From:	Loy, Maggie A
To:	"Porter, Eric"; Eric Weiss
Cc:	"michelle_moreno@fws.gov" (michelle_moreno@fws.gov); Rodriguez, Randy@Wildlife (Randy.Rodriguez@wildlife.ca.gov); "doreen_stadtlander@fws.gov" (doreen_stadtlander@fws.gov)
Subject:	RE: September 19 Interim Review Meeting
Date:	Wednesday, September 18, 2013 10:12:00 AM
Attachments:	Soitec MitigationLandsMemo_Sep2013_FINAL.docx Soitec MitigationLandsMemo_August2013_OPT.pdf Jacumba Solar Mitigation Site_Memo_6 21 13.pdf

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Eric,
I'm glad you asked. A "Final" Memo summary for the Soitec Mitigation Site was submitted for review this week, so it is included as well.

Please contact me if you have questions or comments.
THANKS,
MAGGIE LOY

Planner – EIR Coordinator – Biologist
COUNTY PDS PROJECT PLANNING DIVISION
5510 Overland Ave, Room 310, San Diego, CA 92123
T 858.694.3736 http://www.sdcounty.ca.gov/dplu/index.html

From: Porter, Eric [mailto:eric_porter@fws.gov]
Sent: Wednesday, September 18, 2013 7:39 AM
To: Loy, Maggie A; Eric Weiss
Subject: Fwd: September 19 Interim Review Meeting

Hello Maggie,

I just spoke with Eric Weiss, and he does not have copies of the Dudek reports (Jacumba Solar and Soitec mitigation site). Is there a way you can get electronic copies of those documents to him so he can prep for Thursday's meeting?

Thank you,

Eric

---------- Forwarded message ----------
From: **Loy, Maggie A** <Maggie.Loy@sdcounty.ca.gov>
Date: Thu, Aug 29, 2013 at 5:17 PM
Subject: September 19 Interim Review Meeting
To: Randy Rodriguez <Randy.Rodriguez@wildlife.ca.gov>, "doreen_stadtlander@fws.gov" <doreen_stadtlander@fws.gov>, "Susan_Wynn@fws.gov" <Susan_Wynn@fws.gov>
Cc: "Eric_Porter@fws.gov" <Eric_Porter@fws.gov>, "eric.weiss@wildlife.ca.gov" <eric.weiss@wildlife.ca.gov>, "'michelle_moreno@fws.gov' (michelle_moreno@fws.gov)" <michelle_moreno@fws.gov>, "Stephenson, Bobbie" <Bobbie.Stephenson@sdcounty.ca.gov>, "Fogg, Mindy" <Mindy.Fogg@sdcounty.ca.gov>

Randy and Doreen,

The biology reports for items 1 and 2 are in the mail for the September 19th meeting. The agenda is attached to this e-mail.

I also want to also remind you that USFWS and CDFW stated that they would sent a letter related to the Borrego San and Rock batching item from August 1st. We look forward to seeing it soon.

Item 4, RMP records, needs more discussion related to the means of access of the County records. The RMP list is also attached to this e-mail and if you believe that there should be additional project areas that should be tracked, please bring them the list to the meeting.

Thank you for your continuing efforts towards resource planning for the northern and eastern San Diego County.

MAGGIE LOY
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MEMORANDUM

To:	Patrick Brown, Soitec Development LLC
From:	David Hochart, Dudek
Subject:	Evaluation of Biological Resources for the Soitec Mitigation Site
Date:	August 21, 2013
cc:	Brock Ortega, Dudek
	Vipul Joshi, Dudek
Attachment(s):	Figures 1-4

Soitec Development LLC is considering the purchase of 2,619 acres of open space (i.e., Soitec mitigation site) to satisfy habitat loss mitigation requirements for the development of solar facilities on properties located within the vicinity. The mitigation site, and the two solar farm sites, Tierra del Sol and Rugged, are located within in the unincorporated community of Boulevard, California (Figures 1 and 2). In order to locate and characterize natural communities, including habitats for special-status species within the mitigation site, Dudek conducted vegetation mapping in accordance with the County of San Diego Report Format and Content Requirements (County of San Diego 2010a). This memo provides the results of the vegetation mapping and outlines the potential for special-status plant and wildlife species to occur within the mitigation site.

ENVIRONMENTAL SETTING (EXISTING CONDITIONS)

The mitigation site is situated between approximately 3,240 to 4,080 feet above mean sea level (amsl) in elevation. Land use on site, and in the surrounding areas, is a mixture of open space and rural residential areas. A portion of the mitigation land site borders Mexico and is separated by the border fence. The site is bisected by railroad tracks that are no longer in use. The western portion of the mitigation lands, just north of the train tracks, contains a large rock outcrop which is the highest peak of the property and contains limited vegetation. The remaining portions of the project contain gently rolling hills with several low points that indicate signs of water flow, i.e., potential drainages. Several of the larger potential drainages have artificial impoundments (e.g., berms and basins), most of which are dry at the time of the survey. During the site visits two areas contained water: a small area located within the center of the site, just south of the railroad tracks, and Lake Domingo which is located in the southeastern corner of the site. The mitigation site is generally within the Peninsular Range in a transitional area between the coast and the

desert. It is in a dry climate with average temperatures near the community of Campo ranging from approximately 34–94°F. This community generally receives an average rainfall of less than 15 inches per year (Western Regional Climate Center 2013).

According to USDA (2013), there are four soil types found in the project area, and descriptions based on those by Bowman (1973) and the Web Soil Survey appear as follows.

Acid igneous rock land soil is found in rough broken terrain. The topography ranges from low hills to steep mountains. Large boulders and rock outcrops of granite, quartz diorite, gabbro, basalt, and other rock types cover greater than 50% of the total area of this soil type. The soil material is very shallow consisting of loam to loamy course sand textures over decomposed granite or basic igneous rock. In some locales, pockets of deep soils may be present between the rocks. Many areas are practically barren and have very rapid runoff. The vegetation for this soil type varies by elevation and climate. In the foothills and mountains, acid igneous rock land supports various chaparral vegetation communities. On site, the mapping of this soil coincides with the large rock outcrop located within the western portion of the site, just north of the railroad tracks.

The La Posta series has grayish brown and brown, slightly acid and neutral, loamy coarse sand A horizons, grading to weathered acid igneous rock at a depth of 29 inches. These soils occur in hilly mountainous areas that are moderately sloping to very steep. The following La Posta soil inclusions occur within the project area: La Posta loamy coarse sand, 5–30% slopes, eroded; and La Posta rocky loamy coarse sand, 5–30% slopes, eroded. The soils formed in residuum weathered from granitic rocks at elevations of 2,000 to 4,500 feet. La Posta soils are somewhat excessively drained with medium or rapid runoff and rapid permeability, and native vegetation expected on this soil type in the project area is mainly annual grasses and forbs, chamise (*Adenostoma fasciculatum*), red shank (*Adenostoma sparsifolia*), manzanita (*Arctostaphylos* spp.), scrub oak (*Quercus* spp.), and a few scattered oak trees (*Quercus agrifolia*) along drainages.

The Mottsville series consists of very deep, excessively drained soils that formed in alluvium derived from granitic rocks. Mottsville soils occur on gently sloping (0–15%) alluvial fans, fan remnants, and fan aprons. Mottsville soil inclusion occurs within the project area: Mottsville loamy coarse sand, 2–9% slopes. Mottsville soils occur at elevations of 4,500–5,300 feet. Mottsville soils have negligible or very low surface runoff, rapid or very rapid permeability, and high saturated hydraulic conductivity. Native vegetation expected on this soil type within the project area is mainly big sagebrush (*Artemisia tridentata* ssp. *tridentata*), other desert transition shrubs, and needlegrasses (*Stipa* spp.).

The Tollhouse series consists of shallow, somewhat excessively or excessively drained soils that formed in material weathered from granite and closely related coarse crystalline rocks. The following Tollhouse soil inclusion occurs within the project area: Tollhouse rocky, coarse sandy loam, 5–30% slopes, eroded; and Tollhouse rocky, coarse sandy loam, 30—65% slopes. Tollhouse soils are on strongly sloping to very steep mountain slopes. Rock outcrops are common to many soils of this series. Tollhouse soils occur at elevations of 650 to about 8,000 feet. Native vegetation expected on this soil type within the project area is primarily chaparral consisting of a variety of native shrubs and oak trees. Naturalized grasses and forbs may occur in some locations.

METHODS

Between February 2013 and July 2013, Dudek conducted vegetation mapping and rare plant surveys for the mitigation lands. Dudek biologists conducted vegetation mapping for 8 days in February, conducted surveys for desert beauty (*Linanthus bellus*) and Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*) for 5 days in April, and conducted surveys for sticky geraea (*Geraea viscida*) and Jacumba milk-vetch for 13 days in June. Additional surveys for Tecate tarplant (*Deinandra floribunda*) are to occur during fall 2013.

Focused Plant Surveys

Focused surveys for special-status plants were implemented in two separate passes, spring and summer, to record species that have different blooming periods throughout the year. The last pass will occur in fall of 2013. During these surveys, all plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the *California Native Plant Society On-Line Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2013). For plant species without a CRPR, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2012) and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2012).

Targeted survey methods for special-status plant species identified specific areas within the proposed mitigation lands that would be more likely to support these species. Survey areas were selected based on soil type and vegetation communities that supported these rare plant species within Rugged and Tierra del Sol sites. Specifically, areas surveyed included sites that supported La Posta and Tollhouse soils, and chaparral vegetation community types (e.g., northern mixed chaparral, redshank chaparral, chamise chaparral). As such, the entirety of the mitigation lands was not surveyed. In accordance with survey methods for the Rugged and portions of the Tierra

del Sol project areas, numbers of special-status plant species individuals were counted in the field and reported as ranges including the following: 1 to 10; 11 to 50; 51 to 100; 101 to 500; 501 to 1,000; 1,001 to 5,000; and greater than 10,000. Point data were collected for each occurrence; no polygon data was collected.

Resource Mapping

Vegetation communities and land uses on and within 100 feet of the site were mapped in the field directly onto a 200-foot scale (1 inch = 200 feet), aerial photograph–based field map of the mitigation site. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined.

Consistent with the latest County of San Diego *Report Format and Content Requirements: Biological Resources* (County of San Diego 2010a), vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008).

Survey Limitations

Over the past three water years, average rainfall within the mitigation site and associated project areas has steadily declined. The nearest weather station is located in Campo, California, and generally receives an average rainfall of approximately 15 inches per year (Western Regional Climate Center 2013). Precipitation water year (i.e., July 1 to June 30) amounts for Campo from 2010 to 2011 were recorded at 21.03 inches, from 2011 to 2012 were recorded at 15.84 inches, and from 2012 to 2013 were recorded at 11.21 inches.

Reference population checks were completed for each of the target species prior to conducting focused survey passes. Since annual plant species populations can fluctuate from year to year depending on a variety of conditions, including rainfall, the reference check for desert beauty also included a comparison of population numbers. A reference check of desert beauty was conducted within the Rugged and Tierra del Sol sites on April 4, 2013. A total of 4 locations where desert beauty was mapped in 2011 on the Rugged site were re-surveyed in 2013. Three of the locations had fewer desert beauty individuals than previously recorded (between 30–90% reduction) and one location had a greater number of individuals (approximately 200% increase). Overall it is estimated that the 2013 population was approximately 70% less than the population size recorded in 2012 at the Rugged site. On the Tierra del Sol site, the 2013 reference survey

identified only one individual within four selected sites that had a total of 314 individuals recorded in 2012. These reference site surveys indicate that the population size of desert beauty recorded within the mitigation lands in spring 2013 is likely lower than what would be present during an average rainfall year.

A reference survey for Jacumba milk-vetch and sticky geraea was conducted within the Rugged site on June 14, 2013, and confirmed that these species were blooming and identifiable. Because these species are perennial, the number of individual is not expected to vary greatly from year to year and therefore population counts were not recorded for comparison with previous year counts.

Focused surveys for special-status wildlife species, wintering raptors, and reptile/small mammal trapping were not conducted for the mitigation lands. Nocturnal surveys were not conducted for the project. Birds represent the largest component of the vertebrate fauna, and because most are active in the daytime, diurnal surveys maximize the number of observations of this portion of the fauna. In contrast, daytime surveys usually result in few observations of mammals, many of which may be active at night. In addition, many species of reptiles and amphibians are nocturnal or cryptic in their habits and are difficult to observe using standard meandering transects. Wildlife occurrence data is based largely on previous bird count surveys conducted for the Jewel Valley area (Dudek 2012), with other species noted incidentally during vegetation mapping or focused plant surveys.

Portions of the mitigation lands have been burned during the 2012 Shockey Fire. These areas were mapped per the County Guidelines which state: "Areas recovering from fire shall be mapped using the resurgent vegetation as indicators of the probable resultant habitat. When the fire is so recent that no new vegetation has emerged, historical evidence such as aerial photos and the County's vegetation mapping information shall be used to map the habitat that was burned" (County of San Diego 2010b).

Habitat Types/Vegetation Communities

Twenty vegetation communities or land covers were mapped by Dudek within the project site. Native vegetation communities on site include big sagebrush scrub, granitic chamise chaparral, montane buckwheat scrub, red shank chaparral (including disturbed), red shank chaparral-rock, red shank chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral-rock, granitic northern mixed chaparral/montane buckwheat scrub, scrub oak chaparral, coast live oak woodland, southern coast live oak riparian forest, riparian habitat, and alkali meadow. One non-native vegetation community, non-native grassland, and three land cover types (non-vegetated areas), open water, rock outcrops and disturbed land, also occur within the mitigation site. These vegetation

communities and land cover types are described as follows, their acreages are presented in Table 1, and their spatial distributions are presented on Figures 3a-e.

In September 2010, the CDFG published the *List of California Vegetation Alliances and Associations* (CDFG 2010), which uses the scientific name of the dominant species in that alliance as the alliance name and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2013). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2013):

1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure.

For example, G1 would indicate that a vegetation community is critically imperiled across its entire range (i.e., globally). A rank of S3 would indicate the vegetation community is vulnerable and at moderate risk within a particular state or province, although it may be more secure elsewhere (NatureServe 2013). Because NatureServe ranks vegetation communities at the global level, they have few rankings at the state or province level available. However, the *List of California Vegetation Alliances and Associations* (CDFG 2010) includes state-level rarity rankings (i.e., the subnational (S) rank) for vegetation communities. The *List of California Vegetation Alliances and Associations* (CDFG 2010) is considered the authority for ranking the conservation status of vegetation communities in California.

CDFG's guidelines for determining high priority vegetation types include considering any communities listed with a ranking of S1 to S3 and ascertaining whether the specific stands of the community type within the project area are "considered as high-quality occurrences of a given community." The consideration of stand quality includes cover of non-native invasive species, human-caused disturbance, reproductive viability, and insect or disease damage (CDFG 2012).

Vegetation communities considered special-status are those with an "S" ranking of 1, 2, or 3 (CDFG 2010), as well as communities that require mitigation by the County (County of San Diego 2010b, Table 5). These communities are denoted in Table 1 with an asterisk (*).

There are two power lines scheduled to be installed within the mitigation lands, the Gen-Tie alignment (associated with the Tierra del Sol Project) and the East County (ECO) alignment. Impacts due to these two alignments are excluded from the vegetation tables. There will be

approximately 1 acre of impacts due to the Gen-Tie alignment and 17 acres of impacts due to the ECO alignment. Impacts due to the Gen-Tie alignment are associated with the Tierra del Sol project and as such will be mitigated in conjunction with that project.

Table 1
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code[1]	Existing Acreage Within Mitigation Lands
Upland Scrub and Chaparral		
Big Sagebrush Scrub*	35210	50.2
Granitic Chamise Chaparral*	37210	168.7
Montane Buckwheat Scrub*	37K00	69.9
Red Shank Chaparral *	37300	936.4
Red Shank Chaparral-disturbed *	37300	1.6
Red Shank Chaparral-Rock *	37300	4.9
Montane Buckwheat Scrub/ Red Shank Chaparral*	37K00/37300	8.9
Granitic Northern Mixed Chaparral*	37131	986.4
Granitic Northern Mixed Chaparral-Rock*	37131	244.1
Granitic Northern Mixed Chaparral/Montane Buckwheat Scrub*	37131/37K00	6.0
Scrub Oak Chaparral*	37900	0.3
	Subtotal	*2,477.4*
Upland Woodland and Savannah		
Coast Live Oak Woodland*	71160	17.1
Riparian and Bottomland Habitat		
Southern Coast Live Oak Riparian Forest*	61310	6.8
Riparian Habitat*	63000	10.6
	Subtotal	*17.4*
Riparian Herb		
Alkali Meadow*	45300	2.2
Unvegetated Areas		
Open Water	64100	*9.9*
Rock Outcrops	N/A	*4.0*
	Subtotal	*13.9*
Non-Native Communities and Land Covers		
Non-Native Grassland	42200	51.5
Disturbed Land	11300	38.9
	Subtotal	*90.4*
Total	—	2,618.5

[1]Holland (1986) as modified by Oberbauer et al. (2008)
*Considered special-status by the County (2010b).

Upland Scrub and Chaparral

Big Sagebrush Scrub (35210)

Big sagebrush scrub is characterized as being a moderately open shrubland consisting predominantly (greater than 50% absolute cover) of big sagebrush. It often occurs in or adjacent to the floodplain in the sandy transition to chaparral. This scrub community is relatively common on site, although it occurs in smaller, distinct patches. Some areas mapped as big sagebrush scrub include California buckwheat (*Eriogonum fasciculatum* var. *polifolium*), but at less than 15% absolute cover.

The *Artemisia tridentata* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Big sagebrush scrub is considered special-status based on mitigation recommendations of the County (2010b).

Granitic Chamise Chaparral (37210)

According to Holland (1986), chamise chaparral is strongly dominated by chamise and is adapted to repeated fire by stump sprouting. The herb layer is usually very sparse (Holland 1986). On site, chamise was observed at approximately 50–75% absolute cover, with a sparse herb layer of annual forbs comprising 5–15% absolute cover. Other woody shrubs include manzanita, and cupleaf ceanothus (*Ceanothus perplexans*), which collectively comprise less than 15% absolute cover.

The *Adenostoma fasciculatum* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Granitic chamise chaparral is considered special-status based on mitigation recommendations of the County (2010b).

Montane Buckwheat Scrub (37K00)

Montane buckwheat scrub is not described by Holland but is included in Oberbauer et al. (2008). Montane buckwheat scrub is characterized by a nearly monoculture community of flat-topped buckwheat found at higher elevations in San Diego County. On site, areas mapped as montane buckwheat scrub are almost exclusively dominated by Eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), which occurs at approximately 25–50% absolute cover, and has a well-developed herb layer, composed of annual brome grasses and herbs at approximately 25–50% absolute cover.

The *Eriogonum fasciculatum* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Montane buckwheat scrub is not included in the Habitat Mitigation

Ratios in the County Significance Guidelines (Table 5, County of San Diego 2010b); however, it was originally classified together with flat-topped buckwheat scrub, which is considered special-status based on mitigation recommendations of the County (2010b).

Red Shank Chaparral (37300)

Red shank chaparral is composed of nearly pure stands of red shank (*Adenostoma sparsifolium*) (Holland 1986). It is similar to chamise chaparral but is typically taller and somewhat more open (Holland 1986). On site, red shank chaparral intergrades with chamise chaparral (37200) and scrub oak chaparral (37900). Red shank comprises approximately 50–75% absolute cover, with chamise occasionally present at less than 15% absolute cover. Like chamise chaparral, the herb layer in red shank chaparral is sparse. This vegetation community was found throughout the site. Red shank chaparral – rock was mapped in areas that supported a high percentage of large boulders within the vegetation. Areas mapped as disturbed red shank chaparral were located along a dirt access road and contained fewer shrubs and more annual grasses than pure stands of red shank chaparral.

The *Adenostoma sparsifolium* alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Red shank chaparral is considered special-status based on mitigation recommendations of the County (2010b).

Montane Buckwheat Scrub/ Red Shank Chaparral/ (37K00/37300)

Montane buckwheat scrub/red shank chaparral is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by Eastern Mojave buckwheat and red shank. On site, areas mapped as montane buckwheat scrub/red shank chaparral are dominated by buckwheat and red shank, but also include species such as chamise, and chaparral yucca (*Hesperoyucca whipplei*).

The *Eriogonum fasiculatum/Adenostoma sparsifolium* association is not recognized by CDFG (2010). However, montane buckwheat and red shank chaparral are considered special-status based on mitigation recommendations of the County (2010a).

Granitic Northern Mixed Chaparral (37131)

Granitic northern mixed chaparral consists of broad-leaved sclerophyll shrubs that range from 2–4 meters (7–13 feet) in height and that form dense stands dominated by chamise, red shank, manzanita, and ceanothus (*Ceanothus* spp.). This community occurs inland of southern mixed chaparral in San Diego County and is indicated by desert ceanothus (*Ceanothus greggii*) and

other codominants (chamise, scrub oak, and other oak hybrids). Granitic northern mixed chaparral is underlain by granitic soils.

Granitic northern mixed chaparral has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Granitic northern mixed chaparral is not considered special-status by CDFG, but it is considered special-status based on mitigation recommendations of the County (2010a).

Granitic Northern Mixed Chaparral/Montane Buckwheat Scrub

Granitic northern mixed chaparral/montane buckwheat scrub is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by broad-leaved sclerophyll shrubs such as chamise, redshank, ceanothus, and Eastern Mojave buckwheat.

This association is not recognized by CDFG (2010); however, granitic northern mixed chaparral/montane buckwheat scrub are considered special-status based on mitigation recommendations of the County (2010a).

Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense, evergreen chaparral up to 20 feet tall (Holland 1986). Holland describes the community as dominated by scrub oak. On site, scrub oak chaparral is dominated by scrub oak at between 50–75% absolute cover. Red shank is commonly associated with this vegetation community, but occurs at less than 15% absolute cover. The herb layer is similar to that of chamise and red shank chaparral communities.

The *Quercus berberidifolia* alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Scrub oak chaparral is considered special-status based on mitigation recommendations of the County (2010b).

Upland Woodland and Savannah

Coast Live Oak Woodland (71161)

Coast live oak woodland is an evergreen woodland dominated by coast live oak (*Quercus agrifolia* var. *oxyadenia*). The understory is typically made up of grassland, scrub, or chaparral species, and the community often intergrades with coastal sage scrub or mixed chaparral (Holland 1986). On site, coast live oak woodland is an open woodland, with generally less than 40% cover of coast live oak. The understory is dominated by non-native grasses and annual forbs.

The *Quercus agrifolia* alliance has a rank of G5S4 in CDFG (2010), meaning it is globally secure and apparently secure in the state. Coast live oak woodland is considered special-status based on mitigation recommendations of the County (2010b).

Riparian and Bottomland Habitat

Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is a dense riparian forest dominated by evergreen sclerophyllous trees (oaks) with a closed, or nearly closed, canopy. Within the mitigation site, this vegetation community is dominated by coast live oaks and riparian species such as willows, mulefat (*Baccharis salicifolia*) and tamarisk (*Tamarix* spp.), and is associated with a channel that drains into Domingo Lake.

Southern coast live oak riparian forest has a rank of G4S4 in CDFG (2010), meaning it is globally secure and apparently secure in the state. Southern coast live oak riparian forest is considered special-status based on mitigation recommendations of the County (2010b).

Riparian Habitat (60000)

Areas mapped as riparian habitat encompass all areas that have a potential to contain riparian species and are associated with open water or stream channels. Willow species (*Salix* sp.) were observed in some of these areas however, due to the timing of the survey, willow species and tamarisk were not easily distinguishable. These areas will be refined later in the spring during rare plant surveys.

Riparian Herb

Alkali Meadow (45300)

Alkali meadow is a low-growing, dense or open association of grasses, sedges, and rushes on moist, alkaline soils. This community may intergrade with marsh communities in wetter settings or Great Basin scrub or non-native grassland in drier settings. Representative species of alkali meadow includes Mexican rush (*Juncus mexicanus*), salt grass (*Distichlis spicata*), Mediterranean barley *(Hordeum marinum* ssp. *gussoneanum),* and seaside heliotrope (*Heliotropium curassavicum*).

Juncus mexicanus alliance has a rank of G5S4 in CDFG (2010), meaning it is considered globally secure and apparently secure within the state. Alkali meadow is considered special-

status by the County (2010b) based in its qualification as a Resource Protection Ordinance (RPO) wetland and the County's recommended mitigation ratio for this vegetation community.

Unvegetated Areas

Open Water (64100)

Open water is not a vegetation community; therefore, it is not included in the *List of California Vegetation Alliances and Associations* (CDFG 2010). Although the County does recommend mitigation for impacts to open water, this land cover type is typically considered an RPO wetland and is typically considered jurisdictional waters (County 2010b). On site, open water consists of areas where stream channels have been dammed at some point downstream, creating reservoirs and/or detention basins, most of which are dry. During the site visits two areas contained water: a small area located within the center of the site, just south of the railroad tracks, and Lake Domingo which is located in the southeastern corner of the site.

Rock Outcrops

One large rock outcrop was mapped within the mitigation lands. This area is located in the western part of the site, just north of the railroad tracks. Rock outcrops are not a vegetation community; therefore, are not included in the *List of California Vegetation Alliances and Associations* (CDFG 2010).

Rock outcrops are not considered special-status by CDFG or the County (2010b).

Non-Native Communities and Land Covers

Non-Native Grassland (42200)

According to Holland (1986), non-native grasslands include a dense to sparse cover of annual grasses that die during the summer months, persisting as seeds. Due to the timing of the survey, the species composition within areas mapped as non-native grassland could not be determined. In addition, some of the areas mapped as nan-native grassland may actually contain alkali meadow species. These areas will be refined during the spring plant surveys.

Non-native grassland has a rank of G4S4 in CDFG (2010), meaning it is apparently secure globally and in the state. Because non-native grassland can provide habitat for a variety of species, the County requires mitigation for impacts to it; therefore, it is considered special-status by the County (2010b).

Disturbed Habitat (11300)

Disturbed land refers to areas that have been permanently altered by previous human activity that has eliminated all future biological value of the land for most species. The native or naturalized vegetation is no longer present, and the land lacks habitat value for sensitive wildlife, including potential raptor foraging. Disturbed habitat on site consists of unpaved roads and some areas immediately adjacent to dirt roads. These roads are graded periodically, and no native vegetation remains.

Disturbed habitat is not considered special-status by CDFG or the County (2010b).

Suitability of Mitigation Lands

The mitigation lands will be used as mitigation for the two proposed, Rugged, and Tierra del Sol (which includes the Gen-Tie alignment) projects. Mitigation required for these projects totals 735.9 acres for a variety of habitat types, as shown in Table 2. There is a total of 2,575.5 acres of mitigation lands (excluding rock outcrops and disturbed land) that is available for mitigation. This results in excess habitat within the mitigation lands that totals 1,839.6acres. Most of this excess habitat results from excess chaparral habitat within the mitigation lands.

Table 2
Required Mitigation

Habitat Types/Vegetation Communities	Rugged Mitigation Requirements (acres)	Tierra del Sol Mitigation Requirements (acres)	Total Mitigation Required	Vegetation within the Mitigation Site (acres)	Total Mitigation Acreage (+/- acreage required)
Upland Scrub and Chaparral					
Big Sagebrush Scrub*	122.2	32.4	154.6	50.2	-104.6
disturbed Big Sagebrush Scrub*	5.3	—	5.3	—	-5.3
Montane Buckwheat Scrub*	59.6	41.8	101.4	69.9	-31.5
disturbed Montane Buckwheat Scrub*	5.8	2.3	8.1		-8.1
Granitic Chamise Chaparral*	44.1	89.0	133.1	168.7	+35.6
Granitic Chamise Chaparral/Montane Buckwheat Scrub *	—	2.2	2.2	—	-2.2
Granitic Northern Mixed Chaparral*	—	37.7	37.7	986.4	+948.7
Granitic Northern Mixed Chaparral-Rock*	—	—	—	244.1	+244.1
Granitic Northern Mixed Chaparral/ Montane Buckwheat Scrub *	—	13.3	13.3	6.0	-7.3
Red Shank Chaparral*	33.1	69.9	103.0	936.4	+833.4

Table 2
Required Mitigation

Habitat Types/Vegetation Communities	Rugged Mitigation Requirements (acres)	Tierra del Sol Mitigation Requirements (acres)	Total Mitigation Required	Vegetation within the Mitigation Site (acres)	Total Mitigation Acreage (+/- acreage required)
disturbed Red Shank Chaparral*	—	—	—	1.6	+1.6
Red Shank Chaparral-Rock *	—	—	—	4.9	+4.9
Montane Buckwheat Scrub/ Red Shank Chaparral*	—	2.0	—	8.9	+6.9
Scrub Oak Chaparral*	54.8	6.6	61.4	0.3	-61.1
disturbed Scrub Oak Chaparral*	0.5	—	0.5	—	-0.5
Semi-Desert Chaparral*	50.0	—	50.0	—	-50.0
Semi-Desert Chaparral – Rock*	0.1	—	0.1	—	-0.1
disturbed Semi-Desert Chaparral*	0.5	—	0.5	—	-0.5
Subtotal	*376*	*297.2*	*673.2*	*2,477.4*	*+1,804.2*
Upland Woodland and Savannah					
Coast Live Oak Woodland*	included in oak root zone mitigation[2]	3.3	3.3	17.1	+13.8
Disturbed Coast Live Oak Woodland	—	0.9	0.9	—	-0.9
Mixed Oak Woodland*	included in oak root zone mitigation[2]	—	—	—	—
Oak Root Zone [1]	22.8	—	*22.8*	—	-22.8
Subtotal	*22.8*	*4.2*	*27.0*	*17.1*	*-9.9*
Riparian and Bottomland Habitat					
Southern Coast Live Oak Riparian Forest*	—	—	—	6.8	+6.8
Riparian Habitat*	—	—	—	10.6	+10.6
Subtotal	—	—	—	*17.4*	*+17.4*
Riparian Herb					
Alkali Meadow*	0.21	—	0.21	2.2	+1.99
Disturbed Alkali Meadow*	0.24	—	0.24	—	-0.24
Subtotal	*0.45*	—	*0.45*	*2.2*	*+1.75*
Riparian Scrub					
Disturbed Mulefat Scrub*	0.42	—	0.42	—	-0.42
Tamarisk Scrub*	8.37	—	8.37	—	-8.37
Subtotal	*8.79*	—	*8.79*	—	*-8.79*
Waters					
Ephemeral Stream Channel	0.03	*0.002*	0.032	—	-0.032
Open Water	—	—	—	9.9	+9.9
Subtotal	*0.03*	*0.002*	*0.032*	*9.9*	*+9.87*

Table 2
Required Mitigation

Habitat Types/Vegetation Communities	Rugged Mitigation Requirements (acres)	Tierra del Sol Mitigation Requirements (acres)	Total Mitigation Required	Vegetation within the Mitigation Site (acres)	Total Mitigation Acreage (+/- acreage required)
Non-Native Communities and Land Covers					
Non-Native Grassland*	26.4	—	26.4	51.5	+25.1
Subtotal	*26.4*	—	*26.4*	*51.5*	*+25.1*
Total**	434.5	301.4	735.9	2,575.5[3]	*1,839.6*

Although impacts to specific vegetation communities are not mitigated at specific ratios, the overall suite of habitats that exist within the mitigation lands function similarly to those that will be impacted. There is excess upland scrub and chaparral, riparian and bottomland habitat, riparian herb, waters, and non-native grassland within the mitigation lands than what is required for mitigation. Overall, there is an excess of 1,839.6 acres of habitat within the mitigation lands which will sufficiently account for all impacts to vegetation communities.

Within upland scrub and chaparral habitats, there is an overall excess of these habitats within the mitigation lands which sums to 1,804.2 acres. Specifically, there is a deficit of big sagebrush scrub and scrub oak chaparral but great excess of granitic northern mixed chaparral and red shank chaparral. Although these vegetation communities feature different dominant plant species, the overall habitat functioning is similar for all upland scrub and chaparral habitats. Special-status wildlife will generally utilize all of these habitats indiscriminately, provided there is suitable cover, habitat connectivity, and water and food resources. During Dudek's field investigations, special-status plant species were found in many different chaparral habitats, indicating that they will serve the same special-status species that were found on the three project sites. The special-status plant species are all proposed for coverage under the East County MSCP (Multiple Species Conservation Plan), and will be adequately conserved under this assemblage of vegetation types.

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

In addition to the compensation for impacts to special-status vegetation communities, the mitigation lands are being proposed to compensate for impacts to special-status plant species and habitat for special-status wildlife species associated with the Rugged and Tierra del Sol solar farm projects.

Special-Status Plant Species

Mitigation is required to offset impacts to 4 of the 10 special-status plant species observed within either the Rugged or Tierra del Sol project areas including: Tecate tarplant (*Deinandra* [=*Hemizonia*] *floribunda*), desert beauty (*Linanthus bellus*), Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), and sticky geraea (*Geraea viscida*) (Table 3).

Tecate cypress (*Hesperocyparis forbesii*) was also observed within the Tierra del Sol project area but this population is believed to be planted. Tecate cypress was not observed within the mitigation lands; therefore mitigation for impacts to this species will need to occur at a replacement ratio of 3:1. The location of revegetation of this species has yet to be determined. Three species, Jacumba milk-vetch, desert beauty, and sticky geraea, have been observed within the mitigation lands (Table 3). One additional survey pass is scheduled for fall 2013 to identify Tecate tarplant and additional occurrences of Jacumba milk-vetch.

Table 3
Special-Status Plant Species with a Potential to Occur in the Mitigation Site

Scientific Name Common Name	Sensitivity Code and Status (Federal/State/ County/CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevation Range	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Astragalus douglasii var. *perstrictus* Jacumba milk-vetch	None/None/List A, MSCP/1B.2	Chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland; rocky/perennial herb/April–June/2,953 to 4,495 feet	Observed within both Tierra del Sol, Rugged.	Observed within mitigation lands. Suitable soils found within the western and central regions of the mitigation site. The mitigation site also contains suitable vegetation communities.
Deinandra [=*Hemizonia*] *floribunda* Tecate tarplant	None/None/List A, MSCP/1B.2	Chaparral, coastal scrub/annual herb/August–October/230 to 4,003 feet	Observed within both Tierra del Sol, and Rugged.	High. Suitable soils and vegetated habitat located within the mitigation site. This species was observed along ephemeral drainages in both solar farm project areas and similar drainages are located within the mitigation site.
Geraea viscida Sticky geraea	None/None/List B, MSCP/2.3	Chaparral (often disturbed)/perennial herb/May–June/1,476 to 5,577 feet	Observed within both Tierra del Sol, and Rugged.	Observed within mitigation lands. Suitable chaparral habitat and soils located throughout the mitigation site.

Table 3
Special-Status Plant Species with a Potential to Occur in the Mitigation Site

Scientific Name Common Name	Sensitivity Code and Status (Federal/State/ County/CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevation Range	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Hesperocyparis forbesii Tecate cypress	None/None/List A, MSCP/1B.1	Closed-cone conifer forest, chaparral/ evergreen tree/NA/255–1,500 meters	Observed within Tierra del Sol. Absent from Rugged.	Not observed. This species was presumed an ornamental planted on the Tierra del Sol site. No Tecate cypress trees were observed during the initial biological surveys.
Linanthus bellus Desert beauty	None/None/List B, MSCP/2.3	Chaparral; sandy/annual herb/April–May/3,281 to 4,593 feet	Observed within both Tierra del Sol, and Rugged.	Observed within mitigation lands. Suitable vegetated and soil habitats found within mitigation site

[1] Status Designations:
MSCP: Proposed Covered Species under the Draft East County MSCP
SE: State-listed as endangered
ST: State-listed as threatened
SR: State-listed as rare
CRPR: California Rare Plant Rank
1A (formerly List 1A): Plants Presumed Extinct in California
1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere
2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 (formerly List 3): Plants About Which We Need More Information – A Review List
4 (formerly List 4): Plants of Limited Distribution – A Watch List
0.1–Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2–Fairly threatened in California (20–80% occurrences threatened/moderate degree and immediacy of threat)
0.3–Not very threatened in California (<20% of occurrences threatened /low degree and immediacy of threat or no current threats known)

Tecate Tarplant (*Deinandra floribunda*)

Tecate tarplant is a CRPR 1B.2 (CNPS 2013) and a County List A species (County of San Diego 2010a). A member of the sunflower (*Asteraceae*) family, this species blooms from August through October in chaparral and coastal scrub habitats. Tecate tarplant is an annual herb that occurs at elevations of 70 to 1,220 meters (230 to 4,003 feet) (CNPS 2013). A focused survey for this species will occur in fall 2013.

Desert Beauty (*Linanthus bellus*)

Desert beauty is a CRPR 2.3 (CNPS 2013) and a County List B species (County of San Diego 2010a). A member of the phlox (*Polemoniaceae*) family, this annual herb blooms from April through May in chaparral habitats. This species typically occurs at elevations of 1,000 to 1,400 meters (3,281 to 5,493 feet) (CNPS 2013).

On the mitigation lands there are approximately 811–2,790 occurrences of desert beauty (Table 4, Figure 4). Most occurrences were documented in the north-central portion of the mitigation lands within open sandy areas in red shank chaparral. Few occurrences were documented within granitic chamise chaparral, as well.

Fewer numbers of desert beauty were detected within the mitigation lands than are required by the mitigation ratios. However, prior to conducting focused surveys, a check of reference populations within Rugged and Tierra del Sol project areas found reduced population sizes for this species when compared with survey results from 2011 and 2012. As such, it is suggested that the population size results found in 2013 within the mitigation lands are not indicative of generally reduced population size; rather, that fewer individuals were blooming during 2013 surveys. It is therefore presumed that there is sufficient desert beauty within the mitigation lands during other years that are in accordance with the mitigation ratio.

Jacumba Milk-vetch (*Astragalus douglasii* var. *perstrictus*)

Jacumba milk-vetch is a CRPR 1B.2 (CNPS 2013) and County List A species (County of San Diego 2010a). This perennial herb in the pea or bean family (*Fabaceae*) blooms from April through June. It occurs in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland, and rocky communities at elevations of 900 to 1,370 meters (2,953 to 4,495 feet) (CNPS 2013).

Within the mitigation lands, there are approximately 225–672 occurrences, concentrated in the north-central, southeast, and southwest portions of the site (Figure 4). Since the first pass of focused surveys resulted in the detection of fewer plants than are required for mitigation, the fall pass will also focus on recording any additional milk-vetch that may be located outside of the originally defined suitable habitat areas.

Sticky Geraea (*Geraea viscida*)

Sticky geraea is a CRPR 2.3 (CNPS 2013) and a County List B species (County of San Diego 2010a). A member of the sunflower (*Asteraceae*) family, this perennial herb blooms from May through June in chaparral habitats and occurs at elevations between 450 and 1,700 meters (1,476 to and 5,557 feet) (CNPS 2013). Approximately 356–1,333 individuals were observed during the June 2013 survey pass (Figure 4). Most of the observations were in northern mixed chaparral or redshank chaparral in the northern area of the mitigation lands, and in areas southeast of the railroad tracks. The amount of sticky geraea recorded within the mitigation site covers the required mitigation for this species.

Table 4
Mitigation Requirements for Special-Status Plant Species

Species	Impacts to Special-Status Plant Species			Mitigation Requirements			Total Recorded within Mitigation Lands	Approximate Acres Surveyed
	Tierra del Sol	*Rugged*	*Gen-tie Alignment*	*Mitigation Ratio*	*Total Needs (Low)*	*Total Needs (High)*		
Tecate tarplant	3,103	1-10	n/a	2:1*	6,228	6,226	n/a	n/a
Desert beauty	727	786-4,050	84-600	1:1	1,597	5,377	811-2,790	800
Jacumba milk-vetch	315	211-1,870	27-150	2:1*	1,106	4,670	225-672	1,122
Sticky geraea	274	175-830	10-50	1:1	459	1,154	356-1,333	800

* Due to their relative abundance within the project areas, a 2:1 ratio was chosen for impacts to List A plant species.

Surveys have not yet been conducted for Tecate tarplant and therefore the suitability of the mitigation lands for this species has not been conducted. Surveys for sticky geraea within the mitigation lands indicate that there is approximately the same range of individuals present that are required for mitigation, There are substantially fewer individuals of Jacumba milk-vetch than are required for mitigation, and additional plantings will be required. There are also substantially fewer individuals of desert beauty than is required for mitigation. However, there were notably fewer individuals of desert beauty present at the reference populations checked. Therefore, it is presumed that there is enough habitat to support the needed numbers of this species within the mitigation lands.

Special-Status Wildlife Species

Mitigation for significant long-term direct impacts to County Group 1 wildlife species as a result of removal of suitable habitat within the Tierra del Sol and Rugged solar farm projects, will be reduced to a level that is less than significant through habitat conservation of equivalent function and value. Combined, the two solar farm projects have the potential to directly impact 8 reptile and amphibian species, 10 bird species, and 11 bat species (Table 5). A preliminary assessment of vegetation communities, elevation, and range of these species has determined that all 29 species have a potential to occur within the mitigation site (Table 4). The following sources were also consulted for pertinent special-status species information: the California Natural Diversity Database (CNDDB) (CDFW 2013a), information provided by the California Department of Fish and Wildlife (CDFW) (CDFG 2011, CDFW 2013b), the San Diego County Bird Atlas (Unitt 2004), and previous bird utilization count surveys conducted by Dudek (Dudek 2012). Focused surveys for quino checkerspot (*Euphydryas editha quino*) were conducted on the Tierra Del Sol, Gen-tie and Rugged project sites in 2012 and 2013. The surveys were negative. In the unlikely event that

quino checkerspot were to be found, the habitats on the proposed mitigation property would be similar and consistent with their needs. A habitat assessment for these species will be conducted in the spring/summer of 2013 to confirm the potential for these species to occur and to document species observed within the mitigation site.

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Amphibians and Reptiles				
Aspidoscelis hyperythra beldingi Belding's orange-throated whiptail	None/SSC/ Group 2, MSCP	Coastal sage scrub, chamise-redshank chaparral, mixed chaparral, valley-foothill hardwood especially in area with summer fog. Found from Santa Ana River and near Colton in San Bernardino County, west of Peninsular Ranges, south throughout Baja California, 0 to 2,001 feet (1, 2).	Observed within Rugged and moderate potential to occur within Tierra del Sol.	Moderate. Suitable habitat is present within the mitigation site. The mitigation site is above the elevation range for this species, however this species was observed at the Rugged site where the elevation ranges from 3,500 to 3,670 feet amsl. The nearest CNDDB occurrence for this species is approximately 10 miles west of the mitigation site (6).
Phrynosoma blainvillii Blainville's horned lizard	None /SSC/ Group 2, MSCP	Area of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. Annual grassland, chaparral, woodland, coniferous forest, sandy area, frequently near ant hills. Foothills and coastal plains from Los Angeles to northern Baja California (1, 3).	Observed within both Tierra del Sol, and Rugged.	Observed within mitigation lands. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is less than 0.4 miles northeast of the mitigation site (6).
Salvadora hexalepis virgultea Coast patch-nosed snake	None/SSC/ Group 2, MSCP	Semi-arid, brushy area and chaparral in canyons, rocky hillsides, plains from northern Carrizo Plains south through coastal zone, south and west of the deserts into coastal northern Baja California, at elevations below sea level to 6,988 feet (1).	High potential to occur within Rugged, and moderate potential to occur within Tierra del Sol.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 28 miles northwest of the mitigation site (6).
Plestiodon skiltonianus interparietalis Coronado skink	None/SSC/ Group 2, MSCP	Grassland, woodlands, pine forests, chaparral, especially open sunny areas, such as clearings and edges of creeks, and rocky areas near streams with lots of vegetation; in litter, rotting logs, under flat stones. Found in coastal ranges and Sierra Nevada and foothills, 0 to 8,300 feet (1, 2).	High potential to occur within Rugged, and low potential to occur within Tierra del Sol due to lack of habitat.	High. Suitable habitat for this species is located around Domingo Lake. The nearest CNDDB occurrence for this species is approximately 24 miles west of the mitigation site (6).

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Crotalus ruber ruber Northern red-diamond rattlesnake	None/SSC/ Group 2, MSCP	Chaparral, oak and pine woodland, arid desert, rocky grassland habitats in rocky area and dense vegetation; rocky desert flats on desert slopes of mountains; Morongo Valley (1).	High potential to occur within both Tierra del Sol and Rugged.	High. Suitable habitat for the northern red-diamond rattlesnake is present within the rocky outcrops observed throughout the mitigation site. Also, any area with dense vegetation provides suitable habitat, including chaparral, scrub, and woodland habitats. The nearest CNDDB occurrence for this species is approximately 2.3 miles east of the mitigation site (6).
Anniella pulchra pulchra Silvery legless lizard	None/SSC/ Group 2	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats (1).	High potential to occur within both Tierra del Sol and Rugged.	High. Suitable habitat for this species is located within the oak woodlands and surrounding areas of open water. The nearest CNDDB occurrence for this species is approximately 32 miles north of the mitigation site (6).
Thamnophis hammondii Two-striped garter snake	None/SSC/ Group 1, MSCP	Permanent or semipermanent bodies of water bordered by dense vegetation in rocky area, oak woodland, chaparral, brushland, coniferous forest. Found on Diablo Range, South Coast and Transverse Ranges, and Santa Catalina Island (1, 2).	High potential to occur within Rugged, no potential to occur in Tierra del Sol due to lack of suitable habitat.	High. Suitable habitat is present within areas of open water and surrounding open water. The nearest CNDDB occurrence for this species is approximately 10.4 miles west of the mitigation site (6).
Spea [=Scaphiopus] hammondi Western spadefoot	None/SSC/ Group 2, MSCP	Sandy/gravelly soils within mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, foothills, mountains, and other habitats. Breed in rainpools that do not have bullfrogs, fish, or crayfish. Found throughout Great Valley and foothills south of Redding, throughout South Coast Ranges in Southern California south of Transverse Mountains and west of Peninsular Mountains, 0 to 4,478 feet (1).	High potential to occur within Rugged, no potential to occur in Tierra del Sol due to lack of suitable habitat.	High. Suitable habitat is present within areas of open water, and surrounding open water, as well as stream channels located throughout the site. The nearest CNDDB occurrence for this species is approximately 27.5 miles west of the mitigation site (6).

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
		Birds		
Accipiter cooperii Cooper's hawk (nesting)	None/WL/ Group 1, MSCP	Dense stands of live oak, riparian deciduous, forest habitats near water. Breeds in southern Sierra Nevada foothills, New York Mountains., Owens Valley, and other local area in Southern California, 0 to 8,858 feet (2).	Observed within Rugged and Tierra del Sol.	Known to occur. Suitable habitat for this species is located within the oak woodlands and surrounding areas of open water and this species was observed within the mitigation site during focused bird count surveys[1] (7). The nearest CNDDB occurrence for this species is approximately 1.3 miles west of the mitigation site (6). Recorded in U26 and surrounding grids T25-27 and U25 and U27 (3).
Agelaius tricolor Tricolored blackbird	BCC/SSC/ Group 1, MSCP	Breeds in emergent wetland with tall, dense cattails or tules; willow, blackberry, tall herb thickets. Feeds in grassland and cropland habitats. Found throughout Central Valley and coastal area south of Sonoma County (2).	High potential to forage within Rugged, not expected to nest. No suitable habitat on Tierra del Sol.	Moderate. Meadow habitat, and non-native grassland habitat on site provides suitable foraging habitat. Potential nesting suitable habitat on site around Domino Lake. Red-winged blackbirds have been observed in the area (7). The nearest CNDDB occurrence for this species is approximately 4.5 miles east of the mitigation site (6). Recorded in U26 and surrounding grids T25-27 and U25 (3).
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	None/WL/ Group 1, MSCP	Sparse mixed chaparral and coastal scrub habitats (especially coastal sage) in Southern California on slopes of Transverse and Coastal Ranges, north to Los Angeles County, and northwestern Baja California. Found on steep, rocky hillsides with grass and forb patches, and grassy slopes without shrubs, if rock outcrops are present (2, 4).	High potential to occur within Tierra del Sol and Rugged.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 26.5 miles northwest of the mitigation site (6). Recorded in U26 (3).

[1] This is a modified point-count survey method used to obtain a baseline index of bird use within the area. Monitoring data collected, taken from November 2010 through July 2012, included data such as time, the number and species of birds observed, distance and flight height estimate in general, distance and height estimate, habitat, flight pattern and direction, perch height, and behavior of raptors.

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Amphispiza belli belli Bell's sage sparrow	BCC / WL/, Group 1, MSCP	Low, dense stands of shrubs; chaparral dominated by chamise; coastal scrub dominated by sage. Coast Ranges from northern California to northwestern Baja California, western slope of Sierra Nevada (2, 4).	Observed within both Tierra del Sol and Rugged.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 22 miles northwest of the mitigation site (6). Not recorded in grids; sage sparrow (*Amphispiza belli*) recorded in U26 and surrounding grids T25-27, U25 and U27 (3).
Aquila chrysaetos Golden eagle (nesting and wintering)	BCC/FP, WL/ Group 1, MSCP	Rolling foothills, mountain area, sage-juniper flats, and desert throughout California (2).	High potential to forage on Rugged with a low potential to nest. Not expected to forage or nest within Tierra del Sol.	Known to occur. Suitable foraging habitat is present within most of the mitigation site; moderate potential to nest within rocky areas . Recorded nesting sites are located in the region, but off site. This species was observed within the mitigation site during focused bird count surveys for the area (7). The nearest CNDDB occurrence for this species is approximately 13 miles west of the mitigation site (6). Recorded in surrounding grids T26, T27, and U25 (3).
Buteo lineatus Red-shouldered hawk	None/None/ Group 1	Riparian and woodland habitats interspersed with swamps and wetlands found along coast, southern deserts, and in Central Valley, 0 to 4,921 feet (2).	Moderate potential to occur within Tierra del Sol and high potential to occur within Rugged.	Known to occur. Suitable habitat for this species is located throughout the mitigation area. May use the project area for nesting and foraging. This species was observed within the mitigation site during focused bird count surveys for the area (7). There are no CNDDB occurrence records for this species (6). Recorded in surrounding grids T25-27 and U25 (3).
Cathartes aura Turkey vulture	None/None/ Group 1, MSCP	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting, and resting throughout most of California during breeding season (2).	Observed within both Tierra del Sol and Rugged.	Known to occur. Suitable habitat for this species is located throughout the mitigation area. Suitable open foraging habitat present on site. Suitable nesting habitat not available on site. This species was observed within the mitigation site during focused bird count surveys for the area (7). There are no CNDDB occurrence records for this species (6). Recorded in grid U26 and surrounding grids T25-27, U25, and U27 (3).

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Circus cyaneus Northern harrier (nesting)	None/SSC/ Group 1, MSCP	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub. Resident of northeastern plateau and coastal area; less common resident in Central Valley. Breeds at marsh edge in shrubby vegetation in Central Valley and Sierra Nevada (0 to 5,577 feet), and northeastern California (up to 2,625 feet (2).	Observed within Rugged and not expected to occur within Tierra del Sol.	Known to occur. This species is only expected as a winter visitor in grassland habitat and the more open area of scrub and chaparral communities on site. This species was observed within the mitigation site during focused bird count surveys for the area (7). The nearest CNDDB occurrence for this species is approximately 47 miles west of the mitigation site (6). Recorded in U26 and surrounding grids T27 and U27 (3).
Falco mexicanus Prairie falcon (nesting)	BCC/WL/ Group 1	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs. Southeastern deserts northwest through Central Valley and along inner Coast Ranges and Sierra Nevada (2).	Observed within Rugged. Not expected to nest within either site but there is a high potential for foraging.	High. There is suitable foraging habitat throughout the site and potential nesting habitat within the rocky areas. The nearest CNDDB occurrence for this species is centered approximately 2 miles west of the mitigation site (6). Not recorded in grids (3).
Lanius ludovicianus Loggerhead shrike (nesting)	BCC/SSC/ Group 1, MSCP	Open habitats with scattered shrubs, trees, or other perches; highest density in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Found in foothills and lowlands throughout California (2).	Observed within Rugged and Tierra del Sol.	Known to occur. Suitable nesting habitat for this species is located throughout the mitigation area. This species was observed within the mitigation site during focused bird count surveys for the area (7). The nearest CNDDB occurrence for this species is approximately 24 miles north of the mitigation site (6). Recorded in U26 and surrounding grids T25-27, U25 and U27 (3).
Mammals				
Chaetodipus californicus femoralis Dulzura (California) pocket mouse	None/SSC/ Group 2	Open habitat, coastal sage scrub, chaparral, oak woodland, chamise chaparral, mixed conifer habitats; disturbance specialist; 0 to 3,000 feet (5).	Low potential to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	Moderate. Suitable habitat for this species exists within the oak woodland and chaparral habitats within the mitigation area. Mitigation area is located just outside of the range for this species. The nearest CNDDB occurrence for this species is approximately 4 miles north of the mitigation site (6).

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	None/SSC/ Group 2	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse mixed and chamise chaparral; rocky and gravelly area with yucca overstory, 500 to 3,000 feet (3).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	Moderate. Suitable habitat for this species is located throughout the mitigation area. Mitigation area is located just outside of the range for this species. The nearest CNDDB occurrence for this species is approximately 12 miles west of the mitigation site (6).
Choeronycteris mexicana Mexican long-tongued bat	None/SSC/ Group 2, WBWG: H	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings. Summer resident in San Diego County (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 40 miles northwest of the mitigation site (6).
Corynorhinus townsendii Townsend's big-eared bat	None/SSC/ Group 2, MSCP, WBWG:H	Mesic habitats; gleans from brush or trees, or feeds along habitat edges. Found in all habitats but subalpine and alpine throughout California (2).	Low potential to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 11 miles northwest of the mitigation site (6).
Euderma maculatum Spotted bat	None/SSC/ Group 2, WBWG:H	Foothills, mountains, desert regions of Southern California, including arid deserts, grasslands, and mixed conifer forests. Roosts in rock crevices and cliffs. Feeds over water and along washes (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 55 miles northwest of the mitigation site (6).

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Eumops perotis californicus Greater western mastiff bat	None/SSC/ Group 2, MSCP, WBWG:H	Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures. All subalpine and alpine habitats; 50 to 10,000 feet (3).	Low potential to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 11 miles northwest of the mitigation site (6).
Lasiurus blossevillii Western red bat	None/SSC/ Group 2, WBWG:H	Prefers edges with trees for roosting and open areas for foraging. Roosts in woodlands and forests. Forages over grasslands, shrublands, woodlands, forests, and croplands. Found south of Shasta County to Mexican border, and west of the Sierra Nevada/Cascade Crest. In winter, occupies coastal regions and lowlands south of San Francisco Bay (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 15 miles west of the mitigation site (6).
Lepus californicus bennettii San Diego black-tailed jackrabbit	None/SSC/ Group 2, MSCP	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed area, and rangelands in Southern California (2, 4).	Observed within Tierra del Sol and Rugged.	This species was observed during surveys. The nearest CNDDB occurrence for this species is less than 1 mile north of the mitigation site (6).
Macrotus californicus California leaf-nosed bat	None/SSC/ Group 2, WBWG:H	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Found from Riverside, Imperial, San Diego, and San Bernardino Counties, south to Mexican border; fairly common along parts of Colorado River, elevation approximately 1,969 feet (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 14 miles northeast of the mitigation site (6).
Neotoma lepida intermedia San Diego desert woodrat	None/SSC/ Group 2	Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats. Found south of San Luis Obispo County to San Diego County and San Bernardino and Riverside Counties, 0 to 8,530 feet (2, 4).	Observed within Tierra del Sol and high potential to occur within Rugged.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 1 mile west of the mitigation site (6).

Table 5
Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/ County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Nyctinomops macrotis Big free-tailed bat	None/SSC/ WBWG:MH, Group 2	Rugged, rocky canyons in Riverside, Los Angeles, and San Diego Counties, but scattered records across California to Oakland (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 16 miles northwest of the mitigation site (6).

[1] Status Designations:
Federal
BCC U.S. Fish and Wildlife Service: Birds of Conservation Concern
WBWG: H Western Bat Working Group: High Priority
WBWG: MH Western Bat Working Group: Medium-High Priority
State Designations:
SSC California Special Concern Species
FP California Department of Fish and Game Fully Protected Species
WL California Department of Fish and Game Watch List Species
County Designations:
MSCP Draft East County MSCP covered species
References
1. Nafis 2012
2. Zeiner et al. 1988, 1990a–b
3. SDNHM 2012
4. NatureServe 2012
5. Brehme, C., D. Clark, C. Rochester, and R. Fisher. 2011.
6. CDFW 2013b. CNDDB.
7. Dudek 2012. Unpublished data. Bird Utilization Counts (BUC) for Jewell Valley. Conducted June 2010 through June 2012.

CONCLUSION

Based upon vegetation mapping, elevation ranges, soils, and location of the mitigation site, the mitigation site contains suitable habitat to compensate for the loss of special-status plant and wildlife species that will be, or could potentially be impacted by the Tierra del Sol and Rugged solar farm projects. The mitigation lands, as a whole, provide adequate mitigation for most identified impacts, including impacts to vegetation communities, two special-status plant species –desert beauty and sticky geraea – and special-status wildlife species. Additional mitigation will be required for Jacumba milk-vetch and Tecate cypress because the site does not support sufficient populations of these two species. The site has not yet been evaluated for Tecate tarplant, and a survey pass for this species is scheduled for fall 2013.

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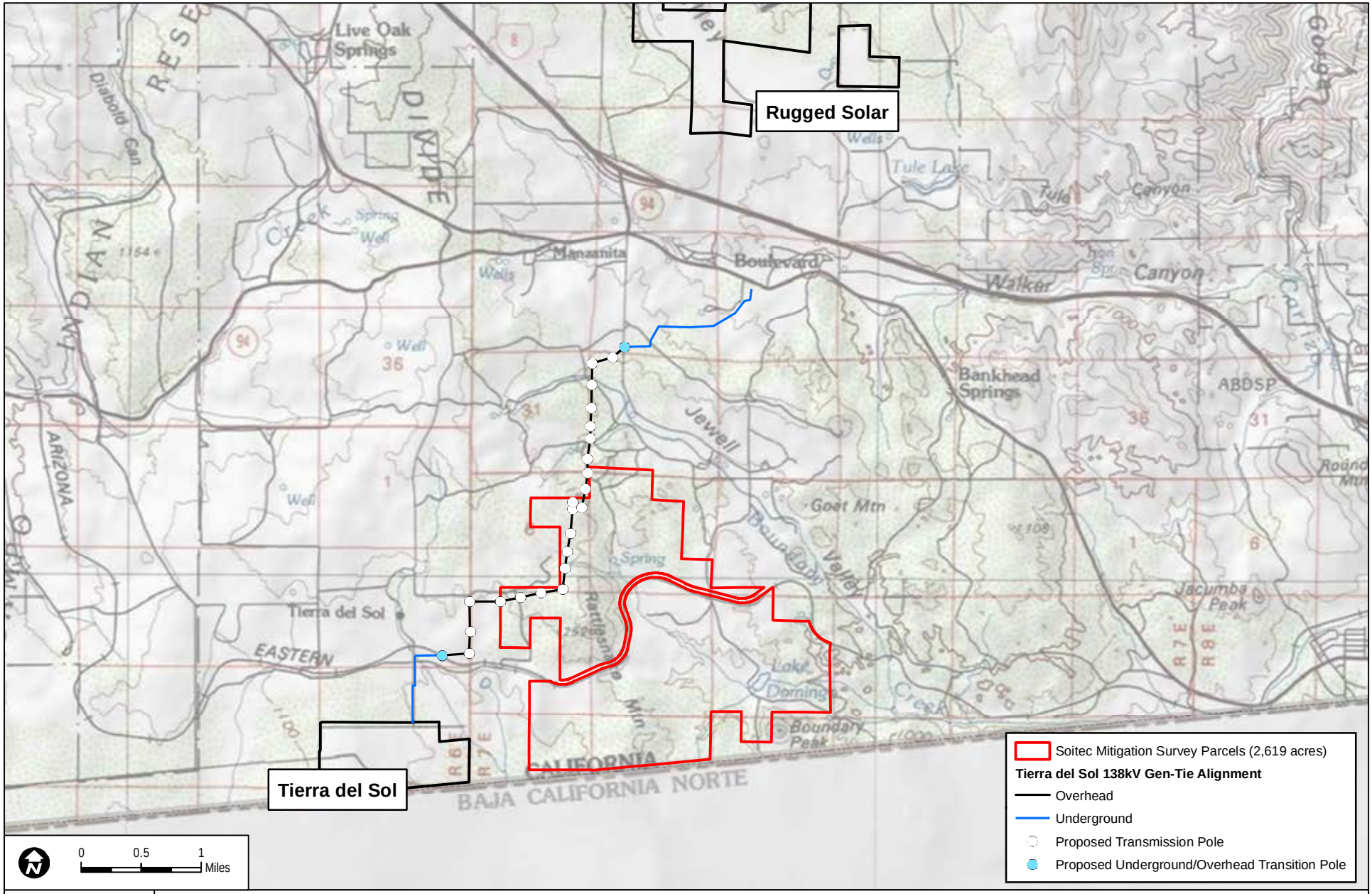
DUDEK

7345

FIGURE 1

Regional Map

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE



DUDEK

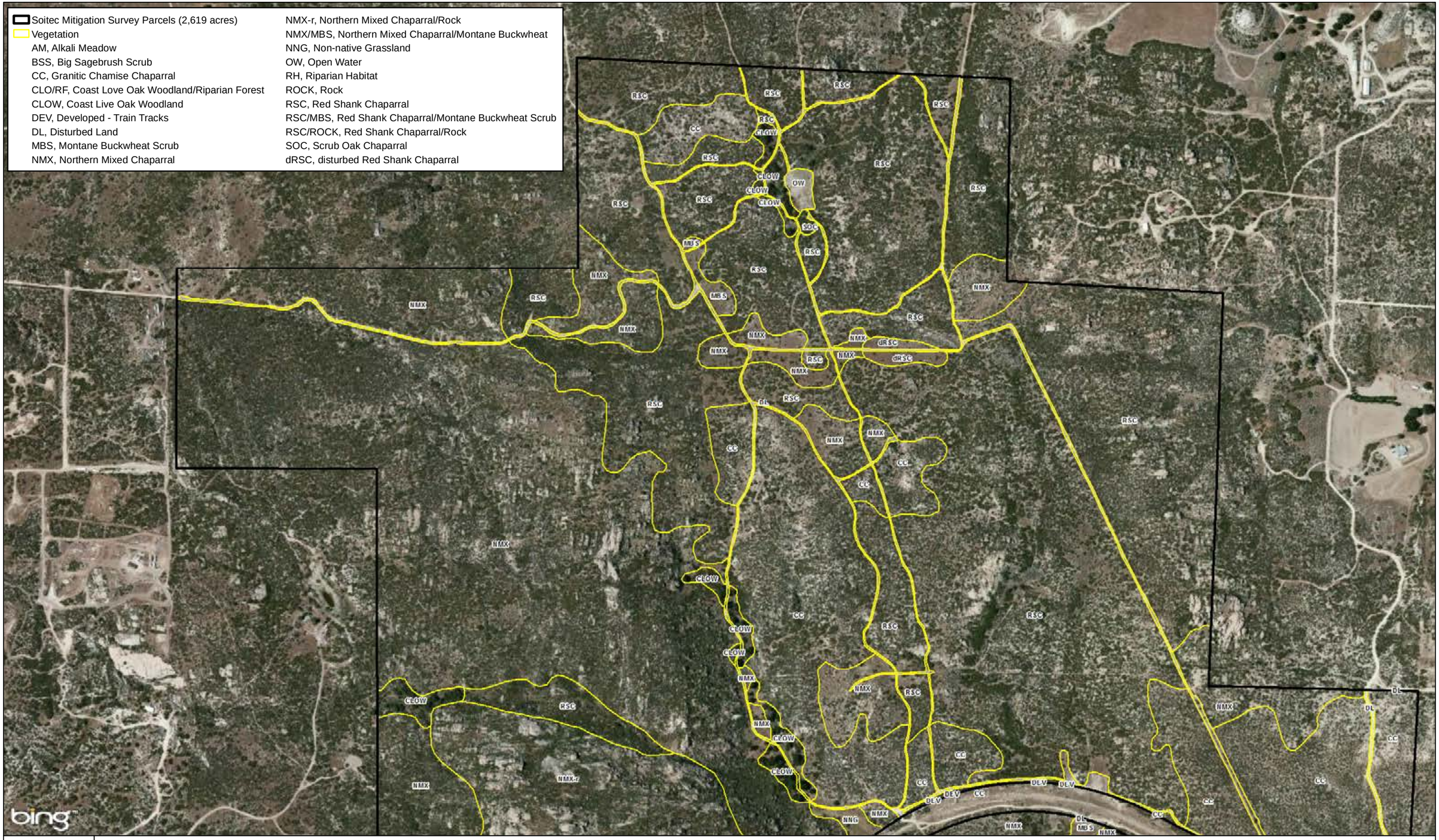
7123

SOURCE: USGS 7.5' Live Oak Springs and Tierra del Sol Quadrangles

FIGURE 2

Vicinity Map

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE



DUDEK

0 250 500 Feet

7345

FIGURE 3a

Vegetation Communities

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE

Soitec Mitigation Survey Parcels (2,619 acres)
Vegetation
AM, Alkali Meadow
BSS, Big Sagebrush Scrub
CC, Granitic Chamise Chaparral
CLO/RF, Coast Love Oak Woodland/Riparian Forest
CLOW, Coast Live Oak Woodland
DEV, Developed - Train Tracks
DL, Disturbed Land
MBS, Montane Buckwheat Scrub
NMX, Northern Mixed Chaparral
NMX-r, Northern Mixed Chaparral/Rock
NMX/MBS, Northern Mixed Chaparral/Montane Buckwheat
NNG, Non-native Grassland
OW, Open Water
RH, Riparian Habitat
ROCK, Rock
RSC, Red Shank Chaparral
RSC/MBS, Red Shank Chaparral/Montane Buckwheat Scrub
RSC/ROCK, Red Shank Chaparral/Rock
SOC, Scrub Oak Chaparral
dRSC, disturbed Red Shank Chaparral

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0 250 500 Feet

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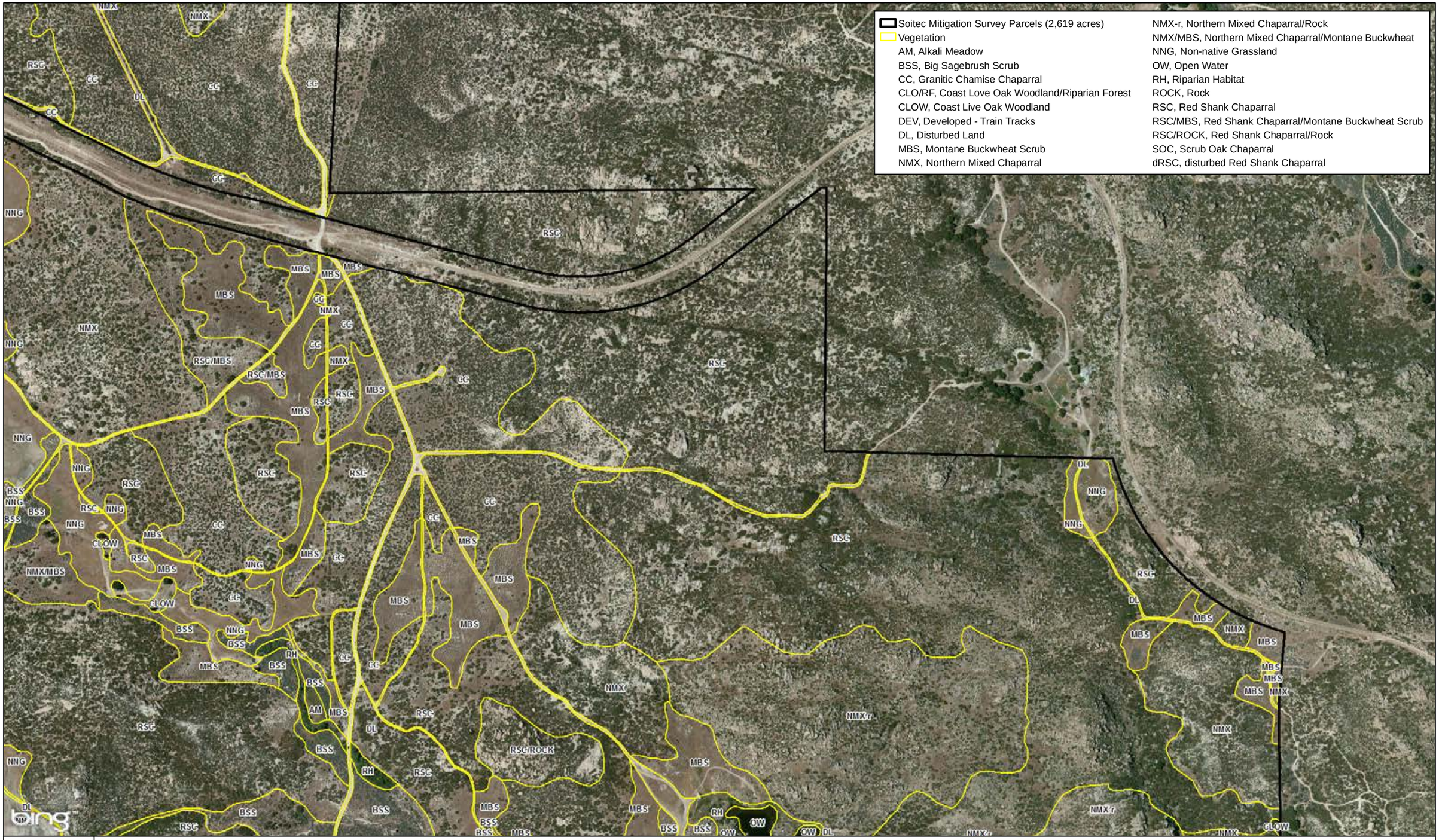
FIGURE 3b

Vegetation Communities

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE



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0 250 500 Feet

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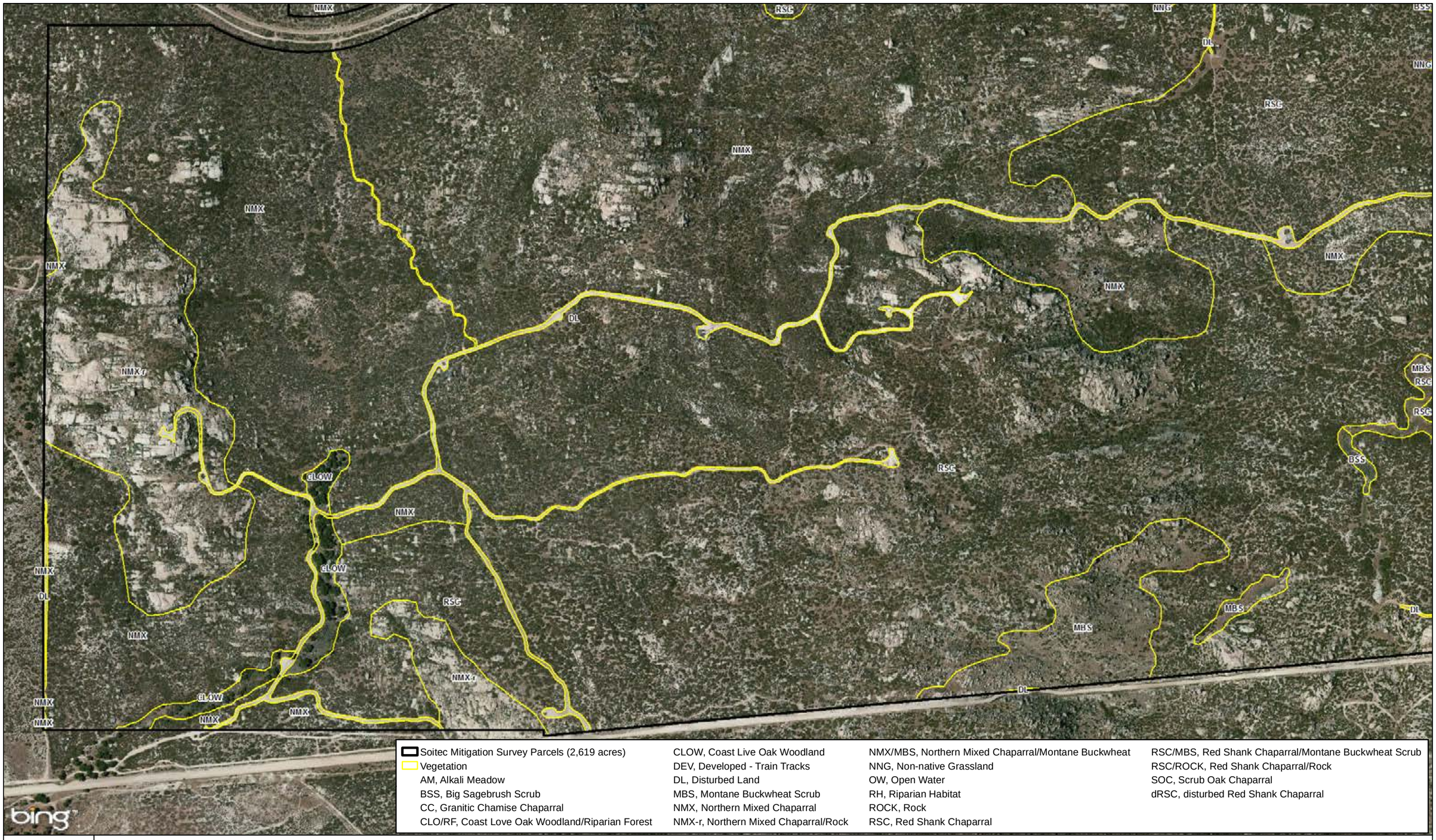
FIGURE 3c

Vegetation Communities

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE



DUDEK

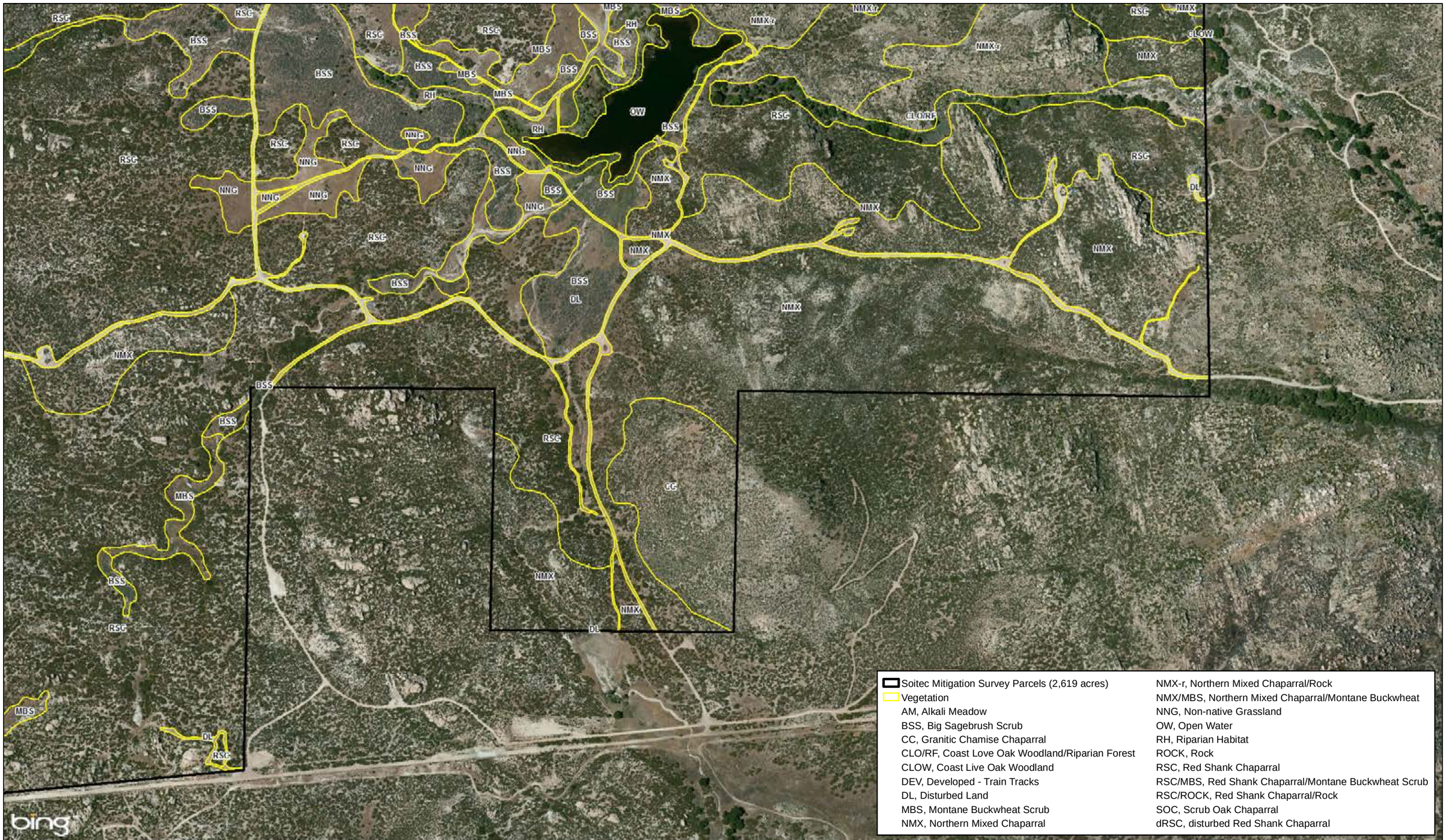
0 250 500 Feet

7345

FIGURE 3d

Vegetation Communities

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE



DUDEK

0 250 500 Feet

7345

FIGURE 3e

Vegetation Communities

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE

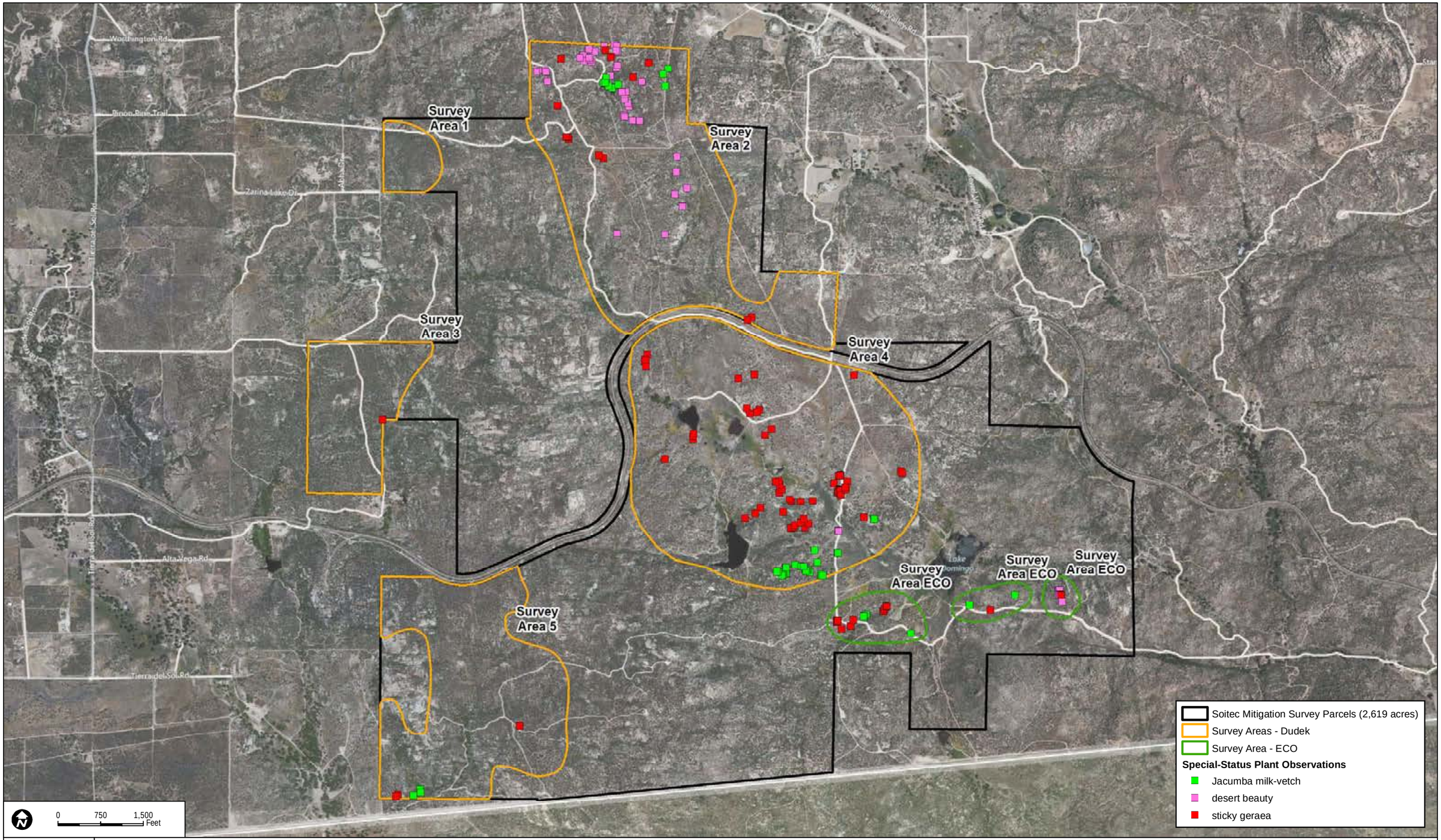


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FIGURE 4

Special-Status Plants Observation Map

EVALUATION OF BIOLOGICAL RESOURCES FOR THE SOITEC MITIGATION SITE

DUDEK

MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
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MEMORANDUM

To: Ashley Gungle, San Diego County Planning and Land Use
From: David Hochart, Brock Ortega, Dudek
Subject: Jacumba Solar Biological Open Space Memorandum
Date: June 21, 2013
Attachment(s): Figures 1–6

INTRODUCTION

Aries Solar Holding, LLC is in the process of evaluating the environmental effects related to development of a 108-acre solar development project within a 305-acre ownership in southeastern San Diego County (Figures 1 and 2). This includes development of the solar farm and the associated gen-tie line, and all construction related disturbances as seen in Figure 3. To satisfy habitat loss mitigation requirements for the development of solar facilities on this Project, Aries Solar Holding, LLC is proposing to balance development with on-site preservation of habitat – providing a contiguous block of habitat. In order to locate and characterize natural communities, including habitats for special-status species within the biological open space (BOS), Dudek conducted vegetation mapping in accordance with the County of San Diego Report Format and Content Requirements (County of San Diego 2010a). This memo provides the results of the vegetation mapping and outlines the potential for special-status plant and wildlife species to occur within the BOS. The memo also includes an overall assessment of habitat function and value within the BOS.

ENVIRONMENTAL SETTING (EXISTING CONDITIONS)

The BOS is undeveloped and on-site elevation ranges from approximately 3,010–3,160 feet above mean sea level (amsl). The site is located 3.5 miles east of the community of Jacumba, south of Old Highway 80 (the highway traverses the northern portion of the site), and north of the international border (see Figure 2). The site is generally flat except for a low hill near its southwest corner, and several unvegetated channels generally flow to the northwest across the site. The project will include an interconnection to San Diego Gas & Electric's (SDG&E's) ECO Substation located approximately 1,000 feet to the east of the project site (see Figure 3). Land use on site, and in the surrounding areas, consists of open space in both private and federal lands holdings (Figure 3). BLM lands are adjacent to the project limits and a 500 kV substation is currently under construction to the east. A portion of BOS borders Mexico and is

separated by the International Border Fence (fence). There are breaks in the fence about 1,300 feet west of the Project within BLM lands, and approximately 3,000 feet to the east that allow for north/south wildlife movement. The mitigation site is generally within the Peninsular Range in a transitional area between the coast and the desert. It is in a dry climate with average temperatures near the community of Jacumba ranging from approximately 34–94°F. This community generally receives an average rainfall of less than 15 inches per year (Western Regional Climate Center 2012).

VEGETATION COMMUNITIES

On-Site Vegetation Communities

Vegetation communities and land uses on and within 100 feet of the site were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet), aerial photograph–based field map of the mitigation site. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined.

Consistent with the latest County of San Diego *Report Format and Content Requirements: Biological Resources* (County of San Diego 2010a), vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008). Biologists conducted vegetation mapping using the *Draft Vegetation Communities of San Diego County* (Oberbauer et al 2008), which is a local (i.e., San Diego County) refinement of the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The *Manual of California Vegetation* (2nd edition) (MCV2; Sawyer et al. 2009) was utilized as an additional reference to help determine characteristics (such as percentage species cover) of various classifications.

Biologists mapped 22 1-acre plots within the project boundary in order to determine the percent cover of California juniper (*Juniperus californica*). Each California juniper was mapped using a Trimble GeoXH GPS unit and the diameter of each tree was recorded. In addition, other shrubs were GPS'd in 2 of the plots in order to provide a comparison of the California junipers and other shrubs on site. The data recorded was then used to calculate the percent cover of California junipers within each 1-acre plot. The purpose of this exercise was to provide guidance for updating the vegetation map, specifically regarding Peninsular Juniper Woodland and Scrub. Following this, Dudek met with the County of San Diego in order to determine the best approach to mapping the Peninsular Juniper Woodland and Scrub. The County agreed that areas with ≥4%

cover of California juniper will be mapped as Peninsular Juniper Woodland and Scrub. The additional data collected provided enough information to determine which areas met these mapping requirements for areas considered Peninsular Juniper Woodland and Scrub and other vegetation communities.

Five plant communities and land cover types were mapped by Dudek within the Project area and BOS, including: disturbed land, Peninsular juniper woodland and scrub, semi-desert chaparral, Sonoran mixed woody scrub, and upper Sonoran subshrub scrub. The acreages of each community type within the project site are shown in Table 1. Descriptions of each vegetation community (with Holland numeric codes) are provided following Table 1. Their spatial distributions are presented on Figure 4.

Table 1
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code[1]	Existing Acreage
Upland Scrub and Chaparral		
Sonoran Mixed Woody Scrub*	33210	3.2
Semi-Desert Chaparral*	37400	179.4
Upper Sonoran Subshrub Scrub*	39000	3.6
Upland Woodland and Savannah		
Peninsular Juniper Woodland and Scrub*	72320	103.3
Non-Native Communities and Land Covers		
Disturbed Land	11300	13.2

Note: The above acreages do not include the gen-tie alignment.
[1] Holland (1986) as modified by Oberbauer et al. (2008)
* Considered special-status by the County (2010b).

Disturbed Land (11300)

Disturbed land refers to areas that have been permanently altered by previous human activity that has eliminated all future biological value of the land for most species. The native or naturalized vegetation is no longer present and the land lacks habitat value for sensitive wildlife, including potential raptor foraging.

Disturbed land found throughout the study area consists primarily of unpaved roads (Figure 4). These roads have been graded and contain little native vegetation. Disturbed land is scattered in various locations throughout the study area.

Peninsular Juniper Woodland and Scrub (72320)

Peninsular juniper woodland and scrub consists of relatively dense pinon woodland dominated by Parry pinyon (*Pinus quadrifolia*), with California juniper (*Juniperus californica*) occurring within xeric sites below the trees dripline. This community occurs in alluvial fans and desert slopes that are slightly lower and more xeric than the peninsular pinon woodland community (72310), with which it intergrades (Holland 1986). Other dominant species include: Parry's beargrass (*Nolina parryi*), Sonoran scrub oak (*Quercus turbinella*), Mojave yucca (*Yucca schidigera*), and sagebrush (*Artemisia tridentata*).

Peninsular juniper woodland and scrub observed on site contains California juniper at greater than 4% absolute cover and lacks pines (*Pinus* sp.). Other commonly occurring species include creosote bush, jointfir (*Ephedra* sp.), goldenbush (*Ericameria* spp.), and snakeweed (*Gutierrezia* sp.). Peninsular juniper woodland and scrub occurs in large patches throughout the study area (Figure 4).

Semi-Desert Chaparral (37400)

According to Holland (1986), semi-desert chaparral is similar to northern mixed chaparral (37710), but it is typically not quite as tall (1.5–3 m) (4.9–10 feet) and more open. Dominant taxa within this community include *Juniperus* sp., *Eriogonum* sp., and *Opuntia* sp. Characteristic species include chamise, *Arctostaphylos* sp., *Ceanothus* sp. *Quercus* sp. and a variety of other shrubs and subshrubs. This community is found on the high desert plateaus and escarpment of the Peninsular Range in San Diego County, associated with drier, cooler winters (Holland 1986).

On site, semi-desert chaparral is found within areas where California juniper is less prominent (less than 4% absolute cover), including areas where California junipers have burned in the past and have not yet recovered. The semi-desert chaparral on site includes creosote bush, jointfir, goldenbush, cholla, Eastern Mojave buckwheat, and deerweed (*Acmispon glaber*). Semi-desert chaparral is the dominant vegetation community on site (Figure 4).

Sonoran Mixed Woody Scrub (33210)

According to Holland (1986), Sonoran mixed woody scrub is similar to Sonoran mixed woody and succulent scrub (33220), but with additional woody species. Characteristic species include creosote bush, burrobush (*Ambrosia dumosa*), ocotillo, *Opuntia* sp., brittlebush (*Encelia farinosa*), and *Krameria* sp. In San Diego County, this community is associated with lower alluvial fans, above the desert floor and below the coarse mountain substrates (Holland 1986).

Sonoran mixed woody scrub on site lack California juniper and are dominated by creosote bush, in addition to other shrub and succulent cover. Other commonly occurring species include jointfir, cholla, goldenbush, snakeweed, and strawberry cactus (*Mammillaria dioica*). Sonoran mixed woody scrub occurs in one small patch toward the central portion of the study area (Figure 4).

Upper Sonoran Subshrub Scrub (39000)

Upper Sonoran subshrub scrub is comprised of low, fairly penetrable scrub of soft-wooded, summer-dormant, drought-tolerant shrubs (Holland 1986). It is usually associated with well drained soils derived from sandstone, shale, or sterile white diatomaceous deposits. In San Diego County, it intergrades with some chaparrals at higher elevations. Dominant vegetation found on site varies, but usually includes narrowleaf goldenbush (*Ericameria linearifolia*), Eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), bladderpod spiderflower (*Isomeris arborea arborea*), or California jointfur (*Ephedra californica*) (Holland 1986).

Areas mapped as upper Sonoran subshrub scrub are dominated by Eastern Mojave buckwheat, goldenbush, jointfir, cholla, and deerweed. This area contains native shrub cover, but lacks California juniper and creosote bush. Sonoran subshrub scrub occurs in one patch located along the southern portion of the study area (Figure 4).

Gen-Tie Vegetation Communities

The alignment and configuration (i.e., overhead vs. underground), has not been determined at this time. For purposes of disclosing all potential ground disturbances associated with the project, the preliminary gen-tie study area has been provided on Figure 3. The gen-tie study are consists of peninsular juniper woodland and scrub (see Figure 3 and vegetation description include above).

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

In addition to the compensation for impacts to special-status vegetation communities, the BOS are being proposed to compensate for impacts to special-status plant species and habitat for special-status wildlife species associated with the project.

Special-Status Plant Species

Table 2 provides a list of special-status plant species with potential to occur within the study area. This list was developed by Dudek by reviewing the physical characteristics of the site and other projects near the project area, the County of San Diego Sensitive Plant List (County of San Diego 2010c), and special-status plants that occur within the California Natural Diversity Database

(CNDDB) 5-mile search (CDFG 2012) or which have been identified within the California Native Plant Society (CNPS) in the Jacumba 7.5-minute USGS quadrangle and surrounding eight quadrangles (CNPS 2012). This table is organized by the County's listing status (i.e., List A-D) and also includes the status of the species, its primary habitat associations, its life form, and the known elevation ranges for which the species is known to occur. Protocol special-status plant species surveys for the project will be completed at later date.

Table 2
Special-Status Plant Species and Potential To Occur Within the Study Area

Scientific Name	Status[1] (Federal/ State/Rare Plant Rank List)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation
List A (Rare, Threatened, or Endangered in California and Elsewhere)		
Acmispon [=*Lotus*] *haydonii* Pygmy lotus	None/None/1B.3	Pinyon and juniper woodland, Sonoran desert scrub; rocky/ perennial herb/Jan.–June/1,706 to 3,937 feet
Astragalus douglasii var. *perstrictus* Jacumba milk-vetch	None/None/1B.2	Chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland/ rocky/ perennial herb/ Apr.–Jun./ 2,953–4,495 feet
Deinandra floribunda Tecate tarplant	None/None/1B.2	Chaparral, coastal scrub/ annual herb/Aug.–Oct./230–4,003 feet
Ericameria cuneata var. *macrocephala* Laguna Mountains goldenbush	None/None/1B.3	Chaparral; granitic/shrub/ Sept.–Dec./3,921–6,070 feet
Eryngium aristulatum var. *parishii* San Diego button-celery	FE/SE/1B.1	Coastal scrub, valley and foothill grassland, vernal pools, mesic areas/annual-perennial herb/Apr.–June/ 65–2,034 feet
Galium angustifolium ssp. *jacinticum* San Jacinto Mountains bedstraw	None/None/ 1B.3	Lower montane coniferous forest/perennial herb/June–August/4,429–6,890 feet
Heuchera brevistaminea Mt. Laguna alumroot	None/None/1B.3	Broadleafed upland forest, chaparral, cismontane woodland, riparian forest; rocky/rhizomatous herb/Apr.–July/4,495–6,562 feet
Hulsea californica San Diego sunflower	None/None/1B.3	Chaparral, lower montane coniferous forest, upper montane coniferous forest/openings and burned areas/perennial herb/Apr.–June/3,002–9,564 feet
Lupinus excubitus var. medius Mountain Springs bush lupine	None/None/1B.3	Pinyon and juniper woodland, Sonoran desert scrub/shrub/ Mar.–May/1,394–4,495 feet
Streptanthus campestris Southern jewel-flower	None/None/1B.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland/rocky/ perennial herb/ May–July/ 2,953–7,546 feet
Tetracoccus dioicus Parry's tetracoccus	None/None/1B.2	Chaparral, coastal scrub/ perennial deciduous shrub/ Apr.–May/ 541–3,281 ft.
Xylorhiza orcuttii Orcutt's woody aster	None/None/1B.2	Sonoran desert scrub/perennial herb/Mar.–Apr./0–1,197.5 feet
List B (Rare, Threatened, or Endangered In California But More Common Elsewhere)		
Astragalus insularis var. *harwoodii* Harwood's milkvetch	None/None/2.2	Desert dunes, Mojavean desert scrub; sandy or gravelly/annual herb/Jan.–May/0 to 2,329 feet
Ayenia compacta California ayenia	None/None/2.3	Mojavean desert scrub, Sonoran desert scrub; rocky/perennial herb/Mar.–Apr./492 to 3,593 feet

Table 2
Special-Status Plant Species and Potential To Occur Within the Study Area

Scientific Name	Status[1] (Federal/ State/Rare Plant Rank List)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation
Bursera microphylla Little-leaf elephant tree	None/None/2.3	Sonoran desert scrub; rocky/deciduous tree/June–July/656–2,297 feet
Calliandra eriophylla Pink fairy duster	None/None/2.3	Sonoran desert scrub; sandy or rocky/ deciduous shrub/ Jan.—Mar./393–4,291 feet
Chamaesyce arizonica Arizona spurge	None/None/2.3	Sonoran desert scrub; sandy/ perennial herb/Mar.—Apr./ 164–984 feet
Dieteria asteroides var. *lagunensis* Mount Laguna aster	None/ SR/2.1	Cismontane woodland, lower montane coniferous forest/ perennial herb/ Jul.–Aug./ 2,625–7,874 feet
Eucnide rupestris Rock nettle	None/None/2.2	Sonoran desert scrub/annual herb/Dec.–Apr./1,640–1,969 feet
Geraea viscida Sticky geraea	None/None/2.3	Chaparral (often in disturbed areas)/perennial herb/May–June/ 1,476–5,577 feet
Herissantia crispa Curly herissantia	None/None/2.3	Sonoran desert scrub/annual-perennial herb/Aug.—Sept./ 2,296–2,378 feet
Hulsea mexicana Mexican hulsea	None/None/2.3	Chaparral (volcanic, often on burns or disturbed areas)/annual-perennial herb/Apr.–June/approximately 3,937 feet
Ipomopsis tenuifolia Slender-leaved ipomopsis	None/None/2.3	Chaparral, pinyon and juniper woodland, Sonoran desert scrub/ gravelly or rocky/ perennial herb/ Mar.–May/ 328–3,937 feet
Linanthus bellus Desert beauty	None/None/2.3	Chaparral (sandy)/annual herb/Apr.–May/3,281–4,593 feet
Lycium parishii Parish's desert-thorn	None/None/2.3	Coastal scrub, Sonoran desert scrub/perennial shrub/Mar.–Apr./1,001–3,281 feet
Malperia tenuis Brown turbans	None/None/2.3	Sonoran desert scrub; sandy, gravelly/annual herb/Mar.–Apr./49 to 1,099 feet
Matelea parvifolia Climbing spearleaf	None/None/2.3	Mojavean desert scrub, Sonoran desert scrub; rocky/ perennial herb/ Mar.–May/ 1,443–3,592 feet
Mentzelia hirsutissima Hairy stickleaf	None/None/2.3	Sonoran desert scrub; rocky/annual herb/March–May/ 0–2,297 feet
Nemacaulis denudata var. *gracilis* Slender woolly-heads	None/None/2.2	Coastal dunes, desert dunes, Sonoran desert scrub/annual herb/Apr.–May/164–1,312 feet
Selaginella eremophila Desert spike-moss	None/None/2.2	Chaparral, Sonoran desert scrub; gravelly or rocky/rhizomatous herb/June/656–2,953 feet
Senecio aphanactis Rayless ragwort	None/None/2.2	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan.–Apr./49–262 feet
List C (Plants Which May Be Rare, But Need More Information To Determine Their True Rarity Status)		
Berberis fremontii Fremont barberry	None/None/3	Chaparral, Joshua tree woodland, pinyon and juniper woodland/rocky/ perennial evergreen shrub/ Apr.–June/ 2,756–6,070 feet

Table 2
Special-Status Plant Species and Potential To Occur Within the Study Area

Scientific Name	Status[1] (Federal/ State/Rare Plant Rank List)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation
List D (Plants Of Limited Distribution And Are Uncommon, But Not Presently Rare Or Endangered)		
Caulanthus simulans Payson's jewel-flower	None/None/4.2	Chaparral, coastal scrub/sandy, granitic/ annual herb/ (Feb.) Mar.–May (June)/ 295–7,218 feet
Horsfordia newberryi Newberry's velvet-mallow	None/None/4.3	Sonoran desert scrub; rocky/ shrub/Feb.—Dec./9–2,624 feet
Pilostyles thurberi Thurber's pilostyles	None/None/4.3	Sonoran desert scrub/perennial herb parasitic/Jan./0–1,198 feet
Not on the County's Sensitive Plant List But Otherwise Designated As Special-Status		
Cylindropuntia (=*Opuntia*) *x fosbergii* Pink cholla	None/None/3	Sonoran desert scrub/stem succulent/Mar.–May/279 to 2,789 feet
Linanthus maculatus Little San Bernardino Mountains linanthus	None/None/1B.2	Desert dunes, Joshua tree woodland, Mojavean desert scrub, Sonoran desert scrub (sandy)/Mar.–May/639 – 6,807 feet
Mentzelia tricupsis Spiny-hair blazing star	None/None/2.1	Mojavean desert scrub (sandy, gravelly, slopes, and washes)/ Mar.–May/492–4,199 feet
Mentzelia tridentata Creamy blazing star	None/None/1B.3	Mojavean desert scrub (rocky, gravelly, sandy)/Mar.–May/2,296 –3,805 feet
Mimulus diffusus Palomar monkeyflower	None/None/4.3	Chaparral, lower montane coniferous forest (sandy or gravelly)/Apr.–June/4,002–6,003 feet
Pickeriginia montana var. *tomentosa* Woolly chaparral-pea	None/None/4.3	Chaparral (gabbroic, granitic, clay)/May–Aug./0–5,577 feet
Pholistoma auritum var. *arizonicum* Arizona pholistoma	None/None/2.3	Mojavean desert scrub/annual herb/March/902–2,740 feet
Pseudorontium cyathiferum Deep Canyon snapdragon	None/None/2.3	Sonoran desert scrub/Feb.–Apr./0–2,624 feet
Symphyotrichum defoliatum San Bernardino aster	None/None/1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic)/near ditches, streams, springs/perennial rhizomatous herb/July–Nov./ 7–6,693 feet

[1]Status

Federal and state status:

- FE: Federally listed as Endangered
- FT: Federally listed as Threatened
- SE: State listed as Endangered
- ST: State listed as Threatened
- SR: State listed as Rare

California Rare Plant Rank (CRPR):

- 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 About Which More Information Is Needed – A Review List
- 4: Plants of Limited Distribution – A Watch List

Threat Ranks

1. Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
2. Fairly endangered in California (20% to 80% of occurrences threatened)
3. Not very endangered in California (less than 20% of occurrences threatened or no current threats known).

Special-Status Wildlife Species

Table 3 provides a list of special-status animal species with potential to occur within the study area. The list of special-status animal species with potential to occur was developed by Dudek and is based on our familiarity with the study area as a result of the recent site visit, past projects completed, and a review of available data described above (i.e., soils maps, CNDDB records, (U.S. Fish and Wildlife Survey) USFWS data; publicly available technical studies, etc.).

Focused surveys for Quino Checkerspot Butterfly were conducted in 2013 per the USFWS survey requirements. Survey results were negative and have been provided to the USFWS.

Known occurrences of special status species are depicted on Figure 5.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Reptiles and Amphibians			
Anaxyrus californicus Arroyo toad	FE/CSC/ Group 1, MSCP	Stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Unlikely—not known from area, and habitat is unsuitable.
Ensatina eschscholtzii klauberi Large-blotched salamander	None/CSC/ Group 1	Oak woodland, chaparral, coastal sage scrub, coastal dunes, conifer forest	Very low—not known from the area and marginal habitat quality.
Rana aurora draytoni California red-legged frog	FT/CSC/ Group 1, MSCP	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Unlikely—not known from area, and habitat is unsuitable.
Spea [=*Scaphiopus*] *hammondi* Western spadefoot	None/CSC/ Group 2	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitat and road rut pools	Marginal—no suitable habitat is present in the study area.
Taricha torosa torosa Coast Range newt (Monterey County south only)	None/CSC/ Group 2	Coastal drainages from Mendocino County to San Diego County; lives in terrestrial habitats and will migrate over 1 kilometer to breed in ponds, reservoirs, and slow moving streams	Very low—no suitable habitat is present in the study area.
Anniella pulchra pulchra Silvery legless lizard	None/CSC/ Group 2	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats	Yes, suitable habitat is present within most of the study area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Aspidoscelis hyperythra beldingi Belding's orange-throated whiptail	None/CSC/ Group 2, MSCP	Coastal sage scrub, chaparral, grassland, juniper and oak woodland; sandy soils, washes	Yes, suitable habitat is present within the study area. Observed in the past during surveys on the ECO site
Aspidoscelis tigris stejnegeri Coastal western whiptail	None/None/ Group 2	Coastal sage scrub, chaparral; sandy areas, gravelly arroyos, or washes	Yes, suitable habitat is present within the study area.
Charina trivirgata Rosy boa	None/None/ Group 2	Rocky chaparral, coastal sage scrub, oak woodlands, desert and semi-desert scrub	Yes, suitable habitat is present within the study area. Observed in the past during surveys on the Tule Project site.
Coleonyx switaki Barefoot banded gecko	None/ST/ Group 2	Rocky, bouldery areas at the heads of canyons; elevation range is approximately sea level to 2,100 feet; range is near Borrego Springs and to the south	Very low—marginal suitable habitat is present; however, the study area elevation is above the known range for the species.
Coleonyx variegatus abbotti San Diego banded gecko	None/None/ Group 1	Cismontane chaparral, coastal sage scrub, desert scrub; granite outcrops	Yes, suitable habitat is present within the study area.
Crotalus ruber ruber Northern red-diamond rattlesnake	None/CSC/ Group 2	Variety of shrub habitats where there is heavy brush, large rocks, or boulders	Yes, suitable habitat is present within the study area.
Diadophis punctatus similis San Diego ringneck snake	None/None/ Group 2	Open, rocky areas in moist habitats near intermittent streams: marsh, riparian woodland, sage scrub	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Actinemys marmorata Western pond turtle	None/CSC/ Group 1, MSCP	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Eumeces skiltonianus interparietalis Coronado skink	None/CSC/ Group 2	Grassland, riparian and oak woodland; found in litter, rotting logs, under flat stones	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Lampropeltis zonata (pulchra) (San Diego population) California (San Diego) mountain kingsnake	None/CSC/ Group 2	Valley-foothill hardwood, hardwood-conifer, chaparral, coniferous forest, wet meadow	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Phrynosoma coronatum (blainvillei population) Coast (San Diego) horned lizard	None/CSC/ Group 2, MSCP	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest, sandy areas, washes, flood plains	Yes, suitable habitat is present within the study area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Salvadora hexalepis virgultea Coast patch-nosed snake	None/CSC/ Group 2	Chaparral, washes, sandy flats, rocky areas	Yes, suitable habitat is present within the study area.
Sceloporus graciosus vanderburgianus Southern sagebrush lizard	None/None/ Group 2	Higher elevation, montane chaparral, hardwood and conifer forest, juniper, coastal sage scrub	Yes, suitable habitat is present within the study area.
Thamnophis hammondii Two-striped garter snake	None/CSC/ Group 1	Marshes, meadows, sloughs, ponds, slow-moving water courses	Very low. Lack of suitable habitat within the study area. No records of the species in the area.
Thamnophis sirtalis ssp. South coast garter snake	None/CSC/ Group 2	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Birds			
Accipiter cooperii Cooper's hawk (nesting)	None/WL, CSC/Group 1, MSCP	Riparian and oak woodlands, montane canyons	Low—lack of suitable nesting habitat within the study area. However, there are records of the species in the area.
Agelaius tricolor Tricolored blackbird	BCC, USBC/CSC/ Group 1, MSCP	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture	Unlikely—lack of suitable nesting habitat within the study area. However, foraging habitat is present on site, and there are records of the species in the area.
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	None/WL/ Group 1	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops	Low to Moderate. However, lack of suitable habitat within the study area, and no records of the species in the area.
Anas strepera Gadwall	None/None/ Group 2	Interior valleys, wetlands, ponds, and streams; feeds and rests in freshwater lacustrine and emergent habitats, and to a lesser extent, estuarine and saline emergent habitats, and nests in nearby herbaceous and cropland habitats	Very low—lack of suitable habitat within the study area, and no records of the species in the area.
Amphispiza belli belli Bell's sage sparrow	BCC/WL/ Group 1	Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys	Moderate, however, marginal suitable habitat within the study area, and no records of the species in the area.
Ammodramus savannarum Grasshopper sparrow	None/CSC/ Group 1	Native and non-native grasslands and pastures	Very low—lack of suitable habitat within the study area. No records of the species in the area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Aquila chrysaetos Golden eagle (nesting and wintering)	BCC/P, WL/Group 1, MSCP	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest	Yes—suitable foraging habitat is present within the study area; however, very low potential for nesting (recorded nesting sites are located in the region, but off site).
Ardea herodias Great blue heron	None/Group 2, CDF	Variety of habitats, but primarily wetlands; lakes, rivers, marshes, mudflats, estuaries, saltmarsh, riparian habitats	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Asio flammeus Short-eared owl	USBC/CSC/ Group 2	Grassland, prairies, dunes, meadows, irrigated lands, saline and freshwater emergent wetlands	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Asio otus Long-eared owl	None/CSC/ Group 1	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Athene cunicularia Burrowing owl	BCC/CSC/ Group 1, MSCP	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas	Yes—may nest and/or winter within the study area (no records for this species in the study areas; however, it was observed on the nearby ECO site).
Aythya americana Redhead	None/CSC/ Group 2	Lacustrine waters, foothills and coastal lowlands, and along the coast and Colorado river; nests in fresh emergent wetland bordering open water	Very low—lack of suitable habitat in the study area.
Branta Canadensis Canada goose	None/None/ Group 2, MSCP	Lakes, fresh emergent wetlands, moist grasslands, croplands, pastures, and meadows	Very low—lack of suitable habitat in the study area.
Buteo lineatus Red-shouldered hawk	None/None/ Group 1	Riparian and woodland habitats, eucalyptus	Very low—lack of suitable habitat in the study area.
Buteo regalis Ferruginous hawk	BCC/WL/ Group 1, MSCP	Open, dry country, grasslands, open fields, agriculture	Unlikely—no suitable habitat present within the study area (may use the study area to forage during the winter, however, study area is outside the recorded breeding range for this species).
Buteo swainsoni Swainson's hawk	BCC, USBC/ST/ Group 1, MSCP	Open grassland, shrublands, croplands	Unlikely—no suitable habitat present within the study area (may use the study area to forage during the winter, however, study area is outside the recorded breeding range for this species).
Butorides virescens Green heron	None/None/ Group 2	Lakes, marshes, streams	Very low—lack of suitable habitat within the study area. No records of the species in the area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Cathartes aura Turkey vulture	SBNF/None/ Group 1	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting, and resting	Yes—suitable foraging habitat is present the study area; however, very low potential for nesting (species has been observed in the region, but off site).
Chlidonias niger Black tern	None/CSC/ Group 2, MSCP	Freshwater lakes, marshes, ponds, coastal lagoons	Very low—no nesting habitat and lack of suitable habitat within the study area.
Circus cyaneus Northern harrier	None/CSC/ Group 1, MSCP	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub	Somewhat likely to occur. No suitable nesting habitat on site, however, marginal suitable foraging habitat is present within the study area.
Dendroica petechia brewsteri Yellow warbler	None/CSC/ Group 2	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders and willows; winters in a variety of habitats	Low—marginal suitable habitat is present within the study area.
Elanus leucurus (caeruleus) White-tailed kite	None/P/Group 1	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian	Somewhat likely to forage within the study area; however, no suitable nesting habitat on site.
Eremophila alpestris actia California horned lark	None/WL/ Group 2	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields	Moderate potential to forage within the study area; however, no suitable nesting habitat on site (observed in the past on the Tule Project and ECO Project sites).
Falco columbarius Merlin	None/CSC/ Group 2	Nests in open country, open coniferous forest, prairie; winters in open woodlands, grasslands, cultivated fields, marshes, estuaries and sea coasts	Yes, suitable foraging habitat is present within the study area. However, the study areas are outside the breeding range for this species (i.e., does not nest in California).
Falco mexicanus Prairie falcon	BCC/CSC/ Group 1	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Yes, suitable foraging habitat is present within the study area. However, there is no suitable nesting habitat present in the study area. Known to occur in the area.
Falco peregrinus anatum American peregrine falcon	BCC, (FD)/ SE, P/Group 1, MSCP	Nests on cliffs, buildings, bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Unlikely—no suitable foraging habitat within the study area. No suitable nesting cliffs present in the study area.
Icteria virens Yellow-breasted chat	None/CSC/ Group 1	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Very low—lack of suitable habitat within the study area. No records of the species in the area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Ixobrychius exilis Least bittern	None/CSC/ Group 2	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Lanius ludovicianus Loggerhead shrike	BCC/CSC/ Group 1	Open ground including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, open woodland	Yes, observed on site. Suitable habitat is present within the study area.
Melanerpes lewis Lewis' woodpecker	BCC/None/ Group 1	Open oak savannahs, broken deciduous, and coniferous habitats	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Oreotyx pictus Eremophila Mountain quail	None/None/ Group 2	Dense montane chaparral and brushy areas within coniferous forest, pinyon-juniper-yucca associations; uses shrubs, brush stands, and trees on steep slopes for cover	Moderate—suitable habitat is present within all of the study areas, but not known from the area.
Piranga rubra (nesting) Summer tanager	None/CSC/ Group 2	Nests in riparian woodland; winter habitats include parks and residential areas	Very low—lack of suitable habitat within the study area and out of the recorded breeding range for this species.
Progne subis (nesting) Purple martin	None/CSC/ Group 1	Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest, and woodland	Low—no nesting habitat. Marginal foraging habitat present within the study area.
Siala mexicana Western bluebird	None/None/ Group 2, MSCP	Open forests of deciduous, coniferous, or mixed trees, savanna, edges of riparian woodland	Very low—lack of suitable habitat within the study area. No records of the species in the area.
Tyto alba Common barn-owl	None/None/ Group 2	Open habitats including grassland, chaparral, riparian, and other wetlands	Low—marginal habitat present within the study area.
Vireo vicinior Gray vireo	BCC, BLM, USBC/CSC/ Group 1	Summer resident in arid pinyon-juniper, juniper, and chamise-redshank chaparral habitats	Yes, suitable nesting habitat is present within all of the study area and may nest on site.
Mammals			
Antrozous pallidus Pallid bat	None/CSC/ Group 2	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging	Yes, suitable foraging habitat is present within the study area. No suitable roosting habitat on site.
Bassariscus astulus Ringtail	None/P/Group 2	Mixed forests and shrublands near rocky areas or riparian habitats	Low—no suitable habitat present within the study area.
Chaetodipus californicus femoralis Dulzura (California) pocket mouse	None/CSC/ Group 2	Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas	Yes, suitable habitat is present within the study area.
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	None/CSC/ Group 2	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams	Yes, suitable habitat is present within the study area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Chaetodipus fallax pallidus Pallid San Diego pocket mouse	None/CSC/ Group 2	Coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland	Yes, suitable habitat is present within the study area and species is known to occur in this region.
Choeronycteris mexicana Mexican long-tongued bat	None/CSC/ Group 2	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings.	Yes, suitable foraging habitat is present within the study areas. Potential roosting areas are within the mountains east of the study area.
Coryorhinus townsendii Townsend's big-eared bat	None/CSC/ Group 2, MSCP	Mesic habitats, gleans from brush or trees or feeds along habitat edges	Yes, suitable foraging habitat is present within the study areas. Potential roosting areas are within the mountains east of the study area.
Euderma maculatum Spotted bat	None/CSC/ Group 2	Rock crevices, riparian forest, woodland and scrub, ponds, lakes, grasslands	Yes, suitable foraging habitat is present within the study areas. Potential roosting areas are within the mountains east of the study area.
Eumops perotis californicus Greater western mastiff bat	None/CSC/ Group 2, MSCP	Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures	Unlikely—marginally suitable foraging habitat present within the study area. No suitable roosting habitat on site.
Lasiurus blossevillii Western red bat	None/None/ Group 2	Prefers edges with trees for roosting and open areas for foraging. Roosts in woodlands and forests. Forages over grasslands, shrublands, woodlands, forests, and croplands.	Unlikely—marginally suitable foraging and roosting habitat present within the study area.
Lepus californicus bennettii San Diego black-tailed jackrabbit	None/CSC/ Group 2	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands	Yes, observed on site. Suitable habitat is present within the study area.
Macrotus californicus California leaf-nosed bat	BLM:S/DFG:SSC/ USFS:S/CSC/ Group 2	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis	Yes, suitable foraging habitat is present within the study areas.
Myotis ciliolabrum Small-footed myotis	None/None/ Group 2	Caves, old mines, abandoned buildings	Low—no suitable habitat present within the study area.
Myotis evotis Long-eared myotis	None/None/ Group 2	Roosts in buildings, crevices, under bark, and snags. Caves used as night roosts. Feeds along habitat edges, in open habitats, and over water.	Yes,.suitable foraging habitat is present within the study area. Potential roosting areas are within the mountains east of the study area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Myotis thysanodes Fringed myotis	None/None/ Group 2	Maternity colonies in caves, mines, buildings, or crevices. Forges over open habitats, early successional stages, streams, lakes, and ponds.	Yes, suitable foraging habitat is present within the study area. Potential roosting areas are within the mountains east of the study area.
Myotis volans Long-legged myotis	None/None/ Group 2	Feeds over open water and over open habitats, using denser woodlands and forests for cover and reproduction	Unlikely, suitable foraging habitat is present within the study area. However, limited roosting sites in the area.
Myotis yumanensis Yuma myotis	None/None/ Group 2	Closely tied to open water which is used for foraging; open forests and woodlands are optimal habitat	Unlikely—suitable foraging habitat is present within the study area. However, there is no known open water in the area.
Neotoma lepida intermedia San Diego desert woodrat	None/CSC/ Group 2	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth	Yes, middens observed within the study area.
Nyctinomops femorosaccus Pocketed free-tailed bat	None/CSC/ Group 2	Rocky desert areas with high cliffs or rock outcrops	Yes, suitable foraging habitat is present within the study area. Potential roosting areas are within the mountains east of the study area.
Nyctinomops macrotis Pocketed free-tailed bat	None/CSC/ Group 2	Rugged, rocky canyons	Unlikely—suitable foraging habitat is present within the study area. However, there are no known rugged, rocky canyons in the area.
Odocoileus hemionus Mule deer	None/None/ Group 2, MSCP	Coastal sage scrub, chaparral, riparian, woodlands, forest; often browses in open areas adjacent to cover	Yes, suitable habitat is present within the study area.
Onychomys torridus Ramona Southern grasshopper mouse	None/CSC/ Group 2	Grassland, sparse coastal sage scrub	Low—no suitable habitat present within the study area.
Perognathus longimembris internationalis Jacumba pocket mouse	None/CSC/ Group 2	Desert riparian, desert scrub, desert wash, coastal scrub, and sagebrush.	Yes, suitable habitat is present within the study area.
Puma [=*Felis*] *concolor* Mountain lion	None/None/ Group 2, MSCP	Coastal sage scrub, chaparral, riparian, woodlands, forest; rests in rocky areas, and on cliffs and ledges that provide cover	Yes, suitable habitat is present within the study area.

Table 3
Special-Status Animal Species and Potential to Occur Within the Study Area

Scientific Name/ Common Name	Status (Federal/State/ County)[1]	Habitat Preferences/Requirements	Potential to Occur on Site?
Taxidea taxus American badger	None/CSC/ Group 2, MSCP	Dry, open treeless areas, grasslands, coastal sage scrub	Yes, suitable habitat is present within the study area.
Invertebrates			
Branchinecta sandiegonensis San Diego fairy shrimp	FE/None/Group 1	Small, shallow vernal pools, occasionally ditches and road ruts	Very low potential to occur due to marginal road ruts within the study area.
Danaus plexippus Monarch butterfly (wintering sites)	None/None/ Group 2	Overwinters in eucalyptus groves	No—no eucalyptus trees occur on site. Large winter colonies are not recorded from the region.
Euphydryas editha quino Quino checkerspot butterfly	FE/None/Group 1	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant Plantago erecta and nectar plants must be present	Yes, suitable habitat is present within the study area, but dependent on presence of host plants. Also, observed during surveys for the Tule Wind project. However, focused surveys in 2013 were negative and no host plants were observed.
Lycaena hermes Hermes copper butterfly	None/None/ Group 1	Coastal sage scrub, southern mixed chaparral supporting at least 5% cover of host plant Rhamnus crocea	Low potential based on location and lack of host plants.
Papilio multiculdata Two-tailed swallowtail	None/None/ Group 1	Foothill slopes and canyons, moist valleys, streamsides, woodlands, parks, roadsides, suburbs, and cities	Unlikely—marginally suitable habitat is present within the study area.
Streptocephalus woottoni Riverside fairy shrimp	FE/None/Group 1	Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids	Low potential due to marginal road ruts.

1 Designations

Federal Designations:

BCC	USFWS: Birds of Conservation Concern
FC	Candidate for federal listing as Threatened or Endangered
(FD)	Federally delisted; monitored for 5 years
BLM:S	Bureau of Land Management – Sensitive
FE	Federally listed Endangered
FT	Federally listed as Threatened
PT	Proposed Threatened

State Designations:

CSC	California Special Concern Species
WL	Watch List
CDF:S	California Department of Forestry, Sensitive Species
P	CDFG Protected
FP	CDFG Fully Protected Species
SE	State-listed as Endangered
ST	State-listed as Threatened
DFG:SSC	CDFG Species of Special Concern

County Designations:

Group 1:	Animals of high sensitivity (listed or specific natural history requirements)
Group 2:	Animals declining, but not in immediate threat of extinction or extirpation

WILDLIFE MOVEMENT

Wildlife currently is able to traverse the site in an unencumbered manner until they arrive at the International Border Fence south of the site. The project site is located near two breaks in the International Border Fence. Two are located approximately 1,400 feet to the west and the other is located approximately 3,000 feet to the east (Figure 6). These breaks are due to the terrain and associated difficulties in building a fence in those areas. This topography does not pose difficulties for wildlife use however. Mule deer, coyotes, mountain lion, bobcat, and other species are readily able to scale slopes of this angle. As shown on Figure 3, the project has been designed to be built adjacent to the border fence in the southeastern corner of the site. This allows for a large contiguous block of habitat to be left in open space for wildlife to use and move through. The BOS is configured to compliment the adjacent BLM lands to the north and east. The project has been designed to be built in a single contiguous block that would allow for the provision of a large single contiguous block of open space habitat for common and special-status species to utilize, adjacent to existing public open space. Finally, the configuration of the open space allows for continued utilization of the breaks in the border fence by wildlife. It is expected that the configuration of the open space will allow for viable preservation of species and movement in the vicinity and region.

CONCLUSION

As seen in Table 4, overall, the project has an excess of 44.5 acres of natural communities within the planned open space. While specific Sonoran mixed woody scrub and upper Sonoran subshrub scrub mitigation is in deficit (-4.4 acres), the excess 44.5 acres of natural communities consisting of Semi-desert Chaparral (36 acres) and Peninsular Juniper Woodland and Scrub (8.5 acres) would provide equal if not better habitat value and function. Semi-desert chaparral supports the same suite of wildlife species and is very similar in form and function to the scrub communities. Based upon vegetation mapping, elevation ranges, soils, and location of the BOS, the BOS contains suitable habitat to compensate for the loss of special-status plant and wildlife species that will be, or could potentially be impacted by the project. Further, the location and configuration would mitigate potential impacts to wildlife movement.

The location of the open space block provides direct and adjacent connection to public open space and allows for unencumbered movement of wildlife across the site and through adjacent open space to two of the few breaks in the International Border Fence. This allows for north/south and east/west movement across the site and vicinity. Utilization of topographically, vegetatively, and governmentally diverse areas is a long-term benefit to wildlife and natural resources in the area. The BOS in surrounding areas contain many species which would be supported by the proposed preservation of these lands.

Table 4
Vegetation Communities, Impact Acreage and Mitigation Credit

Habitat Types/ Vegetation Communities	Code1	Impact Acreage	Mitigation Ratio	On-site BOS Mitigation Credit	Mitigation Outstanding
Upland Scrub and Chaparral					
Sonoran Mixed Woody Scrub*	33210	2.8	1:1	0.4	-2.4
Semi-Desert Chaparral*	37400	71.7	1:1	107.7	+36
Upper Sonoran Subshrub Scrub*	39000	2.8	1:1	0.8	-2.0
Upland Woodland and Savannah					
Peninsular Juniper Woodland and Scrub*	72320	23.7	3:1	79.6	+8.5
Non-Native Communities and Land Covers					
Disturbed Land	11300	7.4	0:0	0	N/A
RWQCB/CDFG/USACOE Waters		0.1	3:1	0.3	TBD

Note: The above acreages do not include the gen-tie alignment.
1 Holland (1986) as modified by Oberbauer et al. (2008)
* Considered special-status by the County (2010b).

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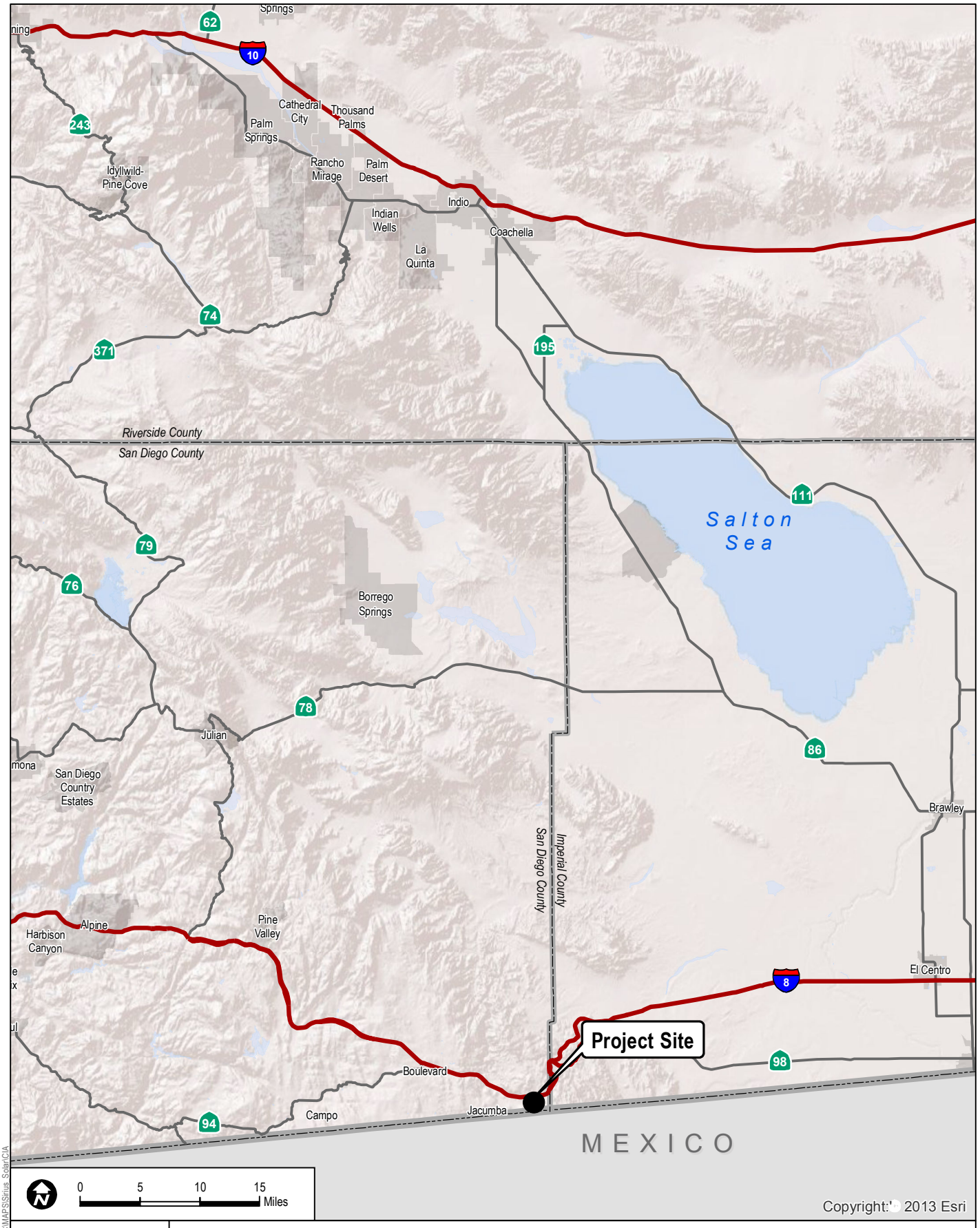

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FIGURE 1

Regional Map

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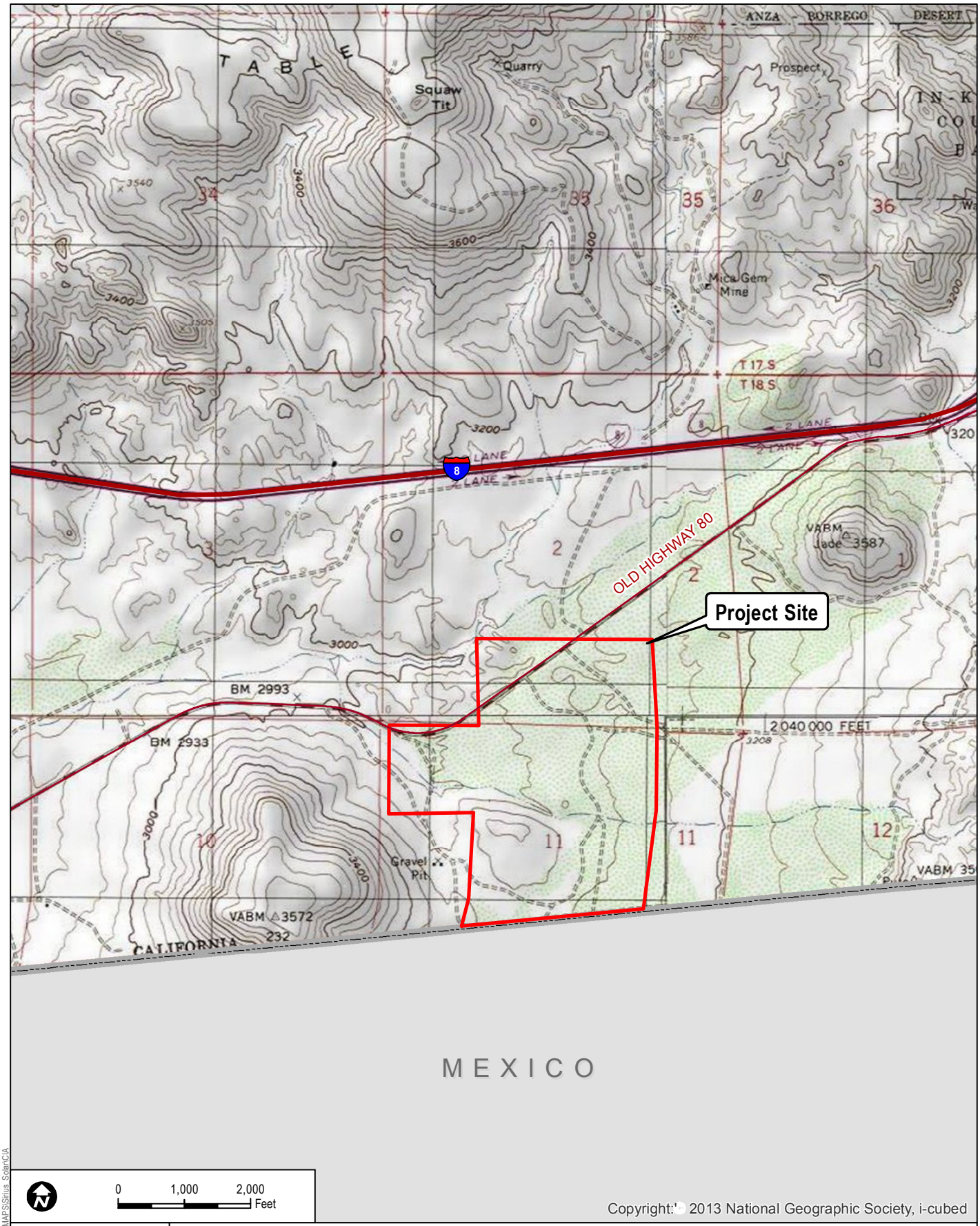

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SOURCE: Bing 2012

FIGURE 2
Vicinity Map

Jacumba Solar - Biological Open Space Memorandum

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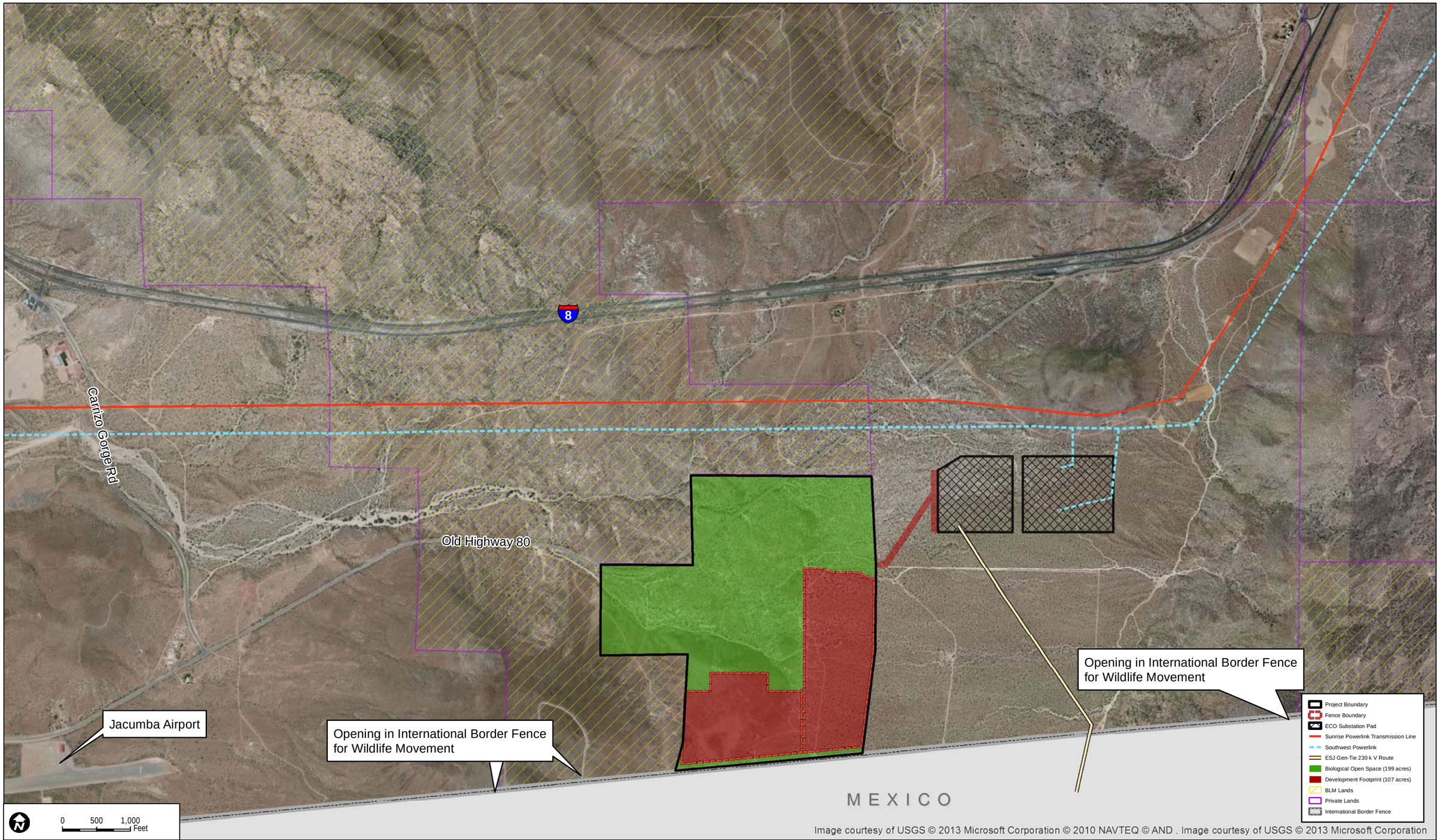

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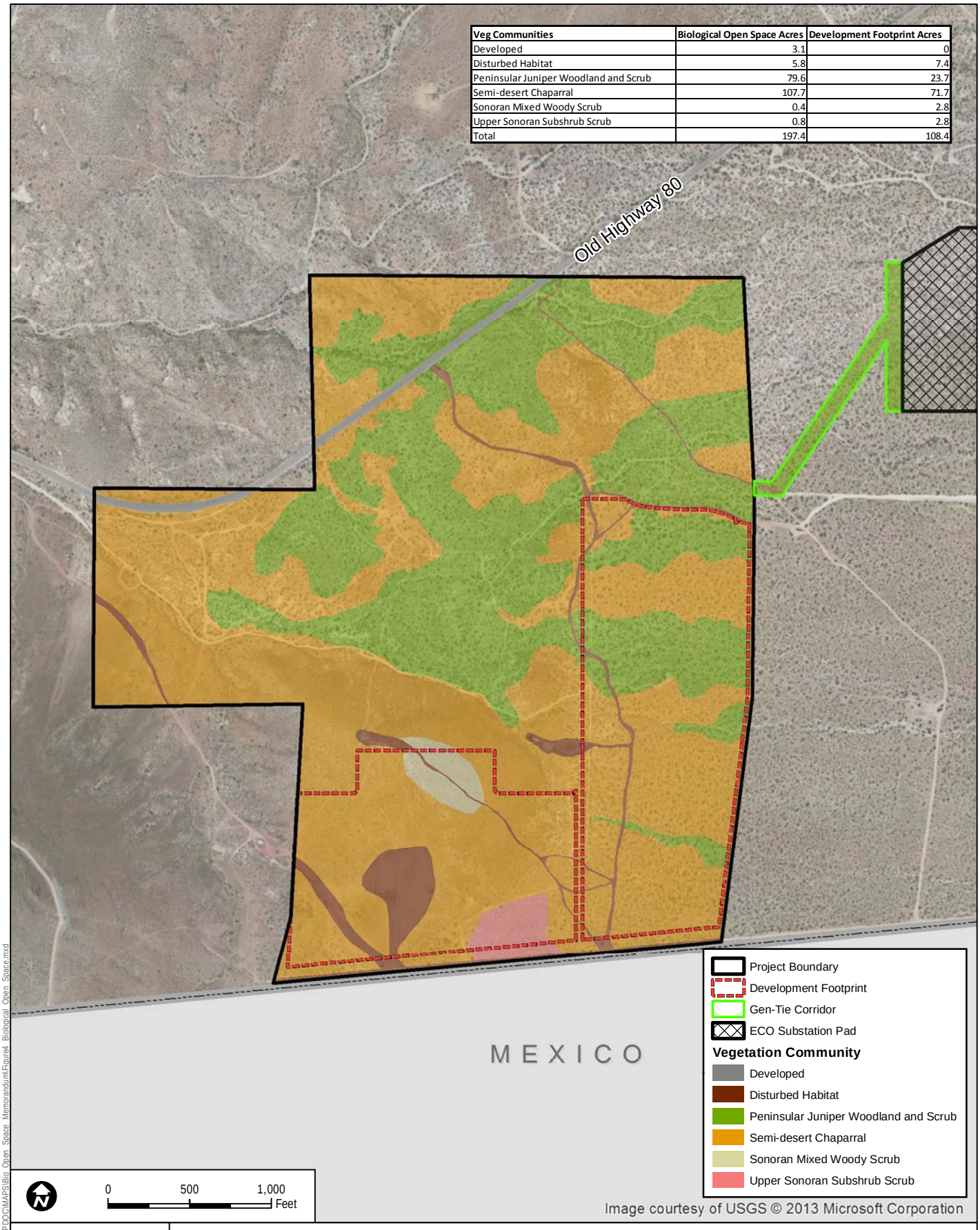
SOURCE: Bing 2013

FIGURE 3

Nearby Land Uses



Veg Communities	Biological Open Space Acres	Development Footprint Acres
Developed	3.1	0
Disturbed Habitat	5.8	7.4
Peninsular Juniper Woodland and Scrub	79.6	23.7
Semi-desert Chaparral	107.7	71.7
Sonoran Mixed Woody Scrub	0.4	2.8
Upper Sonoran Subshrub Scrub	0.8	2.8
Total	197.4	108.4

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SOURCE:Bing 2012, California Department of Fish and Wildlife 2012

FIGURE 4

Biological Open Space

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General Mountain Zone

General Desert Transitional Zone

General Desert Slope Zone

General Desert Floor Zone

desert spike-moss
hairy stickleaf
Parish's desert-thorn
Mexican hulsea
palllid San Diego pocket mouse
San Diego button-celery
Mountain Springs bush lupine
spear-leaf matelea
Arizona pholistoma
Harwood's milk-vetch
desert spike-moss
spiny-hair blazing star
little-leaf elephant tree
curly herissantia
San Bernardino aster
hairy stickleaf
pygmy lotus
Desert Fan Palm Oasis Woodland
barefoot gecko
slender-leaved ipomopsis
Desert Fan Palm Oasis Woodland
barefoot gecko
Mountain Springs bush lupine
slender-leaved ipomopsis
prairie falcon
barefoot gecko
peninsular bighorn sheep
Arizona spurge
Desert Fan Palm Oasis Woodland
barefoot gecko
prairie falcon
southern grasshopper mouse
Mountain Springs bush lupine
southern grasshopper mouse
southern jewel-flower
sticky geraea
palllid San Diego pocket mouse
Desert Fan Palm Oasis Woodland
Mountain Springs bush lupine
slender-leaved ipomopsis
Jacumba milk-vetch
Mountain Springs bush lupine
sticky geraea
slender-leaved ipomopsis
sticky geraea
sticky geraea
Jacumba milk-vetch
sticky geraea
Mountain Springs bush lupine
Jacumba milk-vetch
slender-leaved ipomopsis
southern jewel-flower
desert spike-moss
Jacumba milk-vetch
Arizona pholistoma
slender-leaved ipomopsis
sticky geraea
Fremont barberry
slender-leaved ipomopsis
slender-leaved ipomopsis
Mexican hulsea
Mountain Springs bush lupine
prairie falcon
slender-leaved ipomopsis
prairie falcon
sticky geraea
Jacumba milk-vetch
slender-leaved ipomopsis
Mountain Springs bush lupine
Arizona spurge
quino checkerspot butterfly
Carrizo Gorge Rd.
slender-leaved ipomopsis
pallid bat
Jacumba milk-vetch
Mount Laguna aster
Mountain Springs bush lupine
San Diego desert woodrat
Arizona pholistoma
Jacumba milk-vetch
Fremont barberry
Tecate tarplant
Cooper's hawk
coast horned lizard
Mountain Springs bush lupine
tricolored blackbird
slender-leaved ipomopsis
chaparral ragwort
sticky geraea
southern grasshopper mouse
Parry's tetracoccus
desert beauty
desert beauty
slender-leaved ipomopsis
Old Highway 80
Jacumba Airport
Blue Angels Peak
MEXICO

Project Boundary
Land Zones
Sensitive CNDDB Records within 5 Miles
Quino Checkerspot Butterfly Critical Habitat
Peninsular Bighorn Sheep Critical Habitat

0 0.5 1 Miles

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SOURCE: BING 2013

FIGURE 5

CNDDB Map

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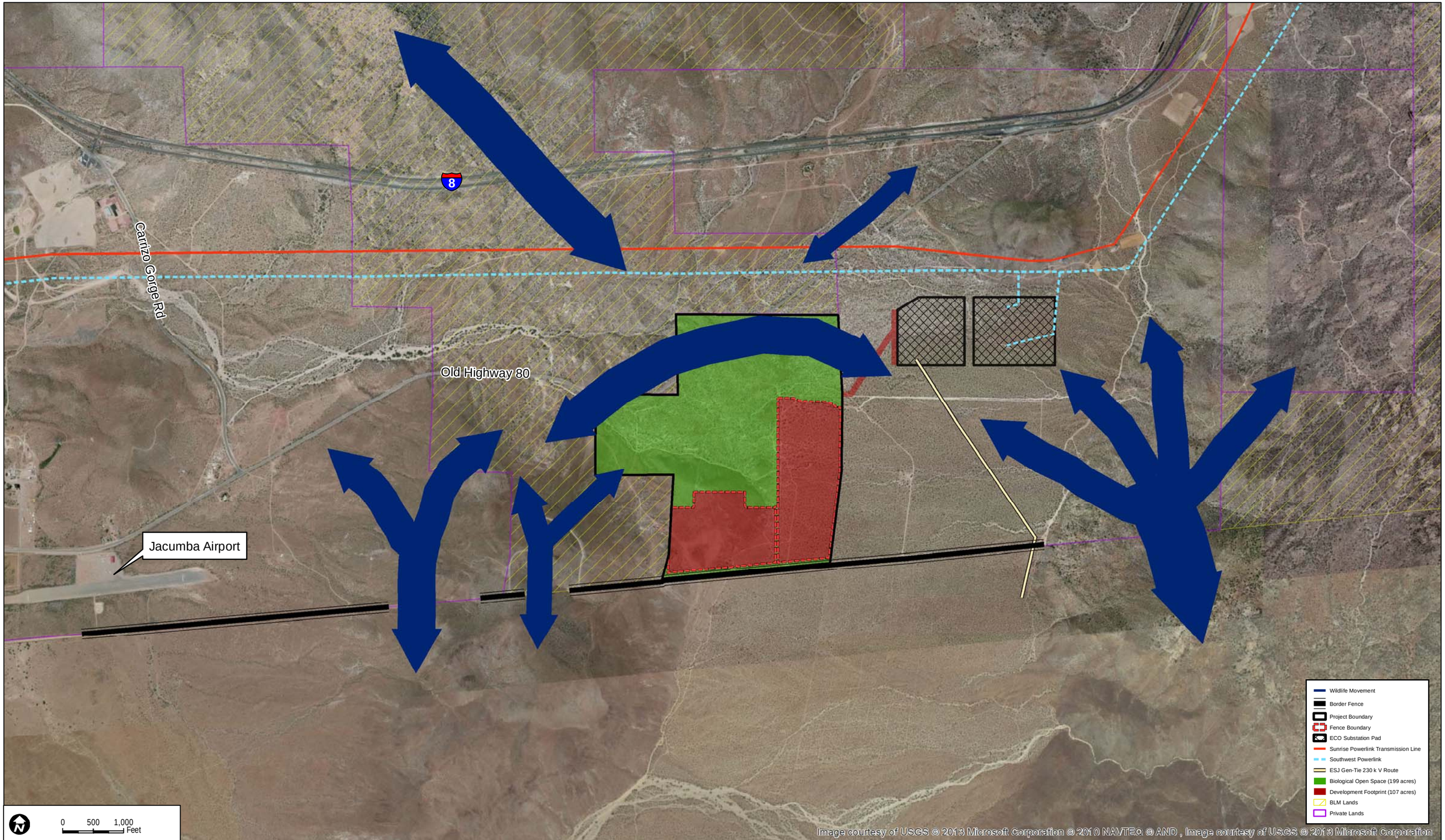

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SOURCE: Bing 2013

7524

FIGURE 6

Nearby Land Uses

Jacumba Solar - Biological Open Space Memorandum

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 T 800.450.1818 F 760.632.0164

MEMORANDUM

To:	Patrick Brown, Soitec Development LLC
From:	David Hochart, Dudek
Subject:	Evaluation of Biological Resources for the Soitec Mitigation Site
Date:	September 13, 2013
cc:	Brock Ortega, Dudek
	Vipul Joshi, Dudek
Attachment(s):	Figures 1-4

Soitec Development LLC is considering the purchase of 2,601.3 acres of open space (i.e., Soitec mitigation site) to satisfy habitat loss mitigation requirements for the development of solar facilities on properties located within the vicinity. The mitigation site, and the four solar farm sites, Tierra del Sol, Rugged LanEast and LanWest, are located within the unincorporated community of Boulevard, California (Figures 1 and 2). The mitigation site will serve as mitigation for the four solar farm projects. However, impacts have only been evaluated for the Tierra del Sol and Rugged sites; impacts for the LanEast and LanWest solar farms will be analyzed at a later date because neither project has been fully developed to a project-level of detail at this time. It is presumed that there will be sufficient habitat and resources available to mitigate for impacts on the LanEast and LanWest solar sites. Impacts for these sites will be evaluated prior to construction.

In order to locate and characterize natural communities, including habitats for special-status species within the mitigation site, Dudek conducted vegetation mapping in accordance with the County of San Diego Report Format and Content Requirements (County of San Diego 2010a). This memo provides the results of the vegetation mapping and outlines the potential for special-status plant and wildlife species to occur within the mitigation site.

ENVIRONMENTAL SETTING (EXISTING CONDITIONS)

The mitigation site is situated between approximately 3,240 to 4,080 feet above mean sea level (amsl) in elevation. Land use on site, and in the surrounding areas, is a mixture of open space and rural residential areas. A portion of the mitigation land site borders Mexico and is separated by the border fence. The site is bisected by railroad tracks that are no longer in use. The western portion of the mitigation lands, just north of the train tracks, contains a large rock outcrop which

is the highest peak of the property and contains limited vegetation. The remaining portions of the project contain gently rolling hills with several low points that indicate signs of water flow, i.e., potential drainages. Several of the larger potential drainages have artificial impoundments (e.g., berms and basins), most of which are dry at the time of the survey. During the site visits two areas contained water: a small area located within the center of the site, just south of the railroad tracks, and Lake Domingo which is located in the southeastern corner of the site. The mitigation site is generally within the Peninsular Range in a transitional area between the coast and the desert. It is in a dry climate with average temperatures near the community of Campo ranging from approximately 34—94°F. This community generally receives an average rainfall of less than 15 inches per year (Western Regional Climate Center 2013).

According to USDA (2013), there are four soil types found in the project area, and descriptions based on those by Bowman (1973) and the Web Soil Survey appear as follows.

Acid igneous rock land soil is found in rough broken terrain. The topography ranges from low hills to steep mountains. Large boulders and rock outcrops of granite, quartz diorite, gabbro, basalt, and other rock types cover greater than 50% of the total area of this soil type. The soil material is very shallow consisting of loam to loamy course sand textures over decomposed granite or basic igneous rock. In some locales, pockets of deep soils may be present between the rocks. Many areas are practically barren and have very rapid runoff. The vegetation for this soil type varies by elevation and climate. In the foothills and mountains, acid igneous rock land supports various chaparral vegetation communities. On site, the mapping of this soil coincides with the large rock outcrop located within the western portion of the site, just north of the railroad tracks.

The La Posta series has grayish brown and brown, slightly acid and neutral, loamy coarse sand A horizons, grading to weathered acid igneous rock at a depth of 29 inches. These soils occur in hilly mountainous areas that are moderately sloping to very steep. The following La Posta soil inclusions occur within the project area: La Posta loamy coarse sand, 5—30% slopes, eroded; and La Posta rocky loamy coarse sand, 5—30% slopes, eroded. The soils formed in residuum weathered from granitic rocks at elevations of 2,000 to 4,500 feet. La Posta soils are somewhat excessively drained with medium or rapid runoff and rapid permeability, and native vegetation expected on this soil type in the project area is mainly annual grasses and forbs, chamise (*Adenostoma fasciculatum*), red shank (*Adenostoma sparsifolia*), manzanita (*Arctostaphylos* spp.), scrub oak (*Quercus* spp.), and a few scattered oak trees (*Quercus agrifolia*) along drainages.

The Mottsville series consists of very deep, excessively drained soils that formed in alluvium derived from granitic rocks. Mottsville soils occur on gently sloping (0—15%) alluvial fans, fan

remnants, and fan aprons. Mottsville soil inclusion occurs within the project area: Mottsville loamy coarse sand, 2—9% slopes. Mottsville soils occur at elevations of 4,500—5,300 feet. Mottsville soils have negligible or very low surface runoff, rapid or very rapid permeability, and high saturated hydraulic conductivity. Native vegetation expected on this soil type within the project area is mainly big sagebrush (*Artemisia tridentata* ssp. *tridentata*), other desert transition shrubs, and needlegrasses (*Stipa* spp.).

The Tollhouse series consists of shallow, somewhat excessively or excessively drained soils that formed in material weathered from granite and closely related coarse crystalline rocks. The following Tollhouse soil inclusion occurs within the project area: Tollhouse rocky, coarse sandy loam, 5—30% slopes, eroded; and Tollhouse rocky, coarse sandy loam, 30—65% slopes. Tollhouse soils are on strongly sloping to very steep mountain slopes. Rock outcrops are common to many soils of this series. Tollhouse soils occur at elevations of 650 to about 8,000 feet. Native vegetation expected on this soil type within the project area is primarily chaparral consisting of a variety of native shrubs and oak trees. Naturalized grasses and forbs may occur in some locations.

METHODS

Between February 2013 and July 2013, Dudek conducted vegetation mapping and rare plant surveys for the mitigation lands. Dudek biologists conducted vegetation mapping for 8 days in February, conducted surveys for desert beauty (*Linanthus bellus*) and Jacumba milk-vetch (*Astragalus douglasii var. perstrictus*) for 5 days in April, and conducted surveys for sticky geraea (*Geraea viscida*) and Jacumba milk-vetch for 13 days in June. Additional surveys for Tecate tarplant (*Deinandra floribunda*) are to occur during fall 2013.

Focused Plant Surveys

Focused surveys for special-status plants were implemented in two separate passes, spring and summer, to record species that have different blooming periods throughout the year. The last pass will occur in fall of 2013. During these surveys, all plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the *California Native Plant Society On-Line Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2013). For plant species without a CRPR, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2012) and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2012).

Targeted survey methods for special-status plant species identified specific areas within the proposed mitigation lands that would be more likely to support these species. Survey areas were selected to exclude areas mapped in the soil survey as acid igneous rock, partially based on the lack of species occurrence within this soil mapping area on the Rugged and Tierra del Sol sites. Due to the limited duration of the spring survey season, only Survey Areas 2, 4, and 5 (approximately 800 acres) were surveyed. During the summer season, all five Survey Areas were surveyed (approximately 1,100 acres).

In accordance with survey methods for the Rugged and portions of the Tierra del Sol project areas, numbers of special-status plant species individuals were counted in the field and reported as ranges including the following: 1 to 10; 11 to 50; 51 to 100; 101 to 500; 501 to 1,000; 1,001 to 5,000; and greater than 10,000. Point data were collected for each occurrence; no polygon data was collected.

Resource Mapping

Vegetation communities and land uses on and within 100 feet of the site were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet), aerial photograph–based field map of the mitigation site. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined.

Consistent with the latest County of San Diego *Report Format and Content Requirements: Biological Resources* (County of San Diego 2010a), vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008).

Survey Limitations

Over the past three water years, average rainfall within the mitigation site and associated project areas has steadily declined. The nearest weather station is located in Campo, California, and generally receives an average rainfall of approximately 15 inches per year (Western Regional Climate Center 2013). Precipitation water year (i.e. July 1 to June 30) amounts for Campo from 2010 to 2011 were recorded at 21.03 inches, from 2011 to 2012 were recorded at 15.84 inches, and from 2012 to 2013 were recorded at 11.21 inches.

Reference population checks were completed for each of the target species prior to conducting focused survey passes. Since annual plant species populations can fluctuate from year to year

depending on a variety of conditions, including rainfall, the reference check for desert beauty also included a comparison of population numbers. A reference check of desert beauty was conducted within the Rugged and Tierra del Sol sites on April 4, 2013. A total of 4 locations where desert beauty was mapped in 2011 on the Rugged site were re-surveyed in 2013. Three of the locations had fewer desert beauty individuals than previously recorded (between 30-90% reduction) and one location had a greater number of individuals (approximately 200% increase). Overall it is estimated that the 2013 population was approximately 70% less than the population size recorded in 2011 at the Rugged site. On the Tierra del Sol site, the 2013 reference survey identified only one individual within four selected sites that had a total of 314 individuals recorded in 2012. These reference site surveys indicate that the population size of desert beauty recorded within the mitigation lands in spring 2013 is likely lower than what would be present during an average rainfall year.

A reference survey for Jacumba milk-vetch and sticky geraea was conducted within the Rugged site on June 14, 2013 and confirmed that these species were blooming and identifiable. Because these species are perennial, the number of individual is not expected to vary greatly from year to year and therefore population counts were not recorded for comparison with previous year counts.

Focused surveys for special-status wildlife species, wintering raptors, and reptile/small mammal trapping were not conducted for the mitigation lands. Nocturnal surveys were not conducted for the project. Birds represent the largest component of the vertebrate fauna, and because most are active in the daytime, diurnal surveys maximize the number of observations of this portion of the fauna. In contrast, daytime surveys usually result in few observations of mammals, many of which may be active at night. In addition, many species of reptiles and amphibians are nocturnal or cryptic in their habits and are difficult to observe using standard meandering transects. Wildlife occurrence data is based largely on previous bird count surveys conducted for the Jewel Valley area (Dudek 2012), with other species noted incidentally during vegetation mapping or focused plant surveys.

Approximately 206 acres of the mitigation lands were burned during the 2012 Shockey Fire. These areas were mapped per the County Guidelines which state: “Areas recovering from fire shall be mapped using the resurgent vegetation as indicators of the probable resultant habitat. When the fire is so recent that no new vegetation has emerged, historical evidence such as aerial photos and the County’s vegetation mapping information shall be used to map the habitat that was burned” (County of San Diego 2010b).

Habitat Types/Vegetation Communities

Twenty vegetation communities or land covers were mapped by Dudek within the project site. Native vegetation communities on site include big sagebrush scrub, granitic chamise chaparral, montane buckwheat scrub, red shank chaparral (including disturbed), red shank chaparral-rock, red shank chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral-rock, granitic northern mixed chaparral/montane buckwheat scrub, scrub oak chaparral, coast live oak woodland, southern coast live oak riparian forest, riparian habitat, and alkali meadow. One non-native vegetation community, non-native grassland, and four land cover types (non-vegetated areas), open water, rock outcrops disturbed land, and urban/developed also occur within the mitigation site. These vegetation communities and land cover types are described as follows, their acreages are presented in Table 1, and their spatial distributions are presented on Figures 3 and 3a-e.

In September 2010, the CDFG published the *List of California Vegetation Alliances and Associations* (CDFG 2010), which uses the scientific name of the dominant species in that alliance as the alliance name and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2013). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2013):

1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure.

For example, G1 would indicate that a vegetation community is critically imperiled across its entire range (i.e., globally). A rank of S3 would indicate the vegetation community is vulnerable and at moderate risk within a particular state or province, although it may be more secure elsewhere (NatureServe 2013). Because NatureServe ranks vegetation communities at the global level, they have few rankings at the state or province level available. However, the *List of California Vegetation Alliances and Associations* (CDFG 2010) includes state-level rarity rankings (i.e., the subnational (S) rank) for vegetation communities. The *List of California Vegetation Alliances and Associations* (CDFG 2010) is considered the authority for ranking the conservation status of vegetation communities in California.

CDFG's guidelines for determining high priority vegetation types include considering any communities listed with a ranking of S1 to S3 and ascertaining whether the specific stands of the community type within the project area are "considered as high-quality occurrences of a given community." The consideration of stand quality includes cover of non-native invasive species, human-caused disturbance, reproductive viability, and insect or disease damage (CDFG 2012).

Vegetation communities considered special-status are those with an "S" ranking of 1, 2, or 3 (CDFG 2010), as well as communities that require mitigation by the County (County of San Diego 2010b, Table 5). These communities are denoted in Table 1 with an asterisk (*).

There are two power lines scheduled to be installed within the mitigation lands, the Gen-Tie alignment (associated with the Tierra del Sol Project) and the East County (ECO) alignment. Impacts resulting from construction of these two alignments, based on the limits of the proposed right-of-way, are excluded from the vegetation tables. Approximately 1 acre of the site was excluded as mitigation due to the presence of the planned Gen-Tie alignment and 17 acres of the site were excluded due to the ECO alignment.

Table 1
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code[1]	Existing Acreage Within Mitigation Lands
Upland Scrub and Chaparral		
Big Sagebrush Scrub*	35210	46.2
Granitic Chamise Chaparral*	37210	165.2
Montane Buckwheat Scrub*	37K00	69.6
Red Shank Chaparral *	37300	932.8
Red Shank Chaparral-disturbed *	37300	1.6
Red Shank Chaparral-Rock *	37300	4.9
Red Shank Chaparral / Montane Buckwheat Scrub *	37300/37K00	8.9
Granitic Northern Mixed Chaparral*	37131	984.0
Granitic Northern Mixed Chaparral-Rock*	37131	244.1
Granitic Northern Mixed Chaparral/Montane Buckwheat Scrub*	37131/37K00	6.0
Scrub Oak Chaparral*	37900	0.3
	Subtotal	*2,463.6*
Upland Woodland and Savannah		
Coast Live Oak Woodland*	71160	17.1
Riparian and Bottomland Habitat		
Southern Coast Live Oak Riparian Forest*	61310	6.8
Riparian Habitat*	63000	9.8
	Subtotal	*16.6*
Riparian Herb		
Alkali Meadow*	45300	2.2
Unvegetated Areas		
Open Water	64100	*9.9*
Rock Outcrops	N/A	*4.0*
	Subtotal	*13.9*
Non-Native Communities and Land Covers		
Non-Native Grassland	42200	50.6
Disturbed Land	11300	35.8
Urban/Developed	12000	0.066
	Subtotal	*86.5*
	Total	2,601.2

[1]Holland (1986) as modified by Oberbauer et al. (2008)
*Considered special-status by the County (2010b).

Upland Scrub and Chaparral

Big Sagebrush Scrub (35210)

Big sagebrush scrub is characterized as being a moderately open shrubland consisting predominantly (greater than 50% absolute cover) of big sagebrush. It often occurs in or adjacent to the floodplain in the sandy transition to chaparral. This scrub community is relatively common on site, although it occurs in smaller, distinct patches. Some areas mapped as big sagebrush scrub include California buckwheat (*Eriogonum fasciculatum* var. *polifolium*), but at less than 15% absolute cover.

The *Artemisia tridentata* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Big sagebrush scrub is considered special-status based on mitigation recommendations of the County (2010b).

Granitic Chamise Chaparral (37210)

According to Holland (1986), chamise chaparral is strongly dominated by chamise and is adapted to repeated fire by stump sprouting. The herb layer is usually very sparse (Holland 1986). On site, chamise was observed at approximately 50—75% absolute cover, with a sparse herb layer of annual forbs comprising 5—15% absolute cover. Other woody shrubs include manzanita, and cupleaf ceanothus (*Ceanothus perplexans*), which collectively comprise less than 15% absolute cover.

The *Adenostoma fasciculatum* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Granitic chamise chaparral is considered special-status based on mitigation recommendations of the County (2010b).

Montane Buckwheat Scrub (37K00)

Montane buckwheat scrub is not described by Holland but is included in Oberbauer et al. (2008). Montane buckwheat scrub is characterized by a nearly monoculture community of flat-topped buckwheat found at higher elevations in San Diego County. On site, areas mapped as montane buckwheat scrub are almost exclusively dominated by Eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), which occurs at approximately 25—50% absolute cover, and has a well-developed herb layer, composed of annual brome grasses and herbs at approximately 25%—50% absolute cover.

The *Eriogonum fasciculatum* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Montane buckwheat scrub is not included in the Habitat Mitigation

Ratios in the County Significance Guidelines (Table 5, County of San Diego 2010b); however, it was originally classified together with flat-topped buckwheat scrub, which is considered special-status based on mitigation recommendations of the County (2010b).

Red Shank Chaparral (37300)

Red shank chaparral is composed of nearly pure stands of red shank (*Adenostoma sparsifolium*) (Holland 1986). It is similar to chamise chaparral but is typically taller and somewhat more open (Holland 1986). On site, red shank chaparral intergrades with chamise chaparral (37200) and scrub oak chaparral (37900). Red shank comprises approximately 50—75% absolute cover, with chamise occasionally present at less than 15% absolute cover. Like chamise chaparral, the herb layer in red shank chaparral is sparse. This vegetation community was found throughout the site. Red shank chaparral – rock was mapped in areas that supported a high percentage of large boulders within the vegetation. Areas mapped as disturbed red shank chaparral were located along a dirt access road and contained fewer shrubs and more annual grasses than pure stands of red shank chaparral.

The *Adenostoma sparsifolium* alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Red shank chaparral is considered special-status based on mitigation recommendations of the County (2010b).

Montane Buckwheat Scrub/ Red Shank Chaparral/ (37K00/37300)

Montane buckwheat scrub/red shank chaparral is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by Eastern Mojave buckwheat and red shank . On site, areas mapped as montane buckwheat scrub/red shank chaparral are dominated by buckwheat and red shank, but also include species such as chamise, and chaparral yucca (*Hesperoyucca whipplei*).

The *Eriogonum fasiculatum/Adenostoma sparsifolium* association is not recognized by CDFG (2010). However, montane buckwheat and red shank chaparral are considered special-status based on mitigation recommendations of the County (2010a).

Granitic Northern Mixed Chaparral (37131)

Granitic northern mixed chaparral consists of broad-leaved sclerophyll shrubs that range from 2—4 meters (7—13 feet) in height and that form dense stands dominated by chamise, red shank, manzanita, and ceanothus (*Ceanothus* spp.). This community occurs inland of southern mixed chaparral in San Diego County and is indicated by desert ceanothus (*Ceanothus greggii*) and

other codominants (chamise, scrub oak, and other oak hybrids). Granitic northern mixed chaparral is underlain by granitic soils.

Granitic northern mixed chaparral has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Granitic northern mixed chaparral is not considered special-status by CDFG, but it is considered special-status based on mitigation recommendations of the County (2010a).

Granitic Northern Mixed Chaparral/Montane Buckwheat Scrub

Granitic northern mixed chaparral/montane buckwheat scrub is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by broad-leaved sclerophyll shrubs such as chamise, redshank, ceanothus, and Eastern Mojave buckwheat.

This association is not recognized by CDFG (2010); however, granitic northern mixed chaparral/montane buckwheat scrub are considered special-status based on mitigation recommendations of the County (2010a).

Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense, evergreen chaparral up to 20 feet tall (Holland 1986). Holland describes the community as dominated by scrub oak. On site, scrub oak chaparral is dominated by scrub oak at between 50—75% absolute cover. Red shank is commonly associated with this vegetation community, but occurs at less than 15% absolute cover. The herb layer is similar to that of chamise and red shank chaparral communities.

The *Quercus berberidifolia* alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Scrub oak chaparral is considered special-status based on mitigation recommendations of the County (2010b).

Upland Woodland and Savannah

Coast Live Oak Woodland (71161)

Coast live oak woodland is an evergreen woodland dominated by coast live oak (*Quercus agrifolia* var. *oxyadenia*). The understory is typically made up of grassland, scrub, or chaparral species, and the community often intergrades with coastal sage scrub or mixed chaparral (Holland 1986). On site, coast live oak woodland is an open woodland, with generally less than 40% cover of coast live oak. The understory is dominated by non-native grasses and annual forbs.

The *Quercus agrifolia* alliance has a rank of G5S4 in CDFG (2010), meaning it is globally secure and apparently secure in the state. Coast live oak woodland is considered special-status based on mitigation recommendations of the County (2010b).

Riparian and Bottomland Habitat

Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is a dense riparian forest dominated by evergreen sclerophyllous trees (oaks) with a closed, or nearly-closed, canopy. Within the mitigation site, this vegetation community is dominated by coast live oaks and riparian species such as willows, mulefat (*Baccharis salicifolia*) and tamarisk (*Tamarix* spp.), and is associated with a channel that drains into Domingo Lake.

Southern coast live oak riparian forest has a rank of G4S4 in CDFG (2010), meaning it is globally secure and apparently secure in the state. Southern coast live oak riparian forest is considered special-status based on mitigation recommendations of the County (2010b).

Riparian Habitat (60000)

Areas mapped as riparian habitat encompass all areas that have a potential to contain riparian species and are associated with open water or stream channels. Willow species (*Salix* sp.) were observed in some of these areas however, due to the timing of the survey, willow species and tamarisk were not easily distinguishable. These areas will be refined later in the spring during rare plant surveys.

Riparian Herb

Alkali Meadow (45300)

Alkali meadow is a low-growing, dense or open association of grasses, sedges, and rushes on moist, alkaline soils. This community may intergrade with marsh communities in wetter settings or Great Basin scrub or non-native grassland in drier settings. Representative species of alkali meadow includes Mexican rush (*Juncus mexicanus*), salt grass (*Distichlis spicata*), Mediterranean barley *(Hordeum marinum* ssp. *gussoneanum),* and seaside heliotrope (*Heliotropium curassavicum*).

Juncus mexicanus alliance has a rank of G5S4 in CDFG (2010), meaning it is considered globally secure and apparently secure within the state. Alkali meadow is considered special-

status by the County (2010b) based in its qualification as a Resource Protection Ordinance (RPO) wetland and the County's recommended mitigation ratio for this vegetation community.

Unvegetated Areas

Open Water (64100)

Open water is not a vegetation community; therefore, it is not included in the *List of California Vegetation Alliances and Associations* (CDFG 2010). Although the County does recommend mitigation for impacts to open water, this land cover type is typically considered an RPO wetland and is typically considered jurisdictional waters (County 2010b). On site, open water consists of areas where stream channels have been dammed at some point downstream, creating reservoirs and/or detention basins, most of which are dry. During the site visits two areas contained water: a small area located within the center of the site, just south of the railroad tracks, and Lake Domingo which is located in the southeastern corner of the site.

Rock Outcrops

One large rock outcrop was mapped within the mitigation lands. This area is located in the western part of the site, just north of the railroad tracks. Rock outcrops are not a vegetation community; therefore, are not included in the *List of California Vegetation Alliances and Associations* (CDFG 2010).

Rock outcrops are not considered special-status by CDFG or the County (2010b).

Non-Native Communities and Land Covers

Non-Native Grassland (42200)

According to Holland (1986), non-native grasslands include a dense to sparse cover of annual grasses that die during the summer months, persisting as seeds. Due to the timing of the survey, the species composition within areas mapped as non-native grassland could not be determined. In addition, some of the areas mapped as nan-native grassland may actually contain alkali meadow species. These areas will be refined during the spring plant surveys.

Non-native grassland has a rank of G4S4 in CDFG (2010), meaning it is apparently secure globally and in the state. Because non-native grassland can provide habitat for a variety of species, the County requires mitigation for impacts to it; therefore, it is considered special-status by the County (2010b).

Disturbed Habitat (11300)

Disturbed land refers to areas that have been permanently altered by previous human activity that has eliminated all future biological value of the land for most species. The native or naturalized vegetation is no longer present, and the land lacks habitat value for sensitive wildlife, including potential raptor foraging. Disturbed habitat on site consists of unpaved roads and some areas immediately adjacent to dirt roads. These roads are graded periodically, and no native vegetation remains.

Disturbed habitat is not considered special-status by CDFG or the County (2010b).

Urban/Developed (12000)

Urban/developed land refers to areas that have been constructed upon or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). Urban/developed areas in the mitigation lands are associated with historically used train tracks that bisect the mitigation lands.

Urban/developed areas are not considered special-status by CDFW or the County (2010a).

Suitability of Mitigation Lands

The mitigation lands are currently planned to be used as mitigation for at least four proposed projects -, Rugged, Tierra del Sol (which includes the Gen-Tie alignment), LanWest and LanEast projects. Mitigation required for the Rugged and Tierra del Sol projects totals 753.1 acres for a variety of upland habitat types, as shown in Table 2. There is a total of 2,531.3 acres of mitigation lands (excluding rock outcrops, wetlands/riparian habitats, disturbed land, and urban/developed) that is available for mitigation. This results in excess habitat within the mitigation lands that totals 1,759.0 acres. Most of this excess habitat results from excess chaparral habitat within the mitigation lands. A portion of this excess habitat is expected to be used as mitigation for other projects.

Table 2
Summary Mitigation Requirements for the Rugged, and Tierra del Sol Projects

Habitat Types/Vegetation Communities	Rugged Mitigation Requirements (acres)	Tierra del Sol Mitigation Requirements (acres)	Total Mitigation Required	Vegetation within the Mitigation Site (acres)	Total Mitigation Acreage (+/- acreage required)
Upland Scrub and Chaparral					
Big Sagebrush Scrub*	135.8	32.4	168.2	46.2	-122.0
disturbed Big Sagebrush Scrub*	7.0	--	7.0	--	-7.0
Montane Buckwheat Scrub*	65.3	41.7	106.9	69.6	-37.3
disturbed Montane Buckwheat Scrub*	7.3	2.3	9.6	--	-9.6
Granitic Chamise Chaparral*	48.4	88.5	136.9	165.2	+28.3
Granitic Chamise Chaparral/Montane Buckwheat Scrub *	--	2.2	2.2	--	-2.2
Granitic Northern Mixed Chaparral*	--	37.6	37.6	984.0	+946.4
Granitic Northern Mixed Chaparral-Rock*	--	--	--	244.1	+244.1
Granitic Northern Mixed Chaparral/ Montane Buckwheat Scrub *	--	13.3	13.3	6.0	-7.3
Red Shank Chaparral*	36.0	69.8	105.8	932.8	+827.0
disturbed Red Shank Chaparral*	--	--	--	1.6	+1.6
Red Shank Chaparral-Rock *	--	--	--	4.9	+4.9
Montane Buckwheat Scrub/ Red Shank Chaparral*	--	2.0	2.0	8.9	+6.9
Scrub Oak Chaparral*	58.7	6.6	65.3	0.3	-65.0
disturbed Scrub Oak Chaparral*	0.5	--	0.5	--	-0.5
Semi-Desert Chaparral*	57.8	--	57.8	--	-57.8
Semi-Desert Chaparral – Rock*	1.5	--	1.5	--	-1.5
disturbed Semi-Desert Chaparral*	0.3	--	0.3	--	-0.3
Subtotal	*418.6*	*296.4*	*715*	*2,463.6*	*+1,748.6*
Upland Woodland and Savannah					
Coast Live Oak Woodland*	--	included in oak root zone mitigation[2]	included in oak root zone mitigation[2]	17.1	+17.1
Disturbed Coast Live Oak Woodland	--	included in oak root zone mitigation[2]	included in oak root zone mitigation[2]	--	--
Mixed Oak Woodland*	--	--	--	--	--
Oak Root Zone [1]	--	*7.5*	*7.5*	--	-7.5[3]
Subtotal	--	*7.5*	*7.5*	*17.1*	*-9.6*[3]
Non-Native Communities and Land Covers					
Non-Native Grassland*	30.4	0.2	30.6	50.6	+20.0

Table 2
Summary Mitigation Requirements for the Rugged, and Tierra del Sol Projects

Habitat Types/Vegetation Communities	Rugged Mitigation Requirements (acres)	Tierra del Sol Mitigation Requirements (acres)	Total Mitigation Required	Vegetation within the Mitigation Site (acres)	Total Mitigation Acreage (+/- acreage required)
Total**	449.0	304.1	753.1	2,531.3[4]	*1,759.0*

[1] These features are overlays to the vegetation community layer and are not counted toward the overall acreage.
[2] Because the oak root zone impacts require a higher mitigation ratio, acres of vegetation communities included in the oak root zone category that have less than a 3:1 mitigation ratio are not counted in the vegetation communities and land cover types.
[3] Mitigation requirements for impacts to oak root zone will be mitigated through conservation of oak riparian forest. A total of 6.8 acres of oak riparian forest occurs within the mitigation site.
[4] Does not include 4 acres of rock, 36 acres of disturbed land, and 0.07 acres of urban/developed habitat.
*Considered special-status by the County (2010a).
**Totals may not add due to rounding.

Although the mitigation site does not support adequate habitat to mitigate each specific vegetation communities separately, taken as a whole, the overall suite of habitats that exist within the mitigation lands provide adequate mitigation to compensate for the losses associated with the two current projects, with remaining habitat available to mitigate future projects. The final acreage of the mitigation site that will be dedicated to mitigate each project will be determined during preparing of a Final Resource Management Plan (RMP), taking into account areas required to mitigate special-status plant species. It is expected that more than 753.1 acres will be required to mitigate impacts to special-status plant species. Therefore the lack of in-kind habitat mitigation for certain communities (e.g., big sagebrush scrub, scrub oak chaparral) will be compensated by an overall greater acreage of mitigation.

This approach is appropriate because species in this region generally utilize a variety of habitats (e.g., scrub, chaparral, and oak woodlands) as opposed to being specifically restricted to one habitat type. Special-status wildlife will generally utilize all of these habitats indiscriminately, provided there is suitable cover, habitat connectivity, and water and food resources. During Dudek's field investigations, special-status plant species were found in many different chaparral habitats, indicating that they will serve the same special-status species that were found on the three project sites. Furthermore, these species benefit from the consolidated nature of the proposed mitigation lands through reduced edge effects and enhanced regional connectivity.

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

In addition to the compensation for impacts to special-status vegetation communities, the mitigation lands are being proposed to compensate for impacts to special-status plant species and habitat for special-status wildlife species associated with the Rugged and Tierra del Sol solar farm projects.

Special-Status Plant Species

Mitigation is required to offset impacts to 4 of the 10 special-status plant species observed within either the Rugged or Tierra del Sol project areas including: Tecate tarplant (*Deinandra* [=*Hemizonia*] *floribunda*), desert beauty (*Linanthus bellus*), Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), and sticky geraea (*Geraea viscida*) (Table 3).

Tecate cypress (*Hesperocyparis forbesii*) was also observed within the Tierra del Sol project area but this population is believed to be planted. Tecate cypress was not observed within the mitigation lands; therefore mitigation for impacts to this species will need to occur at a replacement ratio of 3:1. The location of revegetation of this species has yet to be determined. Three species, Jacumba milk-vetch, desert beauty, and sticky geraea, have been observed within the mitigation lands (Table 3). One additional survey pass is scheduled for fall 2013 to identify Tecate tarplant and additional occurrences of Jacumba milk-vetch.

Table 3
Special-Status Plant Species with a Potential to Occur in the Mitigation Site

Scientific Name Common Name	Sensitivity Code and Status (Federal/State/ County/CRPR)[1]	Habitat Requirements/Life Form/Blooming Period/Elevation Range	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Astragalus douglasii var. *perstrictus* Jacumba milk-vetch	None/None/List A, MSCP/1B.2	Chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland; rocky/perennial herb/April–June/2,953 to 4,495 feet	Observed within both Tierra del Sol, Rugged.	Observed within mitigation lands. Suitable soils found within the western and central regions of the mitigation site. The mitigation site also contains suitable vegetation communities.
Deinandra [=*Hemizonia*] *floribunda* Tecate tarplant	None/None/List A, MSCP/1B.2	Chaparral, coastal scrub/annual herb/August–October/230 to 4,003 feet	Observed within both Tierra del Sol, and Rugged.	High. Suitable soils and vegetated habitat located within the mitigation site. This species was observed along ephemeral drainages in both solar farm project areas and similar drainages are located within the mitigation site.
Geraea viscida Sticky geraea	None/None/List B, MSCP/2.3	Chaparral (often disturbed)/perennial herb/May–June/1,476 to 5,577 feet	Observed within both Tierra del Sol, and Rugged.	Observed within mitigation lands. Suitable chaparral habitat and soils located throughout the mitigation site.
Hesperocyparis forbesii Tecate cypress	None/None/List A, MSCP/1B.1	Closed-cone conifer forest, chaparral/ evergreen tree/NA/255–1,500 meters	Observed within Tierra del Sol. Absent from Rugged.	Not observed. This species was presumed an ornamental planted on the Tierra del Sol site. No Tecate cypress trees were observed during the initial biological surveys.
Linanthus bellus Desert beauty	None/None/List B, MSCP/2.3	Chaparral; sandy/annual herb/April–May/3,281 to 4,593 feet	Observed within both Tierra del Sol, and Rugged.	Observed within mitigation lands. Suitable vegetated and soil habitats found within mitigation site

[1] Status Designations:
MSCP: Proposed Covered Species under the Draft East County MSCP
SE: State-listed as endangered
ST: State-listed as threatened
SR: State-listed as rare
CRPR: California Rare Plant Rank
1A (formerly List 1A): Plants Presumed Extinct in California
1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere
2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 (formerly List 3): Plants About Which We Need More Information – A Review List
4 (formerly List 4): Plants of Limited Distribution – A Watch List
0.1–Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2–Fairly threatened in California (20–80% occurrences threatened/moderate degree and immediacy of threat)
0.3–Not very threatened in California (<20% of occurrences threatened /low degree and immediacy of threat or no current threats known)

Tecate Tarplant (*Deinandra floribunda*)

Tecate tarplant is a CRPR 1B.2 (CNPS 2013) and a County List A species (County of San Diego 2010a). A member of the sunflower (*Asteraceae*) family, this species blooms from August through October in chaparral and coastal scrub habitats. Tecate tarplant is an annual herb that occurs at elevations of 70 to 1,220 meters (230 to 4,003 feet) (CNPS 2013). A focused survey for this species will occur in fall 2013.

Desert Beauty (*Linanthus bellus*)

Desert beauty is a CRPR 2.3 (CNPS 2013) and a County List B species (County of San Diego 2010a). A member of the phlox (*Polemoniaceae*) family, this annual herb blooms from April through May in chaparral habitats. This species typically occurs at elevations of 1,000 to 1,400 meters (3,281 to 5,493 feet) (CNPS 2013).

On the mitigation lands approximately 811-2,790 occurrences of desert beauty have been identified (Table 4, Figure 4). Most occurrences were documented in the north-central portion of the mitigation lands within open sandy areas in red shank chaparral. Few occurrences were documented within granitic chamise chaparral, as well.

Fewer numbers of desert beauty were detected within the mitigation lands than are required by the mitigation ratios. However, prior to conducting focused surveys, a check of reference populations within Rugged and Tierra del Sol project areas found reduced population sizes for this species when compared with survey results from 2011 and 2012. As such, it is suggested that the population size results found in 2013 within the mitigation lands are not indicative of generally reduced population size; rather, that fewer individuals were blooming during 2013 surveys. It is therefore presumed that there is sufficient desert beauty within the mitigation lands during other years that are in accordance with the mitigation ratio.

The 2,601-acre mitigation site supports approximately 2,464 acres of potentially suitable habitat for this species. Approximately 800 acres (32%) of the suitable habitat was surveyed during the focused spring surveys for desert beauty. Although additional surveys are required, it is expected that in a more typical rainfall year, conservation of 800-1,000 acres of the site will be adequate to support the required numbers of desert beauty.

Jacumba Milk-vetch (*Astragalus douglasii var. perstrictus*)

Jacumba milk-vetch is a CRPR 1B.2 (CNPS 2013) and County List A species (County of San Diego 2010a). This perennial herb in the pea or bean family (*Fabaceae*) blooms from April through June. It occurs in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland, and rocky communities at elevations of 900 to 1,370 meters (2,953 to 4,495 feet) (CNPS 2013).

Within the mitigation lands, there are approximately 225-672 occurrences, concentrated in the north-central, southeast, and southwest portions of the site (Figure 4). Since the first pass of focused surveys resulted in the detection of fewer plants than are required for mitigation, the fall pass will also focus on recording any additional milk-vetch that may be located outside of the originally defined focused survey areas.

Sticky Geraea (*Geraea viscida*)

Sticky geraea is a CRPR 2.3 (CNPS 2013) and a County List B species (County of San Diego 2010a). A member of the sunflower (*Asteraceae*) family, this perennial herb blooms from May through June in chaparral habitats and occurs at elevations between 450 and 1,700 meters (1,476 to and 5,557 feet) (CNPS 2013). Approximately 356-1,333 individuals were observed during the June 2013 survey pass (Figure 4). Most of the observations were in northern mixed chaparral or redshank chaparral in the northern area of the mitigation lands, and in areas southeast of the railroad tracks. The amount of sticky geraea recorded within the mitigation site provides the required mitigation for this species.

Table 4
Mitigation Requirements for Special-Status Plant Species

Species	Impacts to Special-Status Plant Species			Mitigation Requirements			Total Recorded within Mitigation Lands	Approx. Acres Surveyed (portion of high suitability habitat)
	Tierra del Sol	Rugged	Gen-tie Alignment	Mitigation Ratio	Total Needs (Low)	Total Needs (High)		
Tecate tarplant	3,103	1-10	n/a	2:1*	6,206	6,226	n/a	n/a
Desert beauty	727	414-1,820	84-600	1:1	1,225	3,147	811-2,790	800 (32%)

Jacumba milk-vetch	315	66-480	27-150	2:1*	816	1,890	225-672	1,122 (46%)
Sticky geraea	274	161-690	10-50	1:1	445	1,014	356-1,333	1,122 (46%)

* Due to their relative abundance within the project areas, a two to one ratio was chosen for impacts to List A plant species.

Special-Status Wildlife Species

Mitigation for significant long-term direct impacts to County Group 1 wildlife species as a result of removal of suitable habitat within the Tierra del Sol and Rugged solar farm projects, will be reduced to a level that is less than significant through habitat conservation of equivalent function and value. Combined, the two solar farm projects have the potential to directly impact 8 reptile and amphibian species, 10 bird species, and 11 bat species (Table 5). A preliminary assessment of vegetation communities, elevation, and range of these species has determined that all 29 species have a potential to occur within the mitigation site (Table 4). The following sources were also consulted for pertinent special-status species information: the California Natural Diversity Database (CNDDB) (CDFW 2013a), information provided by the California Department of Fish and Wildlife (CDFW) (CDFG 2011, CDFW 2013b), the San Diego County Bird Atlas (Unitt 2004), and previous bird utilization count surveys conducted by Dudek (Dudek 2012). Focused surveys for quino checkerspot (*Euphydryas editha quino*) were conducted on the Tierra Del Sol, Gen-tie and Rugged project sites in 2012 and 2013. The surveys were negative. In the unlikely event that quino checkerspot were to be found, the habitats on the proposed mitigation property would be similar and consistent with their needs. A habitat assessment for these species will be conducted in the spring/summer of 2013 to confirm the potential for these species to occur and to document species observed within the mitigation site.

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Amphibians and Reptiles				
Aspidoscelis hyperythra beldingi Belding's orange-throated whiptail	None/SSC/ Group 2, MSCP	Coastal sage scrub, chamise-redshank chaparral, mixed chaparral, valley-foothill hardwood especially in area with summer fog. Found from Santa Ana River and near Colton in San Bernardino County, west of Peninsular Ranges, south throughout Baja California, 0 to 2,001 feet (1, 2).	Observed within Rugged and moderate potential to occur within Tierra del Sol.	Moderate. Suitable habitat is present within the mitigation site. The mitigation site is above the elevation range for this species, however this species was observed at the Rugged site where the elevation ranges from 3,500 to 3,670 feet amsl. The nearest CNDDB occurrence for this species is approximately 10 miles west of the mitigation site (6).
Phrynosoma blainvillii Blainville's horned lizard	None /SSC/ Group 2, MSCP	Area of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. Annual grassland, chaparral, woodland, coniferous forest, sandy area, frequently near ant hills. Foothills and coastal plains from Los Angeles to northern Baja California (1, 3).	Observed within both Tierra del Sol, and Rugged.	Observed within mitigation lands. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is less than 0.4 miles northeast of the mitigation site (6).
Salvadora hexalepis virgultea Coast patch-nosed snake	None/SSC/ Group 2, MSCP	Semi-arid, brushy area and chaparral in canyons, rocky hillsides, plains from northern Carrizo Plains south through coastal zone, south and west of the deserts into coastal northern Baja California, at elevations below sea level to 6,988 feet (1).	High potential to occur within Rugged, and moderate potential to occur within Tierra del Sol.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 28 miles northwest of the mitigation site (6).
Plestiodon skiltonianus interparietalis Coronado skink	None/SSC/ Group 2, MSCP	Grassland, woodlands, pine forests, chaparral, especially open sunny areas, such as clearings and edges of creeks, and rocky areas near streams with lots of vegetation; in litter, rotting logs, under flat stones. Found in coastal ranges and Sierra Nevada and foothills, 0 to 8,300 feet (1, 2).	High potential to occur within Rugged, and low potential to occur within Tierra del Sol due to lack of habitat.	High. Suitable habitat for this species is located around Domingo Lake. The nearest CNDDB occurrence for this species is approximately 24 miles west of the mitigation site (6).
Crotalus ruber ruber Northern red-diamond rattlesnake	None/SSC/ Group 2, MSCP	Chaparral, oak and pine woodland, arid desert, rocky grassland habitats in rocky area and dense vegetation; rocky desert flats on desert slopes of mountains; Morongo Valley (1).	High potential to occur within both Tierra del Sol and Rugged.	High. Suitable habitat for the northern red-diamond rattlesnake is present within the rocky outcrops observed throughout the mitigation site. Also, any area with dense vegetation provides suitable habitat, including chaparral, scrub, and woodland habitats. The nearest CNDDB

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
				occurrence for this species is approximately 2.3 miles east of the mitigation site (6).
Anniella pulchra pulchra Silvery legless lizard	None/SSC/ Group 2	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats (1).	High potential to occur within both Tierra del Sol and Rugged.	High. Suitable habitat for this species is located within the oak woodlands and surrounding areas of open water. The nearest CNDDB occurrence for this species is approximately 32 miles north of the mitigation site (6).
Thamnophis hammondii Two-striped garter snake	None/SSC/ Group 1, MSCP	Permanent or semipermanent bodies of water bordered by dense vegetation in rocky area, oak woodland, chaparral, brushland, coniferous forest. Found on Diablo Range, South Coast and Transverse Ranges, and Santa Catalina Island (1, 2).	High potential to occur within Rugged, no potential to occur in Tierra del Sol due to lack of suitable habitat.	High. Suitable habitat is present within areas of open water and surrounding open water. The nearest CNDDB occurrence for this species is approximately 10.4 miles west of the mitigation site (6).
Spea [=Scaphiopus] hammondi Western spadefoot	None/SSC/ Group 2, MSCP	Sandy/gravelly soils within mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, foothills, mountains, and other habitats. Breed in rainpools that do not have bullfrogs, fish, or crayfish. Found throughout Great Valley and foothills south of Redding, throughout South Coast Ranges in Southern California south of Transverse Mountains and west of Peninsular Mountains, 0 to 4,478 feet (1).	High potential to occur within Rugged, no potential to occur in Tierra del Sol due to lack of suitable habitat.	High. Suitable habitat is present within areas of open water, and surrounding open water, as well as stream channels located throughout the site. The nearest CNDDB occurrence for this species is approximately 27.5 miles west of the mitigation site (6).

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
		Birds		
Accipiter cooperii Cooper's hawk (nesting)	None/WL/ Group 1, MSCP	Dense stands of live oak, riparian deciduous, forest habitats near water. Breeds in southern Sierra Nevada foothills, New York Mountains., Owens Valley, and other local area in Southern California, 0 to 8,858 feet (2).	Observed within Rugged and Tierra del Sol.	Known to occur. Suitable habitat for this species is located within the oak woodlands and surrounding areas of open water and this species was observed within the mitigation site during focused bird count surveys[1] (7). The nearest CNDDB occurrence for this species is approximately 1.3 miles west of the mitigation site (6). Recorded in U26 and surrounding grids T25-27 and U25 and U27 (8).
Agelaius tricolor Tricolored blackbird	BCC/SSC/ Group 1, MSCP	Breeds in emergent wetland with tall, dense cattails or tules; willow, blackberry, tall herb thickets. Feeds in grassland and cropland habitats. Found throughout Central Valley and coastal area south of Sonoma County (2).	High potential to forage within Rugged, not expected to nest. No suitable habitat on Tierra del Sol.	Moderate. Meadow habitat, and non-native grassland habitat on site provides suitable foraging habitat. Potential nesting suitable habitat on site around Domino Lake. Red-winged blackbirds have been observed in the area (7). The nearest CNDDB occurrence for this species is approximately 4.5 miles east of the mitigation site (6). Recorded in U26 and surrounding grids T25-27 and U25 (8).
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	None/WL/ Group 1, MSCP	Sparse mixed chaparral and coastal scrub habitats (especially coastal sage) in Southern California on slopes of Transverse and Coastal Ranges, north to Los Angeles County, and northwestern Baja California. Found on steep, rocky hillsides with grass and forb patches, and grassy slopes without shrubs, if rock outcrops are present (2, 4).	High potential to occur within Tierra del Sol and Rugged.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 26.5 miles northwest of the mitigation site (6). Recorded in U26 (8).

[1] This is a modified point-count survey method used to obtain a baseline index of bird use within the area. Monitoring data collected, taken from November 2010 through July 2012, included data such as time, the number and species of birds observed, distance and flight height estimate in general, distance and height estimate, habitat, flight pattern and direction, perch height, and behavior of raptors.

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Amphispiza belli belli Bell's sage sparrow	BCC / WL/, Group 1, MSCP	Low, dense stands of shrubs; chaparral dominated by chamise; coastal scrub dominated by sage. Coast Ranges from northern California to northwestern Baja California, western slope of Sierra Nevada (2, 4).	Observed within both Tierra del Sol and Rugged.	High. Suitable habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 22 miles northwest of the mitigation site (6). Not recorded in grids; sage sparrow (*Amphispiza belli*) recorded in U26 and surrounding grids T25-27, U25 and U27 (8).
Aquila chrysaetos Golden eagle (nesting and wintering)	BCC/FP, WL/ Group 1, MSCP	Rolling foothills, mountain area, sage-juniper flats, and desert throughout California (2).	High potential to forage on Rugged with a low potential to nest. Not expected to forage or nest within Tierra del Sol.	Known to occur. Suitable foraging habitat is present within most of the mitigation site; moderate potential to nest within rocky areas . Recorded nesting sites are located in the region, but off site. This species was observed within the mitigation site during focused bird count surveys for the area (7). The nearest CNDDB occurrence for this species is approximately 13 miles west of the mitigation site (6). Recorded in surrounding grids T26, T27, and U25 (8).
Buteo lineatus Red-shouldered hawk	None/None/ Group 1	Riparian and woodland habitats interspersed with swamps and wetlands found along coast, southern deserts, and in Central Valley, 0 to 4,921 feet (2).	Moderate potential to occur within Tierra del Sol and high potential to occur within Rugged.	Known to occur. Suitable habitat for this species is located throughout the mitigation area. May use the project area for nesting and foraging. This species was observed within the mitigation site during focused bird count surveys for the area (7). There are no CNDDB occurrence records for this species (6). Recorded in surrounding grids T25-27 and U25 (8).

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
Cathartes aura Turkey vulture	None/None/ Group 1, MSCP	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting, and resting throughout most of California during breeding season (2).	Observed within both Tierra del Sol and Rugged.	Known to occur. Suitable habitat for this species is located throughout the mitigation area. Suitable open foraging habitat present on site. Suitable nesting habitat not available on site. This species was observed within the mitigation site during focused bird count surveys for the area (7). There are no CNDDB occurrence records for this species (6). Recorded in grid U26 and surrounding grids T25-27, U25, and U27 (8).
Circus cyaneus Northern harrier (nesting)	None/SSC/ Group 1, MSCP	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub. Resident of northeastern plateau and coastal area; less common resident in Central Valley. Breeds at marsh edge in shrubby vegetation in Central Valley and Sierra Nevada (0 to 5,577 feet), and northeastern California (up to 2,625 feet (2).	Observed within Rugged and not expected to occur within Tierra del Sol.	Known to occur. This species is only expected as a winter visitor in grassland habitat and the more open area of scrub and chaparral communities on site. This species was observed within the mitigation site during focused bird count surveys for the area (7). The nearest CNDDB occurrence for this species is approximately 47 miles west of the mitigation site (6). Recorded in U26 and surrounding grids T27 and U27 (8).
Falco mexicanus Prairie falcon (nesting)	BCC/WL/ Group 1	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs. Southeastern deserts northwest through Central Valley and along inner Coast Ranges and Sierra Nevada (2).	Observed within Rugged. Not expected to nest within either site but there is a high potential for foraging.	High. There is suitable foraging habitat throughout the site and potential nesting habitat within the rocky areas. The nearest CNDDB occurrence for this species is centered approximately 2 miles west of the mitigation site (6). Not recorded in grids (8).
Lanius ludovicianus Loggerhead shrike (nesting)	BCC/SSC/ Group 1, MSCP	Open habitats with scattered shrubs, trees, or other perches; highest density in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Found in foothills and lowlands throughout California (2).	Observed within Rugged and Tierra del Sol.	Known to occur. Suitable nesting habitat for this species is located throughout the mitigation area. This species was observed within the mitigation site during focused bird count surveys for the area (7). The nearest CNDDB occurrence for this species is approximately 24 miles north of the mitigation site (6).

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
				Recorded in U26 and surrounding grids T25-27, U25 and U27 (8).
Mammals				
Chaetodipus californicus femoralis Dulzura (California) pocket mouse	None/SSC/ Group 2	Open habitat, coastal sage scrub, chaparral, oak woodland, chamise chaparral, mixed conifer habitats; disturbance specialist; 0 to 3,000 feet (5).	Low potential to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	Moderate. Suitable habitat for this species exists within the oak woodland and chaparral habitats within the mitigation area. Mitigation area is located just outside of the range for this species. The nearest CNDDB occurrence for this species is approximately 4 miles north of the mitigation site (6).
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	None/SSC/ Group 2	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse mixed and chamise chaparral; rocky and gravelly area with yucca overstory, 500 to 3,000 feet (3).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	Moderate. Suitable habitat for this species is located throughout the mitigation area. Mitigation area is located just outside of the range for this species. The nearest CNDDB occurrence for this species is approximately 12 miles west of the mitigation site (6).
Choeronycteris mexicana Mexican long-tongued bat	None/SSC/ Group 2, WBWG: H	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings. Summer resident in San Diego County (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 40 miles northwest of the mitigation site (6).
Corynorhinus townsendii Townsend's big-eared bat	None/SSC/ Group 2, MSCP, WBWG:H	Mesic habitats; gleans from brush or trees, or feeds along habitat edges. Found in all habitats but subalpine and alpine throughout California (2).	Low potential to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 11 miles northwest of the mitigation site (6).
Euderma maculatum Spotted bat	None/SSC/ Group 2, WBWG:H	Foothills, mountains, desert regions of Southern California, including arid deserts, grasslands, and mixed	Not expected to occur within Tierra del Sol	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest

Table 5 Special-Status Wildlife Species within a Potential to Occur in the Mitigation Site

Scientific Name/ Common Name	Status (Federal/ State/County)[1]	Habitat Preferences/Requirements	Verified on Rugged and/or Tierra del Sol (direct/indirect evidence)	Potential to Occur within the Mitigation Site and Factual Basis for Determination
		conifer forests. Roosts in rock crevices and cliffs. Feeds over water and along washes (2).	due to lack of suitable habitat. High potential to occur within Rugged.	CNDDB occurrence for this species is approximately 55 miles northwest of the mitigation site (6).
Eumops perotis californicus Greater western mastiff bat	None/SSC/ Group 2, MSCP, WBWG:H	Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures. All subalpine and alpine habitats; 50 to 10,000 feet (3).	Low potential to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 11 miles northwest of the mitigation site (6).
Lasiurus blossevillii Western red bat	None/SSC/ Group 2, WBWG:H	Prefers edges with trees for roosting and open areas for foraging. Roosts in woodlands and forests. Forages over grasslands, shrublands, woodlands, forests, and croplands. Found south of Shasta County to Mexican border, and west of the Sierra Nevada/Cascade Crest. In winter, occupies coastal regions and lowlands south of San Francisco Bay (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 15 miles west of the mitigation site (6).
Lepus californicus bennettii San Diego black-tailed jackrabbit	None/SSC/ Group 2, MSCP	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed area, and rangelands in Southern California (2, 4).	Observed within Tierra del Sol and Rugged.	This species was observed during surveys. The nearest CNDDB occurrence for this species is less than 1 mile north of the mitigation site (6).
Macrotus californicus California leaf-nosed bat	None/SSC/ Group 2, WBWG:H	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Found from Riverside, Imperial, San Diego, and San Bernardino Counties, south to Mexican border; fairly common along parts of Colorado River, elevation approximately 1,969 feet (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 14 miles northeast of the mitigation site (6).
Neotoma	None/SSC/	Joshua tree, pinyon-juniper, mixed	Observed	High. Suitable habitat for this

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lepida intermedia San Diego desert woodrat	Group 2	and chamise-redshank chaparral, sagebrush, and most desert habitats. Found south of San Luis Obispo County to San Diego County and San Bernardino and Riverside Counties, 0 to 8,530 feet (2, 4).	within Tierra del Sol and high potential to occur within Rugged.	species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 1 mile west of the mitigation site (6).
Nyctinomops macrotis Big free-tailed bat	None/SSC/ WBWG:MH, Group 2	Rugged, rocky canyons in Riverside, Los Angeles, and San Diego Counties, but scattered records across California to Oakland (2).	Not expected to occur within Tierra del Sol due to lack of suitable habitat. High potential to occur within Rugged.	High. Suitable foraging habitat for this species is located throughout the mitigation area. The nearest CNDDB occurrence for this species is approximately 16 miles northwest of the mitigation site (6).

[1] Status Designations:

Federal

BCC	U.S. Fish and Wildlife Service: Birds of Conservation Concern
WBWG:	H Western Bat Working Group: High Priority
WBWG:	MH Western Bat Working Group: Medium-High Priority

State Designations:

SSC	California Special Concern Species
FP	California Department of Fish and Game Fully Protected Species
WL	California Department of Fish and Game Watch List Species

County Designations:

MSCP Draft East County MSCP covered species

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1. Nafis 2012
2. Zeiner et al. 1988, 1990a–b
3. SDNHM 2012
4. NatureServe 2012
5. Brehme, C., D. Clark, C. Rochester, and R. Fisher. 2011.
6. CDFW 2013b. CNDDB.
7. Dudek 2012. Unpublished data. Bird Utilization Counts (BUC) for Jewell Valley. Conducted June 2010 through June 2012.
8. Unitt 2004.

CONCLUSION

Based upon vegetation mapping, elevation ranges, soils, and location of the mitigation site, the mitigation site contains suitable habitat to compensate for the loss of special-status plant and wildlife species that will be, or could potentially be impacted by the Tierra del Sol and Rugged solar farm projects. The mitigation lands, as a whole, provide adequate mitigation for most identified impacts, including impacts to vegetation communities, one special-status plant species

–sticky geraea – and special-status wildlife species. Additional mitigation will be required for desert beauty, Jacumba milk-vetch and Tecate cypress because the site does not support sufficient populations of these two species. The site has not yet been evaluated for Tecate tarplant, and a survey pass for this species is scheduled for fall 2013.

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