>	smooth cat's-ear
<i>Lactuca</i>	<i>serriola</i>	prickly lettuce
<i>Lasthenia</i>	<i>californica</i>	California goldfields
<i>Logfia</i>	<i>gallica</i>	narrowleaf cottonrose
<i>Osmadenia</i>	<i>tenella</i>	southern rosinweed
<i>Pseudognaphalium</i>	<i>canescens</i>	everlasting cudweed
<i>Pseudognaphalium</i>	<i>luteoalbum</i>	Jersey cudweed
<i>Pseudognaphalium</i>	<i>stramineum</i>	cotton-batting
<i>Senecio</i>	<i>vulgaris</i>	common groundsel
<i>Silybum</i>	<i>marianum</i>	milk thistle
<i>Sonchus</i>	<i>asper</i>	sow thistle
<i>Stephanomeria</i>	<i>diegensis</i>	wreathplant
<i>Symphyotrichum</i>	<i>ascendens</i>	western aster
<i>Symphyotrichum</i>	<i>lanceolatum</i>	white panicle aster
<i>Uropappus</i>	<i>lindleyi</i>	Uropappus
<i>Xanthium</i>	<i>strumarium</i>	cocklebur
Boraginaceae		Borage Family
<i>Cryptantha</i>	<i>sp.</i>	unknown cryptantha species
<i>Heliotropium</i>	<i>curassivicum</i>	saltmarsh heliotrope
Brassicaceae		Mustard Family
<i>Alyssum</i>	<i>strigosum</i>	alyssum
<i>Brassica</i>	<i>nigra</i>	black mustard
<i>Hirschfeldia</i>	<i>incana</i>	short-podded mustard
<i>Lepidium</i>	<i>nitidum</i>	shining peppergrass
<i>Raphanus</i>	<i>raphanistrum</i>	wild radish
Cactaceae		Cactus Family
<i>Cylindropuntia</i>	<i>prolifera</i>	coastal cholla
<i>Ferocactus</i>	<i>viridescens</i>	San Diego barrel cactus
<i>Opuntia</i>	<i>littoralis</i>	coastal prickly pear
Caprifoliaceae		Honeysuckle Family
<i>Lonicera</i>	<i>subspicata</i>	southern honeysuckle
Caryophyllaceae		Pink Family
<i>Silene</i>	<i>gallica</i>	small-flower catchfly
<i>Silene</i>	<i>laciniata ssp. californica</i>	California Indian pink
Chenopodiaceae		Goosefoot Family
<i>Atriplex</i>	<i>semibaccata</i>	Australian saltbush
<i>Chenopodium</i>	<i>album</i>	lamb's quarters
<i>Salsola</i>	<i>tragus</i>	Russian thistle

Flora Compendia

Cistaceae		Rock-Rose Family
<i>Helianthemum</i>	<i>scoparium</i>	peak rush-rose
Convolvulaceae		Morning-Glory Family
<i>Calystegia</i>	<i>macrostegia</i>	island false bindweed
<i>Convolvulus</i>	<i>tricolor</i>	bindweed
<i>Cuscuta</i>	<i>californica</i>	California dodder
Crassulaceae		Stonecrop Family
<i>Dudleya</i>	<i>edulis</i>	ladie's-fingers
<i>Dudleya</i>	<i>lanceolata</i>	lance-leaved dudleya
<i>Dudleya</i>	<i>pulverulenta</i>	chalk dudleya
<i>Dudleya</i>	<i>variegata</i>	variegated liveforever
Cucurbitaceae		Gourd Family
<i>Marah</i>	<i>macrocarpus</i>	wild cucumber
Ericaceae		Heath Family
<i>Xylococcus</i>	<i>bicolor</i>	mission manzanita
Euphorbiaceae		Spurge Family
<i>Chamaesyce</i>	<i>albomarginata</i>	rattlesnake weed
<i>Croton</i>	<i>setigerus</i>	dove weed
Fabaceae		Legume Family
<i>Lotus</i>	<i>purshianus</i>	Spanish clover
<i>Lotus</i>	<i>scoparius</i>	common deerweed
<i>Lotus</i>	<i>strigosus</i>	strigose lotus
<i>Lupinus</i>	<i>bicolor</i>	miniature lupine
<i>Lupinus</i>	<i>truncatus</i>	blunt leaved lupine
<i>Medicago</i>	<i>polymorpha</i>	bur clover
<i>Melilotus</i>	<i>officinalis</i>	yellow sweet clover
<i>Oxytropis</i>	<i>borealis</i>	boreal locoweed
<i>Pickeringia</i>	<i>montana</i>	chaparral pea
<i>Trifolium</i>	<i>ciliolatum</i>	foothill clover
<i>Trifolium</i>	<i>hirtum</i>	rose clover
Fagaceae		Oak Family
<i>Quercus</i>	<i>berberidifolia</i>	scrub oak
Gentianaceae		Gentian Family
<i>Centaurium</i>	<i>venustum</i>	charming centaury
Geraniaceae		Geranium Family
<i>Erodium</i>	<i>botrys</i>	longe beak stork's bill
<i>Erodium</i>	<i>cicutarium</i>	red-stemmed stork's bill
<i>Erodium</i>	<i>moschatum</i>	musky stork's bill
Grossulariaceae		Gooseberry Family

Flora Compendia

<i>Ribes</i>	<i>speciosum</i>	fuchsia-flowered gooseberry
Hydrophyllaceae		Waterleaf Family
<i>Eriodictyon</i>	<i>crassifolium</i>	thick-leaved yerba santa
<i>Phacelia</i>	<i>cicutaria</i>	caterpillar phacelia
Lamiaceae		Mint Family
<i>Marrubium</i>	<i>vulgare</i>	horehound
<i>Monardella</i>	<i>linoides ssp. viminea</i>	willowy monardella
<i>Salvia</i>	<i>apiana</i>	white sage
<i>Salvia</i>	<i>columbariae</i>	chia
<i>Salvia</i>	<i>leucophylla</i>	purple sage
<i>Salvia</i>	<i>mellifera</i>	black sage
Malvaceae		Mallow Family
<i>Malacothamnus</i>	<i>fasciculatus</i>	mesa bushmallow
<i>Malva</i>	<i>parviflora</i>	cheeseweed
<i>Sidalcea</i>	<i>malviflora</i>	checker mallow
Montiaceae		Purslane Family
<i>Claytonia</i>	<i>perfoliata</i>	miner's lettuce
Myrsinaceae		Myrsine Family
<i>Anagallis</i>	<i>arvensis</i>	scarlet pimpernel
Nyctaginaceae		Four O'Clock Family
<i>Mirabilis</i>	<i>laevis var. crassifolia</i>	California wishbone bush
Onagraceae		Evening Primrose Family
<i>Clarkia</i>	<i>gracilis</i>	slender clarkia
<i>Clarkia</i>	<i>purpurea</i>	wine cup clarkia
<i>Clarkia</i>	<i>unguiculata</i>	elegant clarkia
<i>Epilobium</i>	<i>canum</i>	hummingbird trumpet
<i>Fuchsia</i>	<i>paniculata</i>	shrubby fuchsia
Oxalidaceae		Oxalis Family
<i>Oxalis</i>	<i>albicans</i>	California wood-sorrel
<i>Oxalis</i>	<i>pes-caprae</i>	Bermuda buttercup
Papaveraceae		Poppy Family
<i>Eschscholzia</i>	<i>caespitosa</i>	tufted poppy
<i>Eschscholzia</i>	<i>californica</i>	California poppy
Platanaceae		Sycamore Family
<i>Platanus</i>	<i>racemosa</i>	western sycamore
Polygonaceae		Buckwheat Family
<i>Chorizanthe</i>	<i>staticoides</i>	turkish rugging
<i>Eriogonum</i>	<i>fasciculatum</i>	California buckwheat
<i>Rumex</i>	<i>crispus</i>	curly dock

Flora Compendia

<i>Rumex</i>	<i>salicifolius</i>	willow dock
Primulaceae		Primrose Family
<i>Dodecatheon</i>	<i>clevelandii</i>	Padres' shooting star
Ranunculaceae		Buttercup Family
<i>Delphinium</i>	<i>variegatum</i>	royal larkspur
Resedaceae		Mignonette Family
<i>Reseda</i>	<i>lutea</i>	yellow mignonette
Rhamnaceae		Buckthorn Family
<i>Rhamnus</i>	<i>crocea</i>	redberry buckthorn
<i>Rhamnus</i>	<i>ilicifolia</i>	holly leaf redberry
Rosaceae		Rose Family
<i>Adenostoma</i>	<i>fasciculatum</i>	chamise
<i>Cercocarpus</i>	<i>montanus var. glaber</i>	mountain mahogany
<i>Heteromeles</i>	<i>arbutifolia</i>	toyon
Rubiaceae		Madder Family
<i>Galium</i>	<i>angustifolium</i>	narrow-leaved bedstraw
<i>Galium</i>	<i>aparine</i>	goose grass
Salicaceae		Willow Family
<i>Populus</i>	<i>fremontii</i>	Fremont cottonwood
<i>Salix</i>	<i>lasiolepis</i>	arroyo willow
Scrophulariaceae		Figwort Family
<i>Antirrhinum</i>	<i>nuttallianum</i>	Nuttall's snapdragon
<i>Castilleja</i>	<i>exserta</i>	purple owl's-clover
<i>Castilleja</i>	<i>subinclusa</i>	longleaf Indian paintbrush
<i>Diplacus</i>	<i>aurantiacus ssp. aurantiacus</i>	sticky-leaf monkeyflower
<i>Diplacus</i>	<i>clevelandii</i>	Cleveland's bush monkeyflower
<i>Mimulus</i>	<i>cardinalis</i>	scarlet monkeyflower
<i>Mimulus</i>	<i>guttatus</i>	seep monkeyflower
Solanaceae		Nightshade Family
<i>Solanum</i>	<i>douglasii</i>	greenspot nightshade
<i>Solanum</i>	<i>xanti</i>	chaparral nightshade
Violaceae		Violet Family
<i>Viola</i>	<i>pedunculata</i>	johnny-jump-up
Agavaceae		Agave Family
<i>Agave</i>	<i>americana variegata</i>	century plant
<i>Chlorogalum</i>	<i>pomeridianum</i>	wavy leaf soap plant
<i>Hesperoyucca</i>	<i>whipplei</i>	Our Lord's Candle
Cyperaceae		Sedge Family
<i>Cyperus</i>	<i>difformis</i>	variable flatsedge

Flora Compendia

Iridaceae		Iris Family
<i>Sisyrinchium</i>	<i>bellum</i>	western blue-eyed grass
Liliaceae		Lilly Family
<i>Calochortus</i>	<i>concolor</i>	golden bowl mariposa lily
<i>Calochortus</i>	<i>splendens</i>	splendid mariposa lily
<i>Calochortus</i>	<i>weedii</i> var. <i>weedii</i>	Weed's mariposa lily
Poaceae		Grass Family
<i>Avena</i>	<i>barbata</i>	slender oat
<i>Avena</i>	<i>fatua</i>	wild oat
<i>Bothriochloa</i>	<i>barbinodis</i>	cane blue stem
<i>Bouteloua</i>	<i>gracilis</i>	blue grama
<i>Bromus</i>	<i>arizonicus</i>	Arizona brome
<i>Bromus</i>	<i>carinatus</i>	California brome
<i>Bromus</i>	<i>diandrus</i>	ripgut brome
<i>Bromus</i>	<i>hordeaceus</i>	soft brome
<i>Bromus</i>	<i>rubens</i>	red brome
<i>Bromus</i>	<i>tectorum</i>	cheat grass
<i>Cynodon</i>	<i>dactylon</i>	Bermuda grass
<i>Elymus</i>	<i>condensatus</i>	giant wild rye
<i>Elymus</i>	<i>glaucus</i>	blue wild rye
<i>Festuca</i>	<i>myuros</i>	rattail six-week's grass
<i>Gastridium</i>	<i>phleoides</i>	nit grass
<i>Hordeum</i>	<i>murinum</i> ssp. <i>leporinum</i>	leporinum barley
<i>Hordeum</i>	<i>vulgare</i>	hore barley
<i>Lamarckia</i>	<i>aurea</i>	golden top grass
<i>Lolium</i>	<i>perenne</i> ssp. <i>multiflorum</i>	Italian rye grass
<i>Muhlenbergia</i>	<i>rigens</i>	deer grass
<i>Nassella</i>	<i>cernua</i>	nodding needle grass
<i>Nassella</i>	<i>pulchra</i>	purple needle grass
<i>Pennisetum</i>	<i>setaceum</i>	crimson fountain grass
<i>Polypogon</i>	<i>imberbis</i>	rabbitsfoot grass
<i>Schismus</i>	<i>barbatus</i>	common Mediterranean grass
Themidaceae		Brodiaea Family
<i>Bloomeria</i>	<i>clevelandii</i>	San Diego golden star
<i>Bloomeria</i>	<i>crocea</i>	common golden star
<i>Brodiaea</i>	<i>elegans</i>	harvest brodiaea
<i>Dichelostemma</i>	<i>capitatum</i>	blue dicks
Typhaceae		Cattail Family
<i>Typha</i>	<i>angustifolia</i>	narrow leaf cattail

Fauna Compendium

Reduviidae		Assassin Bugs
<i>Apiomerus</i>	<i>crassipes</i>	bee assassin
Papilionidae		Swallowtail Butterflies
<i>Papilio</i>	<i>rutulus</i>	western tiger swallowtail
<i>Papilio</i>	<i>eurymedon</i>	pale swallowtail
<i>Papilio</i>	<i>zelicaon</i>	anise swallowtail
Pieridae		Whites, Sulphurs, and Orangetips
<i>Colias</i>	<i>eurytheme</i>	alfalfa butterfly
<i>Pieris</i>	<i>rapae</i>	cabbage white
Lycaenidae		Blues and Hairstreaks
<i>Glaucopsyche</i>	<i>lygdamus australis</i>	southern blue
<i>Icaricia</i>	<i>acmon</i>	acmon blue
<i>Brephidium</i>	<i>exilis</i>	pygmy blue
<i>Callophrys</i>	<i>perplexa dumetorum</i>	perplexing hairstreak
Nymphalidae		Brush-Footed Butterflies
<i>Charidryas</i>	<i>gabbii</i>	Gabb's checkerspot
<i>Precis</i>	<i>coenia</i>	buckeye butterfly
<i>Vanessa</i>	<i>cardui</i>	painted lady
Hesperiidae		Skippers
<i>Erynnis</i>	<i>funeralis</i>	funereal dusky wing
<i>Pyrgus</i>	<i>communis</i>	checkered skipper
Riodinidae		Metalmarks
<i>Apodemia</i>	<i>mormo virgulti</i>	Behr's metalmark
Syrphidae		Hover Flies
<i>Copestylum</i>	<i>marginata</i>	hover fly
Sarcophagidae		Flesh Flies
<i>Sarcophaga</i>	<i>sp.</i>	flesh fly
Mutillidae		Velvet Ants
<i>Dasymutilla</i>	<i>occidentalis</i>	velvet ant
Pompilidae		Spider Wasps
<i>Pepsis</i>	<i>chrysothemis</i>	tarantula hawk
Vespidae		Paper Wasps & Potter Wasps
<i>Eumenes</i>	<i>bollii</i>	paper wasp
Apidae		Honey Bees and Bumble Bees
<i>Apis</i>	<i>mellifera</i>	honey bee
Parajulidae		Millipedes
<i>Bollmaniulus</i>	<i>sp.</i>	millipede
Phrynosomatidae		Lizards
<i>Sceloporus</i>	<i>occidentalis</i>	western fence lizard

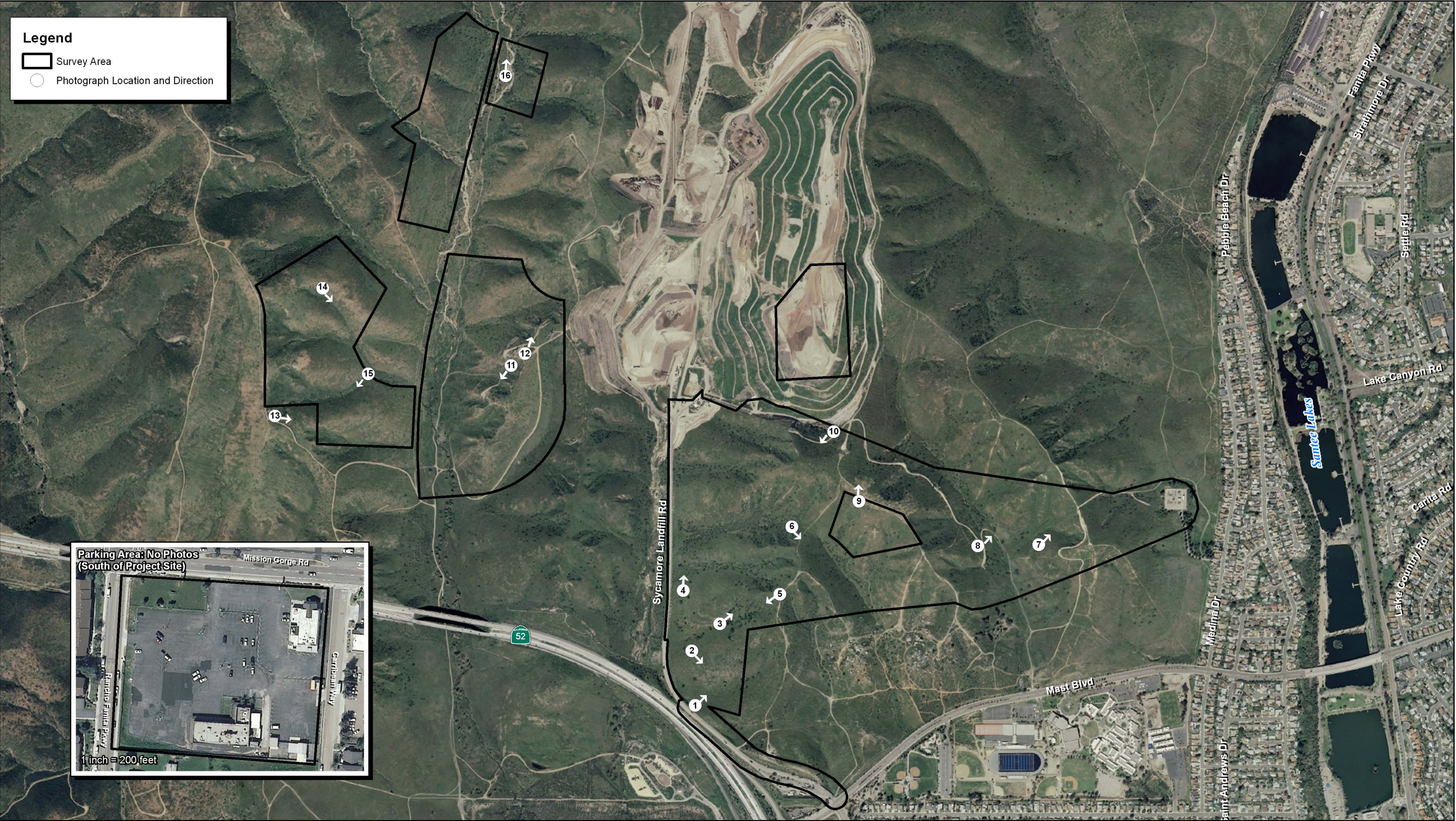
Fauna Compendium

<i>Uta</i>	<i>stansburiana</i>	side-blotched lizard
Scincidae		Skinks
<i>Plestiodon</i>	<i>skiltonianus skiltonianus</i>	western skink
Teiidae		Whiptails
<i>Aspidoscelis</i>	<i>hyperythra</i>	orange-throated whiptail
<i>Aspidoscelis</i>	<i>tigris</i>	western whiptail
Colubridae		Egg-laying snakes
<i>Lampropeltis</i>	<i>zonata pulchra</i>	San Diego mountain kingsnake
<i>Pituophis</i>	<i>cantenifer annectens</i>	San Diego gopher snake
Anatidae		Waterfowl
<i>Anas</i>	<i>platyrhynchos</i>	mallard
Cathartidae		Vultures
<i>Cathartes</i>	<i>aura</i>	turkey vulture
Accipitridae		Hawks
<i>Elanus</i>	<i>leucurus</i>	white-tailed kite
<i>Circus</i>	<i>cyaneus</i>	northern harrier
<i>Accipiter</i>	<i>cooperii</i>	cooper's hawk
<i>Buteo</i>	<i>lineatus</i>	red-shouldered hawk
<i>Buteo</i>	<i>jamaicensis</i>	red-tailed hawk
Falconidae		Falcons
<i>Falco</i>	<i>sparverius</i>	American kestrel
Columbidae		Pigeons/Doves
<i>Zenaida</i>	<i>macroura</i>	mourning dove
Cuculidae		Cuckoos/Roadrunners/Anis
<i>Geococcyx</i>	<i>californianus</i>	greater roadrunner
Apodidae		Swifts
<i>Aeronautes</i>	<i>saxatalis</i>	white-throated swift
Trochilidae		Hummingbirds
<i>Calypte</i>	<i>anna</i>	Anna's hummingbird
Tyrannidae		Flycatchers
<i>Tyrannus</i>	<i>verticalis</i>	western kingbird
Corvidae		Jays/Crows
<i>Corvus</i>	<i>brachyrhynchos</i>	American crow
<i>Corvus</i>	<i>corax</i>	common raven
Hirundinidae		Swallows
<i>Tachycineta</i>	<i>thalassina</i>	violet-green swallow
<i>Stelgidopteryx</i>	<i>serripennis</i>	northern rough-winged swallow
Aegithalidae		Bushtits
<i>Psaltiriparus</i>	<i>minimus</i>	bushtit

Fauna Compendium

Sylviidae		Old world warblers
<i>Polioptila</i>	<i>californica</i>	California gnatcatcher
Timaliidae		Old world babblers
<i>Chamaea</i>	<i>fasciata</i>	wrentit
Prilognatidae		Silky-flycatchers
<i>Phainopepla</i>	<i>nitens</i>	phainopepla
Parulidae		New world warblers
<i>Dendroica</i>	<i>coronata</i>	yellow-rumped warbler
<i>Geothlypis</i>	<i>trichas</i>	common yellowthroat
Emberizidae		Warblers, sparrow, etc.
<i>Pipilo</i>	<i>crissalis</i>	California towhee
<i>Spizella</i>	<i>passerina</i>	chipping sparrow
<i>Spizella</i>	<i>atrogularis</i>	black-chinned sparrow
<i>Chondestes</i>	<i>grammacus</i>	lark sparrow
<i>Melospiza</i>	<i>melodia</i>	song sparrow
Cardinalidae		Cardinals
<i>Passerina</i>	<i>caerulea</i>	blue grosbeak
Icteridae		New world blackbirds
<i>Sturnella</i>	<i>neglecta</i>	western meadowlark
Fringillidae		Finches
<i>Carpodacus</i>	<i>mexicanus</i>	house finch
<i>Carduelis</i>	<i>psaltria</i>	lesser goldfinch
<i>Carduelis</i>	<i>tristis</i>	American goldfinch
Leporidae		Hares and Rabbits
<i>Lepus</i>	<i>californicus</i>	black-tailed jackrabbit
<i>Sylvilagus</i>	<i>audubonii</i>	desert cottontail
Sciuridae		Squirrels
<i>Spermophilus</i>	<i>beecheyi</i>	California ground squirrel
Geomyidae		Pocket Gophers
<i>Thomomys</i>	<i>bottae</i>	Botta's pocket gopher
Canidae		Wolves and Foxes
<i>Canis</i>	<i>latrans</i>	coyote
Felidae		Cats
<i>Lynx</i>	<i>rufus</i>	bobcat
Cervidae		Elk, Moose, Caribou, and Deer
<i>Odocoileus</i>	<i>hemionus</i>	mule deer

Appendix C:
Site Photographs



Source: ESRI Aerial Imagery, MBA Field Survey and GIS Data, 2012.



Photograph 1: Looking northeast from the southern portion of the project site. The photograph is representative of the non-native grassland habitat onsite. The eastern edge of the plant site is located at the edge of the large shrubs in the background.



Photograph 2: Looking southeast at the southern portion of the plant site from the northern portion of the project site. The top of the ridge line in the background is the plant site southern boundary.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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Appendix C Site Photographs 1 and 2

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BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 3: Looking north along the proposed Gent Tie route at the northern extent of the plant site. This photo depicts the typical upland swale associated with the eastern portion of the project survey area. The vegetation at the bottom of the swale is western ragweed.



Photograph 4: Looking southeast at the northern extent of the Gen Tie portion of the project. The Sycamore Landfill Road is in the background. Sycamore Canyon Creek is in the foreground.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

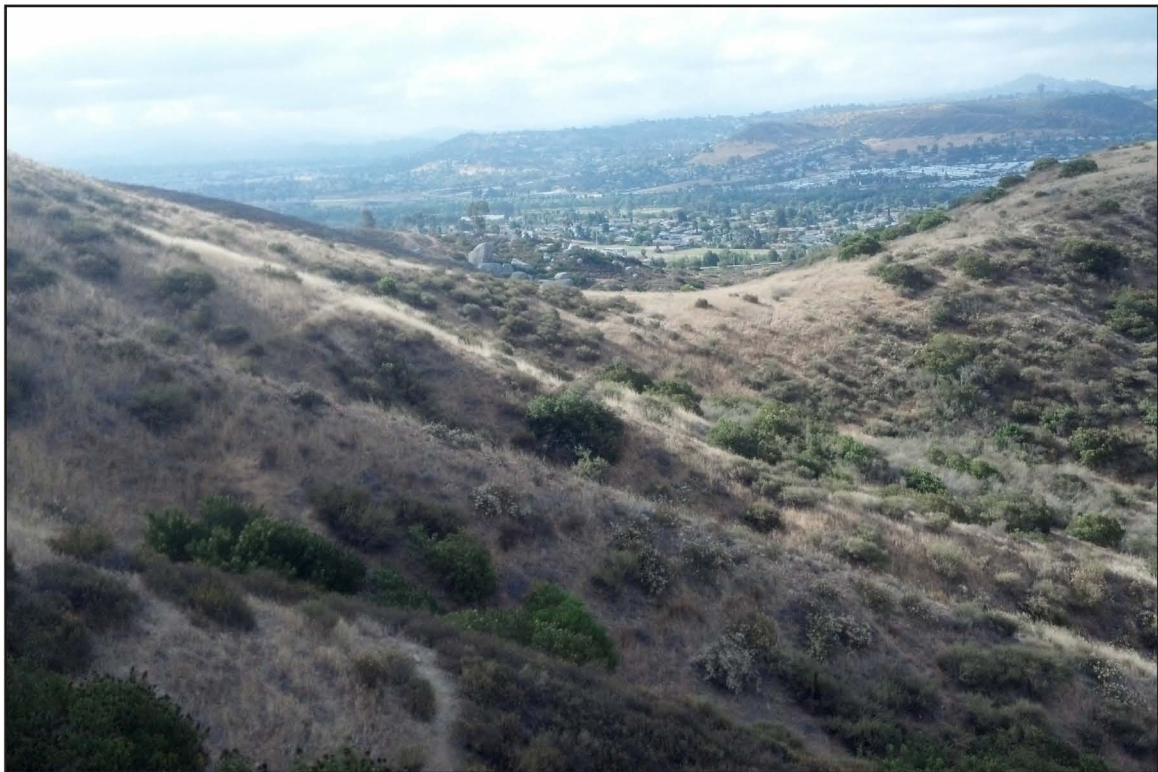
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Appendix C Site Photographs 3 and 4

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BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 5: Looking southwest at the proposed project site. State Route 52 is in the background. The proposed plant site will be constructed within the non-native grassland area adjacent to the Sycamore Landfill Road.



Photograph 6: Looking southeast at the ridge line just east of the Gen Tie Route. The saddle area of the ridge line contains a patch of native grasslands. Residential development is located further to the east, beyond the project survey area.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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Appendix C Site Photographs 5 and 6

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 7: Looking northeast from the proposed Gen Tie at the ridge line furthest to the east within the survey area, west of the existing SDG&E Substation. This area was used for foraging by a resident coastal California gnatcatcher.



Photograph 8: Looking northeast from the proposed Gen Tie at a west facing sloped just west of the last ridge before the existing substation. The vegetation in this area is very sparse with little to no understory.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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Appendix C Site Photographs 7 and 8

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 9: Looking north at the existing sensitive plant conservation area associated with the Sycamore Landfill. The non-native weedy species are hand cleared during routine maintenance. Wire mesh is used to protect the sensitive plant species.



Photograph 10: Looking southwest at the location where the proposed Gen Tie will connect to the existing SDG&E line. This connection will be made a little further to the north. This represents some moderate quality coastal sage scrub habitat on site.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

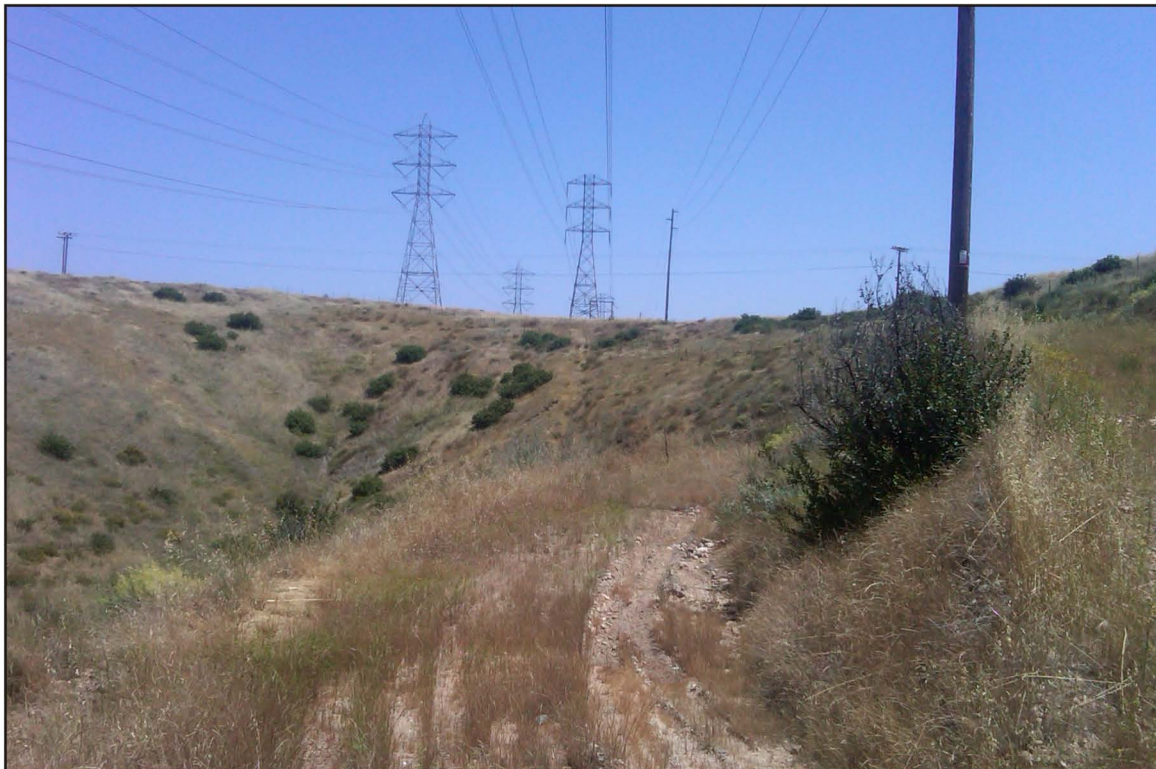
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Appendix C Site Photographs 9 and 10

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 11: Looking south at the southern extent of the survey area at the top of the ridge line, just south of the SDG&E transmission line. The foreground contains mix of Diegan Sage Scrub and non-native grasslands. Also visible in the background is State Route 52 and San Diego River.



Photograph 12: Looking northeast at the existing SDG&E transmission line right-of-way. At this location the existing transmission line runs through one of the 13 proposed mitigation parcels that were assessed as part of the proposed project.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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Appendix C Site Photographs 11 and 12

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 13: Looking west into Spring Canyon from the western edge of the survey area. The vegetation at this altitude is dominated by non-native grasslands with adjacent chamise chaparral. Riparian habitat is also found within the lower portion of the canyon.



Photograph 14: Looking southeast at a small canyon in the western portion of the survey area. At this location, you can clearly see the division between the chamise chaparral and the non-native grasslands.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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Appendix C Site Photographs 13 and 14

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT



Photograph 15: Looking southwest at another division of chamise chaparral and non-native grassland. This division of vegetation communities is often caused by a change in available moisture or a change in soils. The ridge-line represents the western most extent of the proposed mitigation parcels.



Photograph 16: Looking north at the northern extend of the proposed mitigation parcels. Non-native grasslands are found in the foreground with patches of chaparral and coastal sage scrub in the background.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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Appendix C Site Photographs 15 and 16

TETRA TECH EC, INC. • QUAIL BRUSH PROJECT
BIOLOGICAL RESOURCES SURVEY REPORT

Appendix D: Special-Status Plant and Wildlife Species

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

The special-status species and sensitive plant communities analysis was based on a comprehensive list compiled from Section 1.3 “Covered Species List” of the City of San Diego Subarea Plan document. This list was cross-referenced with a list of special-status plant and wildlife species and sensitive plant communities from CNDDDB and CNPS database searches for the La mesa and Poway, California USGS 7.5-minute topographic quadrangle, and a query of the local area from the Consortium.

The sensitive plant communities include:

- San Diego Mesa Hardpan Vernal Pool
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood Willow Riparian Forest
- Southern Riparian Forest
- Southern Riparian Scrub
- Southern Sycamore Alder Riparian Woodland
- Valley Needlegrass Grassland

The special-status plant species include:

- Aphanisma (*Aphanisma blitoides*)
- Baja California birdbush (*Omithostaphylos oppositifolia*)
- Beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*)
- Blochman’s dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*)
- Brand’s star phacelia (*Phacelia stellaris*)
- California adolphia (*Adolphia californica*)
- California Orcutt grass (*Orcuttia californica*)
- Chaparral ragwort (*Senecio aphanactis*)
- Cliff spurge (*Euphorbia misera*)
- Coastal dunes milk vetch (*Astragalus tener* var. *titi*)
- Coast wallflower (*Erysimum ammophilum*)
- Coast woolly-heads (*Nemacaulis denudate* var. *denudata*)
- Coulter’s goldfields (*Lasthenia glabrata* ssp. *coulteri*)
- Coulter’s saltbush (*Atriplex coulteri*)
- Del Mar manzanita (*Arctostaphylos glandulosa* var. *crassifolia*)
- Del Mar sand aster (*Corethrogyne filaginifolia* var. *linifolia*)
- Denesa bear-grass (*Nolina interrata*)
- Dense reed grass (*Calamagrostis densa*)

- Dunn's mariposa lily (*Calochortus dunnii*)
- Encinitas coyote brush (*Baccharis vanessae*)
- Estuary sea-blite (*Suaeda esteroa*)
- Felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*)
- Gander's butterweed (*Senecio ganderi*)
- Gander's pitcher sage (*Lepechinia ganderi*)
- Golden-spined cereus (*Bergerocactus emoryi*)
- Heart-leaved pitcher sage (*Lepechinia cardiophylla*)
- Lakeside ceanothus (*Ceanothus cyaneus*)
- Laguna Mountains jewel-flower (*Streptanthus bemarkinus*)
- Little mouseltail (*Myosurus minimus* ssp. *apus*)
- Mexican flannelbush (*Fremontodendron mexicanum*)
- Narrow-leaved nightshade (*Solanum tenuilobatum*)
- Nevin's barberry (*Berberis nevinii*)
- Nuttall's lotus (*Lotus nuttallianus*)
- Nuttall's scrub oak (*Quercus dumosa*)
- Orcutt's bird's-beak (*Cordylanthus orcuttianus*)
- Orcutt's brodiaea (*Brodiaea orcuttii*)
- Orcutt's dudleya (*Dudleya attenuata* ssp. *ocuttii*)
- Orcutt's pincushion (*Chaenactis glabriuscula* var. *ocuttiana*)
- Otay manzanita (*Arctostaphylos otayensis*)
- Otay Mesa mint (*Pogogyne nudiuscula*)
- Otay tarplant (*Deinandra conjugens*)
- Palmer's ericameria (*Ericameria palmeria*)
- Palmer's frankenia (*Frankenia palmeri*)
- Parry's tetracoccus (*Tetracoccus dioicus*)
- Prostrate navarretia (*Navarretia fossalia*)
- Purple stemodia (*Stemodia durantifolia*)
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)
- Salt marsh bird's-beak (*Cordylanthus maritimus* ssp. *maritimus*)
- San Diego ambrosia (*Ambrosia pumila*)
- San Diego barrel cactus (*Ferocactus viridescens*)
- San Diego bur-sage (*Ambrosia chenopodiifolia*)
- San Diego button-celery (*Eryngium aristulatum* spp. *parishii*)
- San Diego goldenaster (*Muilla clevelandii*)
- San Diego marsh-elder (*Iva hayesiana*)
- San Diego mesa mint (*Pogogyne abramsii*)
- San Diego sagewort (*Artemisia palmeri*)

- San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*)
- San Diego thorn-mint (*Acanthomintha ilicifolia*)
- Santa Catalina Island currant (*Ribes viburnifolium*)
- San Miguel savory (*Satureja chandleri*)
- Sea dahlia (*Coreopsis maritima*)
- Shaw's agave (*Agave shawii*)
- Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*)
- Short-lobed broomrape (*Orobanche parishii* ssp. *brachyloba*)
- Singlewhorl burrobrush (*Ambrosia monogyra*)
- Slender cottonheads (*Nemacaulis denudata* var. *gracilis*)
- Slender-pod jewelflower (*Caulanthus stenocarpus*)
- Small-leaved rose (*Rosa minutifolia*)
- Snake cholla (*Opuntia californica* var. *californica*)
- South Coast saltscale (*Atriplex pacifica*)
- Spreading navarretia (*Navarretia fossalis*)
- Sticky dudleya (*Dudleya viscida*)
- Tecate cypress (*Cupressus forbesii*)
- Thread-leaved brodiaea (*Brodiaea filifolia*)
- Torrey pine (*Pinus torreyana* ssp. *torreyana*)
- Variegated dudleya (*Dudleya variegata*)
- Wart-stemmed ceanothus (*Ceanothus verrucosus*)
- Willowy monardella (*Monardella linoides* ssp. *viminera*)

The special-status wildlife species include:

- American badger (*Taxidea taxus*)
- American peregrine falcon (*Falco peregrinus anatum*)
- Arroyo southwestern toad (*Bufo microscaphus* ssp. *californicus*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)
- Burrowing owl (*Athene cunicularia*)
- California brackishwater snail (*Tryonia imitator*)
- California brown pelican (*Pelcanus occidentalis* ssp. *californica*)
- California red-legged frog (*Rana aurora* ssp. *pallida*)
- California least tern (*Sterna antillarum browni*)
- Canada goose (*Branta Canadensis* ssp. *moffitti*)
- Coast (San Diego) horned lizard (*Phrynosoma blainvilli*)
- Coastal cactus wren (*Campylorhynchus brunneicapillus*)

- Coastal California gnatcatcher (*Poliophtila californica californica*)
- Cooper's hawk (*Accipiter cooperi*)
- Coronado skink (*Eumeces skiltonianus interparietalis*)
- Elegant tern (*Sterna elegans*)
- Ferruginous hawk (*Buteo regalis*)
- Golden eagle (*Aguila chrysaetos*)
- Globose dune beetle (*Coelus globosus*)
- Hoary bat (*Lasiurus cinereus*)
- Large-billed savannah sparrow (*Passerculus sandwichensis ssp. rostratus*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Light-footed clapper rail (*Rallus longirostris levipes*)
- Long-billed curlew (*Numenius americanus*)
- Mexican long-tongued bat (*Choeronycteris mexicana*)
- Mountain lion (*Felis concolor*)
- Mountain plover (*Charadrius montanus*)
- Northern harrier (*Circus cyaneus*)
- Northern red-diamond rattlesnake (*Crotalus ruber ruber*)
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
- Orange-throated whiptail (*Aspidoscelis hyperythra*)
- Pallid bat (*Antrozous pallidus*)
- Pacific pocket mouse (*Perognathus longimembris pacificus*)
- Redish egret (*Egretta rufescens*)
- Riverside fairy shrimp (*Streptocephalus woottonii*)
- Rosy boa (*Charina trivirgata*)
- Sandy beach tiger beetle (*Cicindela hirticollis gravida*)
- Saltmarsh skipper (*Panoquina errans*)
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
- San Diego desert woodrat (*Neotoma lepida intermedia*)
- San Diego fairy shrimp (*Branchinecta sandiegoensis*)
- Senile tiger beetle (*Cicindela senilis frosti*)
- Silvery legless lizard (*Anniella pulchra pulchra*)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
- Southern mule deer (*Odocoileus hemionus fuliginata*)
- Southwestern pond turtle (*Clemmys marmorata ssp. pallida*)
- Southwestern willow flycatcher (*Empidonax trailli ssp. extimus*)
- Swainson's hawk (*Buteo swainsoni*)
- Thorne's hairstreak (*Mitoura thornei*)
- Tricolored blackbird (*Agelaius tricolor*)

- Two-striped garter snake (*Thamnophis hammondi*)
- Western beach tiger beetle (*Cicindela latesignata latesignata*)
- Western bluebird (*Sialia mexicana*)
- Western mastiff bat (*Eumops perotis californicus*)
- Western snowy plover (*Charadrius alexandrinus nivosus*)
- Western spadefoot (*Spea hammondi*)
- Western tidal-flat tiger beetle (*Cicindela gabbii*)
- White-faced ibis (*Plegadis chihi*)

Table D-1: Special Status Plant Species Table

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	San Diego County MSCP				
<i>Adolphia californica</i>	San Diego adolphia	None	None	2.1	List B	Occurs in chaparral, coastal scrub, and valley and foothill grassland areas. Known Elevation Limits: 135 to 2,220 feet	Deciduous shrub	Dec. to May	High potential to occur. Recorded within 2.7 miles of the site. Suitable coastal scrub and grassland habitat occurs on the project site.
<i>Ambrosia pumila</i>	San Diego ambrosia	FE	None	1B.1	List A	Occurs in chaparral, coastal scrub, and valley and foothill grassland, vernal pools. Often found in disturbed areas and sometimes in alkaline soils. Known Elevation Limits: 60 to 1,260 feet	Rhizomatous herb	May to Oct.	Moderate potential to occur. Recorded within 1 miles of the site. Marginal coastal scrub and grassland habitat occurs on site. No alkaline soils on project site.
<i>Artemisia palmeri</i>	San Diego sagewort	None	None	4.2	List D	Occurs in sandy mesic areas within chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodlands. Known Elevation Limits: 50 to 3,000 feet	Perennial deciduous shrub	Feb. to Sept.	Low Potential to occur. No record of the species within 5 miles of the site. No suitable sandy soils occur within the project site.

Table D-1 (cont.): Special Status Plant Species Table

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	San Diego County MSCP				
<i>Bloomeria clevelandii</i>	San Diego goldenstars	None	None	1B.1	List A	Occurs in chaparral, coastal scrub, valley and foothill grassland, and vernal pool habitats in clay soils. Known Elevation Limits: 150 to 1,380 feet	Bulbifours herb	Apr. to May	High potential to occur. Recorded within 1 mile of the site. Suitable coastal scrub and grassland habitat occurs on project site.
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	None	None	1B.1	List A	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools in mesic environments supported by clay and sometimes serpentine soils. Known Elevation Limits: 90 to 5,076 feet	Bulbiferous herb	May to Jul.	Moderate potential to occur. Record of this species within 2 miles of the site. Marginal quality habitat occurs within the project site.
<i>Dudleya variegata</i>	Variegated dudleya	None	None	1B.2	List A	Clay habitat within chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Known Elevation Limits: 60 to 1,260 feet	Perennial herb	Apr. to Jun.	Present. This species was observed within the Diegan sage scrub along the ridgeline near the transmission line ROW.

Table D-1 (cont.): Special Status Plant Species Table

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	San Diego County MSCP				
<i>Ericameria palmeri</i> var. <i>palmeri</i>	Palmer's goldenbush	None	None	1B.1	List A	Occurs in mesic areas associated with chaparral and coastal scrub. Known Elevation Limits: 10 to 1,900 feet	Perennial evergreen shrub	July to Nov.	Moderate potential to occur. No record of this species within 5 miles of the site. Marginal quality habitat occurs within the project site.
<i>Eryngium aristulatum parishii</i>	San Diego button-celery	FE	SE	1B.1	List A	Occurs in coastal scrub, valley and foothill grassland, and vernal pool habitats in mesic soils. Known Elevation Limits: 60 to 1,860 feet	Annual/perennial herb	Apr. to Jun.	Not likely to occur. No record of the species within 5 miles of the site. Marginal quality habitat occurs within the project site.
<i>Ferocactus viridescens</i>	San Diego barrel cactus	None	None	2.1	List B	Occurs in chaparral, coastal scrub, valley, and foothill grassland habitats. Known Elevation Limits: 10 to 1,350 feet	Stem succulent	May to Jun.	Present. This species was observed within the Diegan sage scrub within the project site.
<i>Holocarpha virgata</i> ssp. <i>elongata</i>	Graceful tarplant	None	None	4.2	List D	Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands. Known Elevation Limits: 200 to 3,610 feet	Annual herb	May to Nov.	Low potential to occur. No record of the species within 5 miles of the site. Marginally suitable habitat occurs on the project site.

Table D-1 (cont.): Special Status Plant Species Table

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	San Diego County MSCP				
<i>Isocoma menziesii</i> <i>var. decumbens</i>	Decumbent goldenbush	None	None	1B.2	List A	Occurs in chaparral and coastal scrub, often in disturbed areas with sanding soils. Known Elevation Limits: 30 to 445 feet	Perennial shrub	Apr. to Nov.	Low potential to occur. No record of the species within 5 miles of the site. Marginally suitable habitat occurs on the project site.
<i>Lepidium virginicum</i> <i>var. robinsonii</i>	Robinson's pepper-grass	None	None	1B.2	List A	The species occurs in chaparral and coastal scrub habitats on dry soils. Known Elevation Limits: 3 to 2,835 feet	Annual herb	Jan. to July	Low potential to occur. No record of the species within 5 miles of the site. Marginally suitable habitat occurs on the project site.
<i>Lepechinia cardiophylla</i>	Heart-leaved pitcher sage	None	None	1B.2	List A	Occurs in closed-cone coniferous forest, openings in chaparral, and cismontane woodland habitats. Metavolcanic soils. Known Elevation Limits: 1,560 to 4,110 feet	Shrub	Apr. to June	Present. The species was observed adjacent to the emergent wetland area in the central portion of the biological survey area.
<i>Monardella viminea</i>	Willowy monardella	FE	SE	1B.1	List A	Occurs in the understory of chaparral. Associated with Acid Igneous rock lands. Known Elevation Limits: 164 to 750 feet	Rhizomatous herb	June to Aug.	Present. The species was observed adjacent to the drainage feature in the northwestern portion of the project site.

Table D-1 (cont.): Special Status Plant Species Table

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	San Diego County MSCP				
<i>Stylocline citroleum</i>	Oil nestraw	None	None	1B.1	List A	Occurs in clay soils in chenopod scrub, coastal scrub, and valley and foothill grassland. Known Elevation Limits:165 to 1,310 feet	Annual herb	Mar. to Apr.	Low potential to occur. No record of the species within 5 miles of the site. Marginally suitable habitat occurs on project site.
U.S. Fish and Wildlife Service FE Federal Endangered FT Federal Threatened PE Proposed Endangered PT Proposed Threatened FC Federal Candidate FSC Species of Concern* *No longer recognized as a federal designation.		California Department of Fish and Game CE California Endangered CT California Threatened CR California Rare				California Native Plant Society 1A Plants presumed extinct in California. 1B Plants rare, threatened, or endangered in California and elsewhere. 2 Plants rare, threatened, or endangered in California, but more common elsewhere. 3 Plants in need of more information. 4 Plants of limited distribution. *.1-Seriously threatened in California (high degree/immediacy of threat) *.2-Fairly threatened in California (moderate degree/immediacy of threat) *.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)		San Diego County <i>San Diego County Sensitive</i> List A: Plants rare, threatened or endangered in California and elsewhere List B: Plants rare, threatened or endangered in California but more common elsewhere List C: Plants which may be rare, but need more information to determine their true rarity status List D: Plants of limited distribution and are uncommon, but not presently rare or endangered) Not Listed: Species not listed by San Diego County Proposed North County Multiple Species Conservation Plan	
<p>Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within 5 miles) of the project site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the site.</p> <p>Low Potential to Occur - There is a historical record of the species in the vicinity of the project site and potentially suitable habitat on site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur.</p> <p>Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the project site, and there is a recorded occurrence of the species within the greater vicinity (within 5 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.</p> <p>High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the project site (within 3 miles).</p> <p>Species Present - The species was observed on the project site at the time of the survey or during a previous biological survey.</p>									

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
Invertebrates						
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE	None	Group 1, NC	Found on grassy openings in vegetation on hills and mesas near the coast with high density of food plants (<i>Plantago erecta</i> , <i>P. insularis</i> , <i>Orthocarpus purpurescens</i>)	Moderate potential to occur. Record occurrence within 3 miles of the site. Only a few individual host plants on site. Marginal quality habitat. Mission Trails population was believed to be eliminated due to 2007 fire.
<i>Lycaena hermes</i>	Hermes copper	None	None	Group 1, NC	Found in mixed woodlands, chaparral, and coastal sage scrub habitats. Spiny redberry is the known host plant and is closely associated with California buckwheat within 10 feet of the host plant.	Moderate potential to occur. Record occurrence within 3 miles of the site. Only a few individual host plants on site were observed near buckwheat. Marginal quality habitat. Populations do not recover well from fires.
Reptiles and Amphibians						
<i>Aspidoscelis hyperythrus</i>	Orange-throated whiptail	None	DFG: SSC	Group 2, NC	Coastal scrub, chaparral, and valley and foothill hardwood habitats. Prefers washes and sandy areas with patches of brush and rocks. Perennial plants required to support its primary prey termites.	Moderate potential to occur. Recorded occurrence within 1-mile south of the project site. Marginal quality habitat within the project site.
<i>Bufo microscaphus californicus</i>	Arroyo toad	Endangered	None	Group 1, MSCP	This species can be found in semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, along rivers with sandy banks, willows, cottonwoods, and sycamores, specifically in loose, gravelly areas of streams in drier parts of its range.	Low potential to occur. Recorded occurrence over 10-miles northeast of the site. No suitable habitat within the project site. Marginal quality habitat in the biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Charina trivirgata</i>	Rosy boa	None	None	Group 2, NC	This species is known to occur within chaparral and desert habitats from the coast to the Mojave and Colorado deserts. Prefers moderate to dense vegetation and rocky cover. Specifically inhabits a mix of brushy cover and rocky soil, coastal canyons and hillsides, desert canyons, washes and mountains.	Low potential to occur. There is a recorded occurrence of this species four miles north of the site. Moderately suitable habitat occurs within the rocky chaparral areas of the project site.
<i>Crotalus ruber ruber</i>	Northern red diamond rattlesnake	None	DFG: SSC	Group 2, NC	Occurs from coastal San Diego County to the eastern slopes of the mountains and in desert habitats. Occurs from sea level to 2,400 feet in chaparral, woodland, and arid desert habitats in rocky areas and dense vegetation.	High potential to occur. Species recorded within 1 mile north of the project site. No suitable habitat occurs within the project site. Marginally suitable habitat occurs within the biological survey area.
<i>Diadophis punctatus similis</i>	San Diego ringneck snake	None	None	Group 2, NC	Wet meadows and moist rocky hillsides, gardens, farmlands, grassland, chaparral, mixed coniferous forests, and woodlands.	Low potential to occur. There is a recorded occurrence eight miles west of the site. Moderately suitable habitat occurs within the wetland portion of the biological survey area.
<i>Plestiodon skiltonianus interparietalis</i>	Coronado Island skink	None	DFG: SSC	Group 1, NC	Occurs in grassland, chaparral, pinon-juniper and juniper sage woodland, pine-oak and pine forest habitats in the coastal ranges of Southern California. The species prefers early successional stages or open areas. Typically found in rocky areas close to streams and on dry hillsides.	Present. Species was observed in the northern portions of the project site. Suitable habitat occurs within the project site and biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Phrynosoma coronatum blainvillei</i>	San Diego horned lizard	None	DFG: SSC	Group 2, NC	Inhabits coastal sage scrub and chaparral in arid and semi-arid climate conditions and prefers friable, rocky, or shallow sandy soils.	Low potential to occur. There is a recorded occurrence 3 miles south of the site. Moderately suitable habitat occurs within the biological survey area.
<i>Salvadora hexalepis virgulata</i>	Coast patch-nosed snake	None	DFG: SSC	Group 2, NC	desert habitat, chaparral, washes and sandy flats	Low potential to occur. There is a recorded occurrence 3 miles south of the site. Moderately suitable habitat occurs within the biological survey area.
<i>Scaphiopus hammondi</i>	Western spadefoot toad	None	DFG: SSC	Group 2, NC	Found in coastal sage scrub, chaparral, and grassland habitats, but most common in grasslands with vernal pools or mixed grassland/CSS habitats.	Low potential to occur. There is a recorded occurrence two miles north of the site. Moderately suitable habitat occurs within the biological survey area.
<i>Thamnophis hammondi</i>	Two-striped garter snake	None	DFG: SSC	Group 1, NC	This species is known to occur in coastal California from the vicinity of Salinas to northwest Baja California from sea level to about 7,000 feet in elevation. It is highly aquatic and found in or near permanent fresh water, often along streams with rocky beds and riparian growth.	Low potential to occur. There is a recorded occurrence three miles east of the site. Moderately suitable habitat occurs within the biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
Avian						
<i>Accipiter cooperi</i>	Cooper’s hawk	None	None	Group 1, MSCP	(Nesting) Open, uninterrupted, or marginal type woodlands. Nest sites in riparian growths of deciduous trees, live oaks. Also other various forest habitats that are near water. Dense woodlands and forests are primary foraging habitat for this accipiter.	Present. Species observed nesting within the southwestern portion of the biological survey area. No suitable nesting habitat within the project site.
<i>Agelaius tricolor</i>	Tricolored blackbird	None	DFG: SSC	Group 1, MSCP	Open grassland, farmland, lakeshores, or scrub for foraging; requires wetlands with tall emergent vegetation for breeding	Not likely to occur. No record of the species within 5 miles of the site. No suitable habitat within the project site.
<i>Aimophila ruficeps canescens</i>	Southern rufous-crowned sparrow	None	DFG: SSC	Group 1, MSCP	Resident in southern California coastal sage scrub and sparse mixed chaparral.	Present. Species observed foraging within the western portion of the biological survey area. No suitable nesting habitat within the project site.
<i>Amorous savanna rum perpallidus</i>	Grasshopper sparrow	None	None	Group 1, NC	Coastal lowlands in undisturbed grassland with tall dense grasses	Low potential to occur. There is a recorded occurrence three miles east of the site. Moderately suitable habitat occurs within the biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Amphispiza belli belli</i>	Bell's sage sparrow	None	DFG: SSC	Group 1, NC	Vertical structure, habitat patchiness, and vegetation density may be more important in habitat selection by the species than the specific shrub species, but is closely associated with sagebrush. Common, but localized resident breeder in dry chaparral and coastal sage scrub along the coastal lowlands, inland valley, and in the lower foothills of local mountains. The preference for chamise chaparral appears to occur only in the more northern parts of its range.	Moderate potential to occur. Species recorded within 5 miles of the site. Marginally suitable habitat occurs across the site.
<i>Aquila chrysaetos</i>	Golden eagle	Eagle Protection Act	CDFG:FP	Group 1, MSCP	(Nesting and Wintering) Rolling foothills and mountain areas, juniper-sage flats, and deserts. Primarily associated with cliff-walled canyons and large trees in open habitats for nesting. Shrub-steppe and native grassland communities provide important foraging habitat. Also carrion.	Low potential to occur. There is a recorded occurrence 10 miles northeast of the site. No suitable nesting habitat occurs within the survey area.
<i>Elanus leucurus</i>	White tailed kite	None	CDFG:FP	Group 1, MSCP	Open savanna, grasslands, and fields	Low potential to occur. Present, observed flying over project site during reconnaissance level survey. No suitable nesting habitat onsite.
<i>Athene cunicularia</i>	Burrowing owl	None	DFG: SSC	Group 1, MSCP	Open grasslands, desert, and sparse scrublands with low-growing vegetation. Subterranean nester, dependent upon pre-existing burrow, most commonly from ground squirrels.	Low potential to occur. There is a recorded occurrence six miles southwest of the site. Moderately suitable habitat occurs within the biological survey area, but vegetation is too dense. No suitable burrows were observed within the biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Campylorhynchus brunneicapillus cousei</i>	Coastal cactus wren	None	DFG: SSC	Group 1, MSCP	Occurs in southern California coastal sage scrub vegetation. This wren require tall Opuntia cactus for nesting and roosting.	Low potential to occur. There is a recorded occurrence two miles southeast of the site. A few small patches of cactus occur within the project site, but not suitable for this species.
<i>Dendroica petechia brewsteri</i>	Yellow warbler	None	DFG: SSC	Group 2, NC	This species is associated with riparian areas, preferring to nest within willows, cottonwoods, aspens, sycamores and alders. Also known to nest in montane shrubs in open conifer forests.	Moderate potential to occur. Species recorded within 2 mile south of the site along the San Diego River. Marginally suitable habitat occurs within the southwestern portion of the biological survey area.
<i>Eremophila alpestris actia</i>	California horned lark	None	DFG: SSC	Group 2, NC	prairies, fields, golf courses, shores, airports	Moderate potential to occur. Species recorded within two miles north of the site. Marginally suitable habitat occurs within the biological survey area.
<i>Falco mexicanus</i>	Prairie falcon	None	DFG: SSC	Group 1, NC	Occurs in dry, open county, and prairies	Low potential to occur. Species recorded within three mile northeast of the site. Marginally suitable foraging habitat occurs within the biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Icteria virens</i>	Yellow-breasted chat	None	DFG: SSC	Group 1, NC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Specifically nests in low, dense riparian vegetation, consisting of willow, blackberry, wild grape. Forages and nests within 10 feet of ground.	Moderate potential to occur. Species recorded within eight miles east of the site along the San Diego River. Marginally suitable habitat occurs within the southwestern portion of the biological survey area.
<i>Ixobrychus exilis</i>	Least bittern	None	DFG: SSC	Group 2, NC	A colonial nester in marshlands and borders of ponds and reservoirs, which provide ample cover. Nests are usually constructed in low tules, over water.	Moderate potential to occur. Species recorded within 1 mile northeast of the site. Marginally suitable habitat occurs within the southwestern portion of the biological survey area.
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	FT	DFG: SSC	Group 1, MSCP	This species is an obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California. Specifically inhabits, low, coastal sage scrub in arid washes, on mesa and slopes. Not all areas classified as coastal sage scrub are occupied.	Moderate potential to occur. Species recorded within one mile east of the site within the Sycamore Landfill. Marginally suitable habitat occurs within the project site. Not observed during focused surveys.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE	SE	Group 1, MSCP	Least Bell's vireo is a summer resident of Southern California inhabiting low riparian habitats in the vicinity of water or in dry river bottoms below 2,000 feet. Its nests are placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis and/or mesquite.	High potential to occur. Species recorded within one mile south of the site along the San Diego River. Marginally suitable habitat occurs within the southwestern portion of the biological survey area. Species was observed downstream of the project site.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
Mammals						
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None	DFG: SSC	Group 2, NC	Variety of habitats including coastal scrub, chaparral, and grasslands in San Diego County. Associated with grass-chaparral edges.	Moderate potential to occur. Species recorded within two miles southwest of the site along the San Diego River. Marginally suitable habitat occurs within the northwestern portion of the biological survey area. However, this area contains steep slopes.
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	None	DFG: SSC	Group 2, NC	Found in coastal scrub, chaparral, grasslands, and sagebrush, among other low-lying habitat types, in western San Diego County.	Moderate potential to occur. Species recorded within two miles southwest of the site along the San Diego River. Marginally suitable habitat occurs within the project site.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None	DFG: SSC	Group 2, NC	Typically occurs in coastal scrub throughout Southern California. Prefers moderate to dense canopies and are particularly abundant in rock outcrops, and rocky cliffs and slopes.	Low potential to occur. Species observed within two miles west of the project site, marginally suitable habitat occurs on the project site.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None	DFG: SSC	Group 2, NC	Open desert scrub with suitable cover and burrowing substrate. Burrows beneath desert shrubs and loose friable soils.	Present. Species detected within the western portion of the project site. Individuals were not observed within the project site. This species is not likely to occur within the project site, but is present in the biological survey area.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Antrozous pallidus</i>	Pallid bat	None	DFG: SSC	Group 2, NC	Roosts in rock crevices, tree hollows, mines, caves and a variety of anthropogenic structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags, inside basal hollows of redwoods and giant sequoias, and bole cavities in oaks. They have also been reported roosting in stone piles.	Low potential to occur. Species observed within three miles east of the project site, no suitable habitat occurs on the project site.
<i>Myotis ciliolabrum</i>	Small-footed myotis	None	None	Group 2, NC	Wide range of habitat types however primarily within arid wooded and brushy uplands, including open stands in forests and woodlands, adjacent to water. Caves, buildings, mines, and crevices used for refuge.	Low potential to occur. Species observed within ten miles southeast of the project site, no suitable habitat occurs on the project site.
<i>Taxidea taxus</i>	American badger	None	None	Group 2, MSCP	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Low potential to occur. No record of the species within six miles east of the site. No suitable habitat within the project site.
<i>Odocoileus hemionus</i>	Southern mule deer	None	None	Group 2, MSCP	Mule deer occupy a wide range of habitat types within their home range. In San Diego County, this species prefers more arid, open situations.	Low potential to occur. Vegetation on the site is mostly grasslands with several meandering trails. No evidence of the species was observed during the surveys.

Table D-2: Special Status Wildlife Species Table

Species		Status			Required Habitat	Potential to Occur/ Known Occurrence/ Suitable Habitat
Scientific Name	Common Name	Federal	State	San Diego County		
<i>Felis concolor</i>	Mountain lion	None	None	Group 2, MSCP	Uses rocky areas, cliffs, and ledges that provide cover within open woodlands and chaparral, as well as riparian areas that provide protective habitat connections for movement between fragmented core habitats. Also, need both vertical and horizontal cover components, such as rocks and downed logs, to feel secure enough to bed. Typically associated with populations of the species primary prey, mule deer.	Low potential to occur. No evidence of deer was observed within the project site. No evidence of the species was observed during the surveys.
Federal FE Federal Endangered FT Federal Threatened FSC Federal Species of Concern PFT Proposed Federal Threatened C Candidate for Federal Listing D Delisted		State SE State Endangered ST State Threatened DFG:SSC California Species of Concern CDFG:FP Fully Protected Species CDFG: P Protected Species			San Diego County <i>Sensitive Animal Lists</i> Group 1: High Sensitivity; species listed or has specific local natural history requirements Group 2: Species declining, but not in immediate threat of extinction or extirpation MSCP: Species Covered Under MSCP (2001) NC: Species Not Covered Under MSCP (2001)	
Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within 5 miles) of the project site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the site. Low Potential to Occur - There is a historical record of the species in the vicinity of the project site and potentially suitable habitat on site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the project site, and there is a recorded occurrence of the species within the greater vicinity (within 5 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity. High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the project site (within 3 miles). Species Present - The species was observed on the project site at the time of the survey or during a previous biological survey.						

Appendix E: California Natural Diversity Database Results



Selected Elements by Element Code

California Department of Fish and Game

California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFG SSC or FP
AAABF02020	<i>Spea hammondi</i> western spadefoot	None	None	G3	S3	SSC
ABNGA02010	<i>Ixobrychus exilis</i> least bittern	None	None	G5	S1	SSC
ABNKC12040	<i>Accipiter cooperii</i> Cooper's hawk	None	None	G5	S3	WL
ABNKD06090	<i>Falco mexicanus</i> prairie falcon	None	None	G5	S3	WL
ABNSB10010	<i>Athene cunicularia</i> burrowing owl	None	None	G4	S2	SSC
ABPAT02011	<i>Eremophila alpestris actia</i> California horned lark	None	None	G5T3Q	S3	WL
ABPBG02095	<i>Campylorhynchus brunneicapillus sandiegensis</i> coastal cactus wren	None	None	G5T3Q	S3	SSC
ABPBJ08081	<i>Polioptila californica californica</i> coastal California gnatcatcher	Threatened	None	G3T2	S2	SSC
ABPBW01114	<i>Vireo bellii pusillus</i> least Bell's vireo	Endangered	Endangered	G5T2	S2	
ABPBX03018	<i>Dendroica petechia brewsteri</i> yellow warbler	None	None	G5T3?	S2	SSC
ABPBX91091	<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	None	None	G5T2T4	S2S3	WL
AMACB02010	<i>Choeronycteris mexicana</i> Mexican long-tongued bat	None	None	G4	S1	SSC
AMACC01020	<i>Myotis yumanensis</i> Yuma myotis	None	None	G5	S4?	
AMACC05030	<i>Lasiurus cinereus</i> hoary bat	None	None	G5	S4?	
AMACC05060	<i>Lasiurus blossevillii</i> western red bat	None	None	G5	S3?	SSC
AMACC05070	<i>Lasiurus xanthinus</i> western yellow bat	None	None	G5	S3	SSC
AMACD02011	<i>Eumops perotis californicus</i> western mastiff bat	None	None	G5T4	S3?	SSC
AMACD04010	<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	None	None	G4	S2S3	SSC
AMACD04020	<i>Nyctinomops macrotis</i> big free-tailed bat	None	None	G5	S2	SSC
AMAEB03051	<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	None	None	G5T3?	S3?	SSC
AMAFD05021	<i>Chaetodipus californicus femoralis</i> Dulzura pocket mouse	None	None	G5T3	S2?	SSC



Selected Elements by Element Code
California Department of Fish and Game
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFG SSC or FP
AMAFD05031	<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	None	None	G5T3	S2S3	SSC
AMAFF08041	<i>Neotoma lepida intermedia</i> San Diego desert woodrat	None	None	G5T3?	S3?	SSC
ARACF12100	<i>Phrynosoma blainvillii</i> coast horned lizard	None	None	G4G5	S3S4	SSC
ARACH01114	<i>Plestiodon skiltonianus interparietalis</i> Coronado Island skink	None	None	G5T2T3Q	S1S2	SSC
ARACJ02060	<i>Aspidoscelis hyperythra</i> orangethroat whiptail	None	None	G5	S2	SSC
ARACJ02143	<i>Aspidoscelis tigris stejnegeri</i> coastal whiptail	None	None	G5T3T4	S2S3	
ARADA01020	<i>Charina trivirgata</i> rosy boa	None	None	G4G5	S3S4	
ARADB30033	<i>Salvadora hexalepis virgultea</i> coast patch-nosed snake	None	None	G5T3	S2S3	SSC
ARADB36160	<i>Thamnophis hammondi</i> two-striped garter snake	None	None	G3	S2	SSC
ARADE02090	<i>Crotalus ruber</i> red-diamond rattlesnake	None	None	G4	S2?	SSC
CTT42110CA	Valley Needlegrass Grassland Valley Needlegrass Grassland	None	None	G3	S3.1	
CTT44321CA	San Diego Mesa Hardpan Vernal Pool San Diego Mesa Hardpan Vernal Pool	None	None	G2	S2.1	
CTT61300CA	Southern Riparian Forest Southern Riparian Forest	None	None	G4	S4	
CTT61310CA	Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	None	None	G4	S4	
CTT61330CA	Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	None	None	G3	S3.2	
CTT62400CA	Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	None	None	G4	S4	
CTT63300CA	Southern Riparian Scrub Southern Riparian Scrub	None	None	G3	S3.2	
ICBRA03060	<i>Branchinecta sandiegonensis</i> San Diego fairy shrimp	Endangered	None	G1	S1	
ICBRA07010	<i>Streptocephalus woottoni</i> Riverside fairy shrimp	Endangered	None	G1	S1	
IILEPC1160	<i>Lycaena hermes</i> Hermes copper butterfly	None	None	G1G2	S1S2	
IILEPK405L	<i>Euphydryas editha quino</i> quino checkerspot butterfly	Endangered	None	G5T1	S1	



Selected Elements by Element Code

California Department of Fish and Game

California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFG SSC or FP
NBHEP1C010	<i>Geothallus tuberosus</i> Campbell's liverwort	None	None	G1	S1	1B.1
NLTEST7980	<i>Texosporium sancti-jacobi</i> woven-spored lichen	None	None	G3	S1.1	
PDAP10Z042	<i>Eryngium aristulatum var. parishii</i> San Diego button-celery	Endangered	Endangered	G5T1	S1	1B.1
PDAST0C0M0	<i>Ambrosia pumila</i> San Diego ambrosia	Endangered	None	G1	S1	1B.1
PDAST0S160	<i>Artemisia palmeri</i> San Diego sagewort	None	None	G3	S3.2	4.2
PDAST0W0P0	<i>Baccharis vanessae</i> Encinitas baccharis	Threatened	Endangered	G1	S1	1B.1
PDAST3L0C1	<i>Ericameria palmeri var. palmeri</i> Palmer's goldenbush	None	None	G4T2T3	S1	1B.1
PDAST50010	<i>Ambrosia monogyra</i> singlewhorl burrobrush	None	None	G5	S2.2	2.2
PDAST57091	<i>Isocoma menziesii var. decumbens</i> decumbent goldenbush	None	None	G3G5T2T3	S2.2	1B.2
PDAST580A0	<i>Iva hayesiana</i> San Diego marsh-elder	None	None	G3?	S2.2?	2.2
PDAST8H060	<i>Senecio aphanactis</i> chaparral ragwort	None	None	G3?	S1.2	2.2
PDAST8Y070	<i>Stylocline citroleum</i> oil neststraw	None	None	G2	S2	1B.1
PDBOR0H010	<i>Harpagonella palmeri</i> Palmer's grapplinghook	None	None	G4	S3.2	4.2
PDBRA1M114	<i>Lepidium virginicum var. robinsonii</i> Robinson's pepper-grass	None	None	G5T3	S3	1B.2
PDCAC08060	<i>Ferocactus viridescens</i> San Diego barrel cactus	None	None	G4	S2	2.1
PDCHE040E0	<i>Atriplex coulteri</i> Coulter's saltbush	None	None	G2	S2	1B.2
PDCRA040R0	<i>Dudleya variegata</i> variegated dudleya	None	None	G2	S2.2	1B.2
PDERI040E8	<i>Arctostaphylos glandulosa ssp. crassifolia</i> Del Mar manzanita	Endangered	None	G5T2	S2	1B.1
PDERI0B011	<i>Comarostaphylis diversifolia ssp. diversifolia</i> summer holly	None	None	G3T2	S2	1B.2
PDFAG050D0	<i>Quercus dumosa</i> Nuttall's scrub oak	None	None	G1G2	S1.1	1B.1
PDLAM01010	<i>Acanthomintha ilicifolia</i> San Diego thorn-mint	Threatened	Endangered	G2	S2	1B.1



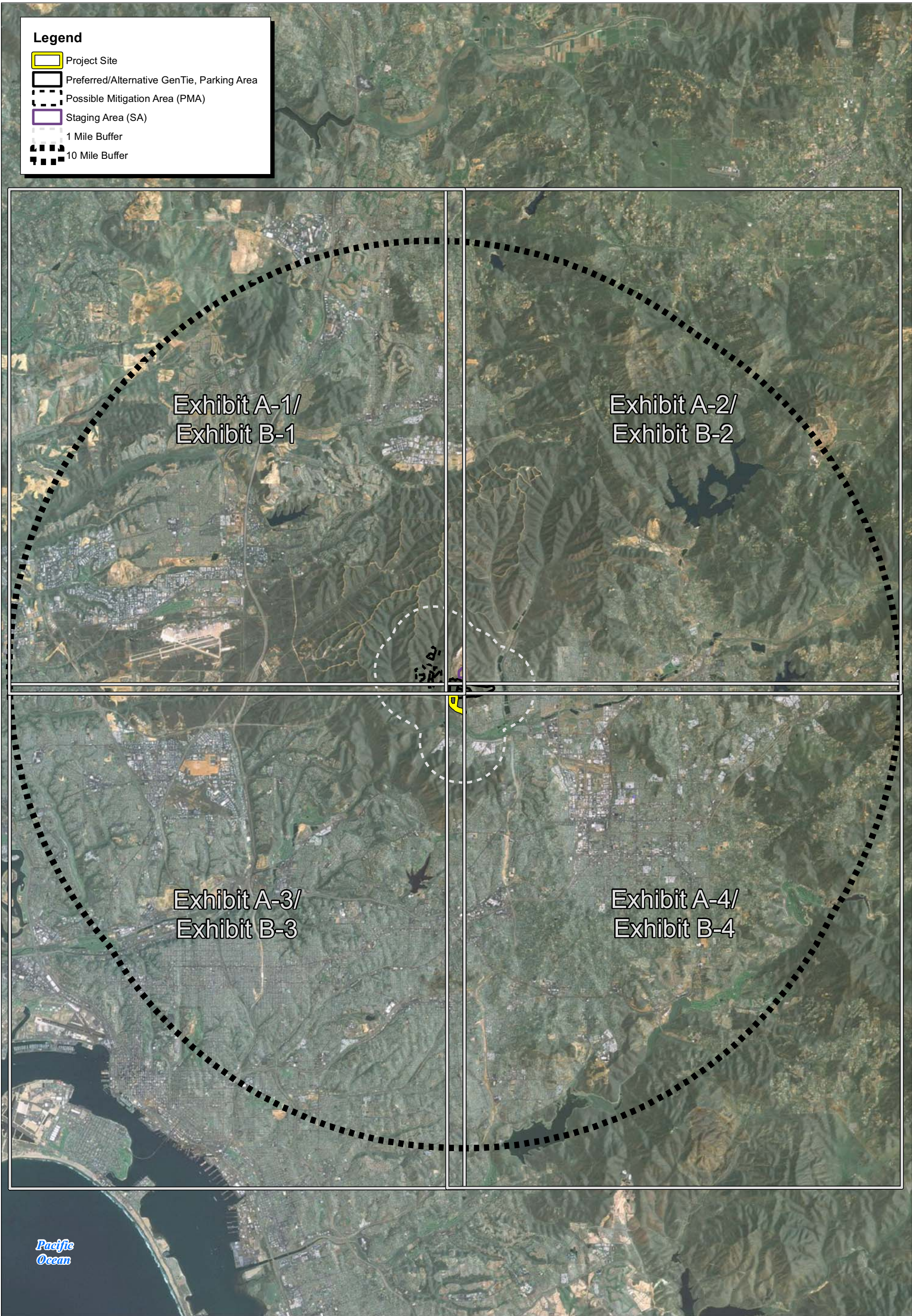
Selected Elements by Element Code
California Department of Fish and Game
California Natural Diversity Database



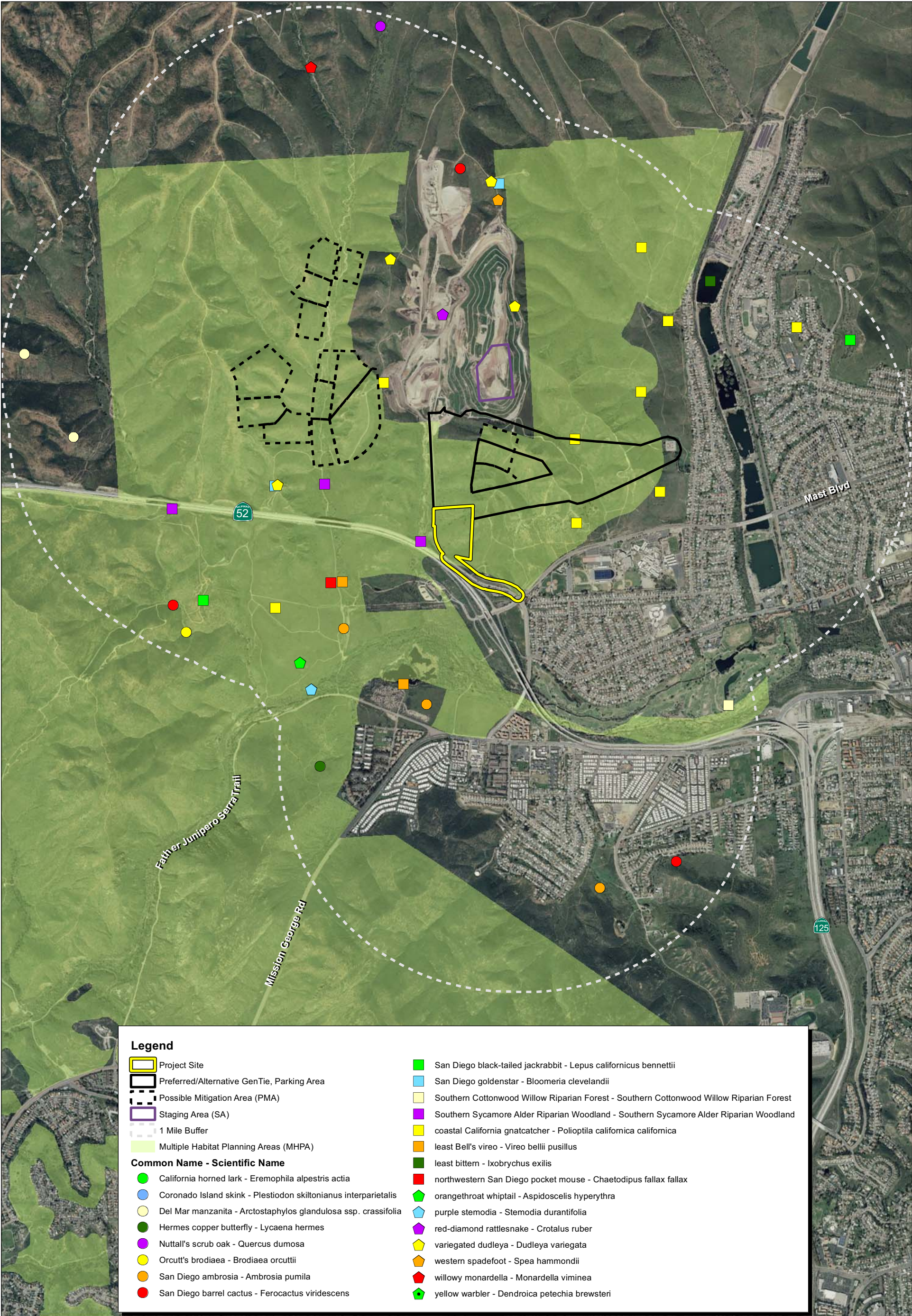
Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFG SSC or FP
PDLAM180D4	<i>Monardella viminea</i> willow monardella	Endangered	Endangered	G1	S1	1B.1
PDLAM1K010	<i>Pogogyne abramsii</i> San Diego mesa mint	Endangered	Endangered	G1	S1	1B.1
PDLAM1K040	<i>Pogogyne nudiuscula</i> Otay Mesa mint	Endangered	Endangered	G1	S1	1B.1
PDPGN040K1	<i>Chorizanthe polygonoides var. longispina</i> long-spined spineflower	None	None	G5T3	S3	1B.2
PDPLM0C0Q0	<i>Navarretia prostrata</i> prostrate vernal pool navarretia	None	None	G2	S2	1B.1
PDRAN0H031	<i>Myosurus minimus ssp. apus</i> little mousetail	None	None	G5T2Q	S2.2	3.1
PDRHA01010	<i>Adolphia californica</i> California adolphia	None	None	G3G4	S2	2.1
PDRHA041J0	<i>Ceanothus verrucosus</i> wart-stemmed ceanothus	None	None	G3	S2.2	2.2
PDSCR1U010	<i>Stemodia durantifolia</i> purple stemodia	None	None	G5	S2.1?	2.1
PMLIL0C050	<i>Brodiaea filifolia</i> thread-leaved brodiaea	Threatened	Endangered	G1	S1	1B.1
PMLIL0C0B0	<i>Brodiaea orcuttii</i> Orcutt's brodiaea	None	None	G1	S1	1B.1
PMLIL1H010	<i>Bloomeria clevelandii</i> San Diego goldenstar	None	None	G2	S2	1B.1

Record Count: 75

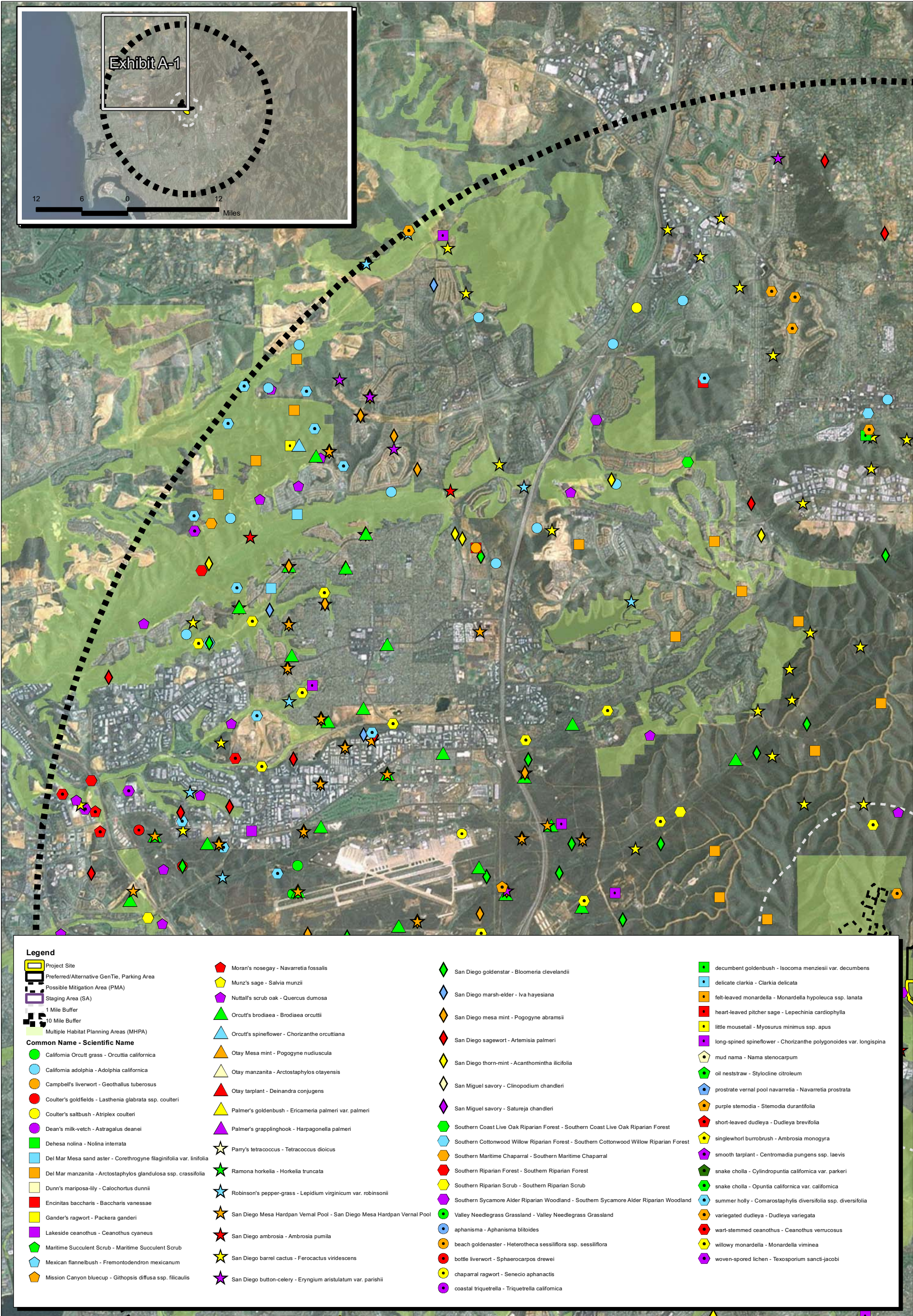
Appendix F: Additional Graphics for the California Energy Commission



Source: ESRI Aerial.



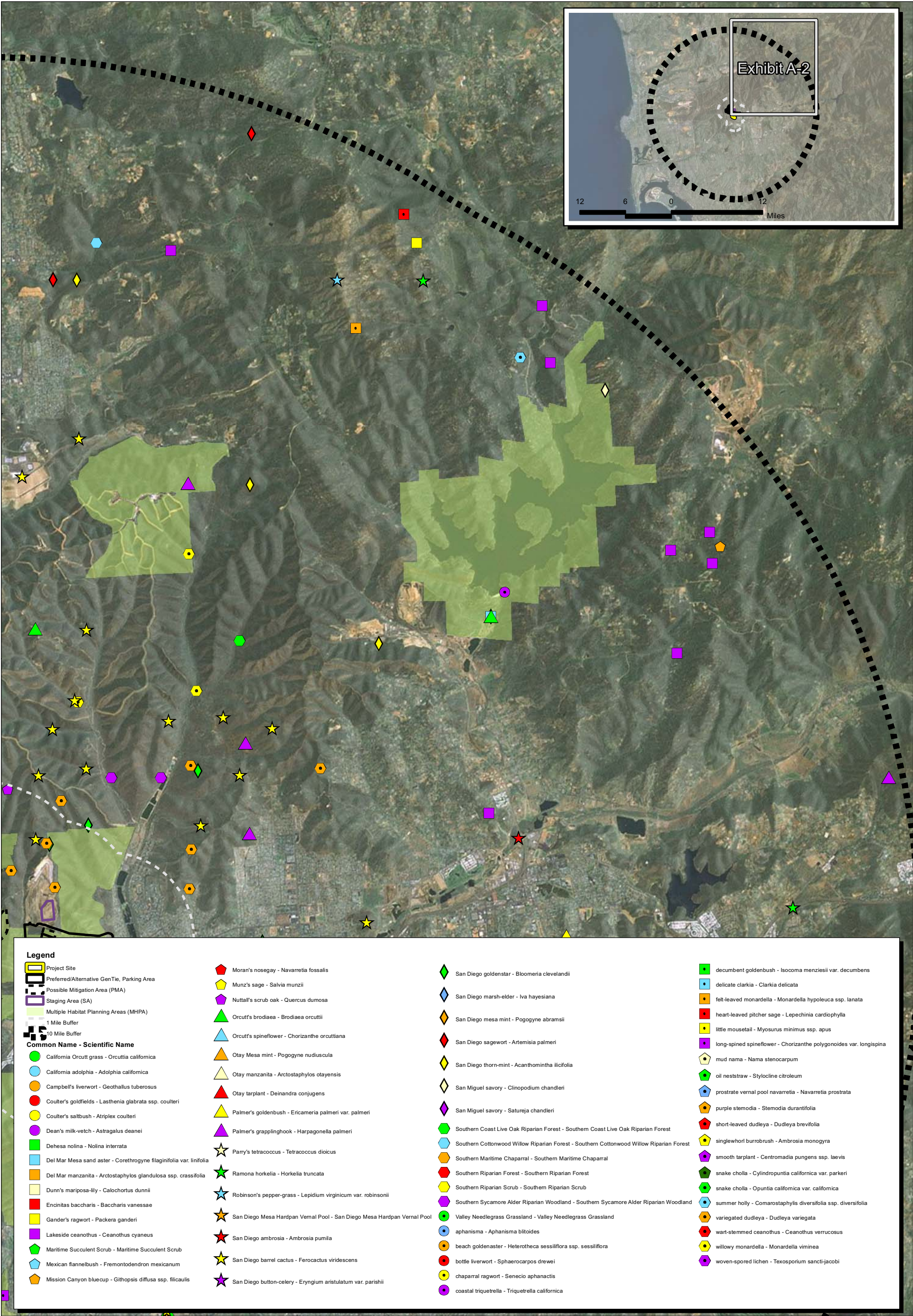
Source: ESR Aerial Imagery, CNDDDB Data June 2012.



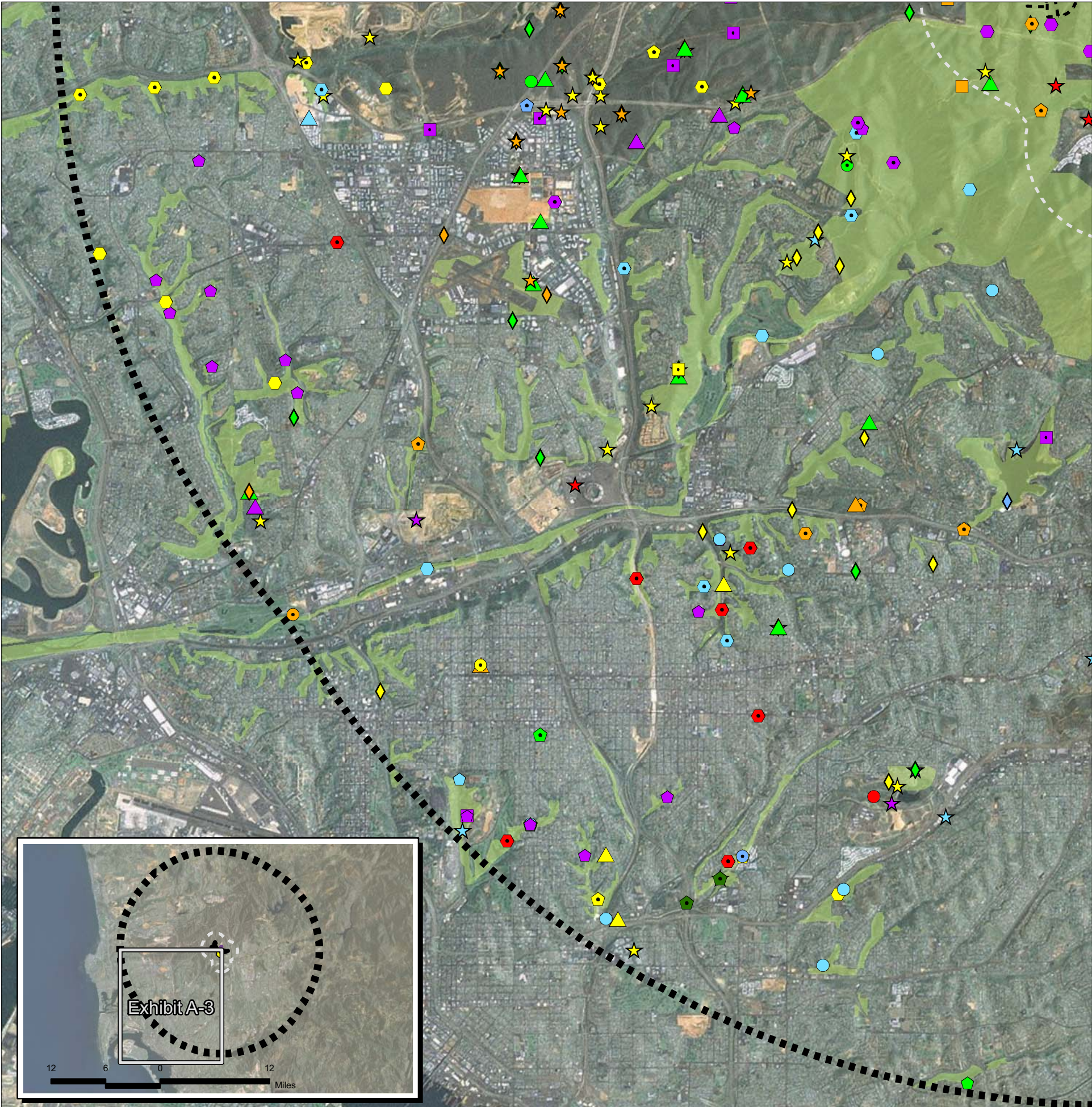
Source: ESRI Aerial, CNDDDB Data JUNE 2012.

Appendix F Exhibit A-1

CNDDDB-Recorded Occurrences of Special-Status Plant Species within 10 Miles of the Project Site



Source: ESRI Aerial, CNDDDB Data June 2012.



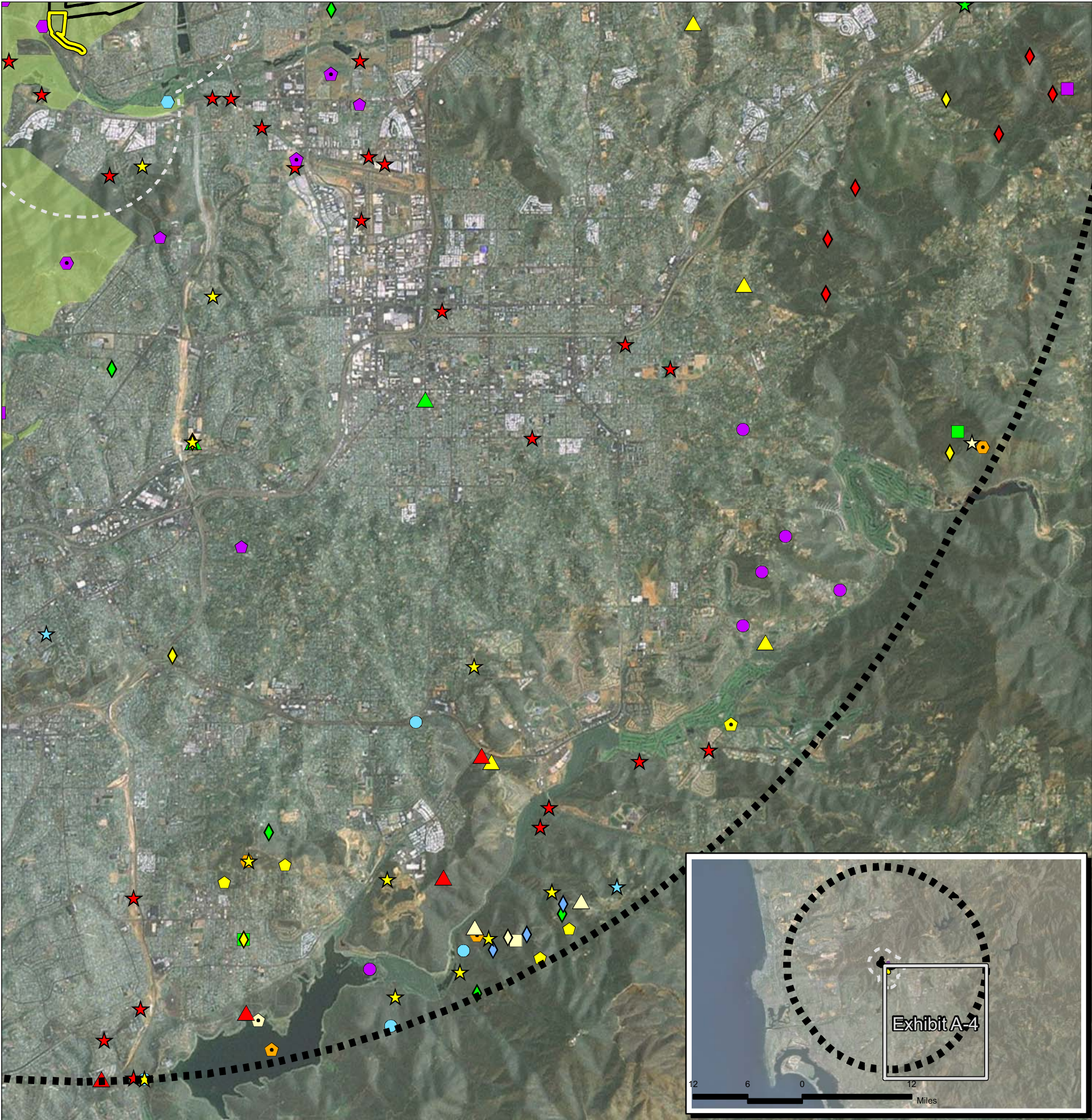
Legend

- | | | | |
|---|---|---|--|
| Project Site | Munz's sage - <i>Salvia munzii</i> | San Diego marsh-elder - <i>Iva hayesiana</i> | delicate clarkia - <i>Clarkia delicata</i> |
| Staging Area (SA) | Nuttall's scrub oak - <i>Quercus dumosa</i> | San Diego mesa mint - <i>Pogogyne abramsii</i> | felt-leaved monardella - <i>Monardella hypoleuca</i> ssp. <i>lanata</i> |
| Possible Mitigation Area (PMA) | Orcutt's brodiaea - <i>Brodiaea orcuttii</i> | San Diego sagewort - <i>Artemisia palmeri</i> | heart-leaved pitcher sage - <i>Lepechinia cardiophylla</i> |
| Preferred/Alternative GenTie, Parking Area | Orcutt's spineflower - <i>Chorizanthe orcuttiana</i> | San Diego thorn-mint - <i>Acanthomintha ilicifolia</i> | little mouse-tail - <i>Myosurus minimus</i> ssp. <i>apus</i> |
| 1 Mile Buffer | Otay Mesa mint - <i>Pogogyne nudiuscula</i> | San Miguel savory - <i>Clinopodium chandleri</i> | long-spined spineflower - <i>Chorizanthe polygonoides</i> var. <i>longispina</i> |
| 10 Mile Buffer | Otay manzanita - <i>Arctostaphylos otayensis</i> | San Miguel savory - <i>Satureja chandleri</i> | mud nama - <i>Nama stenocarpum</i> |
| Common Name - Scientific Name | Otay tarplant - <i>Deinandra conjugens</i> | Southern Coast Live Oak Riparian Forest - Southern Coast Live Oak Riparian Forest | oil neststraw - <i>Stylocine citroleum</i> |
| California Orcutt grass - <i>Orcuttia californica</i> | Palmer's goldenbush - <i>Ericameria palmeri</i> var. <i>palmeri</i> | Southern Cottonwood Willow Riparian Forest - Southern Cottonwood Willow Riparian Forest | prostrate vernal pool navarretia - <i>Navarretia prostrata</i> |
| California adolphia - <i>Adolphia californica</i> | Palmer's grapplinghook - <i>Harpagonella palmeri</i> | Southern Maritime Chaparral - Southern Maritime Chaparral | purple stemodia - <i>Stemodia durantifolia</i> |
| Campbell's liverwort - <i>Geothallus tuberosus</i> | Parry's tetracoccus - <i>Tetracoccus dioicus</i> | Southern Riparian Forest - Southern Riparian Forest | short-leaved dudleya - <i>Dudleya brevifolia</i> |
| Coulter's goldfields - <i>Lasthenia glabrata</i> ssp. <i>coulteri</i> | Ramona horkelia - <i>Horkelia truncata</i> | Southern Riparian Scrub - Southern Riparian Scrub | singlewhorl burrobush - <i>Ambrosia monogyra</i> |
| Coulter's saltbush - <i>Atriplex coulteri</i> | Robinson's pepper-grass - <i>Lepidium virginicum</i> var. <i>robinsonii</i> | Southern Sycamore Alder Riparian Woodland - Southern Sycamore Alder Riparian Woodland | smooth tarplant - <i>Centromadia pungens</i> ssp. <i>laevis</i> |
| Dean's milk-vetch - <i>Astragalus deanei</i> | San Diego Mesa Hardpan Vernal Pool - San Diego Mesa Hardpan Vernal Pool | Valley Needlegrass Grassland - Valley Needlegrass Grassland | snake cholla - <i>Cylindropuntia californica</i> var. <i>parkeri</i> |
| Dehesa nolana - <i>Nolina interrata</i> | San Diego ambrosia - <i>Ambrosia pumila</i> | aphanisma - <i>Aphanisma blitoides</i> | summer holly - <i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> |
| Del Mar Mesa sand aster - <i>Corethrogyne filaginifolia</i> var. <i>linifolia</i> | San Diego barrel cactus - <i>Ferocactus viridescens</i> | beach goldenaster - <i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i> | variegated dudleya - <i>Dudleya variegata</i> |
| Del Mar manzanita - <i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> | San Diego button-celery - <i>Eryngium aristulatum</i> var. <i>parishii</i> | bottle liverwort - <i>Sphaerocarpos drewei</i> | wart-stemmed ceanothus - <i>Ceanothus verrucosus</i> |
| Dunn's mariposa-lily - <i>Calochortus dunnii</i> | San Diego goldenstar - <i>Bloomeria clevelandii</i> | chaparral ragwort - <i>Senecio aphanactis</i> | willow monardella - <i>Monardella viminea</i> |
| Encinitas baccharis - <i>Baccharis vanessae</i> | | coastal triquetrella - <i>Triquetrella californica</i> | woven-spored lichen - <i>Texosporium sancti-jacobi</i> |
| Gander's ragwort - <i>Packera ganderi</i> | | decumbent goldenbush - <i>Isocoma menziesii</i> var. <i>decumbens</i> | Multiple Habitat Planning Areas (MHPA) |
| Lakeside ceanothus - <i>Ceanothus cyaneus</i> | | | |
| Maritime Succulent Scrub - Maritime Succulent Scrub | | | |
| Mexican flannelbush - <i>Fremontodendron mexicanum</i> | | | |
| Mission Canyon bluecup - <i>Githopsis diffusa</i> ssp. <i>filicaulis</i> | | | |
| Moran's nosegay - <i>Navarretia fossalis</i> | | | |

Source: ESR Aerial, CNDDB Data June 2012.

Appendix F
Exhibit A-3

CNDDB-Recorded Occurrences of Special-Status
Plant Species within 10 Miles of the Project Site

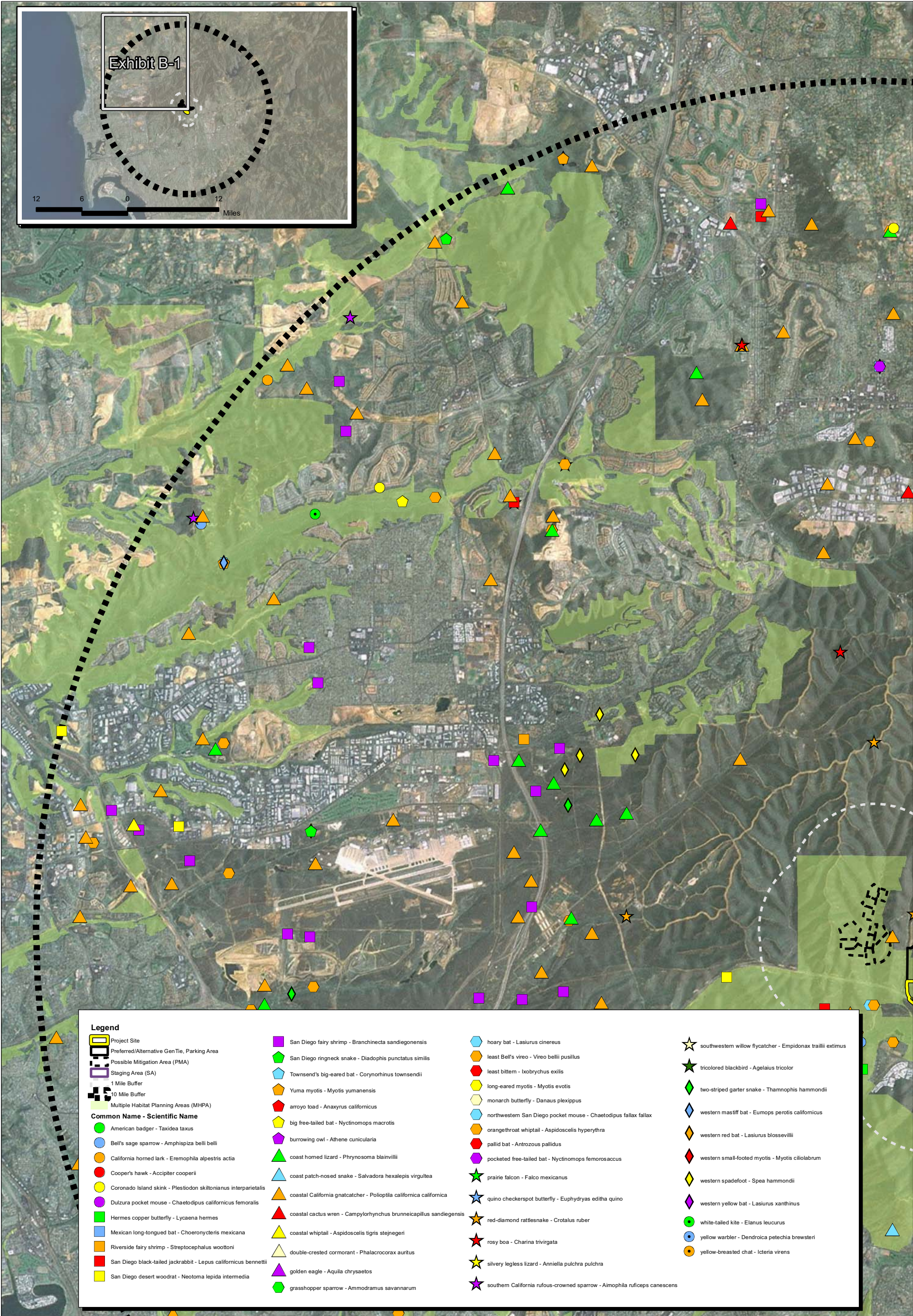


Legend			
	Project Site		Moran's nosegay - Navarretia fossilis
	Preferred/Alternative GenTie, Parking Area		Munz's sage - Salvia munzii
	Possible Mitigation Area (PMA)		Nuttall's scrub oak - Quercus dumosa
	Staging Area (SA)		Orcutt's brodiaea - Brodiaea orcuttii
	1 Mile Buffer		Orcutt's spineflower - Chorizanthe orcuttiana
	10 Mile Buffer		Otay Mesa mint - Pogogyne nudiuscula
	Multiple Habitat Planning Areas (MHPA)		Otay manzanita - Arctostaphylos otayensis
Common Name - Scientific Name			Otay tarplant - Deinandra conjugens
	California Orcutt grass - Orcuttia californica		Palmer's goldenbush - Ericameria palmeri var. palmeri
	California adolphia - Adolphia californica		Palmer's grapplinghook - Harpagonella palmeri
	Campbell's liverwort - Geothallus tuberosus		Parry's tetracoccus - Tetracoccus dioicus
	Coulter's goldfields - Lasthenia glabrata ssp. coulteri		Ramona horkelia - Horkelia truncata
	Coulter's saltbush - Atriplex coulteri		Robinson's pepper-grass - Lepidium virginicum var. robinsonii
	Dean's milk-vetch - Astragalus deanei		San Diego Mesa Hardpan Vernal Pool - San Diego Mesa Hardpan Vernal Pool
	Dehesa nolina - Nolina interrata		San Diego ambrosia - Ambrosia pumila
	Del Mar Mesa sand aster - Corethrogyne filaginifolia var. linifolia		San Diego barrel cactus - Ferocactus viridescens
	Del Mar manzanita - Arctostaphylos glandulosa ssp. crassifolia		San Diego button-celery - Eryngium aristulatum var. parishii
	Dunn's mariposa-lily - Calochortus dunnii		San Diego goldenstar - Bloomeria clevelandii
	Encinitas baccharis - Baccharis vanessae		San Diego marsh-elder - Iva hayesiana
	Gander's ragwort - Packera ganderi		San Diego mesa mint - Pogogyne abramsii
	Lakeside ceanothus - Ceanothus cyaneus		San Diego thorn-mint - Acanthomintha ilicifolia
	Maritime Succulent Scrub - Maritime Succulent Scrub		San Miguel savory - Clinopodium chandleri
	Mexican flannelbush - Fremontodendron mexicanum		San Miguel savory - Satureja chandleri
	Mission Canyon bluecup - Githopsis diffusa ssp. filicaulis		Southern Coast Live Oak Riparian Forest - Southern Coast Live Oak Riparian Forest
			Southern Cottonwood Willow Riparian Forest - Southern Cottonwood Willow Riparian Forest
			Southern Maritime Chaparral - Southern Maritime Chaparral
			Southern Riparian Forest - Southern Riparian Forest
			Southern Riparian Scrub - Southern Riparian Scrub
			Southern Sycamore Alder Riparian Woodland - Southern Sycamore Alder Riparian Woodland
			Valley Needlegrass Grassland - Valley Needlegrass Grassland
			aphanisma - Aphanisma blitoides
			beach goldenaster - Heterotheca sessiliflora ssp. sessiliflora
			bottle liverwort - Sphaerocarpos drewei
			chaparral ragwort - Senecio aphanactis
			coastal triquetrella - Triquetrella californica
			decumbent goldenbush - Isocoma menziesii var. decumbens
			delicate clarkia - Clarkia delicata
			felt-leaved monardella - Monardella hypoleuca ssp. lanata
			heart-leaved pitcher sage - Lepechinia cardiophylla
			little mouse-tail - Myosurus minimus ssp. apus
			long-spined spineflower - Chorizanthe polygonoides var. longispina
			mud nama - Nama stenocarpum
			oil neststraw - Stylocline citreolum
			prostrate vernal pool navarretia - Navarretia prostrata
			purple stemodia - Stemodia durantifolia
			short-leaved dudleya - Dudleya brevifolia
			singlewhorl burrobush - Ambrosia monogyra
			smooth tarplant - Centromadia pungens ssp. laevis
			snake cholla - Cylindropuntia californica var. parkeri
			snake cholla - Opuntia californica var. californica
			summer holly - Comarostaphylis diversifolia ssp. diversifolia
			variegated dudleya - Dudleya variegata
			wart-stemmed ceanothus - Ceanothus verrucosus
			willow monardella - Monardella viminea
			woven-spored lichen - Texosporium sancti-jacobi

Source: ESR Aerial, CNDDDB Data June 2012.

Appendix F Exhibit A-4

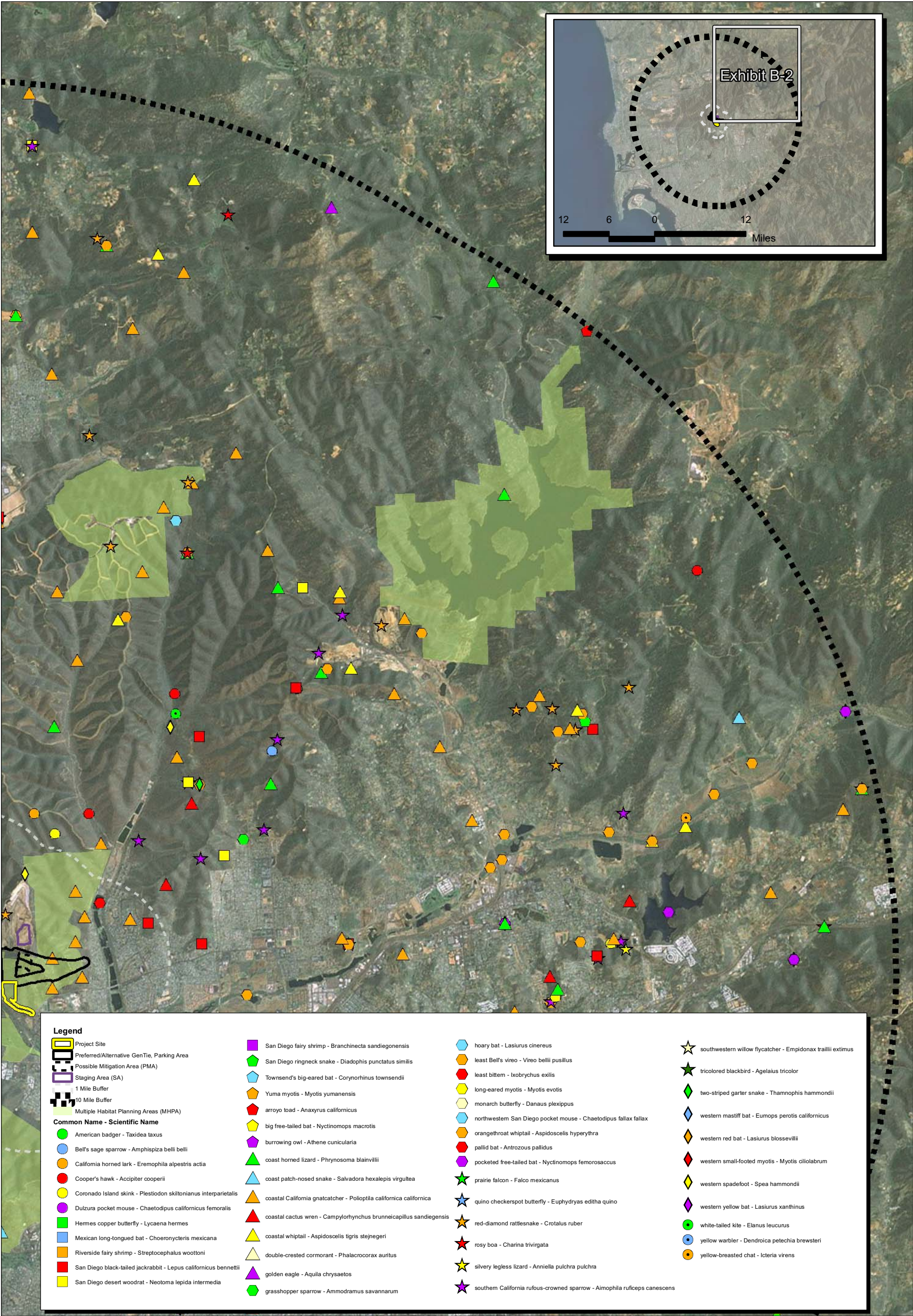
CNDDDB-Recorded Occurrences of Special-Status Plant Species within 10 Miles of the Project Site



Source: ESRI Aerial, CNDDDB Data JUNE 2012.

Appendix F Exhibit B-1

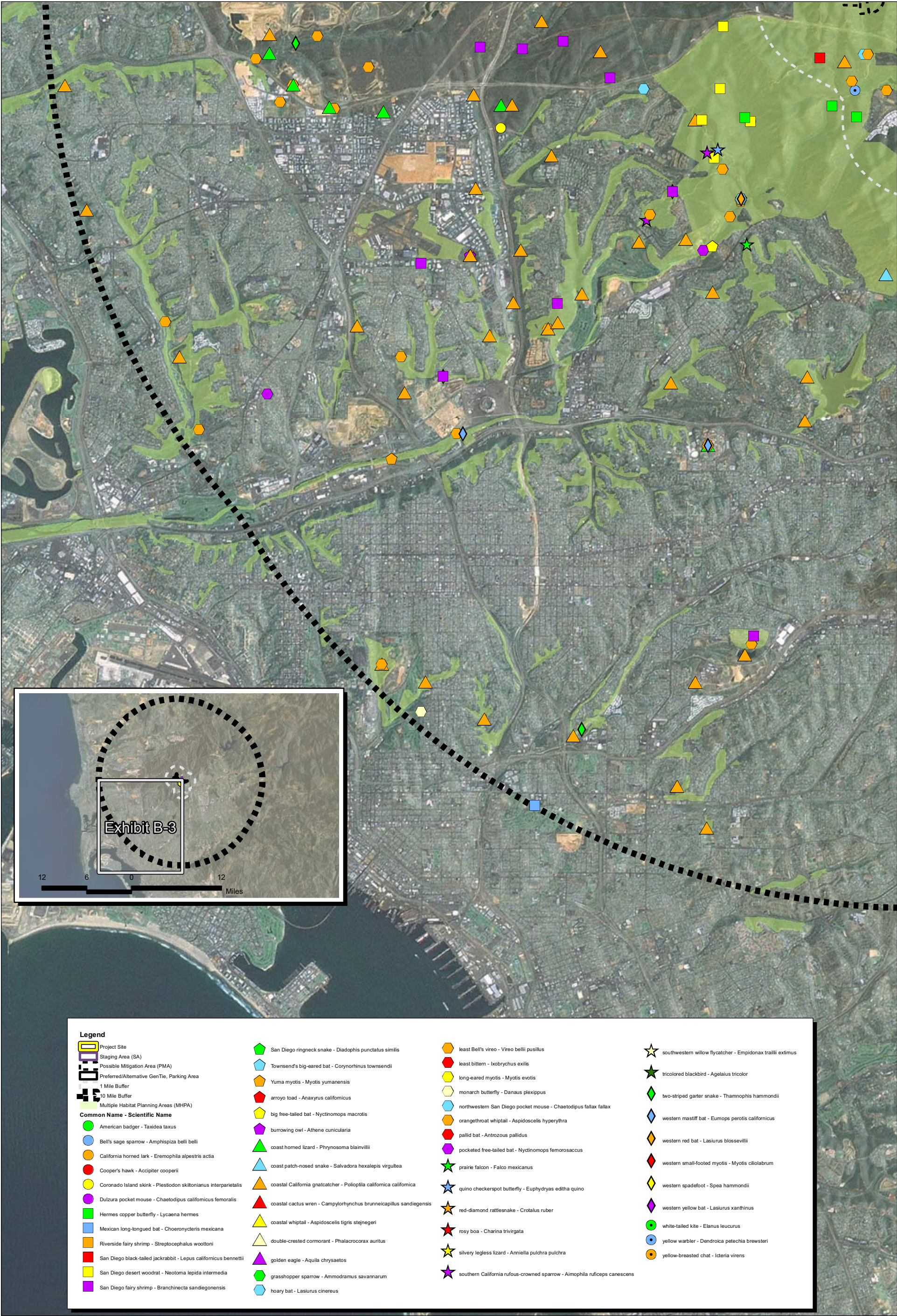
CNDDDB-Recorded Occurrences of Special-Status Animal Species within 10 Miles of the Project Site



Source: ESRI Aerial, CNDDDB Data June 2012.

Appendix F
Exhibit B-2

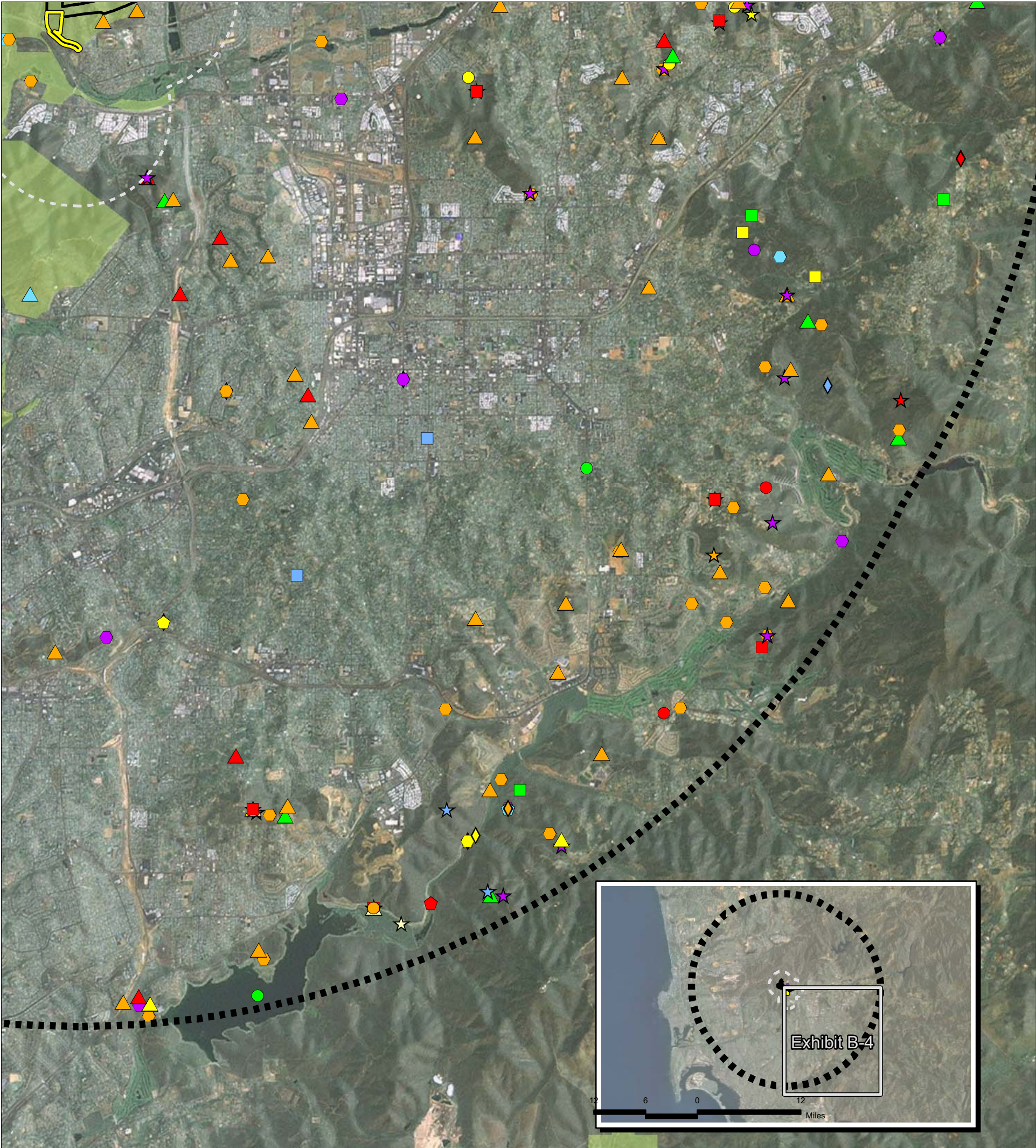
CNDDDB-Recorded Occurrences of Special-Status
Wildlife Species within 10 Miles of the Project Site



Source: ESR Aerial, CNDDDB Data June 2012.

Appendix F
Exhibit B-3

CNDDDB-Recorded Occurrences of Special-Status
Animal Species within 10 Miles of the Project Site



Legend							
	Project Site		San Diego ringneck snake - <i>Diadophis punctatus similis</i>		least Bell's vireo - <i>Vireo bellii pusillus</i>		southwestern willow flycatcher - <i>Empidonax traillii eximius</i>
	Preferred/Alternative GenTie, Parking Area		Townsend's big-eared bat - <i>Corynorhinus townsendii</i>		least bittern - <i>Ixobrychus exilis</i>		tricolored blackbird - <i>Agelaius tricolor</i>
	Possible Mitigation Area (PMA)		Yuma myotis - <i>Myotis yumanensis</i>		long-eared myotis - <i>Myotis evotis</i>		two-striped garter snake - <i>Thamnophis hammondi</i>
	Staging Area (SA)		arroyo toad - <i>Anaxyrus californicus</i>		monarch butterfly - <i>Danaus plexippus</i>		western mastiff bat - <i>Eumops perotis californicus</i>
	1 Mile Buffer		big free-tailed bat - <i>Nyctinomops macrotis</i>		northwestern San Diego pocket mouse - <i>Chaetodipus fallax fallax</i>		western red bat - <i>Lasiurus blossevillei</i>
	10 Mile Buffer		burrowing owl - <i>Athene cunicularia</i>		orangethroat whiptail - <i>Aspidoscelis hyperythra</i>		western small-footed myotis - <i>Myotis ciliolabrum</i>
	Multiple Habitat Planning Areas (MHPA)		coast horned lizard - <i>Phrynosoma blainvillii</i>		pallid bat - <i>Antrozous pallidus</i>		western spadefoot - <i>Spea hammondi</i>
Common Name - Scientific Name			coast patch-nosed snake - <i>Salvadora hexalepis virgulata</i>		pocketed free-tailed bat - <i>Nyctinomops femorosaccus</i>		western yellow bat - <i>Lasiurus xanthinus</i>
	American badger - <i>Taxidea taxus</i>		coastal California gnatcatcher - <i>Polioptila californica californica</i>		prairie falcon - <i>Falco mexicanus</i>		white-tailed kite - <i>Elanus leucurus</i>
	Bell's sage sparrow - <i>Amphispiza belli belli</i>		coastal cactus wren - <i>Campylorhynchus brunneicapillus sandiegensis</i>		quino checkerspot butterfly - <i>Euphydryas editha quino</i>		yellow warbler - <i>Dendroica petechia brewsteri</i>
	California horned lark - <i>Eremophila alpestris actia</i>		coastal whiptail - <i>Aspidoscelis tigris stejnegeri</i>		red-diamond rattlesnake - <i>Crotalus ruber</i>		yellow-breasted chat - <i>Icteria virens</i>
	Cooper's hawk - <i>Accipiter cooperii</i>		double-crested cormorant - <i>Phalacrocorax auritus</i>		rosy boa - <i>Charina trivirgata</i>		
	Coronado Island skink - <i>Plestiodon skiltonianus interparietalis</i>		golden eagle - <i>Aquila chrysaetos</i>		silvery legless lizard - <i>Anniella pulchra pulchra</i>		
	Dulzura pocket mouse - <i>Chaetodipus californicus femoralis</i>		grasshopper sparrow - <i>Ammodramus savannarum</i>				
	Hermes copper butterfly - <i>Lycaena hermes</i>		hoary bat - <i>Lasiurus cinereus</i>				
	Mexican long-tongued bat - <i>Choeronycteris mexicana</i>						
	Riverside fairy shrimp - <i>Streptocephalus woottoni</i>						
	San Diego black-tailed jackrabbit - <i>Lepus californicus bennettii</i>						
	San Diego desert woodrat - <i>Nectoma lepida intermedia</i>						
	San Diego fairy shrimp - <i>Branchinecta sandiegonensis</i>						

Source: ESR Aerial, CNDDDB Data June 2012.

Appendix G:
Biologist Resumes



Scott Crawford, MA
Senior Project Manager

Overview

- 18 Years Experience
- Master's degree, Biological Science – California State University, Fullerton
- Bachelor's degree, Environmental Biology – California State University, Northridge

Scott Crawford, MA, senior biologist, has over 18 years experience conducting herpetological, mammalian and avian surveys and ten years experience preparing jurisdictional delineation for regulatory permits. Scott's expertise includes conducting focused surveys for sensitive wildlife species including fairy shrimp, California gnatcatcher, Red-Legged Frog, Arroyo Toad, Least Bell's Vireo, Western Spadefoot, Western Pond Turtle and Burrowing Owl. He is also well versed in documenting biological resources and drainage systems using Geographic Information Systems.

Related Experience

Commercial and Industrial Projects

Morger Property Biological Resources Assessment, Century American Development Company. A biological resources assessment was conducted on a 425-acre project site. The existing conditions were documented in order to assist in the development of a future commercial development.

Gatlin Development Company Biological Resources Assessment. A biological resources assessment was conducted on a 32-acre project site. The existing conditions were documented in order to assist in the development of a future Wal-Mart Super-center. 2005

Hemet Auto Mall Biological Resources Assessment, City of Hemet. Conducted a general biological resources assessment for the 15-acre property in the western portion of the City of Hemet. The existing conditions were documented in order to assist in the expansion of the existing auto mall.

California Gnatcatcher Focused Surveys, Rose Hills Cemetery. Conducted a focused survey for California Gnatcatchers on a proposed construction footprint required to repair a landslide within the Cemetery Property. Suitable habitat was observed and focused surveys were conducted. No Gnatcatchers was observed during the surveys.

California Gnatcatcher Protocol Surveys, Quest Diagnostics, Orange County. Conducted protocol surveys for the California gnatcatcher. A single coastal California gnatcatcher was observed during the surveys.

San Bernardino Kangaroo Rat, Calmat, City of Etiwanda. Conducted a preliminary habitat survey for occurrence of suitable habitat on site for the San Bernardino kangaroo rat. The 80-acre project site was determined to have marginal habitat for this species, and the focused trapping effort was stopped during the second night due to lack of significant trap success. It was determined that the species was not present onsite.

Western Brass Biological Resources Assessment, City of Calimesa. Conducted a general biological resources assessment for the 60-acre property in the eastern portion of the City of Calimesa. The existing conditions were documented in order to assist in the development of a residential community.

Rose Hills Cemetery Biological Resources Assessment. Conducted a biological resources assessment to

document the existing conditions within the proposed expansion and maintenance areas that required site disturbance. Suitable gnatcatcher habitat and drainage feature were documented within the Project Site.

J. Edwards Company Biological Resources Assessment, City of Corona. Conducted a biological resources assessment for a 120-acre parcel within the sphere of influence of the City of Corona at the base of the Cleveland National Forest. Suitable habitat was observed for California gnatcatcher. A single red-diamond rattlesnake, a California species of special concern, was identified onsite.

California Gnatcatcher Focused Surveys, Citrus Valley Health Partners, City of Diamond Bar. Conducted a focused survey for California Gnatcatchers for a proposed commercial development. Suitable habitat was observed and focused surveys were conducted. No Gnatcatchers were observed during the surveys.

Upper Newport Backbay Slope Stabilization Project Construction Monitoring. Under contract to CBD Contractors, conducted construction monitoring to minimize impacts to California gnatcatchers for a slope stabilization project at Upper Newport Backbay in the City of Newport Beach, Orange County, California.

Rose Hills Cemetery Construction Monitoring, City of Industry. Monitored construction activity to prohibit fill from entering the drainage feature during excavation activities as part of the ongoing maintenance of the drainage features downstream of the cemetery property.

Construction Monitoring, Gave technical and biological support during soil boring operations, which included installation, drilling, and removal. Conducted erosion control monitoring of nine drilling locations. Conducted biological monitoring of southwestern pond turtles and southwestern pond turtle burrows prior to and during sampling.

Desert Tortoise Surveys, Garlock Mine, Kern County, California. Conducted a desert tortoise protocol survey on a large mining operation outside of the City of Johannesburg, California. Two desert tortoises were observed within the project site and two were observed in the Zone of Influence area.

Construction monitoring. Wind Fence Construction. City of Cathedral City, Riverside County, California. Conducted construction monitoring to minimize impacts to Coachella Valley Milkvetch, fridge-toed lizards, and Palm Springs pocket mouse for a wind fence in Riverside County, California.

Energy Projects

Lake Elsinore Advance Pump Storage (LEAPS), Lake Elsinore and Surrounding Areas. Conducted biological resources assessment and focused species surveys for thirty-seven miles of proposed transmission lines for the LEAPS project near Lake Elsinore and surrounding areas. Surveys included general reconnaissance-level surveys as well as focused surveys for Quino checkerspot butterfly, California gnatcatcher, least bell's vireo, arroyo toad, red-legged frog, spotted owl, and sensitive plants. Also participated in informal consultation with USFWS, USFS, and CDFG.

Daggett Ridge Wind-Farm Biological Resources Assessment, SeaWest WindPower, Inc. Conducted a biological resources assessment on a 4,500-acre property for a proposed wind-farm along Daggett ridge, east of the City of Barstow. The survey was conducted to determine suitable habitat for sensitive plant and wildlife species such as Mojave monkey flower (*Mimulus mohavensis*), Barstow woolly sunflower (*Eriophyllum mohavense*), Mohave tui chub (*Gila bicolor mohavensis*), desert tortoise (*Gopherus agassizii*), yellow-breasted chat (*Icteria virens*), LeConte's thrasher (*Toxostoma lecontei*), and Mohave ground squirrel (*Spermophilus mohavensis*). The site was also assessed as a raptor use area as part of a preliminary bird strike study.

Christensen/Lazar Project Biological Resources Assessment, Unincorporated Riverside County. Conducted a biological resources assessment for a proposed wind energy project (Commercial WECS Permit No. 99) near Palm Springs for Environ Wind Development Corporation.

Federal Projects

Endangered Species Management Plan, Prepared for Fort Irwin. Information was gathered on all endangered, threatened, or sensitive species observed or potentially occurring within the project area to be included in the Endangered Species Management Plan for Fort Irwin. Conservation measures were developed in order to manage these sensitive species within Fort Irwin.

General Plan Updates

General Plan/Environmental Update Draft EIR, Hogle-Ireland, Laguna Woods. Conducted a biological resources assessment and assisted in the preparation of the biological section for the draft EIR for the General Plan/Environmental Update.

General Plan Update Biological Resources Document, City of Perris. Prepared the biological resources section, conducted a complete survey and evaluation of all property within the City limits.

General Plan Update Biological Resources Document, City of Rancho Santa Margarita. Prepared the biological resources section, conducted a complete survey and evaluation of all property within the City limits.

Subarea 2 General Plan Biological Resources Document, City of Chino. Assisted in the preparation of the biological resources section, conducted a complete vegetation map and jurisdictional delineation over the entire General Plan area.

Native American Lands Projects

Flat-tailed Horned Lizard Focused Surveys, Agua Caliente Band of Cahuilla Indians, Coachella Valley. Conducted focused surveys for the presence/absence of flat-tailed horned lizards within all suitable habitat associated with the Indian Reservation lands. A single horned lizard was observed during the surveys.

Agua Caliente Band of Cahuilla Indian Lands Biological Resources Assessment, Riverside County. Conducted a general biological assessment on thirty two square miles of Agua Caliente band of Cahuilla Indians lands in the Palm Springs Area. The survey consisted of walking the existing trails and mapping the vegetation and other biological features present within the Indian lands. The information obtained from the biological resources assessment was used to prepare a Habitat Conservation Plan for the area.

Torres Martinez Desert Cahuilla Indian Lands Biological Resources Assessment, Torres Martinez Indian Reservation. Conducted a biological resources assessment to assist in the development of a multiple species habitat conservation plan.

Residential and Mixed Use Projects

Winokur Residential Property Biological Resources Assessment/ESHA Assessment, City of Malibu. Conducted a biological resources assessment for a single family residence in the City of Malibu. The survey was conducted to delineate the limits of the Environmentally Sensitive Habitat Area (ESHA). Survey was conducted to determine if a more detailed assessment was needed, but was not required. 2008

Green Park Ranch Wetlands Delineation, City of Simi Valley. Conducted a wetland delineation on a 1600-acre site in the City of Simi Valley. The survey was conducted to delineate the jurisdictional limits of United States Army Corps of Engineers waters of the U.S. and California Department of Fish and Game waters of the state. Assisted in preparing the Runkle Canyon Specific Plan and reviewed the EIR prepared by Impact Sciences. Participated in public hearings and coordination with City Staff to reduce environmental impacts.

Central Capital Corporation Biological Resources Assessment, City of La Habra. A biological resources assessment was conducted on a 4-acre project site. The existing conditions were documented in order to assist in the development of a future residential development.

Searless Company Biological Resources Assessment, City of Orange. A biological resources assessment was conducted on a 10-acre project site. The existing conditions were documented in order to assist in the development of a future residential development.

Granite Equities Biological Resources Assessment, French Valley Property. A biological resources assessment was conducted on a 30-acre project site. The existing conditions were documented in order to assist in the development of a future residential development.

Courdures North Property Biological Resources Assessment, Courdures LLC, City of Perris. Conducted a general biological resources assessment for the Courdures North property. The existing conditions were documented in order to assist in the development of a single-family residential development.

Knowleton Communities Biological Resources Assessment, City of Corona. Conducted a biological resources assessment for a 120-acre parcel within the sphere of influence of the City of Corona at the base of the Cleveland National Forest. Suitable habitat was observed for California gnatcatcher.

California Gnatcatcher Focused Survey, Orange County. Assisted in conducting a focused survey to determine the presence and location of any individual or pair of gnatcatchers within a 595-acre parcel located in Cypress Canyon. Four pairs of gnatcatchers were identified during the survey.

California Gnatcatcher Focused Survey, City of Beaumont. Assisted in conducting a survey to determine the presence and location of any individual or pair of gnatcatchers within a 536-acre parcel. No gnatcatchers were identified during the survey.

Palm Springs Pocket Mouse Trapping, Country Club Estates. Conducted a 5 days trapping effort for the Palm Springs pocket mouse. A total of 1,035 trap-nights were set and checked. No Palm Springs Pocket Mouse individuals were captured during the trapping effort. The site contained marginal and mostly unsuitable habitat for this species.

Flat-tailed Horned Lizards Focused Survey, Country Club Estates. Assisted Marie Barrett in conducting a focused scat survey for the flat-tailed horned lizard in desert scrub habitat. It was determined that the project site contained limited suitable habitat and this species was determined to be absent from the project site.

California Gnatcatcher Protocol Surveys, Urban Environs, Community of East Highlands. Conducted protocol surveys for the California gnatcatcher. No coastal California gnatcatchers were observed during the surveys. Blue-Gray gnatcatchers were observed within the project site.

California Gnatcatcher Protocol Surveys, Nuevo Development, City of Nuevo. Conducted protocol surveys for the California gnatcatcher. No coastal California gnatcatchers were observed during the surveys.

Saddleback Meadows Western Spade Foot Toad Focused Survey, Irvine. Conducted a focused survey for the presence of western spade-foot toad. The survey was conducted within suitable ephemeral ponds located on the Saddleback Meadows property in Irvine. The survey was used to update a previous study on spade-foot occurrences within the project site. Western spade-foot toad tadpoles were observed at the site. Vocalizations were heard at four of the ponds.

Quino Checkerspot Butterfly Habitat Assessment and Protocol Surveys, Century Crowell Communities. Assisted with conducting habitat assessment and protocol surveys for a project site in the Gavilan Plateau area. Suitable habitat was observed and focused surveys were conducted. No butterflies were observed during the surveys.

Quino Checkerspot Butterfly Surveys, Winchester Area. Assisted in conducting the first protocol survey for two parcels in the Winchester area for the Quino Checkerspot Butterfly.

Habitat Assessment for Quino Checkerspot Butterfly, City of Yucaipa. Conducted preliminary habitat assessment for the Quino checkerspot butterfly. Suitable Quino habitat was observed on the 450-acre site during the second day of surveys, therefore adult surveys were recommended.

Habitat Assessment for Quino Checkerspot Butterfly, City of Ontario. Conducted preliminary habitat assessment for the Quino checkerspot butterfly. The survey was conducted on a total of four parcels of land that encompassed approximately one thousand acres. The habitat consisted of active cow pastures and agricultural land. It was determined that no suitable Quino checkerspot butterfly habitat occurred within either of the four project sites.

Armada LLC Biological Resources Assessment, Riverside County. Conducted a general biological resources assessment for the 640-acre property just south of the City of Corona. The existing conditions were documented in order to assist in the development of a residential community.

Boyd Property Biological Resources Assessment, City of Corona. Conducted a general biological resources assessment for the 4-acre Boyd property in the City of Corona just south of the 91 freeway. The existing conditions were documented in order to assist in the development of a residential community.

Riverside Fairy Shrimp Protocol Survey, Courdures LLC, City of Perris. Conducted protocol dry season surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on a single large ponded area. Branchinecta cysts were observed.

Riverside Fairy Shrimp Protocol Survey, Classic Pacific, City of Beaumont. Conducted protocol wet season surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on two natural occurring ponded areas. Common versatile fairy shrimp were observed.

Riverside Fairy Shrimp Protocol Survey, Classic Pacific, City of Beaumont. Conducted protocol dry season surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on two natural occurring ponded areas. Branchinecta cysts were observed.

Nevin's Barberry Focused Survey, Spring Brook Estates, Riverside County. Conducted focused surveys for Nevin's barberry within a 5-acre survey area. The area was part of a much larger 200-acre proposed residential development. No sensitive plants were observed during the survey.

Burrowing Owl Focused Survey, Spring Mountain Ranch, Riverside County. Conducted focused surveys for burrowing owl within a proposed residential development. No burrowing owls were observed during the survey.

California Gnatcatcher Surveys, Van Daele Development, Meniffee Area. Conducted protocol surveys in the Meniffee area. The surveys were conducted on a 60-acre parcel of land that contained suitable coastal sage scrub habitat. Three pairs of gnatcatchers were observed during the survey.

Juniper Flats Biological Resources Assessment, Nuevo Development. Conducted a general biological resources assessment for the Juniper Flats property. The existing conditions were documented in order to assist in the development of a residential community. 2003

Tonner Canyon Biological Resources Assessment, City of Industry. Conducted a general biological resources assessment for the Tonner Canyon property. The existing conditions were documented in order to assist the City of Industry develop the property as well as maintain its biological integrity.

College Park Biological Resources Assessment, City of Upland. Conducted a biological resources assessment for a proposed residential development.

Century Vintage Homes Biological Resources Assessment, City of Yucaipa. Conducted a biological resources assessment for a proposed residential development.

Blue Stone Development Biological Resources Assessment, Community of Meniffee, Riverside County. Conducted a biological resources assessment for a proposed residential development.

East Highland Ranch Property Biological Resources Assessment, Spring Pacific Properties, LLC. Conducted a biological resources assessment for a proposed residential development.

Arlington Heights Property Biological Resources Assessment, Hawarden Development Corporation, Riverside County. Conducted a biological resources assessment on the 70-acre project site for the Alessandro Arroyo for a proposed residential development.

Delhi Sands Flower-Loving Fly Habitat Assessment, LD King, City of Ontario. Conducted a habitat assessment for the Delhi sands flower-loving fly on a 25-acre parcel. The site was located in Delhi sands; however, due to the active cultivation of pasture lands, suitable habitat no longer exists at the site.

Riverside Fairy Shrimp Protocol Survey, Oliver Cagle, Riverside County. Conducted protocol wet season surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on an old stock pond. No fairy shrimp were observed.

Riverside Fairy Shrimp Protocol Survey, Granite Homes, Riverside County. Conducted protocol dry season surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on an old stock pond. Branchinecta and Streptocephalus cysts were observed.

Nevin's Barberry and Vail Lake Ceanothus Focused Survey, Realty Trust, Riverside County. Conducted focused surveys for Nevin's barberry and Vail Lake Ceanothus. No sensitive plants were observed during the survey.

Focused Burrowing Owl Survey, Granite Equities, French Valley Property. A focused survey was conducted on a 30-acre project site. Two pairs of burrowing owl were observed onsite and an additional two were observed off-site.

Agua Bella Property Burrowing Owl Focused Survey, Highland Fairview Properties, Riverside County. Conducted focused surveys for burrowing owl within a proposed residential development. No burrowing owls

were observed during the survey.

Bel Lago Property Burrowing Owl Focused Survey, Highland Fairview Properties, Riverside County.

Conducted focused surveys for burrowing owl within a proposed residential development. A single pair of burrowing owls was observed during the survey.

Morgan Ranch Project Construction Monitoring for Pulte Homes, City of Temecula, Riverside County, California. Conducted construction monitoring to minimize impacts to drainage features for a residential development in Riverside County, California. Provided erosion control consultation for problem areas.

Lockmoor Development Project Construction Monitoring, Riverside County, California. Conducted construction monitoring to minimize impacts to drainage features for a residential development in Riverside County, California.

Arroyo Toad Surveys, Rio Santiago, Orange County, California. Conducted protocol surveys for arroyo toad at the Rio Santiago project site in the City of Orange. The surveys were conducted within Santiago Creek. No arroyo toads were observed on site.

Irvine Company Santiago Hills Estates Project Construction Monitoring. Conducted construction monitoring to minimize impacts to California gnatcatchers for a proposed residential development just south of Irvine Regional Park. Orange County, California.

Romoland South Site Burrowing Owl Focused Survey, Classic Pacific, Riverside County. Conducted focused surveys for burrowing owl within a proposed residential development. No burrowing owls were observed during the survey.

Romoland North Site Burrowing Owl Focused Survey, Classic Pacific, Riverside County. Conducted focused surveys for burrowing owl within a proposed residential development. No burrowing owls were observed during the survey.

Least Bell's Vireo Surveys, Armada LLC. Conducted a focused survey for Least Bell's Vireo for a proposed residential development just south of the City of Corona along Cajalco Road. Suitable habitat was observed and focused surveys were conducted. No Least Bell's Vireo were observed during the surveys.

California Gnatcatcher Surveys, City of Anaheim. Conducted protocol surveys in the Anaheim Hills area. The **Runkle Canyon Property Western Spade-foot Toad Focused Survey, California Greenpark Group, LLC.** Conducted a focused survey for the presence of western spade-foot toad. The survey was conducted at all suitable ponded areas located on the property. Western spade-foot tadpoles and adults were identified during the survey.

East Highland Ranch Property California Gnatcatcher Focused Surveys, Spring Pacific Properties, LLC. Conducted a focused survey for California Gnatcatchers on the property. Suitable habitat was observed and focused surveys were conducted. No Gnatcatchers was observed during the surveys.

Scale Broom Focused Survey, Lennar Homes. Conducted scale broom surveys to identify and assist in vegetation removal of scale broom, which is known to damage the foundations of new home construction. 400 to 500 plants were observed during the survey and herbicide application and vegetation removal was monitored for six months.

Riverside Fairy Shrimp Protocol Survey and Vegetation Monitoring, Rancho Diamante, Riverside County.

Conducted protocol wet season surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on previous agricultural lands. Common fairy shrimp were observed. Also conducted vegetation monitoring on the restoration site associated with mitigation requirements on the site. Monitoring included a site visit and plant recordation.

Nesting Bird Survey, Brandywine Development, City of Orange. Conducted a nesting bird survey to determine if construction activity would affect any active bird nests protected under the migratory bird treaty act. A total of three active nests were observed during the survey.

California Gnatcatcher Focused Survey, Lewis Homes, City of Fontana. Conducted focused California gnatcatcher surveys on a 700-acre parcel proposed for residential development in the northeastern portion of the City of Fontana. No California gnatcatchers were observed during the survey.

Fagan Property Sensitive Plant Species Focused Survey, Shea Homes, Ventura County. Conducted a focused survey for listed plant species. No sensitive plant species were observed during the survey.

Broad-leaved Crownbeard Focused Plant Survey, Khalda Development, City of Laguna Beach. Conducted a 100% coverage survey for Broad-leaved Crownbeard (*Verbesina dissita*). Several plants were observed onsite and mapped. The project site was redesigned to avoid all impacts to the plant.

surveys were conducted on a 100-acre parcel of land that contained suitable coastal sage scrub habitat. One pair of gnatcatchers was observed during the survey.

California Gnatcatcher Surveys, Community of Three-Arch-Bay. Conducted protocol surveys for California gnatcatcher. The surveys were conducted on a 5-acre parcel of land that contained suitable coastal sage scrub habitat. The proposed project includes the expansion of an existing detention basin. No gnatcatchers were observed during the survey.

Quino Checkerspot Butterfly Habitat Assessment and Protocol Surveys, Armada LLC. Conducted a habitat assessment for a proposed residential development just south of the City of Corona along Cajalco Road. Suitable habitat was observed and focused surveys were conducted. No butterflies were observed during the surveys.

California Gnatcatcher Focused Surveys, Armada LLC. Conducted a focused survey for California Gnatcatchers for a proposed residential development just south of the City of Corona along Cajalco Road. Suitable habitat was observed and focused surveys were conducted. A single pair of Gnatcatchers was observed during the surveys.

Riverside Fairy Shrimp Protocol Survey, Greenpark Runkle Canyon LLC. Conducted protocol surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on one natural occurring vernal pool and two man-made vernal pools in order to determine presence/absence. The common *Branchinecta lindahli* was the only species of fairy shrimp observed in the sampling.

Cagney Property Site Sensitive Plants Focused Survey, Pulte Homes. Conducted focused surveys to identify any sensitive plant species within the site. No sensitive plant species were identified during the site visit.

California Gnatcatcher Surveys, Nuevo Development. Conducted protocol surveys in the unincorporated community of Nuevo. The surveys were conducted on a 250-acre parcel of land that contained suitable coastal sage scrub habitat. No gnatcatchers were observed during the survey.

Quino Checkerspot Butterfly Protocol Surveys (QCB), Century Crowell Communities, Riverside County.

Conducted protocol surveys for the endangered QCB. The surveys were conducted in the Gavilan Plateau area that was once known to contain a large population of QCB.

School Projects

University of California Biological Resources Assessment, Irvine. Conducted a Biological Resources Assessment update for UC Irvine's Long Range Development Plan. The surveys were conducted to document existing conditions and to evaluate the remaining open space with respect to future development opportunities and constraints.

University of California Biological Resources Assessment, Irvine. Conducted three Biological Resources Assessments/Focused Species Surveys/Wetland Delineations for projects at UC Irvine involving the extension of a roadway in the east campus, and the expansion of student housing. The surveys were conducted to delineate the jurisdictional limits of United States Army Corps of Engineers waters of the U.S. and California Department of Fish and Game waters of the state.

Islander Park Biological Resources Assessment, University of California, Riverside. Conducted a biological resources assessment for the proposed expansion of the University of California, Riverside. The proposed project contains disturbed non-native vegetation. Several jurisdictional drainage features occurred onsite.

Radio Telemetry Gray Fox Surveys, California State University Fullerton. Used Radio Telemetry to track the local Gray Fox Population in Cleveland National Forest. Activity times and locations were entered into a GIS system to analyze home ranges and activity patterns.

Telecommunications Projects

NEPA Compliance/Telecommunication Facilities Biological Services, Various Sites in Southern and Central California. Served as a project biologist for a variety of telecommunication providers throughout southern and central California. Assisted compliance with the National Environmental Policy Act (NEPA) for the implementation of cellular communication facilities. This project included the preparation of NEPA compliance documents in accordance with the Federal Communication Commissions regulations pertaining to telecommunication facilities, in particular, biological surveys, including focused, sensitive species surveys and wetland delineations and permitting, construction monitoring, and arborist surveys.

Millwood Property California Gnatcatcher Focused Survey, Cingular, Orange County. Conducted focused surveys for California gnatcatcher within a proposed cellular communication facility in the City of Lake Forest. Two pairs of gnatcatchers were observed during the survey.

Sprint PCS Construction Monitoring at Laguna Canyon Cell Site. Conducted construction monitoring to minimize impacts to California gnatcatchers for a Cellular communications facility in the Laguna Canyon. Orange County, California.

Sprint PCS Construction Monitoring at Avila Beach Cell Site. Conducted construction monitoring to minimize impacts to strait-awned spineflower and Brewer's spineflower for a Cellular communications facility in Avila Beach. San Luis Obispo County, California.

Laguna Canyon California Gnatcatcher Focused Survey, AT&T, Orange County. Conducted focused surveys for California gnatcatcher within a proposed cellular communication facility west of State Highway 133. Two pairs of gnatcatchers were observed during the survey.

California Gnatcatcher Surveys, Sprint, City of Camarillo. Conducted protocol surveys for California gnatcatcher. The surveys were conducted on a 10-acre site adjacent to an orchard that contained suitable coastal sage scrub habitat. No gnatcatchers were observed during the survey.

California Gnatcatcher Surveys, Cingular, City of Glendale. Conducted protocol surveys for California gnatcatcher. The surveys were conducted on a 10-acre water tank site that contained suitable coastal sage scrub habitat. No gnatcatchers were observed during the survey.

Tonner Canyon California Gnatcatcher Focused Survey, Sprint PCS. Conducted focused surveys for California gnatcatcher within a proposed cellular communication facility along the southern portion of Tonner Canyon. No gnatcatchers were observed during the survey.

La Tuna Canyon California Gnatcatcher Focused Survey, Cingular, Los Angeles County. Conducted focused surveys for California gnatcatcher within a proposed cellular communication facility north of State Highway 210, Los Angeles County. No gnatcatchers were observed during the survey.

Laguna Canyon California Gnatcatcher Focused Survey, Cingular, Orange County. Conducted focused surveys for California gnatcatcher within a proposed cellular communication facility west of State Highway 133. Two pairs of gnatcatchers were observed during the survey.

Desert Tortoise Protocol Survey, Cellular Site, City of Mojave. Conducted a zone of influence survey to determine possible impacts to desert tortoise populations with regard to the development of a cellular-phone utility pole site near the city of Mojave. No tortoises or sign of tortoises were observed during the survey.

Desert Tortoise Protocol Survey, Cellular Site, Antelope Valley. A zone of influence survey was conducted to determine possible impacts to desert tortoise populations with regard to the development of a cellular-phone utility pole site in Antelope Valley. No tortoises or sign of tortoises were observed during the survey.

Trails and Recreation Projects

Biological Resources Assessment for an IS/MND for a Trails Project in Los Angeles County. Conducted a biological resources assessment on a 3-mile trail system in the unincorporated community of Avocado Heights, Los Angeles County. The information was used to prepare a IS/MND CEQA document. 2008

Quail Lake Spring Surveys Project. Conducted spring surveys for a proposed project with SEA #58 south of Quail Lake. Prepared the final Constraints analysis for submittal to the SEATAC for review and recommendation. Coordinated project design to reduce amount of potentially significant impacts. (2002-2005)

Glen Helen Specific Plan Biological Services, San Bernardino County. Assisted in the preparation of a Specific Plan for Glen Helen in the Community of Devore. Prepared biological resources assessment incorporating several years of biological surveys.

Seal Beach Multi-Use Trail Biological and Jurisdictional Assessment, W.G. Zimmerman Engineering. Conducted a wetland delineation and biological resources assessment for the installation of a multi-use trail system.

Wildlife Movement Corridor Study, Los Angeles and Orange Counties. Conducted a year-long study of wildlife movement within the Tonner Canyon property in the Los Angeles and Orange Counties. Surveys included spot counts for birds, scent stations for tracks, and photo stations for active wildlife movement photographs. The survey was conducted for a 5-day period once a month for an entire year. 2007 to 2008.

Native Plant Collection, City of Anaheim. Collected, identified and mounted all observed plant in the 60-acre nature center. The plants were collected in coastal sage scrub, chaparral, and oak woodland habitats. This collection will be used as a reference for the general public.

Deer Canyon Project Construction Monitoring, City of Anaheim. Completed a pre-construction walk-over the proposed impact area. No California gnatcatchers were observed during the survey.

O'Neal Park Arroyo Toad Focused Surveys, County of Orange. Conducted focused surveys for Arroyo Toad for a proposed sewer line within the campground portion of O'Neal Park.

Riverside Fairy Shrimp Habitat Assessment, Enviro-recycling, City of Hemet. Conducted a habitat assessment for Riverside Fairy Shrimp. The ponded area onsite was created by continual off-road vehicle use on an existing dirt access road. The ponded area did not support any fairy shrimp species.

Southwestern Pond Turtle Habitat Assessment, Los Angeles Department of Public Works. Assisted in habitat assessment for the southwestern pond turtle in five locations within the upper west fork and east fork of the San Gabriel River system. The surveys consisted of walking the stream course and evaluating suitable aquatic habitat as well suitable refugia and basking sites.

Southwestern Pond Turtle Trapping/Telemetry, Los Angeles County Department of Public Works. Assisted in trapping southwestern pond turtles in the San Gabriel water shed prior to the sluicing of Morris Dam. A total of twelve turtles were captured, processed, fitted with a radio telemetry transmitter, and relocated in the upper west fork of the San Gabriel River. Turtles were then monitored bi-monthly for movement and recaptured to determine health and status of each individual.

Southwestern Pond Turtle Trapping, Los Angeles County Department of Public Works. Assisted in trapping southwestern pond turtles in the Aliso Creek Channel, a tributary to Aliso Creek. A total of thirty nine turtles were captured, measured, and relocated further downstream in the Aliso Creek system. Also assisted in surveying for hatchling turtles in the upland portion of the study site and construction monitoring near the edge of the undrained pond. Assisted in surveying the drained pond for juvenile pond turtles.

Transportation Projects

Pala Road Biological Resources Assessment, City of Temecula. A biological resources assessment was conducted on portion of Pala Road in the City of Temecula. The existing conditions were documented as part of the Pala Road expansion Project.

Needles Highway Expansion Biological Resources Assessment, San Bernardino County. Conducted a biological resources assessment for the proposed expansion and realignment of Needles Highway between the City of Needles and the City of Laughlin, California for the San Bernardino County Department of Public Works. The survey was conducted to determine suitable habitat for Arizona vireo, Vermillion flycatcher, brown flycatcher, summer tanager, elf owl, and gila woodpecker.

Focused Surveys for Desert Tortoise, WZI Engineering. Conducted a focused survey for desert tortoise for the proposed expansion of Ridgecrest Road in the northern portion of the City of Ridgecrest. No desert tortoise or desert tortoise sign was observed during the survey.

Santa Ana River Channel Bat Species Focused Survey, City of Santa Ana. Conducted focused surveys for bat species within four proposed bridge expansion projects within the Santa Ana River Channel. No bats were observed during the survey.

Riverside Fairy Shrimp Protocol Survey, County of Orange. Conducted protocol surveys for the federally endangered Riverside Fairy Shrimp. The surveys were conducted on two natural occurring and one man-made vernal pool as part of a mitigation site for the Antonio Parkway extension.

El Segundo Blue Butterfly (ESB) Protocol Surveys, Los Angeles World Airport. Conducted block-count surveys for the endangered ESB. These surveys were conducted to determine the status of the existing ESB population in the dune system west of the airport. Thousands of butterflies were identified during the survey.

California Gnatcatcher Focused Survey, County of Orange. Conducted focused surveys for California gnatcatcher within a proposed bridge expansion project site for the widening of an Antonio Parkway bridge. No gnatcatchers were observed during the survey.

Antonio Expansion Endangered Riverside Fairy Shrimp Protocol Surveys, County of Orange. The surveys were conducted at the vernal pool mitigation site. The pool had been previously inoculated from a vernal pool that had known populations of fairy shrimp.

Pacific Pocket Mouse Focused Surveys, Transportation Corridor Authority. Assisted in trapping for pacific pocket mouse along the north side of Camp Pendleton in known pacific pocket mouse habitat. The trapping effort consisted of approximately 6,900 trap-nights. A total of 8 individuals were trapped, processed, and released during the three weeks of trapping.

El Segundo Blue Butterfly Block Counts, Los Angeles World Airport. Assisted in the block counts for the El Segundo Blue Butterfly. Each block was systematically surveyed and all butterflies observed were counted. Field experience gained during the survey allowed Mr. Crawford to obtain an individual 10A(1)a permit.

BNSF Railroad ROW Construction Monitoring at the Orange and Riverside County Boundary. Conducted construction monitoring within occupied California gnatcatcher habitat along the gnatcatchers were flushed out of the brush during drilling efforts. The gnatcatchers were monitored to determine presence and location throughout the day. Several gnatcatchers were observed during construction.

Water, Wastewater, and Stormwater Projects

Bauer Environmental Services, San Bernardino County. Updated Biological Opportunities and Constraints Analysis for the Master Plans of water supply and water distribution for the City of Chino Hills in San Bernardino County, California.

Storm Drain Repair Project Biological Resources Assessment, City of San Clemente. Conducted a biological resources assessment for a storm drain repair project located in the City of San Clemente. The proposed project contains disturbed ruderal and landscape vegetation. No jurisdictional drainage features occurred onsite.

Los Virgenes Water District Feasibility Studies and Surveys. Conducted feasibility studies and reconnaissance-level surveys on several project alternatives within Ventura and Los Angeles County, Las Virgenes water District. Aided in developing the impacts and recommended mitigation measures in the biological section for the EIR.

Two-stripe Garter Snake Surveys, Los Angeles County Department of Public Works. Assisted in surveying for the two-stripe garter snake in the San Gabriel water shed prior to the sluicing of Morris Dam. Los Angeles Department of Public Works. Surveys were conducted by walking along the banks of the stream course and surveying in suitable garter snake habitat.

Arroyo Toad Surveys, Los Angeles County Department of Public Works. Assisted in surveying for Arroyo Toad in the Big Tujunga wash as part of a habitat comparison study for potential mitigation measures for impacts associated with the sluicing of Morris and San Gabriel Dams along the San Gabriel River Channel. No arroyo toads were observed.

Santa Susana Tarplant Focused Plant Survey, Sprint PCS, City of Chatsworth. Conducted a 100% coverage survey for the Santa Susana tarplant (*Hemizonia minthornii*). The site was located within an existing water tank facility that has previously mitigated for impacts to the species. The plants were mapped and project redesign was recommended to avoid impacts to the species.

Southwestern Pond Turtle Trapping, Los Angeles County Department of Public Works. Assisted in trapping southwestern pond turtles at Sawpit Dam. Due to the rough terrain of the site, traps were set using a boat to get to the remote portions of the reservoir. No pond turtles were observed during the trapping session.

Hollywood Underground Reservoir Restoration Monitoring. Conducted restoration monitoring for the Hollywood reservoir underground storage facility. Assisted in erosion control installation and conducted annual transects to determine percent coverage of the restoration sties.

Pipeline Compliance Inspections, Federal Energy Regulatory Commission, Western US. Conducted site inspections of natural gas pipeline right-of-ways throughout the western United States. The purpose of these inspections is to evaluate natural gas pipeline companies' compliance with the environmental conditions of the Commission's order for the subject project. Inspection reports are prepared to describe existing conditions and to offer recommendations to correct any problem areas or areas of non-compliance observed during the inspection.

Garden Grove Channel Construction Monitoring, Huntington Beach. Conducted construction monitoring to minimize impacts to drainage feature and adjacent wetlands for a levee reinforcement project along the East Garden Grove Wintersburg Channel, in California.

Wetland Delineations

- **Yaqui Pass Project Site, AMG & Associates LLC, San Diego County.** 33-acre property.
- **Palm Canyon Project Site, AMG & Associates LLC, San Diego County.** 5.24-acre property.
- **Eagle Valley Ranch Project Site, Eagle Valley Ranch Developers LLC, Riverside County.** 780-acre property.
- **Morgan Ranch Project Site, Sage Communities Inc, Tehama County.** 130-acre property.
- **Wildomar Project Site, South Coast Communities, Riverside County.** 80-acre property.
- **Randal Street Bridge, County of Orange, Orange County.** Proposed bridge replacement over an unnamed drainage feature.
- **Fullerton Ranch, Dunmore Homes, Placer County.** Proposed residential development.
- **City of Bakersfield, Kern County.** Off-road vehicle use park.
- **Nevada Hydro, Riverside County.** Conducted wetland delineation for two proposed reservoir locations in the Cleveland national Forest.
- **Classic Pacific, City of Lake Elsinore.** Conducted wetland delineation for a proposed residential development east of Interstate 5.

- **Vineyard Property, Pacific First Capital Group, Riverside County.** Conducted wetland delineation for a proposed residential development in Riverside County California.
- **Fahrens Creek Property, D.R. Horton, Merced County.** Conducted wetland delineation for a proposed residential development in the City of Merced, Merced County California.
- **Bolsa Chica Wash, Riverside County.** Conducted wetland delineation for the reinforcement of Bolsa Chica Channel within an existing golf course.
- **Jefferson Plaza, Real Estate Affiliates Inc, Riverside County.** Conducted wetland delineation for a proposed commercial development adjacent to the White Water River in the City of La Quinta.
- **De Anza Property, Northwest Pipe Company, Riverside County.** Conducted wetland delineation for a proposed residential development.
- **Mead Valley Property, Granite Equities.** A jurisdictional delineation was conducted on a 60-acre project site. The existing conditions were documented in order to assist in the development of a future residential development.
- **S & D Dairy Wetland Delineation, Shea Homes, Riverside County.** Conducted wetland delineation for a proposed residential development.
- **Calimesa Property, Kehl Group LLC, Riverside County.** Conducted wetland delineation for a proposed residential development.
- **Bel Lago Property, Highland Fairview Properties, Riverside County.** Conducted wetland delineation for a proposed mixed use community.
- **Rancho Diamante Project, City of Hemet, Riverside County.** Conducted wetland delineation for a proposed residential development.
- **Pala Road Expansion, City of Temecula.** Conducted a jurisdictional delineation as part of the Pala Road expansion Project.
- **Oak Hills Project, Alpine Real Property Equity Group Inc, San Bernardino County.** Conducted wetland delineation for a proposed residential development.
- **Salt Creek Extension Realignment Project, Arcon Homes, Riverside County.** Conducted wetland delineation for a proposed road extension project.
- **Tri-Lake Consultants, Riverside County.** Conducted wetland delineation for a proposed road expansion project.
- **Sunrise Communities, City of Fullerton.** Conducted wetland delineation for a proposed retirement facility development.
- **Chandler Street, KB Homes, Riverside County.** Conducted wetland delineation for a proposed residential development.
- **Courdures LLC, City of Perris.** Conducted wetland delineation for a proposed residential community.
- **Armada LLC, City of Cabazon.** Conducted wetland delineation for a proposed residential community.
- **Aware Property, City of Hesperia.** Conducted wetland delineation for a proposed commercial facility.
- **Wal-Mart, City of Hesperia.** Conducted wetland delineation for a proposed Wal-Mart facility.
- **Etiwanda School District, City of Rancho Cucamonga.** Conducted wetland delineation for a proposed school facility north of Interstate 10.

- **Classic Pacific, City of Beaumont.** Conducted wetland delineation for a proposed residential development south of State Route 60.
- **O'Neal Park, County of Orange.** Conducted wetland delineation for a proposed sewer line within the campground portion of O'Neal Park.
- **Palm Meadows, Riverside County.** Conducted wetland delineation for a proposed residential development adjacent to the Santa Ana River Channel.
- **Knowleton Communities, City of Corona.** Conducted wetland delineation for a proposed residential development.
- **Fairfield Residential LLC, City of Redlands.** Conducted wetland delineation for a proposed residential development.
- **Hawarden Development Corporation, Riverside County.** Conducted a jurisdictional delineation for Tentative Tract 31799, a proposed residential development.
- **Hawarden Development Corporation.** Tentative Tract 32270. Riverside County. Conducted a jurisdictional delineation for a proposed residential development.
- **Lennar Homes, City of Norco, California.** Conducted wetland delineation for a proposed residential development.
- **Century Vintage Crowell, Rolling Hills Ranch. City of Devore. California.** Conducted wetland delineation for a proposed residential development.
- **Armada LLC, Cajalco Road, Riverside County, California.** Conducted wetland delineation for a proposed residential development.
- **City of Industry, Brea Wash, California.** Conducted wetland delineation for a proposed commercial development in the City of Industry, just south of Grand Avenue.
- **City of Industry, San Jose Creek Tributary, California.** Conducted wetland delineation for a proposed commercial development in the City of Industry, just south of Grand Avenue and east of Valley Boulevard.
- **Prologis Trust, City of Moreno Valley. California.** Conducted a wetland delineation on a 74.81-acre property located the City of Moreno Valley, Riverside County. The proposed project included a single-family residential development.
- **Pulte Homes, Cagney Property, California.** Conducted wetland delineation for a proposed residential development in an unincorporated portion of Riverside County.
- **County of Orange, California.** Conducted wetland delineation for a proposed bridge expansion project site for the widening of an Antonio Parkway bridge.
- **Century Vintage Crowell, Gavilan Hills, California.** Conducted wetland delineation for a proposed residential development.
- **LaCadena Construction. California.** Conducted wetland delineation for a proposed residential development.
- **Century Crowell Communities. City of Banning, Riverside County.** Conducted a wetland delineation for a 450-acre Project Site for a proposed residential development.
- **Guthrie Development. Tentative Tract 27824. Riverside County.** Conducted a wetland delineation for a 250-acre Project Site for a proposed residential development.

- **Spring Pacific Properties, LLC.** Conducted wetland delineation on the East Highland Ranch Property for a proposed residential development.
- **Environ Wind Development Corporation.** Commercial WECS Permit No. 99 Christensen/Lazar Project. Unincorporated Riverside County. Conducted wetland delineation for a proposed wind energy project near Palm Springs.
- **Hawarden Development Corporation. 70-acre Arlington Heights Property. Riverside County.** Conducted a jurisdictional delineation of the Alessandro Arroyo for a proposed residential development.
- **Blackmon Homes, Inc. Tentative Tract Map 29507. Lake Elsinore, Riverside County, California.** Conducted a jurisdictional delineation for a proposed 90-acre residential development.
- **Van Daele Development. City of Riverside,** Conducted a wetland delineation for the 60-acre project site. Assisted in 404 and 1601 permit process.
- **VTN Development. City of Menifee.** Conducted a wetland delineation for the 80-acre project site. Assisted in 404 and 1601 permit process.
- **Palo Comado Ranch Partnership. City of Agoura Hills.** Conducted a wetland delineation for Tentative Tract Map 52396. Assisted in 404 and 1601 permit process, 2000.
- **Ascension Cemetery Expansion in Lake Forest.** Conducted Wetland Delineation for proposed expansion and assisted in the permit process.
- **Century Crowell Communities. Gavilan Hills, Riverside County.** Conducted a wetland delineation for the 300-acre project site. Assisted in 404 and 1601 permit process.
- **Imperial Highway Expansion Project - City of Yorba Linda.** Conducted a wetland delineation and habitat assessment for the 4 miles expansion project. Assisted in 404 and 1601 permit process.
- **Greenpark Runkle Canyon LLC.** Conducted wetland delineation on a 580-acre site in the City of Simi Valley (Greenpark Ranch). The survey was conducted to reevaluate a delineation completed in 1990. The delineation was mapped with the aid of the GS50 backpack GPS unit and GIS software.
- **Spring Mountain Ranch.** Conducted wetland delineation on a 800-acre site near the City of Riverside. The survey was conducted to evaluate the jurisdictional areas within the project site. The information was used to support the submitted EIR. The delineation was mapped with the aid of GIS software.
- **Level 3.** Conducted wetland determinations for all drainages within the vicinity of a proposed fiber-optic cable right-of-way. The determination was conducted from the City of Tehachapi to Bakersfield along farm roads and railroad right-of-ways. The information was used by the project engineers to determine exact location of the right-of-way.
- **City of Santa Ana.** Conducted a wetland delineation for Bristol Street Bridge Crossing Expansion project. Assisted in 404 and 1601 permit process.
- **City of Santa Ana.** Conducted a wetland delineation for the Memory Lane Bridge Expansion project. Assisted in 404 and 1601 permit process.
- **P&F Investment Company, Limited,** Conducted a jurisdictional delineation for the proposed residential development on the Woodcrest Property. The information was used by the project engineers to determine exact location of the individual residential pads.

Professional Affiliations

- The Wildlife Society

Research and Publications

Masters Thesis, Social Behavior of the Zebra-tailed Lizard, California State University, Fullerton. Was responsible for the creation of an independent thesis study. The study was done on the zebra-tailed lizard, which lives in a desert wash community. This study will help in the conservation of this lizard in the event of massive habitat destruction due to off-road vehicles.



Dale Hameister
Regulatory Specialist

Overview

- 12 Years Experience
- Bachelor's degree, Earth System Science and Policy, 1998 – California State University, Monterey Bay

Dale Hameister has been actively involved in providing biological consulting services for twelve years. His extensive knowledge of California's flora and fauna combines with experience in biological assessments, wetland assessments, and regulatory compliance to facilitate public agency projects involving multiple government agencies: California Department of Fish and Game, United States Fish & Wildlife Service, Army Corp of Engineers, California State Parks, and numerous counties and local agencies. His scope of work includes preparing biological assessment reports, jurisdictional delineations, native landscape plans, erosion control plans, mitigation and restoration plans, rare species recover plans, and performing fieldwork that involves protocol surveys and construction site monitoring.

Dale is thoroughly familiar with GIS, GPS, and aerial photography for use in habitat classification, impact analysis, and natural resource planning.

Related Experience

Biological Assessments and Sensitive Species

Lemoore Walmart EIR, Lemoore, Kings County, CA. Conducted biological survey and authored the Biological Resources section.

Nesting Bird Survey and Burrowing Owl 30 Pre-construction Protocol Survey, City of San Ramon, Contra Costa County, CA. Conducted pre-construction nesting bird survey and burrowing owl clearance survey for the City of San Ramon.

Wellhead Electric Solar Project, near Coalinga, Fresno County, CA. Conducted biological survey and assessment of jurisdictional waters within agricultural area in Fresno County.

King Solar I, Kings County, CA. Conducted biological surveys and mapped potential San Joaquin kit fox burrow sites on 142 acres site in Kings County.

King Solar II, Kings County, CA Conducted biological surveys, burrowing owl surveys, and mapped potential San Joaquin kit fox burrow sites on 3,000 acres site in Kings County.

Sherwood Site Biological Resources Study, McFarland, Kern County, CA. Conducted biological survey for solar project.

Beachwood Biological Studies, Half Moon Bay, San Mateo County, CA. Conducted biological surveys and mapped wetlands on property in Half Moon Bay.

Plunge and Elder Creeks, San Bernardino Flood Control District, Highland, CA. Conducted detailed surveys and mapping of endangered Santa Ana River woolly star (*Eriastrum densifolium sanctorum*). Mapped more than 900 individual plants with GPS.

Focused Sensitive Plant Surveys, Public Safety Enterprise Communication Project, Riverside and San Diego Counties, CA. Surveyed communication tower locations for sensitive plant species on mountain peaks

in the San Jacinto, Santa Rosa, Pallen Mountains, and Palomar Mountain. Also surveyed areas in the desert near the Colorado River.

Coachella Valley MSHCP Consistency Analysis, Palm Springs Unified School District Cabot Yerxa Elementary School, City of Desert Hot Springs, Riverside County, California. Prepared biological habitat assessment and MSHCP consistency analysis for 10 acre school site.

Rock Honda Burrowing Owl Focused Survey Report, City of Fontana, San Bernardino County, California. Conducted protocol surveys for burrowing owl at proposed site for Rock Honda.

Habitat Conservation Plan for the Smith's Blue Butterfly, Sarment Parcel, Carmel Highlands, Monterey County, California. Prepared plan for the designation and maintenance of a preserve for the endangered Smith's Blue Butterfly.

Biological Monitor for the California State Park's Carmel Rivermouth Lagoon Enhancement Project. Monitored construction activities, provided orientation for all Granite Construction Employees on site, and relocated amphibians and reptiles in the construction area.

Avoidance and Mitigation Measures per Salvage, Mitigation and Monitoring Plan for The Marina State Beach Bike Lane Project. Directed and performed legless lizard salvage and relocation, Monterey spineflower seed collection and relocation, and buckwheat removal and mitigation.

Wilderness Gardens Preserve, San Diego County, CA. Conducted detailed biological inventory with a team of biologists. Mr. Hameister was the lead biologist for the botanical portion of the project. The project area contained several habitat types including wetlands, chaparral, oak woodland, and riparian.

Mount Olympus Preserve—, San Diego County, CA. Conducted detailed biological inventory with a team of biologists. Mr. Hameister was the lead biologist for the botanical portion of the project. The project area contained several habitat types including chaparral, native grasslands, and oak woodland.

Jurisdictional Delineations

Highway 1 expansion and Bike Lane Project, City of Half Moon Bay, San Mateo County, CA. Provided jurisdictional delineation along 4 mile stretch of Highway 1, mapping drainages, wetlands, and sensitive habitat.

Beachwood Jurisdictional Delineation, Half Moon Bay, San Mateo County, CA. Assisted jurisdictional delineation and mapping of wetlands on property in Half Moon Bay.

Mateca Trails, San Joaquin County, Mateca, CA. Provided jurisdictional delineation for development project including mapping drainages, wetlands, and sensitive habitat. A biological survey and assessment was also conducted.

Turkey Creek Estates, Lincoln, CA. Provided jurisdictional delineation for development project including mapping drainages, wetlands, and sensitive habitat. A biological survey and assessment was also conducted.

Cable Creek Bottom Control Maintenance Project, San Bernardino, CA. Provided jurisdictional delineation for maintenance permitting for flood control channel.

Vegetation, Restoration, and Erosion Control

Tally Ho Inn Replacement and Remodel Landscape Plan: Prepared for John Thodos AIA Architect, Carmel-by-the-Sea, CA. Prepared landscape planting plan for green roof, technical illustrations, and photographic exhibits

Final Restoration and Mitigation Plan for BT Development Company L.L.C. Holiday Inn Express Project: For BT Development Company in Marina, CA. Obtained 2081 permit for incidental take of endangered sand gilia and Monterey spineflower. Authored restoration and mitigation plan including the salvage and relocation of sand and entire seed bank to the restoration area, establishment of 3 acres of dune scrub habitat, salvage and relocation of legless lizards, and monitoring. Directed and performed legless lizard salvage and relocation.

Vegetation Management Plan – Phase I for San Mateo County Department of Parks and Recreation.

Performed GPS mapping and created GIS database of plant communities and rare, threatened and endangered species for Wunderlich Park. Performed biological survey and ground truthing of GIS data.

Bolsa Point Ranch Biological Assessment and Grazing Plan for Peninsula Open Space Trust, San Mateo County, CA. Performed biological surveys and authored habitat descriptions.

Driscoll Ranch Natural Resource Management Plan for Peninsula Open Space Trust, San Mateo County, CA. Performed biological surveys.

Landslide Restoration and Erosion Control Plan: Prepared for Santa Clara Valley Water District tunnel project near Casa de Fruta, CA. Authored restoration and erosion control plan including planting specification, protection measures, monitoring and maintenance specifications.

Energy Resources

Los Angeles Department of Water and Power (LADWP) Pine Canyon Wind Farm Development in the Tehachapi Mountains, Kern County, California. Conducted a year-long avian study to document all avian species, specifically raptors, which occur within a 7 mile area of the Tehachapi Mountains for a proposed wind farm. The surveys were conducted on foot from eight different vantage points throughout the canyon with the use of a helicopter for transportation between each vantage point. The studies utilized binoculars, spotting scopes, and audible detection to determine the different species in the area. Bat sonar recording, protocol raptor surveys and vegetation mapping were also conducted along with the general avian surveys. Mr. Hameister was the lead biologist for the botanical portion of the project. The study will be used to determine if the construction of a new wind farm in the Tehachapi Mountain range will adversely affect resident, migratory and sensitive avian species.

LADWP - Powerline Road, San Bernardino County, CA. Conducted focused surveys for desert tortoise (*Gopherus agassizii*) on 90 miles of Power Line Road in between Baker and Victorville in San Bernardino County. Also mapped vegetation within the vicinity of the survey route and acted as the lead botanist for the project.

Tracer ES&T. Provided biological consulting for development projects within oilfields on Orcutt Hill in Santa Maria, CA.

Utilities and Communication

Results of Biological Survey of Cingular Cellular Site SJ-909-01 International Turbine Research. Prepared biological assessment report to determine impacts of a proposed cellular tower near Hollister, CA.

Residential Subdivisions

Initial Biological Assessment for Rancho Cañada Village, Carmel by-the-Sea, CA. Prepared detailed biological surveys and impact assessment for the proposed Rancho Cañada Village subdivision project in Carmel Valley.

Biological Assessment for the Proposed Wang Subdivision for Private Owner, Monterey, CA. Performed biological surveys, habitat classification, impact analysis, and mitigation recommendations for 23 lot subdivision on 120 acres. Included specific surveys for rare and endangered species.

Planting Specifications for Vegetation of Terraced Wire Walls at the McDowell Residence, Carmel Highlands, CA. Prepared planting specification for the vegetation of terraced wire walls for slope stabilization and screening purposes.

EIR Herritage Oaks Subdivision, Aromas, Monterey County, CA. Conducted biological surveys for subdivision project in Aromas including mapping rare plants including Monterey spineflower and Pajaro manzanita.



Diana Lloyd

Regulatory Specialist/Biologist**Overview**

- 5 Years Experience
- Master's degree, Biology – California State University, Fullerton
- Bachelor's degree, Marine Biology – California State University, Long Beach

Diana Lloyd offers regulatory permitting and mitigation implementation experience for projects conducted throughout California. Her expertise includes project management and preparation of environmental documents including state and federal regulatory agency permits, biological technical reports, jurisdictional delineation reports, and habitat mitigation and monitoring plans. In addition, she has conducted numerous sensitive species surveys for birds and reptiles, assisted with focused plant surveys, conducted vegetation mapping, mitigation monitoring and jurisdictional delineations in the field. She has successfully planned and managed mitigation restoration projects for coastal sage scrub, riparian habitat, and native wetland habitat. She has been trained in Wetland Delineations in the Arid West and Vernal Pool Restoration by the Wetland Training Institute and in Riparian Proper Functioning Condition Assessment by the Nevada Creeks and Communities Cadre. She is also an International Society of Arboriculture certified arborist (#WE-8790A) and has conducted tree surveys including health and risk assessments. Diana is also an active member of the International Society of Arboriculture (ISA) - Western Chapter, The Wildlife Society, and the Western Working Bat Group.

Related Experience**Regulatory Compliance**

Trabuco Road Streetscape Project. Regulatory compliance consultant to procure regulatory permits for impacts to jurisdictional features due to street and stormdrain improvements on Trabuco Road in Lake Forest, Orange County. Duties include preparation of applications for a United States Army Corps of Engineers 404 Nationwide Permit, California Department of Fish and Game Section 1602 agreement, and Regional Water Quality Control Board 401 Water Quality Certification, review of conditions on each agency authorization, and coordination of the required mitigation.

Canyon Heights. Managed regulatory compliance pertaining to an open space area required as mitigation by the U.S. Fish and Wildlife Service (USFWS). Engaged in negotiations with the USFWS to create a feasible perpetual management plan based on site conditions. Successfully developed and implemented measures to reduce trespassing, vandalism and dumping at the site including preparation of a No-Trespassing letter for distribution to all residents within one mile of the mitigation area, presentation of information regarding the mitigation area and regulatory requirements at a Homeowners Association Meeting, and established contacts with local enforcement agencies to oversee the mitigation area and prevent trespassing and dumping on the site.

Highway 111 Bridge Widening. Regulatory compliance consultant to procure regulatory permits for impacts to jurisdictional features due to bridge widening and installation of a storm drain outlet in Indio, Riverside County. Duties included preparation of applications for a United States Army Corps of Engineers 404 Nationwide Permit, California Department of Fish and Game Section 1602 agreement, and Regional Water Quality Control Board 401 Water Quality Certification, review of conditions on each agency authorization, and coordination with the issuing agencies.

Guava Street Improvements. Regulatory compliance consultant to procure regulatory permits for impacts to jurisdictional features due to raising and widening Guava Street in Murrieta, Riverside County. Duties included preparation of applications for a United States Army Corps of Engineers 404 Nationwide Permit, California Department of Fish and Game Section 1602 agreement, and Regional Water Quality Control Board 401 Water Quality Certification, review of conditions on each agency authorization, coordination of the required plans, preparation of the Habitat Mitigation and Monitoring Plan, and coordination with the issuing agencies regarding various revisions to the plan. Prepared a Multiple Species Habitat Conservation Plan Assessment and a Determination of Biologically Equivalent or Superior Alternatives Report.

Heritage Oaks Estates. Regulatory compliance consultant to procure regulatory permits for impacts to jurisdictional features due to a residential development in Calimesa, Riverside County. Duties included preparation of applications for a United States Army Corps of Engineers 404 Nationwide Permit, California Department of Fish and Game Section 1602 agreement, and Regional Water Quality Control Board 401 Water Quality Certification, coordination of mitigation strategy with the resource agencies, review of conditions on each agency authorization, due date phase and work effort required, preparation of the Habitat Mitigation and Monitoring Plan, assistance with preparation of the Conservation Easement and coordination with the agencies involved.

Cantalina Residential Development. Regulatory compliance consultant to procure regulatory permits for impacts to jurisdictional features due to a residential development in Menifee, Riverside County. Duties included preparation of applications for a United States Army Corps of Engineers 404 Nationwide Permit, California Department of Fish and Game Section 1602 agreement, and Regional Water Quality Control Board 401 Water Quality Certification.

Mission Viejo Country Club Multifamily Residential Development. Regulatory compliance consultant to procure regulatory permits for impacts to jurisdictional features due to a residential development in Mission Viejo, Orange County. Work effort included identification of an appropriate permitting strategy, preparation of a United States Army Corps of Engineers 404 Nationwide Permit, California Department of Fish and Game Section 1602 agreement, and Regional Water Quality Control Board 401 Water Quality Certification, and coordination with the issuing agencies.

Pacific Gateway Business Center Channel Re-contouring. Regulatory compliance consultant to procure regulatory permits for temporary impacts to a jurisdictional channel due to re-grading required to re-establish flows in Seal Beach, Orange County. Work effort included identification of an appropriate re-grading strategy, preparation of a Coastal Development Permit Addendum, and coordination with the California Coastal Commission.

Jurisdictional Waters and Wetlands Delineations

Legacy Project in Orange. Conducted a delineation of jurisdictional waters and wetlands in Santiago Creek in Orange, Orange County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987), the Arid West Supplement (2006), and the Ordinary High Water Mark in the Arid West Delineation Manual (2008), preparation of a jurisdictional delineation report and impact analysis that will be included in the regulatory agency applications for authorization. In addition, duties included preparation of a California Rapid Assessment Method survey and report detailing the existing condition, functions, and values of Santiago Creek for comparison with future, restored conditions, functions and values.

Trabuco Road Streetscape Project. Conducted a delineation of jurisdictional waters and wetlands in an unnamed drainage tributary to Serrano Creek in Lake Forest, Riverside County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987), the Arid West Supplement (2006), and the Ordinary High Water Mark in the Arid West Delineation Manual (2008),

preparation of a jurisdictional delineation report and impact analysis that will be included in the regulatory agency applications for authorization.

Enchanted Resorts/Diamond Hill Estates. Regulatory consultant to determine any constraints due to potentially jurisdictional features that intersected the proposed, off-site utility improvements in the City of Calistoga, Napa County. Duties included a field jurisdictional assessment based on the methods in the Wetland Delineation Manual (1987), the Arid West Supplement (2006), and the Ordinary High Water Mark in the Arid West Delineation Manual (2008), and preparation of a jurisdictional assessment report to be used in finalizing the plans.

Viewpoint Elementary School. Conducted a delineation of jurisdictional waters and wetlands in an un-named drainage tributary to Arroyo Calabasas in Calabasas, Los Angeles County, pursuant to Section 404 of the Clean Water Act. Duties included conducting a field delineation using the Wetland Delineation Manual (1987), the Arid West Supplement (2006), and the Field Guide to the Identification of the Ordinary High Water Mark in the Arid West (2008), and preparation of a jurisdictional delineation report that would be included in the regulatory agency applications for authorization.

Highway 111 Bridge Widening. Conducted a delineation of jurisdictional waters and wetlands in a segment of the Clearwater Channel and the Whitewater River in Indio, Riverside County, pursuant to Section 404 of the Clean Water Act. Duties included review of a previously prepared delineation report, field verification of the delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of supplemental jurisdictional delineation report to accompany the regulatory agency applications for authorization.

Guava Street Improvement Project. Conducted a delineation of jurisdictional waters and wetlands in an un-named drainage tributary to Murrieta Creek in Murrieta, Riverside County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a jurisdictional delineation report and impact analysis that would be included in the regulatory agency applications for authorization.

91/71 Interchange. Conducted a delineation of jurisdictional waters and wetlands in Fresno Canyon Wash, Wardlow Wash, and several un-named drainages tributary to the Santa Ana River in Corona, Riverside County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a jurisdictional delineation report and impact analysis that would be included in the regulatory agency applications for authorization.

Larkspur Development. Conducted a delineation of jurisdictional waters and wetlands in two un-named drainages associated with mitigation for the Larkspur Development in Riverside, Riverside County, pursuant to the Section 404 Permit issued by the United States Army Corps of Engineers. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a post-mitigation jurisdictional delineation memorandum.

Mission Viejo Country Club Multifamily Residential Development. Conducted a delineation of jurisdictional waters and wetlands in a segment of Oso Creek in Mission Viejo, Orange County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a jurisdictional delineation report and impact analysis that would be included in the regulatory agency applications for authorization.

Fresno, Master Planned Community. Conducted a delineation of jurisdictional waters and wetlands in a 460-acre site in Clovis, Fresno County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a jurisdictional delineation constraints analysis for planning purposes.

Sacramento, Master Planned Community. Conducted a delineation of jurisdictional waters and wetlands in a 230-acre site in Williams, Colusa County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a jurisdictional constraints analysis for planning purposes.

Chumash Reservation Sewer Line Repair. Conducted a delineation of jurisdictional waters and wetlands in a segment of Sanja Cota in Santa Ynez, Santa Barbara County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006).

Costa Mesa, Master Planned Community. Conducted a delineation of jurisdictional waters and wetlands in an approximately 400-acre site in Costa Mesa, Orange County, pursuant to Section 404 of the Clean Water Act. Duties included a field delineation using the Wetland Delineation Manual (1987) and the Arid West Supplement (2006), and preparation of a jurisdictional delineation report and constraints analysis for planning purposes.

Mitigation and Restoration Plans and Projects

Newport Sewer Trunk. Regulatory consultant and restoration monitor during implementation of mitigation for impacts to jurisdictional areas in Newport, California. Work effort included explaining the mitigation responsibilities required in the Coastal Development Permit issued by the California Coastal Commission, attending a meeting between the contractor and the Orange County Water District to clarify responsibilities between the two parties, prepared a habitat mitigation and monitoring plan, and monitored implementation of the mitigation.

Mosaic Development. Regulatory consultant and restoration monitor starting in the second year of mitigation implementation for compliance with the regulatory authorizations for impacts to jurisdictional areas in Menifee, Riverside County. Duties include managing the maintenance crews, conducting qualitative and quantitative monitoring and reporting, responding to irrigation issues, and coordinating with the subdivision land owners regarding the transfer of responsibilities for the mitigation site.

Hidden Meadows Development. Regulatory consultant and restoration monitor starting in the third year of mitigation implementation for compliance with the regulatory authorizations for impacts to jurisdictional areas in Menifee, Riverside County. Duties include managing the maintenance crews, conducting qualitative and quantitative monitoring and reporting, and responding to irrigation issues.

Sierra Business Center, LLC. Regulatory compliance and restoration consultant to implement mitigation required by the regulatory permits for impacts to jurisdictional areas in Fontana, San Bernardino County. Work effort includes managing the maintenance and monitoring program starting in the third year of implementation, and responding to issues regarding vegetative cover, irrigation, and processing of the conservation easement.

La Laguna/Shorepoint Estates. Regulatory compliance and restoration consultant to implement mitigation required by the regulatory permits for impacts to jurisdictional areas in Lake Elsinore, Riverside County. Work effort includes managing the maintenance and monitoring program starting in the second year of implementation, and responding to issues regarding vegetative cover, irrigation, and land ownership of the conservation easement.

Canyon Heights. Regulatory compliance and restoration consultant to implement mitigation required by the regulatory permits for impacts to jurisdictional areas in Canyon Lake, Riverside County. Work effort includes managing the maintenance and monitoring program starting in the second year of implementation, and

responding to issues the conservation easement preparation, vegetative cover, and negotiating with the U.S. Fish and Wildlife Service to create a feasible perpetual management plan based on site conditions. Coordinated with the Center for Natural Lands Management to prepare a Conservation Easement and hand over maintenance responsibilities.

Hellman Properties, LLC. Consultant for CEQA mitigation requirements for oil mining and storage facility in Seal Beach, Orange County. Duties included a site assessment for visual impacts and review of the lighting plan to assess lighting impacts on adjacent open space areas, and preparation of a report documenting observations and recommending mitigation strategies for submittal to the California Coastal Commission

Bayview Landing Senior Apartments. Project biologist for mitigation monitoring. Duties included quarterly qualitative and annual quantitative monitoring of wetland and coastal sage scrub habitat creation, analysis of transect data, preparation of annual reports and coordination with the California Coastal Commission.

Pacific Gateway Business Center Mitigation Areas and Channel Re-contouring. Project biologist for mitigation monitoring. Duties included monitoring pursuant to the Habitat Mitigation and Monitoring Plan created for the mitigation areas established during construction of the Business Center, and preparation of a new Habitat Mitigation and Monitoring Plan for the channel re-contouring project. Monitoring duties included quarterly qualitative and annual quantitative monitoring of wetland habitat creation, analysis of transect data, preparation of annual reports and coordination with the California Coastal Commission and the California Department of Fish and Game.

Master Planned Community in Costa Mesa. Project biologist and regulatory compliance assistant to prepare a Habitat Mitigation and Monitoring Plan for an approximately 400-acre site in the City of Costa Mesa. Orange County.

Resource Management Plan for Mixed Use Development in Irvine. Project Biologist. Duties included assisting in preparing a Habitat Mitigation and Monitoring Plan for a 300-acre Mixed Use Development in the City of Irvine.

Resource Management Plan for Wilderness Park in Mission Viejo. Project biologist. Duties included assisting in the preparation of a Habitat Mitigation and Monitoring Plan for the 4000-acre Aliso and Wood Canyons Wilderness Park in Orange County.

Biological Resources Assessments and Technical Studies

Diana has conducted biological assessments and constraints analyses for various projects in the counties of Riverside, Fresno, and Orange. Duties include conducting an overall habitat assessment in the field to determine whether sensitive species may be present on the site preparation of a report with the findings and recommendations for focused surveys or potential avoidance and mitigation measures that may be necessary to comply with federal, state, and local laws that protect biological resources on the site. In addition, Diana has prepared several Multiple Species Habitat Conservation Plan (MSHCP) consistency analyses and Determination of Biologically Equivalent or Superior Preservation analyses to comply with the Western Riverside MSHCP regulations.

Gathering Place, Groveland. Conducted an arborist survey and prepared the biological resources section of the CEQA document for the Gathering Place Project in the Town of Groveland, Tuolumne County. Duties included a detailed arborist survey, numbering each tree with a metal tag, identifying species, measuring height and diameter at breast height, mapping the location of each tree using a Global Positioning System, and preparing an arborist report. In addition, a brief biological resources assessment was conducted in the field to document any suitable habitat for special status species and to map the vegetation communities on the site. The biological resources assessment results were summarized in the biological resources section of the initial study.

Enchanted Resorts, Calistoga. Conducted a biological resources assessment and a jurisdictional waters and wetlands assessment for the Enchanted Resorts project in Calistoga, Napa County. Duties included conducting a biological resources assessment on the approximately 80-acre site to document any suitable habitat for special status species. In addition, a jurisdictional assessment was conducted in areas where two off-site utility alignment alternatives crossed jurisdictional waters. A report was prepared documenting all observations on the site and the client was advised regarding the potential need for agency authorizations for the utility alignments.

Pine Canyon Wind Farm. Assisted with weekly avian surveys conducted via helicopter in the Tehachapi Mountains for the Los Angeles Department of Water and Power to determine bird use in the area proposed for the Pine Canyon Wind farm. Installed bat detection equipment to record bat calls for analysis in the office. Analyzed bat calls and managed data.

San Diego County Parks. Assisted with biodiversity baseline surveys to document all the flora and fauna on two potential county parks, each of which were over 700 acres. Wildlife surveys included installing pitfall traps for reptiles and insects, installing funnel traps for snakes, setting up remotely operated cameras to detect nocturnal wildlife, installing scent stations to track mammals, conducting avian and botanical surveys, and installing bat detection equipment that recorded bat calls for analysis in the office. Duties also included assistance with preparation of the two biodiversity reports, including compilation of flora and fauna lists, and data management. Assisted in preparing a Vegetation Management Report for each county park.

Guava Street Improvement Project. Conducted a biological assessment and prepared a report identifying biological constraints for regulatory purposes. Identified burrowing owl habitat and the need for focused burrowing owl surveys.

Silverlakes Recreation Park in Norco. Prepared a Multiple Species Conservation Habitat Plan consistency analysis and Determination of Biologically Equivalent or Superior Preservation analysis to comply with the county of Riverside conservation regulations. Conducted focused surveys for Least Bell's vireo and pre-construction burrowing owl surveys.

Mission Viejo Country Club Multifamily Residential Project. Conducted a biological assessment and prepared a report identifying biological constraints for planning purposes. Mapped the vegetation and identified the need for least bell's vireo and southwestern pond turtle focused surveys.

Marina Park, Newport Beach. Conducted a biological assessment and prepared a report identifying biological constraints for an initial study. Mapped the vegetation and prepared a report for use in the initial study and environmental impact report.

Senior Housing Project in East Orange. Conducted a biological assessment and prepared a report identifying biological constraints for planning purposes. Mapped the vegetation and identified the need for focused coastal California gnatcatchers.

Private Development in Highland. Conducted a biological assessment and prepared a report identifying biological constraints for regulatory purposes. Identified burrowing owl habitat and the need for focused burrowing owl surveys.

Fresno, Master Planned Community. Conducted a biological assessment and prepared a memorandum identifying biological constraints for regulatory purposes.

Sensitive Species Surveys

Diana Lloyd has conducted numerous habitat assessments and focused surveys for burrowing owl (*Athene cunicularia*) on project sites ranging from 10 to 350 acres. Diana has also assisted with or conducted surveys in the counties of Orange, Riverside, Los Angeles for the following sensitive species: Brand's star phacelia (*Phacelia stellaris*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), southwestern pond turtle (*Clemmys*

marmorata pallida), southwestern willow flycatcher (*Empidonax traillii extimus*), Delhi sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*), desert tortoise (*Gopherus agassizii*), silvery legless lizard (*Anniella pulchra pulchra*). Diana has also mapped vegetation on sites ranging from 10 to 400 acres in coastal, inland, and wetland habitats.

Santa Ana River Trail. Conducted focused surveys for Least Bell's vireo along proposed trail segment within Prado Dam and surrounding areas in Riverside County.

Silverlakes Recreation Park in Norco. Conducted focused surveys for Least Bell's vireo, conducted surveys for nesting raptors, and conducted pre-construction burrowing owl surveys.

Mission Viejo Country Club Multifamily Residential Project. Conducted surveys for nesting birds, least bell's vireo, and southwestern pond turtle, and assisted with focused surveys for southwestern willow flycatcher.

Boulder Heights Project, Unincorporated Riverside County. Mapped vegetation on the approximately 10-acre site and conducted surveys for nesting birds and least bell's vireo. Also conducted surveys for sensitive plants focusing on smooth tarplant (*Centromadia pungens* ssp. *laevis*).

Canyon Heights in Quail Valley. Mapped vegetation on the approximately 80-acre site and conducted surveys for nesting birds and least bell's vireo. Also conducted surveys for sensitive plants focusing on Munz's onion (*Allium munzii*), dwarf burr ambrosia (*Ambrosia pumila*), San Jacinto Valley crownscale, (*Atriplex coronata* var. *notatior*), thread-leaved brodiaea (*Brodiaea filifolia*), slender-horned spineflower (*Dodecahema leptoceras*), Moran's navarretia (*Navarretia fossalis*), California Orcutt grass (*Orcuttia californica*).

Guava Street Improvement Project. Conducted a habitat assessment for burrowing owl and focused burrowing owl surveys.

Southern California Logistics Airport in Victorville. Conducted focused surveys for desert tortoise and burrowing owl on a 350-acre property.

Private Development in Highland. Conducted a habitat assessment for Delhi sands fly and burrowing owl and conducted focused burrowing owl surveys.

Master Planned Community in Costa Mesa. Assisted in mapping the vegetation and conducted nesting bird surveys and least bell's vireo surveys on an approximately 400-acre site.

Master Planned Community in Victorville. Assisted with a habitat assessment and focused surveys for burrowing owl on an approximately 200-acre site.

Private Development in Verdugo Hills. Assisted with focused surveys for silvery legless lizard on suitable habitat within the approximately 200-acre site.

Arborist Surveys

Legacy Project in Orange. Certified Arborist. Duties included a detailed arborist survey, a risk assessment, numbering each tree with a metal tag, identifying species, mapping the location of each tree using a Global Positioning System, analyzing potential impacts to existing trees due to the new development, preparing an arborist report, including recommendations to protect trees in place, to be used in the Tree Removal Permit application submitted to the City of Orange.

Gathering Place, Groveland. Certified Arborist. Conducted an arborist survey and prepared the biological resources section of the CEQA document for the Gathering Place Project in the Town of Groveland, Tuolumne County. Conducted a detailed arborist survey, numbered each tree with a metal tag, identified each tree to species, measured height and diameter, mapped the location of each tree using a Global Positioning System, and prepared an arborist survey report. Oak trees at the site were of particular concern, due to the local and state ordinances for protection of oak trees.

Dana Point Harbor. Certified Arborist. Duties included collecting frond, root, and soil samples from four Canary Island palm trees that appeared to be diseased or declining, submitting the samples to a plant and soil laboratory and preparing a detailed arborist report to be used in maintenance and management of those trees.

Burris Basin in Anaheim. Certified Arborist. Duties included a detailed arborist survey, numbering each tree with a metal tag, identifying species mapping the location of each tree using a Global Positioning System, and preparing an arborist report.

Urban Environs Project in Calimesa. Certified Arborist. Duties included a detailed arborist survey, a risk assessment, numbering each tree with a metal tag, identifying species, mapping the location of each tree using a Global Positioning System, and preparing an arborist report. Oak trees at the site were of particular concern, due to the local and state ordinances for protection of oak trees.

Dana Point Harbor Renovation. Arborist Assistant. Duties included a detailed arborist survey, a risk assessment, numbering each tree with a metal tag, identifying species and mapping the location of each tree. Assisted in preparing an arborist report.

Mission Viejo Country Club Multifamily Residential Project. Project Biologist. Duties included using a Global Positioning System with mapping software to conduct a tree location survey for native trees within existing riparian habitat.

Biological Monitoring

Burris Basin Recreational Area Basin – Clearing and Grading, Anaheim. Biological monitor for the City of Anaheim. Implemented the mitigation measures for biological resources specified in the Initial Study pursuant to the California Environmental Quality Act for development of a recreational area in Anaheim, Orange County. Duties included conducting a pre-construction nesting bird survey for migratory birds with a focus on American prairie falcon (*Falco mexicanus*), least tern (*Sternula antillarum*), brown pelican (*Pelecanus occidentalis*), and western snowy plover (*Charadrius alexandrinus nivosus*). Flagged all nest sites, prepared a pre-construction nesting bird survey, prepared and delivered an educational presentation and handout for construction personnel regarding avoidance of nesting and sensitive birds. Coordinated with all parties to ensure they adhered to the mitigation requirements. Other duties included overseeing installation of silt-fence to protect native plantings in adjacent mitigation area, overseeing clearing and grading activities to protect biological resources, preparation of a pre-construction nesting bird report, and coordination with Orange County Water District biologists.

Hidden Valley Wetlands – Dike Repair, Riverside. Biological monitor for City of Riverside Regional Water Quality Control Plant. Monitoring duties included conducting a pre-construction nesting bird survey, mapping nesting bird locations, monitoring nests and fish nets during the dike repair project within the Santa Ana River to protect sensitive biological resources including the least bell's vireo (*Vireo bellii pusillus*) and Santa Ana sucker (*Catostomus santaanae*).

Rancho Mission Viejo – Fuel Modification, Mission Viejo. Biological monitor for Rancho Mission Viejo. Monitoring duties included overseeing fuel modification activities within open space areas adjacent to residential properties to protect biological resources.

Private Development – Fuel Modification. Biological monitor for a private development in the City of Laguna Beach. Monitoring duties included overseeing fuel modification activities within open space areas adjacent to residential properties to protect biological resources.

Private Development – Tree Clearing. Biological monitor for a private development in the City of Tujunga. Monitoring duties included overseeing clearing of certain numbered trees to protect biological resources, and reporting of activities in field memos for the California Department of Fish and Game.

Private Development – Clearing and Grading. Biological monitor for a private development in the City of Laguna Beach. Monitoring duties included overseeing clearing and grading activities to protect biological resources, and reporting of activities in daily field memos for the California Department of Fish and Game and the California Coastal Commission.

Research

Master's Thesis. Studied the effects of location, dissolved elements, and temperature on the metal chemistry of statoliths in *Kelletia kelletii* larvae. Duties included field collection of specimens, laboratory preparation of the statoliths, element analysis. Research resulted in a research publication titled, "Egg source, temperature and culture seawater affect elemental signatures in *Kelletia kelletii* larval statoliths" published in the Marine Ecology Progress Series Vol. 353: 115–130 on January 17, 2008.

Certificates

- Certified Arborist – International Society of Arboriculture
- Arid West Supplement– Wetland Training Institute
- Riparian Proper Functioning Condition– California and Nevada Creeks and Communities Cadres
- Vernal Pool Plant Identification and Restoration – Wetland Training Institute

Professional Affiliations

- Wetland Training Institute
- International Society of Arborists
- Western Bat Working Group
- Western Society of Naturalists
- The Wildlife Society



Tommy K. Molioo

Staff Ecologist

Overview

- 3 ½ Years Experience
- Bachelor's degree, Biology – Minot State University, North Dakota

Tommy Molioo has conducted a range of technical field studies and prepared various biological resources technical reports for planning and natural resources management projects requiring CEQA and NEPA compliance. His experience includes conducting various technical surveys and studies including, habitat assessments, biological resources impact analyses, year-long biodiversity studies, avian and nesting bird surveys, habitat mitigation monitoring, and local and regional habitat conservation plan (HCP) compliance and strategic planning. Tommy has prepared reports for projects within the Orange County Natural Community Conservation Plan (NCCP), the County of San Diego Multiple Species Conservation Program (MSCP) and Multiple Habitat Conservation Plan (MHCP), including associated county and city Subarea Plans, as well as the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which involved producing written habitat assessments and determining project consistency with conservation plan analyses.

Working independently or as a team member, Tommy has conducted sensitive plant and wildlife species protocol surveys for Marvin's onion, many-stemmed dudleya, San Fernando Valley spineflower, Nevin's barberry, Davidson's bush mallow, slender mariposa lily, Coachella Valley milk-vetch, Quino checkerspot butterfly, coastal California gnatcatcher, least Bell's vireo, burrowing owl, desert tortoise, Arroyo toad, flat-tailed horned lizard, Los Angeles pocket mouse, and San Bernardino kangaroo rat. Tommy has also assisted with conducting tree surveys and formal wetland delineations for projects requiring wetlands permitting under US Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish & Game (CDFG) jurisdiction. He has prepared and implemented Habitat Mitigation and Monitoring Plans (HMMs), including site preparation, species selection, planting, and ongoing maintenance and monitoring surveys, for restoration projects throughout Southern California. These restoration projects also include resource agency coordination and preparation of annual monitoring reports. Tommy has also conducted reconnaissance-level field surveys for telecommunications projects throughout Southern and Central California, which involve habitat mapping, sensitive species identification, mitigation recommendation and preparation of reports applicable to local, state and federal jurisdictions and agencies.

Related Experience

Biological and Cultural Resources Monitoring

LADWP Pine Canyon Second Barrel Maintenance Monitoring. Conducted a pre-construction clearance survey, worker training program, and construction monitoring during road maintenance of a small segment of the existing Second Aqueduct access north of California City, to protect Desert tortoise (*Gopherus agassizii*), Mohave ground squirrel (*Xerospermophilus mohavensis*), Le Conte's thrasher (*Toxostoma lecontei*), and Charlotte's phacelia (*Phacelia nashiana*).

Desert Hot Springs Wind Fence Installation Monitoring. Conducted on-site monitoring of the federally endangered Coachella Valley milk vetch during installation of a wind fence adjacent to Interstate 10. The monitoring effort included identifying all specimens of Coachella Valley milk vetch on-site and creating a buffer around each plant to ensure direct take of this species did not occur during project activities.

Los Angeles Department of Water and Power, Construction Monitoring for Silverlakes Reservoir. Conducted on-site construction monitoring of pit drilling at 3 locations within the Silverlakes Reservoir facility. The

monitoring effort included identifying all nesting birds within the project site and determining the extent of impacts that may occur to actively nesting birds. Monitored the effects of drilling on a active rookery of nesting great blue herons.

Disneyland Resort Parking Expansion Study Construction Monitoring. Conducted on-site construction monitoring of excavation and earth-moving activities for the construction of a parking lot structure for the Disneyland Resort. The monitoring effort focused on archeological/cultural resources that may be uncovered during excavating and earth-moving activities.

Los Angeles Unified School District, Construction of South Region High School #12. Conducted on-site construction monitoring of excavation and grading activities for the school site. The monitoring effort focused on archeological/cultural resources that may be uncovered during excavating and earth-moving activities.

Biological Resources Assessments and Studies

SR-91 and SR-71 Interchange Improvement Project, City of Corona. Conducted a general habitat assessment and MSHCP Consistency Analysis for the 35-acre project site and surrounding 652-acre study area. Surveys focused on assessing suitable conditions for burrowing owl, narrow endemic plant species, riparian/riverine areas, as well as sensitive species not covered under the MSHCP. Assisted in conducting a jurisdictional delineation for areas potentially under the jurisdiction of the USACE, RWQCB, and CDFG. Prepared a written Habitat Assessment and MSHCP Consistency report, and Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis. Assisted in preparation of a Natural Environment Study (NES) for the California Department of Transportation (CalTrans) and the Riverside County Transportation Commission (RCTC).

San Clemente Target, City of San Clemente. Conducted a reconnaissance-level field survey to assess the existing conditions on site and identify sensitive biological resources within the 15-acre project site. The survey focused on assessing suitable habitat for sensitive plant species including thread-leaved brodiaea and sensitive wildlife species including burrowing owl and coastal California gnatcatcher. The findings of the survey were prepared into a biological resources assessment report, which included correspondence with City personnel to address impacts and mitigation.

Mt. Olympus Preserve, San Diego County Conducted a complete flora and fauna inventory of species within the 707-acre Mt. Olympus Preserve, as part of a biodiversity study for the County of San Diego. Inventory techniques included small mammal trapping, pit-fall trapping, avian spot counts, motion-activated photography, scent station detection and acoustic monitoring for bats. The surveys were conducted between the late spring to early fall to observe the migration and blooming periods of various species in the region. The findings of the biodiversity study were prepared into a baseline biodiversity report, to be included as part of the finalized North County MSCP. Tommy also assisted in preparation of a Public Access Plan for the Preserve.

Wilderness Gardens Preserve, San Diego County Conducted a complete flora and fauna inventory of species within the Wilderness Gardens Preserve as part of a biodiversity study for the County of San Diego. Inventory techniques included small mammal trapping, pit-fall trapping, avian spot counts, motion-activated photography, scent station detection and acoustic monitoring for bats. The surveys were conducted between the late spring to early fall to observe the migration and blooming periods of different species in the region. The findings of the biodiversity study were prepared into a baseline biodiversity report, to be included as part of the finalized North County MSCP.

Los Angeles Department of Water and Power (LADWP) Pine Canyon Wind Farm Development in the Tehachapi Mountains, Kern County, California. Conducted a year-long avian study to document all avian species, specifically raptors, which occur within a 7 mile area of the Tehachapi Mountains for a proposed wind farm. The surveys were conducted on foot from eight different vantage points throughout the canyon with the use of a helicopter for transportation between each vantage point. The studies utilized binoculars, spotting

scopes, and audible detection to determine the different species in the area. Bat sonar recording, protocol raptor surveys and vegetation mapping were also conducted along with the general avian surveys. The study will be used to determine if the construction of a new wind farm in the Tehachapi Mountain range will adversely affect resident, migratory and sensitive avian species.

Tonner Canyon, City of Industry. Assisted as staff ecologist in collecting data for a Wildlife Corridor Study through the Tonner Canyon corridor. Data collection methods included avian spot counts, scent station detection, and motion-capture cameras. Avian spot counts recorded species flying over and under the State Route 57 overpass located over the canyon. The studies were conducted for a one-year period for 5 consecutive days a month. The collected data was incorporated into a Wildlife Corridor Study Report.

Tentative Tract 33642, City of Moreno Valley. Conducted a Riverside MSHCP Consistency Analysis for a 17-acre residential development property in Moreno Valley, CA. Assessed the site for burrowing owl, and riverine/riparian areas as described by the MSHCP, and prepared a written Habitat Assessment and MSHCP Consistency report, and Burrowing Owl Focused Survey report.

Sensitive Species Surveys

Pick-A-Part Recycling Center, Unincorporated Riverside County. Conducted a focused protocol burrowing owl survey for the 150-acre in unincorporated Riverside County as part of a MSHCP consistency analysis. The survey was conducted in accordance with the Burrowing Owl Consortium, CDFG, and MSHCP focused survey guidelines for burrowing owl. The burrowing owl surveys were conducted concurrently with a general habitat assessment, jurisdictional delineation, focused plant survey, and Los Angeles pocket mouse trapping. The results of the focused burrowing owl survey was prepared into a written report by Tommy Molioo and included as an appendix to the MSHCP consistency analysis report.

Burrowing Owl Focused Surveys, Southern California. Conducted and assisted in conducting numerous focused surveys, following CDFG and MSHCP protocol for burrowing owls, during numerous projects in San Bernardino, and Riverside Counties. Surveys involved data collection on burrowing owl numbers, behavior, locations, occupied burrows, and sign. Reports were prepared to document findings.

Sensitive Species Surveys, Southern California. Assisted in conducting habitat assessments, monitoring surveys, and focused protocol surveys for Coachella Valley milk-vetch, Arroyo toad, desert tortoise, Los Angeles pocket mouse, San Bernardino kangaroo rat, least Bell's vireo, coastal California gnatcatcher and burrowing owl, for projects in Los Angeles, Orange, Riverside, and San Bernardino Counties. The surveys involve overall species accounts, including monitoring behavior and nest locations, and also consisted of an inventory of all plant and wildlife species observed on the sites, vegetation mapping, and habitat assessment.

Mitigation, Habitat Restoration, and Enhancement Projects

LADWP Hollywood Water Quality Improvement Project, City of Los Angeles. Assisted in the monitoring of an ongoing restoration effort for the Los Angeles Department of Water and Power's Hollywood Water Quality Improvement Project (HWQIP) at the Hollywood Reservoir in southern California. The restoration effort was implemented in order to mitigate for impacts resulting from the HWQIP, specifically the loss of coastal sage scrub habitat.

Morgan Valley Residential Development, City of Temecula. Coordinated the implementation of a Habitat Mitigation and Monitoring Plan, involving site preparation, irrigation installation, container and cutting planting, and seeding. The restoration site is mitigation for impacts made to riparian scrub vegetation along an unnamed creek as a result of construction of the Morgan Valley residential development. Conducted monthly and annual monitoring surveys and prepared an annual monitoring report to document performance.

Blackmore Restoration Project, Murrieta, County of Riverside. Conducted three years of quarterly and annual monitoring surveys for the Shea Homes – Blackmore restoration project. The mitigation for the restoration project involved the creation of riparian scrub habitat within a tributary to Murrieta Creek. Annual monitoring surveys involved qualitative and quantitative transect surveys to determine native and non-native species density. Quarterly monitoring involved assessing the site for any potential maintenance issues and removing exotic and invasive species. The project also involves an off site mitigation located within the same watershed further to the east. Agency correspondence and coordination was required to address the off site mitigation and any on site issues.

Mosaic Development Project (Tract Map No. 28206), Menifee Area, County of Riverside. Conducted various monitoring surveys and maintenance visits for components of the Mosaic residential development restoration project. The project involves the creation of wetland habitat and preservation of onsite willow habitat. Surveys include a nesting bird survey and written report, and quarterly and annual monitoring surveys. Monitoring surveys focused on native vs. non-native species coverage, wetland determination, and recommendations for remedial measures for erosion and/or supplemental seeding. Surveys involved the subsequent preparation of a Notice of Completion of Installation (As-built) report and an Annual Mitigation Monitoring Report (AMMR).

Adeline's Farm (Tract 29214) Project, French Valley, County of Riverside. Conducted quarterly and annual monitoring surveys for the Adeline's Farm development, Shea Homes, Murrieta Area, Riverside County. The mitigation for the restoration project involves the creation of bioswale habitat onsite. Monitoring surveys also involve the preparation of an As-built report and Annual Mitigation Monitoring Report. Worked with the PM and client to recommend and formulate strategies for continued maintenance and increasing species coverage and diversity. Assisted in conducting a jurisdictional delineation of the site and downstream portion used for offsite mitigation credit for another project.

Permits and Certifications

- Scientific Collecting Permit # SC-10395 – 5/09

Training

- Bat Ecology and Field Techniques Workshop – 6/10

Professional Affiliations

- Western Bat Working Group
- Western Section of the Wildlife Society
- Rancho Santa Ana Botanic Gardens



Kelly Rios

Natural Resources Project Manager**Overview**

- 18 Years Experience
- Bachelor's degree, Biological Science – California State University, Fullerton
- Holds permits and certifications for numerous species

A biologist since 1993, **Kelly Rios** has conducted numerous focused surveys for sensitive species such as coastal California gnatcatcher, San Bernardino kangaroo rat, quino checkerspot butterfly, and El Segundo blue butterfly, as well as various sensitive plant species throughout California. Her experience also includes habitat restoration in a variety of plant communities and wetland delineations. Additionally, she has conducted habitat creation and restoration efforts for federally-listed endangered species such as the coastal California gnatcatcher, El Segundo blue butterfly and the Delhi sands flower-loving fly. She served as Project Manager responsible for restoring and monitoring the Los Angeles Department of Water and Power's HWQIP at the Hollywood Reservoir in Southern California, mitigating for impacts resulting from the excavation and deposition of excess fill material onto the adjacent canyons and hills, designing a suitable plant pallet and seed mix, and installing container plants and willow cuttings. The monitoring effort involved inventorying native and non-native plant species, conducting monthly, quarterly, and annual monitoring surveys, and preparing various monitoring reports.

Related Experience**Habitat Restoration, Enhancement, and Restoration Monitoring**

Ballona Lagoon Restoration Project, Marina Del Rey, CA. Assistant project manager; the banks of the Ballona Lagoon were restored with native plant species in accordance to regulatory agencies permit requirements. The restoration effort was monitored to ensure plant survival and maintenance recommendations were made to meet the success criteria for agency sign-off.

Newport Back Bay Slope Stabilization Project, City of Newport Beach, CA. As project manager, monitored the construction activities during a slope stabilization project in Newport Back Bay in Orange County to ensure no infringement upon the nearby wetlands and clapper rail habitat. The slope was re-vegetated with coastal sage scrub species to provide habitat for the coastal California Gnatcatcher.

Los Angeles World Airports El Segundo Blue Butterfly (ESB) Survey and Habitat Restoration, City of El Segundo, CA. Project manager, permitted biologist; Directed Los Angeles World Airport's maintenance crews and volunteer groups in the habitat restoration and enhancement of former residential blocks to native sand dunes for El Segundo Blue Butterfly at Los Angeles World Airport. Conducted transects and block counts for the El Segundo Blue Butterfly. Each former residential block was systematically surveyed and all butterflies observed were counted. Additionally, transects were conducted weekly throughout the butterfly's flight season to determine the population and length of the flight season.

Sycamore Park Mitigation Monitoring, City of Diamond Bar, CA. As project manager, designed and directed the installation of the plant pallet to restore and enhance portions along the pedestrian path of Sycamore Park. Conducted qualitative and quantitative surveys using belt transects to assess plant diversity and density. Recommendations were made to facilitate restoration success in the coastal sage scrub, oak woodland, riparian, and vernal pool habitats throughout the park.

Delhi Sands flower-loving fly Habitat Restoration, Angelus Block. Served as assistant project manager to restore habitat of a 30-acre site in San Bernardino County that was created as a preserve for the Delhi Sands Flower-Loving Fly (*Raphiamitus terminatus abdominalis*).

Restoration Monitoring for Tentative Tracts 32400, 47850, and 47851, City of Diamond Bar, CA. Assistant project manager; performed mitigation monitoring for the City of Diamond Bar for biological resources. Conducted qualitative and quantitative surveys using belt transects to assess plant diversity and density.

Restoration of Native Habitats and Monitoring, Western Pacific Housing. As project manager, implemented the approved Conceptual Mitigation Plan for a riparian restoration site in Norco, California. Monitored and made recommendations for installation of the native plant material.

Restoration of Native Habitats and Monitoring, County of Orange, CA. As assistant project manager, assisted in directing monitoring and maintenance activities of a 71-acre restoration site, which was created as mitigation for habitat loss due to the Antonio Parkway Extension Project. Habitat restoration includes coastal sage scrub, oak woodland, riparian and grassland plant communities.

Serrano Creek Restoration Project, City of Lake Forest, CA. As project manager, conducted annual monitoring for Orange County's ongoing Serrano Creek Restoration Project. The project was implemented as mitigation for impacts to Serrano Creek and includes the restoration of riparian and upland plant communities. The monitoring effort involves annual quantitative surveys to assess native species coverage and diversity, tree assessments, and recommendations for achieving performance standards, all of which are documented in annual reports.

Watershed Quality/Watershed Assessment

Los Angeles Department of Water and Power (LADWP) Hollywood Water Quality Improvement Project (HWQIP), Southern California. As senior project manager, performed mitigation monitoring for the Hollywood Water Quality Improvement Project (HWQIP). Recommendations were made to facilitate restoration success in coastal sage scrub, riparian, and wetland habitats. Plant palettes were created and implemented to emulate the surrounding native habitat. Conducted monthly qualitative and annual quantitative surveys to determine species composition and densities. Assisted in the design and implemented sediment and erosion control measures such as gabion structures, check dams, and debris basins.

Power Plant Fish Impingement Studies

Southern California Edison San Onofre Nuclear Power Plant. Conducted fish species accounts of *Porichthys*, *Genyonemus*, *Paralabrax*, *Pleuronichthys*, *Heterodontus*, *Syngnathus spp*, and others for Southern California Edison during fish impingements. The species that are trapped in the water intake during the heat treatment of the power plant are counted, weighed, measured, and sexed for the California Department of Fish and Game.

Transportation Projects

Restoration Monitoring along the Foothill Transportation Corridor, Transportation Corridor HRERM Agency. As assistant project manager, conducted mitigation monitoring for the Transportation Corridor Agency along the Foothill Transportation Corridor in south Orange County. Restored coastal sage scrub habitat for the federally listed threatened California Gnatcatcher. Monitoring included qualitative and quantitative surveys, using line and belt transects to determine percent cover and density of the plant species. Due to these restoration efforts, the project site was identified as occupied by the California Gnatcatcher.

Sensitive Species Surveys

Presence/ Absence Surveys. Conducted numerous presence/absence surveys of the California Gnatcatcher (*Poliophtila californica californica*) in Orange, Riverside, San Bernardino, and San Diego Counties.

Telecommunications Projects

San Bernardino Kangaroo Rat Focused Survey, Sprint/Nextel. Senior project manager, permitted biologist; Conducted focused trapping surveys for the San Bernardino kangaroo rat (*Dipodomys merriami parvus*) to determine presence/absence of the species on a proposed Nextel Wireless facility in San Bernardino County.

San Bernardino Kangaroo Rat Focused Survey, T-Mobile. Project manager, permitted biologist; Conducted focused trapping surveys for the San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) to determine presence/absence of the species on a proposed T-Mobile Wireless facility in San Bernardino County.

San Bernardino Kangaroo Rat Focused Survey, Cingular. Project manager, permitted biologist; Conducted focused trapping surveys for the San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) to determine presence/absence of the species on a proposed Cingular Wireless facility in San Bernardino County.

Multi Species Habitat Conservation Projects

Coachella Valley Multiple Species Conservation Plan. Collected and compiled data on the Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*) for preparation of a Coachella Valley Multiple Species Habitat Conservation Plan. These investigations included presence/absence determination through the use of line transects, mark and recapture studies of the target species using studies grids with assessment lines and trapping for the purpose of habitat quality assessments.

Biological Assessments

Biological Assessment in the San Bernardino Mountains. Conducted a biological assessment of a 20-acre site in sensitive pebble plain and Jeffrey pine forest habitat in the San Bernardino Mountains. During the survey, a federally-listed threatened species, Ash-gray Indian paintbrush (*Castilleja cinerea*), and a federally-listed species of concern, silver-haired ivesia (*Ivesia argyrocoma*), was observed on the project site. Focused surveys for these sensitive species were then conducted.

Runkle Canyon Specific Plan, Green Park Runkle Canyon, LLC. Project manager, permitted biologist; Conducted biological assessments, many focused surveys on the 1,595.5-acre project site that is located in the southeasterly portion of the City of Simi Valley. These surveys include coastal California Gnatcatcher, Least Bell's Vireo, Western Spadefoot Toad, and various sensitive plant species. Surveys were also conducted for nesting birds, especially raptor species.

