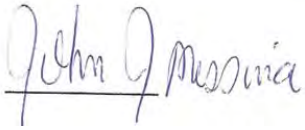
BIOLOGICAL RESOURCES LETTER REPORT
FOR THE NRG BORREGO 1 SOLAR PROJECT

PROJECT CASE NUMBER 3300-10-026 (MUP)
ENVIRONMENTAL REVIEW NUMBER 10-05-001
APN 140-290-12; KIVA Project Number 05-0061012

Prepared for: ***The County of San Diego***

Prepared by:



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May 2011

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SUMMARY

This biological letter report presents the biological resources associated with the proposed Borrego 1 Solar Project (Project), an unmanned photovoltaic solar project that will be built on a 308-acre parcel about 2 miles north of the community of Borrego Springs. The Project will also include a 69kV generation-tie transmission line (gen-tie line) to SDG&E's existing Borrego Substation (approximately one mile) which will be expanded slightly.

The entire solar project site is an old vineyard/orchard that is now dominated by large, extensive stands of Saharan mustard (*Brassica tournefortii*). Large patches of athel (*Tamarisk aphylla*) non-native woodland occur as linear windscreens, primarily along the borders of the site. Small patches of disturbed Sonoran creosote bush scrub, disturbed desert saltbush scrub, and disturbed Sonoran mixed woody scrub occur onsite as the result of relatively recent colonization of the site by common desert shrub species. The proposed gen-tie transmission line would run from the southeastern corner of the site to the Borrego substation within a disturbed road right-of-way on the west side of Borrego Valley Road.

Given the long period of active agricultural use of the site, its present disturbed condition and the large-scale intensive agriculture adjacent land uses, most sensitive species known to occur in the vicinity of the project site would not be expected to occur or have a low potential for occurrence onsite. Because of the lack of suitable habitat, no focused sensitive species surveys have been conducted.

The Borrego Substation expansion area supports disturbed desert saltbush scrub and a small area of disturbed habitat around the periphery of the existing substation.

The proposed project would result in the direct and permanent loss of a total of 308.2 acres of habitat on the solar project site: 281.8 acres of disturbed habitat; 17.4 acres of athel dominated non-native woodland; 2.6 acres of disturbed Sonoran creosote bush scrub; 2.2 acres of disturbed desert saltbush scrub; 1.6 acres of disturbed Sonoran mixed woody scrub; and 2.6 acres of developed areas. In addition, 2.2 acres would be disturbed by the expansion of the Borrego Substation: 0.3 acres of disturbed habitat and 1.9 acres of disturbed native saltbush scrub.

Impacts to the disturbed Sonoran creosote bush scrub, disturbed desert saltbush scrub and disturbed Sonoran mixed woody scrub are considered significant. Impacts to disturbed desert saltbush scrub would require a mitigation ratio of 2:1 (totaling 8.2 acres – 4.4 for the solar project site and 3.8 for the substation expansion area); impacts to disturbed Sonoran creosote bush scrub and Sonoran mixed woody scrub would require a mitigation ratio of 1:1 for a total of 2.6 acres and 1.6 acres, respectively. A total of 12.4 acres of mitigation would be required. A common form of habitat compensation mitigation is the acquisition of similar or higher quality native desert scrub habitat and its placement in long-term preservation for natural biological resources. Acquired habitat should be

contiguous with large areas of similarly designated habitat that has high conservation value. Implementation of this mitigation measure would reduce impacts to native vegetation communities to less than significant.

Several special status wildlife species could potentially use the site. Flat-tailed horned lizard (*Phrynosoma mcallii*), prairie falcon, and pallid bat all have a low potential for occurrence. Ferruginous hawk has a moderate potential for occurrence, and Swainson's hawk and loggerhead shrike have a high potential for occurrence.

To the extent practicable, project construction would not occur during the Swainson's hawk or ferruginous hawk migration (February through April). If project construction would occur during the migration season, a biological monitor would be present to survey for migrating birds. Implementation of this measure would reduce potential impacts to Swainson's hawk or ferruginous hawk migration to less than significant.

Ground and vegetation disturbance shall take place outside of the recognized nesting season, generally between early February and August, if practical. If ground and vegetation disturbance must occur within the recognized nesting season, nesting bird surveys shall be performed starting within one week of commencing construction and weekly thereafter throughout the nesting season to identify any nests that may be impacted by construction activities. If any active nests are located within the proposed disturbance area or within 100 feet of ground disturbing activities, a 100-foot buffer area will be flagged around the nest (500 feet from any active raptor nest), and no activity will be allowed in the buffer area until nesting is completed. Implementation of this measure would reduce potential impacts to nesting birds to less than significant.

Loss of the native vegetation communities would result in a significant impact to raptor foraging habitat. Implementation of the aforementioned mitigation measure for vegetation communities by habitat acquisition and preservation would also reduce impacts to raptor foraging habitat to less than significant.

INTRODUCTION

As part of the County of San Diego's discretionary decision to issue a Major Use Permit to authorize a Major Impact Utility Pursuant to Section 1350 of the County's Zoning Office, the Department of Planning and Land Use (DPLU) requires the submittal of a Biological Resources Letter Report as part of the Major Use Permit Application Package. This report fulfills this requirement.

PROJECT DESCRIPTION

The Borrego 1 Solar Project is a proposed photovoltaic (PV) solar generating facility located in San Diego County approximately 2 miles north-northeast of the center of the community of Borrego Springs, California. The Project Site is southwest of the corner of Borrego Valley and Henderson Canyon Roads. The Project Site is approximately 308 acres of private land that has previously been used for agriculture.

The PV panels will be mounted either on fixed tilt supports or single-axis trackers. The Project will be 26 MWac (32 MWdc).

The main project access will be located at the southeast corner of the site on Borrego Valley Road with a secondary access on Henderson Canyon Road. No sewer service or potable water is required as the facility would be unmanned. Water would be used for dust suppression during construction and the Project would use approximately two acre-feet of water annually during operation for cleaning the solar panels. This water will be provided from existing wells on the Project site.

The site would be grubbed to remove existing vegetation and almost no grading would be necessary as it is already level. The soil surface will be smoothed and compacted to prepare the site for installation of the solar panels. The construction period for the 26 MW phase (using either mounting system) is expected to be a 4-6 month timeframe.

The only off-site improvement associated with the Project is a 69kV generation-tie (gen-tie) transmission line from the site to SDG&E's existing Borrego Substation and a small expansion of this substation. The proposed gen-tie line is approximately one mile in length and would be located within the disturbed right-of-way on the west side of Borrego Valley Road. The interconnection at the existing substation would occur within the expansion of its current footprint.

PROJECT LOCATION

The proposed 308-acre solar project is located at the southwest corner of the intersection of Henderson Canyon and Borrego Valley Roads north of the community of Borrego Springs (**Figures 1** and **2**). The gen-tie line will run south to SDG&E's existing Borrego Substation on Borrego Valley Road. This gen-tie line will be located within the disturbed road 30-foot wide ROW on the west side of Borrego Valley Road and is approximately 1.0 mile in length. The Borrego Substation Expansion area extends along the southern and eastern boundaries of the existing substation.

PROJECT SETTING

A general site survey was conducted by John Messina on July 9, 2010 to assess the biological resources present and potentially occurring onsite. A second survey was conducted by John Messina on October 24, 2010 to map the vegetation communities and conduct a general wildlife survey. The site was surveyed on foot to observe the vegetation features of the site. Given the disturbed and open condition of the site, very broad wandering transects (on average 500-600 feet apart) were walked in an east-west direction. The proposed gen-tie line corridor is immediately adjacent to Borrego Valley Road, vegetation communities were mapped, and species composition was noted from Borrego Valley Road for these areas. A brief site reconnaissance was also conducted by Patrick Golden on May 13, 2009. This survey was conducted from the perimeter roads of the solar project site.

On April 6, 2011, John Messina conducted a general wildlife and rare plant survey of the Borrego Substation Expansion area. The survey was conducted from 12:30-14:00. Weather conditions were partly sunny with high clouds. Temperatures were in the high 60's to low 70's^{0}F. The expansion area is rather narrow, so several meandering transects approximately 25 feet apart were walked through the site and the entire expansion area and immediate offsite areas were surveyed as such. The rare plant survey was conducted during the traditional blooming period of several early season ephemeral species. Though the diversity of native annual and herbaceous perennial species was relatively low, this was more an indication of the disturbed condition of the area as well as its small size rather than a consequence of the timing of the survey. The presence of several ephemeral native species in bloom was further evidence that that rare plant survey was conducted during the appropriate time. **Table 1** provides a list of the staff, date and times the surveys were conducted.

Vegetation communities were mapped in the field during the survey based on Oberbauer's *Vegetation Communities in San Diego County* (1996). Plant scientific nomenclature follows that of Rebman and Simpson (2006).

Because of the lack of quality habitat, focused species-specific surveys were not conducted; refer to the Special Status Species subsection below for a discussion.

Table 1 - Survey Dates, Personnel, and Conditions

Personnel	**Survey Type**	**Survey Date/Time**	**Site Conditions**
Patrick Golden	General wildlife; Vegetation Communities	May 13, 2009; 1100-1330 hours	Sunny, calm and clear; 103^{0}F
John Messina	Botanical	July 9, 2010; 0800-1200 hours	Sunny, calm and clear; High 90's-low 100's^{0}F
John Messina	Botanical; General wildlife	October 24, 2010 0815-1500 hours	Sunny, calm and clear; High 70's-low 80^{0}F
John Messina	Botanical and rare plant; General wildlife	April 6, 2011 1230-1400 hours	Partly sunny with high clouds, calm to low gusts; High 60's-low 70^{0}F

REGIONAL CONTEXT

The project is located within the northern half of Borrego Valley approximately 2 miles northeast of the community of Borrego Springs. Coyote Creek, a major drainage at the base of the Coyote Mountains, lies approximately 1.3 miles to the northeast of the site. Galleta Meadows, on the alluvial fan of Henderson Canyon at the base of San Ysidro Mountain, is approximately 1.7 miles to the east. The site is within the County of San Diego's NCCP Desert Subregional Planning Area.

The site is essentially flat with no topographic relief. Soils of the entire project area are Rositas fine sands 0-2 percent slopes (RoA). Soils of the Rositas Series consist of somewhat excessively drained, very deep loamy coarse sands derived from granitic alluvium. These soils are located on alluvial fans and alluvial plains. The Rositas fine sands with 0-2 percent slopes are nearly level (USDA 1973).

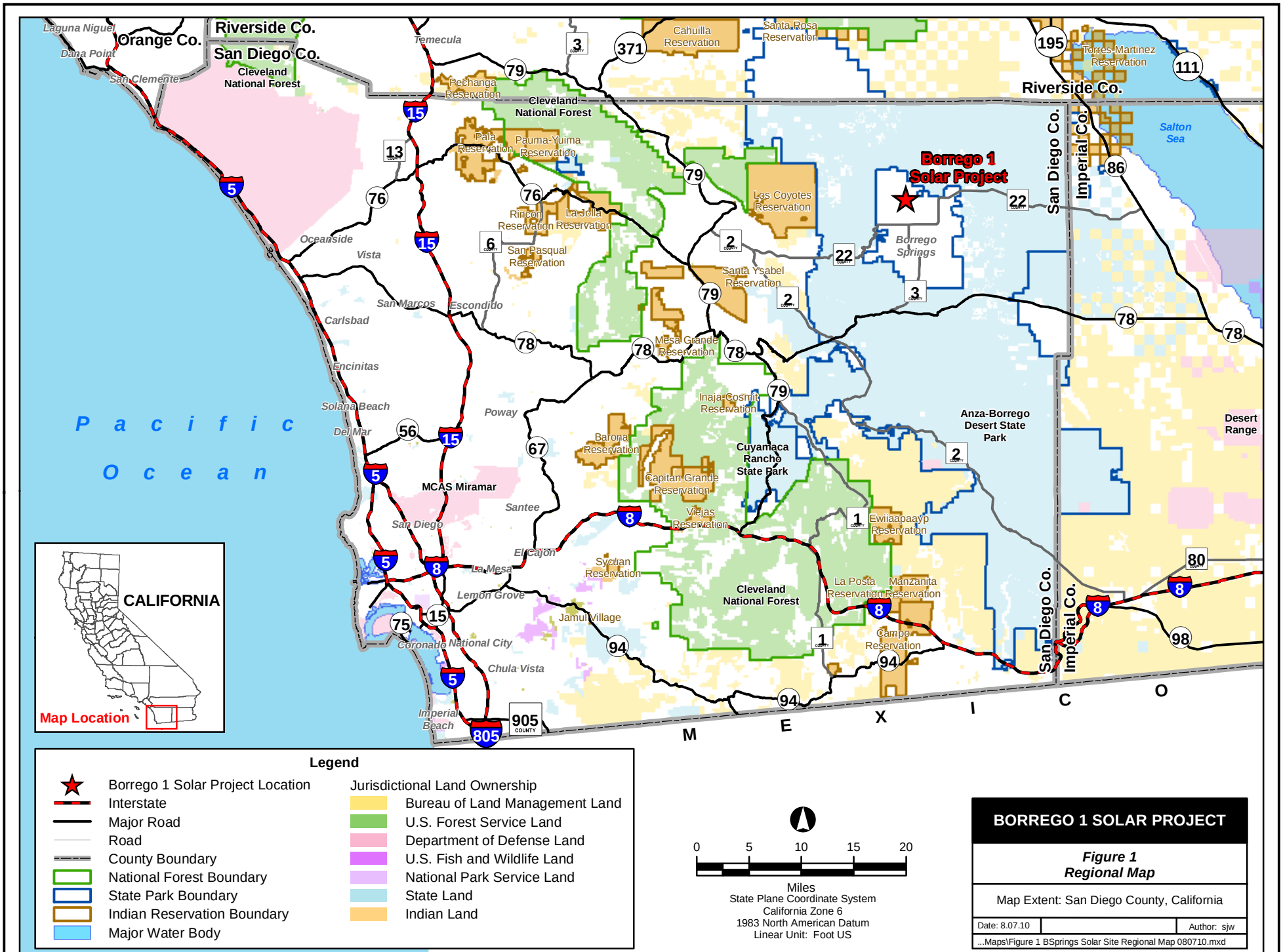
The entire project site was under some form of agriculture historically and was under intensive agriculture as early as 1967-68, as evidenced by the aerial photography base maps of the *Soil Survey of San Diego Area, California* (USDA 1973).

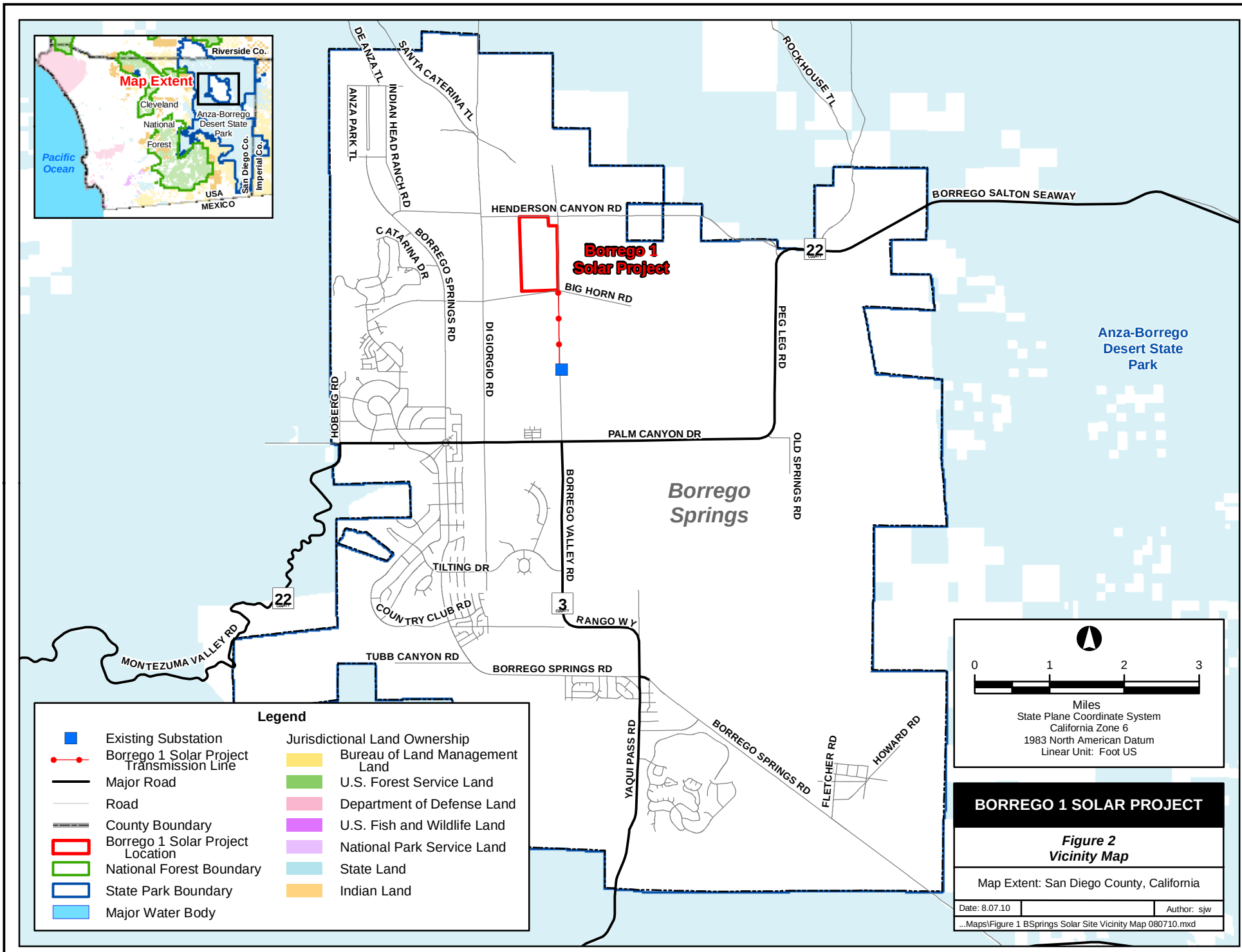
HABITATS/VEGETATION COMMUNITIES

Disturbed habitat

The entire Borrego 1 Solar project site is an old vineyard/orchard that is now dominated by large extensive stands of Saharan mustard (*Brassica tournefortii*) (**Figure 3a & 3b**; **Attachment B Photographs 1** and **2**). It appears that the site has not been under active cultivation for several years; however remnants of old vineyard trellises are present over large areas of the site. Non-native grasses are not the dominant species on the site (**Attachment B Photographs 3** and **4**). Mediterranean schismus (*Schismus barbatus*) was the only common non-native grass associate within this area. As such, the majority of the site is classified as disturbed habitat that is dominated by Saharan mustard with some Mediterranean schismus. Solitary individual shrubs such as creosote bush (*Larrea tridentata*), many-fruit saltbush (A*triplex polycarpa*), four-wing saltbush (*Atriplex canescens* var. *canescens*), blue palo verde (*Cercidium floridum* ssp. *floridum*) and honey mesquite (*Prosopis glandulosa* var. *torreyana*) are scattered throughout the disturbed habitat. Large patches of native annuals, primarily (*Dicoria canescens*) and narrow-leaf cryptantha (*Cryptantha angustifolia*) also occur within the disturbed habitat. Disturbed habitat accounts for 280.0 acres. **Table 2** lists the vegetation communities and their acreages onsite.

A description guideline for disturbed habitat is provided in an earlier revision of the *County of San Diego's Report Format and Content Requirements Biological Resources* "Disturbed land includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops) and where there is


Borrego 1 Solar Project
Riverside Co.
San Diego Co.
Orange Co.
Imperial Co.
Pacific Ocean
MEXICO
Cleveland National Forest
MCAS Miramar
Anza-Borrego Desert State Park
Cuyamaca Rancho State Park
Desert Range
Salton Sea
Borrego Springs
Oceanside
Vista
San Marcos
Escondido
Carlsbad
Encinitas
Solana Beach
Del Mar
Poway
Santee
El Cajon
La Mesa
Lemon Grove
Coronado
National City
Chula Vista
Imperial Beach
San Diego
Laguna Niguel
Dana Point
San Clemente
Temecula
Pechanga Reservation
Pala Reservation
Pauma-Yuima Reservation
Rincon Reservation
La Jolla Reservation
San Pasqual Reservation
Santa Ysabel Reservation
Los Coyotes Reservation
Cahuilla Reservation
Santa Rosa Reservation
Torres-Martinez Reservation
Mesa Grande Reservation
Inaja-Cosmit Reservation
Barona Reservation
Capitan Grande Reservation
Viejas Reservation
Sycuan Reservation
Jamul Village
La Posta Reservation
Manzanita Reservation
Campo Reservation
Ewiiaapaayp Reservation
CALIFORNIA
Map Location
Legend
Borrego 1 Solar Project Location
Interstate
Major Road
Road
County Boundary
National Forest Boundary
State Park Boundary
Indian Reservation Boundary
Major Water Body
Jurisdictional Land Ownership
Bureau of Land Management Land
U.S. Forest Service Land
Department of Defense Land
U.S. Fish and Wildlife Land
National Park Service Land
State Land
Indian Land
0 5 10 15 20
Miles
State Plane Coordinate System
California Zone 6
1983 North American Datum
Linear Unit: Foot US
BORREGO 1 SOLAR PROJECT
Figure 1
Regional Map
Map Extent: San Diego County, California
Date: 8.07.10
Author: sjw
...Maps\Figure 1 BSprings Solar Site Regional Map 080710.mxd


Riverside Co.
Map Extent
Cleveland National Forest
Anza-Borrego Desert State Park
Pacific Ocean
San Diego Co.
Imperial Co.
USA
MEXICO
DE ANZA TL
SANTA CATERINA TL
ROCKHOUSE TL
ANZA PARK TL
INDIAN HEAD RANCH RD
HENDERSON CANYON RD
BORREGO SALTON SEAWAY
C ATARINA DR
BORREGO SPRINGS RD
Borrego 1 Solar Project
BIG HORN RD
DI GIORGIO RD
PEG LEG RD
HOBERG RD
PALM CANYON DR
OLD SPRINGS RD
Anza-Borrego Desert State Park
Borrego Springs
BORREGO VALLEY RD
TILTING DR
COUNTRY CLUB RD
RANGO WY
MONTEZUMA VALLEY RD
TUBB CANYON RD
BORREGO SPRINGS RD
YAQUI PASS RD
FLETCHER RD
HOWARD RD
22
3
Legend
Existing Substation
Borrego 1 Solar Project Transmission Line
Major Road
Road
County Boundary
Borrego 1 Solar Project Location
National Forest Boundary
State Park Boundary
Major Water Body
Jurisdictional Land Ownership
Bureau of Land Management Land
U.S. Forest Service Land
Department of Defense Land
U.S. Fish and Wildlife Land
National Park Service Land
State Land
Indian Land
0 1 2 3
Miles
State Plane Coordinate System
California Zone 6
1983 North American Datum
Linear Unit: Foot US
BORREGO 1 SOLAR PROJECT
Figure 2
Vicinity Map
Map Extent: San Diego County, California
Date: 8.07.10
Author: sjw
...Maps\Figure 1 BSprings Solar Site Vicinity Map 080710.mxd

APN 14013043
APN 14013026
APN 14013022
APN 14013018
APN 14013028
BORREGO VALLEY RD
APN 14013027
OV
APN 14013021
HENDERSON CANYON RD
DSS-D
NNW
Property Boundary
Limit of Impacts
SMWS-D
SMWS-D
SMWS-D
SMWS-D
APN 14029003
SMWS-D
DSS-D
DH
NNW
APN 14029004
DH
NNW
NNW
DSS-D
SCBS-D
640
SCBS-D
DSS-D
DSS-D
SCBS-D
APN 14029005
DH
SCBS-D
DH
APN 14029012
APN 14029011
NNW
DEV
IA-N
DEV
DSS-D
NNW
APN 14029008
DSS-D
SCBS-D
SMWS-D
NNW
DEV
DSS-D
APN 14029010
Property Boundary
Limit of Impacts
APN 14103053
APN 14103052
BIG HORN RD
SCBS-D
APN 14106007
APN 14029009

Legend

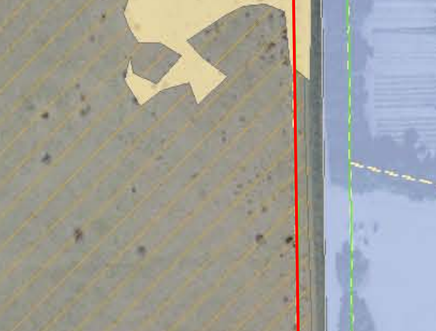
- Existing Substation
- Existing 69 kV Transmission Line
- Borrego 1 Solar Project Transmission Line
- Major Road
- Road
- Road Easement
- 40 Foot Contour Interval
- County Boundary
- Parcel Boundary
- Borrego 1 Solar Project Location
- Borrego 1 Solar Project 500 Foot Buffer
- National Forest Boundary
- State Park Boundary
- Major Water Body

Jurisdictional Land Ownership

- Bureau of Land Management Land
- U.S. Forest Service Land
- Department of Defense Land
- U.S. Fish and Wildlife Land
- National Park Service Land
- State Land
- Indian Land

Vegetation Type

- DSS-D Desert Saltbush Scrub (36110)
- IA-N Intensive Agriculture - Nursery (18200)
- NNW Non-Native Woodland (79000)
- OV Orchards and Vineyards (18100)
- SCBS-D Sonoran Creosote Bush Scrub - Disturbed (33100)
- SMWS-D Sonoran Mixed Woody Scrub (33210)
- DH Disturbed Habitat (11300)
- DEV Developed (12000)



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Feet

State Plane Coordinate System
California Zone 6
1983 North American Datum
Linear Unit: Foot US

Sources:
SanGIS. "Parcels for entire County of San Diego". August 2010. San Diego Geographic Information Source - JPA. 7 August 2010. http://www.sangis.org/Download_GIS_Data.htm.
SanGIS. "Road Right-of-Way". August 2010. San Diego Geographic Information Source - JPA. 7 August 2010. http://www.sangis.org/Download_GIS_Data.htm.

BORREGO 1 SOLAR PROJECT

Figure 3a
Existing Vegetation and Impacts

Map Extent: San Diego County, California

Date: 11.12.10 | Author: sjw

...Maps\Figure 3a Boreego 1 Solar Existing Vegetation 080710.mxd

DH
NNW
BIG HORN RD
DH
IA-N
APN 14029010
APN 14029009
BIG HORN RD
600
600
600
600
BORREGO VALLEY RD
SCBS-D
APN 14106007
DSS-D
DSS-D
DEV
IA-N
APN 14106008
DSS-D
DH
APN 14121001
Borrego Substation
APN 14121002
560
APN 14103053
APN 14103052
APN 14103027
APN 14103026
APN 14103022
APN 14103028
APN 14103029
APN 14121030
APN 14121057

Legend

- Existing Substation
- Existing 69 kV Transmission Line
- Borrego 1 Solar Project Transmission Line
- Major Road
- Road
- Road Easement
- 40 Foot Contour Interval
- County Boundary
- Parcel Boundary
- Borrego 1 Solar Project Location
- Borrego 1 Solar Project 500 Foot Buffer
- National Forest Boundary
- State Park Boundary
- Major Water Body

Jurisdictional Land Ownership

- Bureau of Land Management Land
- U.S. Forest Service Land
- Department of Defense Land
- U.S. Fish and Wildlife Land
- National Park Service Land
- State Land
- Indian Land

Vegetation Type

- DSS-D Desert Saltbush Scrub (36110)
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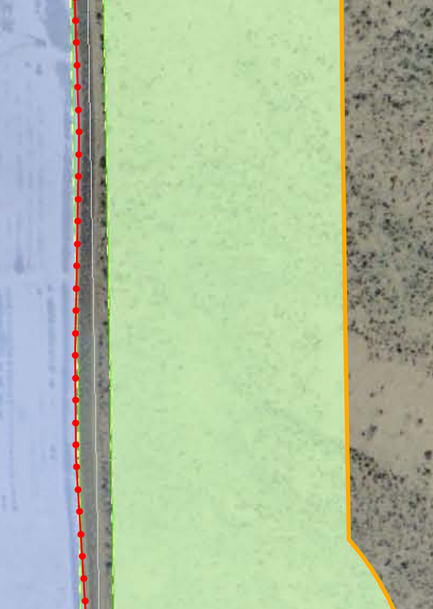
- DH Disturbed Habitat (11300)
- DEV Developed (12000)



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Feet

State Plane Coordinate System
California Zone 6
1983 North American Datum
Linear Unit: Foot US

Sources:
SanGIS. "Parcels for entire County of San Diego". August 2010. San Diego Geographic Information Source - JPA. 7 August 2010. http://www.sangis.org/Download_GIS_Data.htm.
SanGIS. "Road Right-of-Way". August 2010. San Diego Geographic Information Source - JPA. 7 August 2010. http://www.sangis.org/Download_GIS_Data.htm.

BORREGO 1 SOLAR PROJECT

Figure 3b
Existing Vegetation and Impacts

Map Extent: San Diego County, California

Date: 11.12.10		Author: sjw

...Maps\Figure 3b Boreego 1 Solar Existing Vegetation 080710.mxd

evidence of soil surface disturbance and compaction from previously legal human activity; or where the vegetative cover is greater than 10 percent, there is soil surface disturbance and compaction, and the presence of building foundations and debris (e.g., irrigation piping, fencing, old wells, abandoned farming or mining equipment) resulting from legal activities (as opposed to illegal dumping). Vegetation on disturbed land (if present) will have a high predominance of non-native and/or weedy species that are indicators of surface disturbance and soil compaction. Although non-native grasses may be present on disturbed land, they do not dominate the vegetative cover. Examples of disturbed land include the following activities, if preformed under legal means: recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites" (County of San Diego, 2009).

As mentioned above, native shrubs (creosote bush, many-fruit saltbush, four-wing saltbush, blue palo verde and honey mesquite) have sporadically colonized the site. Colonization is primarily along the edges of Borrego Valley Road where extra water from the road's surface runoff may contribute to successful establishment of these species. Colonization is also expected to proceed from the edges of the property inward, as the edges are closer to offsite source populations and shorter seed/propagule dispersal distances. Areas of relatively higher native shrub density have been classified as disturbed Sonoran creosote bush scrub (**Attachment B**; **Photographs 5** and **6**), disturbed desert saltbush scrub (**Attachment B**; **Photograph 7**) and disturbed Sonoran mixed woody scrub. These areas are still characterized by relatively low native shrub density with an understory dominated by Saharan mustard. Habitat quality of these communities is extremely low.

Sonoran creosote bush scrub

Areas where creosote bush are a component of native shrub patches are classified as disturbed Sonoran creosote bush scrub. The individuals of creosote bush may not be the most common species within a patch but they are the most conspicuous. Burrow weed (*Ambrosia dumosa*), four-wing saltbush and many-fruit saltbush are also present in these patches at varying densities. Saharan mustard is the dominant species in the understory. Mediterranean schismus and desert alkali goldenbush (*Isocoma acradenia* var. *eremophila*) are common in the understory. Narrow-leaf cryptantha is localized in some of the patches of disturbed Sonoran creosote bush scrub. Approximately 2.6 acres of disturbed Sonoran creosote bush scrub, on the project site.

Sonoran mixed woody scrub

Disturbed Sonoran mixed scrub occurs in the northwest corner of the site; blue palo verde is the dominant shrub in this community. Several large individuals of mesquite are present also. Many-fruit saltbush is the most common shrub present within these patches, but scattered individuals of creosote bush and four-wing saltbush are also present. Saharan mustard is the dominant understory plant with Mediterranean schismus and narrow-leaf cryptantha also common. Approximately 1.6 acres of disturbed Sonoran mixed woody scrub occurs on the solar project site.

Desert saltbush scrub

Disturbed desert saltbush scrub is dominated by four-wing saltbush with very scattered creosote bush. Approximately 2.2 acres disturbed desert saltbush scrub occurs on the project site.

Athel dominated non native woodland

Throughout the property, especially along roads and the property boundaries, athel (*Tamarix aphylla*) has been planted as windrows (**Attachment B**; **Photograph 1**). Because of this species' dense canopy and high production of leaf and twig litter in the understory, no other plant species are associated with these windrows. Some of these windrows are still very healthy; attempts to eradicate other patches of this species have been successful or partially successful, but some of the trees are still alive. Approximately 17.4 acres of this community (including areas where it is recovering from previous eradication attempts) occurs on the solar project site.

Developed

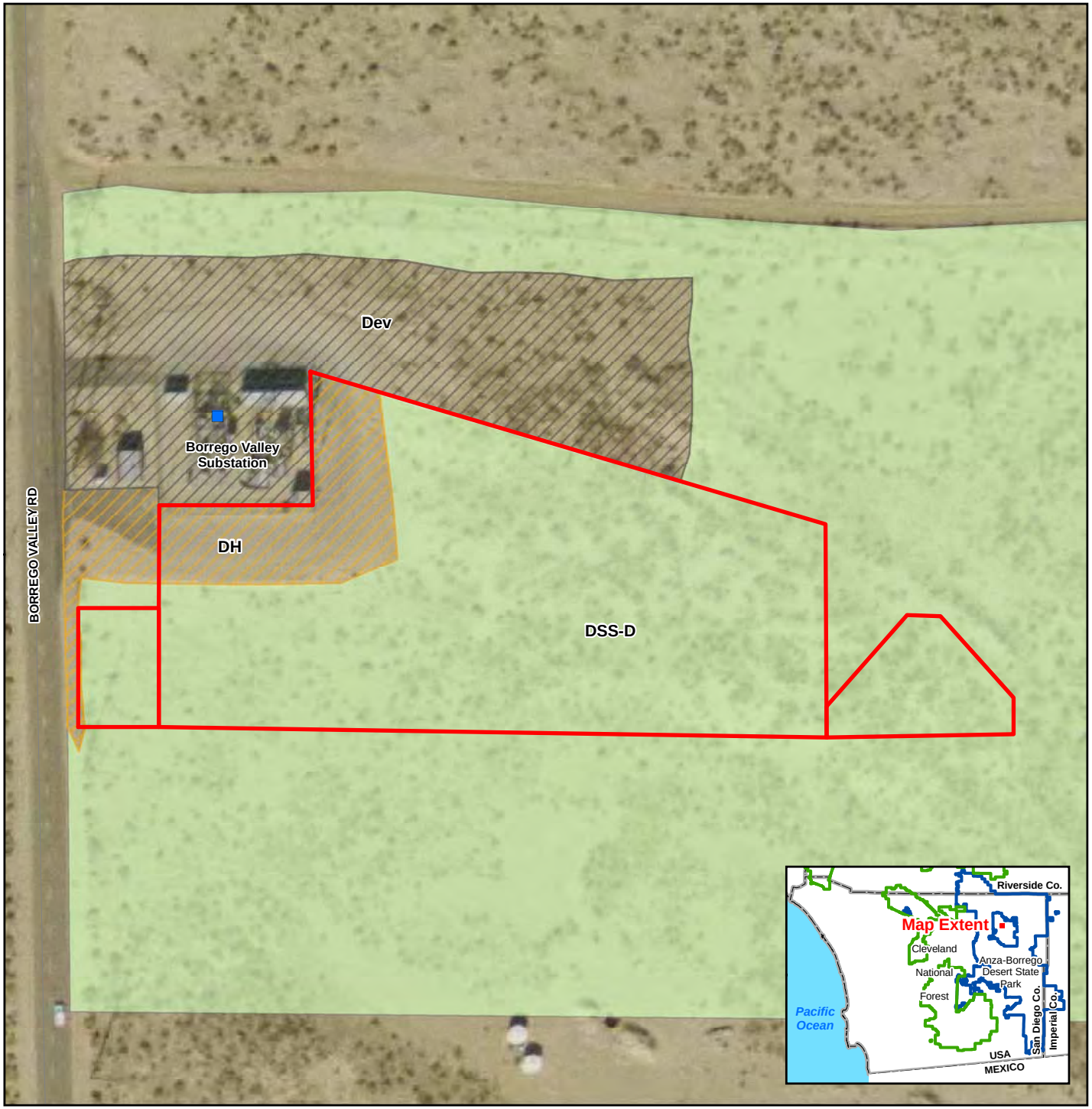
The remaining 0.4 acre of the property is classified as developed.

Gen-Tie Line Corridor

The proposed gen-tie line would run from the southeastern corner of the site to the existing substation within a dirt road alongside the west side of Borrego Valley Road. The northern portion of corridor is an extension of the disturbed habitat on the project site. This area is dominated almost exclusively by Saharan mustard. Disturbed desert saltbush scrub occurs along the northern boundary of the commercial nursery that is directly across Borrego Valley Road from the existing substation. However, the corridor will be located within the disturbed portion of this area. Approximately 1.8 acres of disturbed habitat occur within the gen-tie line corridor. The remaining 2.2 acres is classified as developed (substation).

Borrego Substation Expansion

With the exception of a small bare area associated with the dirt road that surrounds the substation (0.3 acre), a majority of site is disturbed desert saltbush scrub (1.9 acres). **Figure 3c** depicts the vegetation of the expansion area. Many-fruit saltbush is the dominant species present with four-wing saltbush an associate. No other woody species (native or non-native) were observed in the expansion area. The expansion area and adjacent habitat has burned previously, most likely several years prior, as evidenced by burn scars and recovery. The resulting habitat then is very open with the inter-shrub spaces dominated by Mediterranean schismus and Sahara mustard. These two non-native weedy species are the most abundant species within the expansion area. Native annual and herbaceous perennial species were present but in very low numbers. Narrow-leaf cryptantha, desert sand verbena, dune evening primrose (*Oenothera deltoides* ssp. *deltoides*), pinnate-leaf primrose (*Camissonia claviformis* ssp. *aurantiaca*), desert dandelion (*Malacothrix glabrata*), trailing mallow (*Eremalche exilis*), desert pincushion



Legend

- Existing Substation
- Road
- County Boundary
- Borrego Substation Expansion Area
- National Forest Boundary
- State Park Boundary
- Major Water Body

Vegetation Types

- Desert Saltbush Scrub - Disturbed (DSS-D)
- Disturbed Habitat (DH)
- Developed (Dev)

0 100 200

Feet

State Plane Coordinate System
California Zone 6, NAD 83
Feet

Vegetation on Borrego Substation Expansion Area

Figure 3c

Map Extent: San Diego County, California

Date: 4.21.11 | Author: sjw

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(*Chaenactis sevioides*), and slender pectocarya (*Pectocarya linearis* ssp. *ferocula*), were the native plant species observed.

Offsite Surrounding Lands

Orchards and vineyards, primarily citrus crops, occur along the northern boundary of the project site north of Henderson Canyon Road. Intensive agriculture, primarily an ornamental nursery, occurs along the eastern boundary of the site, east of Borrego Valley Road. Disturbed habitat that is similar in species composition to the community on the solar project site occurs west and south of the site.

Disturbed Sonoran creosote bush scrub and disturbed desert saltbush scrub occur along the east side of Borrego Valley Road. These habitats are characterized by widely spaced shrubs, with an understory dominated by dense stands of Saharan mustard. Creosote bush, four-wing saltbush and many-fruit saltbush are the shrub component of the disturbed Sonoran creosote bush scrub. Four-wing saltbush and many-fruit saltbush are the shrub components of the disturbed desert saltbush scrub. Though not evident from Borrego Valley Road, these communities might have been burned recently. The shrub density and cover is very sparse and the density and cover of Saharan mustard is very high, but there was no apparent ground disturbance as the natural topography and landform seem intact. Intensive agriculture (nursery) and disturbed habitat occur to the west of the gen-tie transmission line corridor.

TABLE 2 - VEGETATION ACREAGES

Vegetation Community (Holland Code)	**Acreage**			
	Solar farm	**Transmission Gen-tie line**	**Substation Expansion**	**Total**
Disturbed Habitat (11300)	280.0	1.8	0.3	282.1
Athel Dominated Non-Native Woodland (79000)	17.4	0	0	17.4
Sonoran Creosote Bush Scrub-Disturbed (33100)	2.6	0	0	2.6
Desert Saltbush Scrub (36110)	2.2	0	1.9	4.1
Sonoran Mixed Woody Scrub (33210)	1.6	0	0	1.6
Developed	0.4	2.2	0	2.6
TOTAL	**304.2**	**4.0**	**2.2**	**310.4**

SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are communities that are considered rare either regionally or globally and support sensitive species.

Sonoran creosote bush scrub, Sonoran mixed woody scrub, and desert saltbush scrub are considered sensitive natural communities by the County of San Diego (2010) because they either support, or are necessary to support, a viable population of sensitive species,

are critical to the proper functioning of a balanced natural ecosystem, or serve as a functioning wildlife corridor (County of San Diego 2009). The three natural communities mentioned here do not perform these said functions. The habitat quality is extremely low in each instance, and they represent recent colonization of the site by several species. Native cover in these habitats is also extremely low. However, these species are not randomly distributed throughout the site. They are clumped in assemblages, generally at the edges of the site or adjacent to roads that bisect the site, both areas that would have a higher probability of successful colonization of these species from offsite populations. Most of the patches of these native habitats are long and narrow.

FLORA

A total of 23 plant species were observed onsite during the July 9, 2010 survey. Because the survey was conducted during the middle of summer, spring ephemeral species may not have been observable. Despite the timing of the survey, species diversity of the site is expected to be quite low because of the long-term agricultural land use and the high density and cover of Saharan mustard. A total of 11 plant species were observed on the Borrego Substation Expansion area during the April 6, 2011 survey. **Attachment A** lists the 29 plant species that were observed during all the surveys.

FAUNA

The project site supports some species of common desert wildlife, although densities and species richness are low due to the disturbed nature of the site. Numerous passerine avian species, turkey vultures, and hawks are common in this area, and many breed in the Borrego Valley. Small mammals, lizards, and large mammals such as coyote, are also common in the Borrego Valley. Common wildlife species that were observed during biological surveys are listed in **Attachment B**. No reptiles were observed, although harvester ants were common and provide a prey base for some species of lizards. The presence of small mammal burrows also indicates a prey base is present for some species of lizards and snakes.

A Red-tailed Hawk (*Buteo jamaicensis*) was observed foraging over the site. Small mammal burrows occur in high numbers in many parts of the site, likely used by Antelope ground squirrel (*Ammospermophilus leucurus*) and Merriam's kangaroo rat (*Dipodomys merrami*). White-winged dove (*Zenaida asiatica*) was common in the athel dominated non-native woodland. Common raven (*Corvus corax*) and American crow (*Corvus brachyrhynchos*) were observed flying over the site.

A total of 3 faunal species were observed (two directly, one indirectly) during the April 6, 2011 survey of the Borrego Substation Expansion area. A medium-sized flock of white-crowned sparrows (*Zonotrichia leucophrys*) were observed throughout the substation expansion area and adjacent offsite areas. White-crowned sparrows are common in San Diego County from fall through spring. A single individual of white-winged dove was

observed flying over the expansion area. A high density of small mammal burrows, possibly created by Merriam's kangaroo rat, are present throughout the proposed expansion area. Attachment A lists the animal species observed during all the surveys.

SPECIAL STATUS SPECIES

Plants

Special Status Plant Species are those that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (2010a); listed as endangered, threatened or rare by the California Department of Fish and Game(CDFG) (CNDDB 2010a); occur on the CDFG's *Special Vascular Plants, Bryophytes and Lichens List* (CNDDB 2010b); occur on the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants*(2010), and/or are considered sensitive by the County of San Diego (2010).

The County of San Diego, Department and Land Use Planning (DPLU), provided a list of sensitive plant species known from the vicinity of the project site in a Pre-Application Scoping Letter for this project dated May 26, 2010. A CNDDB RareFind search was conducted for all sensitive plant species reported within five miles of the project area. The results of this search are depicted in **Figure 4**. An online query of the San Diego Natural History Museums Herbarium Plant Atlas database was conducted to find all specimen collections of the sensitive species from the County's list and RareFind search from the vicinity of the project. Species from these sources are listed in **Table 3**.

Most sensitive plant species are not expected to occur on the project site. Several sensitive plant species have a low potential for occurrence on the project site.

Though focused sensitive plant surveys were not conducted, the general condition of the site is expected to preclude the occurrence of most of these species. The site is very disturbed due to prior orchard or vineyard activity and is dominated by Saharan mustard a California Invasive Plant Council (Cal-IPC) plant species that has a rating high for having severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Species rated as high have reproductive biology and other attributes that are conducive to moderate to high rates of dispersal and establishment. Saharan mustard has a rating of severe for impacts and invasiveness (Cal-IPC 2006). Though there has been colonization of some native species, particularly native shrubs, this has been a relatively slow process and successful by only a relatively small number of very common species. Desert habitats are characterized by extremely low resiliency, i.e. very slow ability to recover to a pre-impact condition once the impacts have been removed. Rare plant species would not likely colonize a site like this prior to a much higher establishment of the more common native species.

Lastly, the site is surrounded on all sides by either similar non-native habitat (disturbed habitat) on the west and south; or orchard and vineyards on the north and intensive agriculture-nursery on the east. Disturbed Sonoran creosote bush scrub and disturbed desert saltbush scrub occurs off the southeastern corner of the solar farm. There are very

limited areas in close proximity to the site that may support sensitive plant populations that would serve as source populations for successful migration to the solar farm.

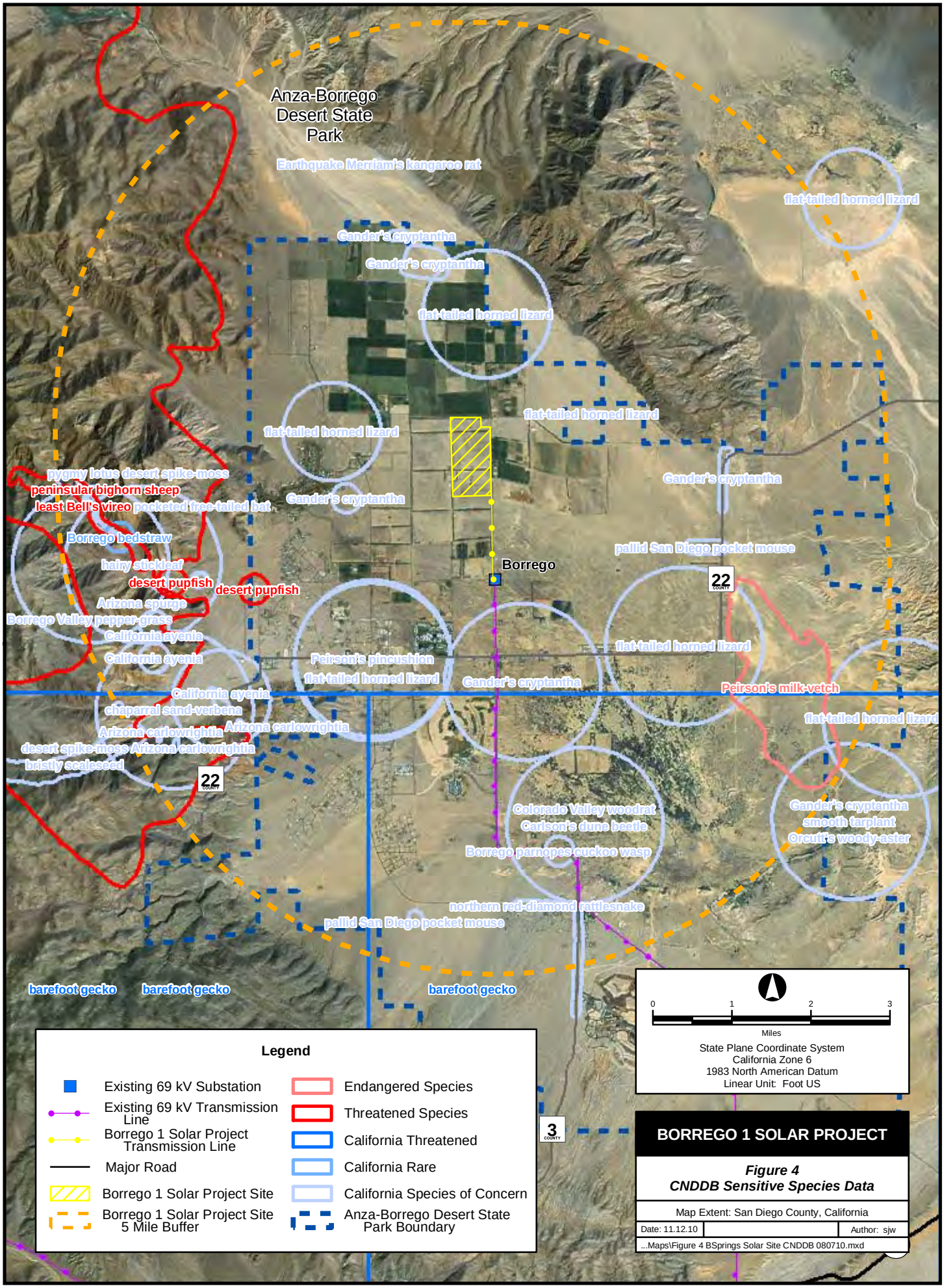
For these reasons, most sensitive plant species are not expected to occur on the project site. The site and surrounding areas are very disturbed and the lack of suitable habitat onsite and immediately offsite would likely preclude the occurrence of these species onsite or within close proximity to the site from which they could disperse to the site.

Gander's cryptantha (*Cryptantha ganderi*), Peirson's cushion flower (*Chaenactis carphoclina* var. *peirsonii*), and ribbed cryptantha (*Cryptantha costata*) have a low potential for occurrence onsite. Gander's cryptantha occurs throughout Borrego Valley so there is a potential that it could have migrated to the site after the cessation of agricultural activities, given the disturbed nature of the site. Similarly Peirson's cushion flower (documented occurrence one mile southwest of the site) and ribbed cryptantha (documented occurrences one mile west and two miles north of the site) both have reported occurrences near the property. These could have migrated to the site but the potential for onsite populations is considered low. There is a minimal amount of low quality desert scrub habitat onsite that could support these species.

Sensitive plant species are not expected to occur within the gen-tie line corridor along the western edge of Borrego Valley Road because the line would be sited in an existing road right-of-way with disturbed habitat on both sides that would not support sensitive plant species. The corridor here is also subjected to high levels of indirect impacts, runoff with petroleum products, higher levels of engine emissions, more trash, and higher rates of invasive species occurrences. As such, sensitive plant species are not expected to occur along the gen-tie transmission line corridor.

Borrego Substation Expansion

No sensitive plant species were observed during the survey which was conducted at a time when early season, ephemeral plant species would have been observable if present. Sensitive plant species are anticipated to have a low potential for occurrence within the expansion area. The site is relatively small and highly disturbed as witnessed by the high amount of the two aforementioned very invasive species and the correspondingly low cover of native species. Mediterranean grass and Sahara mustard are extremely successful at outcompeting and displacing native plants and dominate the understory of the expansion area. The site is relatively small which would also lower the potential for the occurrence of sensitive plant populations. Though the expansion area is contiguous with much larger and extensive areas of native habitats, primarily to the east, these habitats appear to be in the same general condition as the expansion site (i.e. high cover of invasive species and previously burned). Immediately adjacent to the expansion area is the Borrego Substation, Borrego Valley Road, a few private residences and commercial nurseries which would also contribute to the indirect impacts that would further lower the quality of the onsite habitat.


Anza-Borrego Desert State Park
Earthquake Merriam's kangaroo rat
flat-tailed horned lizard
Gander's cryptantha
Gander's cryptantha
flat-tailed horned lizard
flat-tailed horned lizard
flat-tailed horned lizard
pygmy lotus desert spike-moss
peninsular bighorn sheep
least Bell's vireo pocketed free-tailed bat
Gander's cryptantha
Gander's cryptantha
Borrego bedstraw
pallid San Diego pocket mouse
hairy stickleaf
Borrego
desert pupfish
desert pupfish
22
Arizona spurge
Borrego Valley pepper-grass
California ayenia
California ayenia
flat-tailed horned lizard
Peirson's pincushion
flat-tailed horned lizard
Gander's cryptantha
Peirson's milk-vetch
California ayenia
chaparral sand-verbena
flat-tailed horned lizard
Arizona carlowrightia
Arizona carlowrightia
desert spike-moss Arizona carlowrightia
bristly scalesseed
22
Colorado Valley woodrat
Carlson's dune beetle
Gander's cryptantha
smooth tarplant
Orcutt's woody-aster
Borrego parnopes cuckoo wasp
northern red-diamond rattlesnake
pallid San Diego pocket mouse
barefoot gecko
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3
0
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State Plane Coordinate System
California Zone 6
1983 North American Datum
Linear Unit: Foot US
Legend
Existing 69 kV Substation
Existing 69 kV Transmission Line
Borrego 1 Solar Project Transmission Line
Major Road
Borrego 1 Solar Project Site
Borrego 1 Solar Project Site 5 Mile Buffer
Endangered Species
Threatened Species
California Threatened
California Rare
California Species of Concern
Anza-Borrego Desert State Park Boundary
BORREGO 1 SOLAR PROJECT
Figure 4
CNDDB Sensitive Species Data
Map Extent: San Diego County, California
Date: 11.12.10
Author: sjw
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Of the sensitive plant species known from the vicinity of the expansion area Gander's cryptantha, Peirson's cushion flower, and ribbed cryptantha have a low potential for occurrence within the expansion area. Gander's cryptantha occurs throughout Borrego Valley. Similarly Peirson's cushion flower (documented occurrence one mile southwest of the solar site) and ribbed cryptantha (documented occurrences one mile west and two miles north of the solar site) both have reported occurrences near the expansion area. Both cryptantha species bloom from March-May so the survey was conducted towards the middle of their traditional blooming periods. Neither of these two sensitive cryptantha species were observed during the survey. There was one species of cryptantha observed on the expansion site but this was identified as the common narrow-leaf cryptantha. Peirson's cushion flower blooms from March-June so the survey coincided with the traditional early blooming period of this species also. The common desert pincushion plant which is often confused for Peirson's cushion flower was observed within the expansion area. There is a minimal amount of low quality desert scrub habitat onsite that could support these species and as such the potential for their occurrence in the expansion area is considered low.

Animals

Special status wildlife species are those that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (2010b); listed as endangered or threatened by the California Department of Fish and Game (CDFG) (CNDDB 2010c); occur on the CDFG's *Special* Animals List (CNDDB 2009); and/or are considered sensitive by the County of San Diego (2010).

The County of San Diego, Department and Land Use Planning (DPLU) provided a list of sensitive wildlife species known from the vicinity of the project site in a Pre-Application Scoping Letter for this project dated May 26, 2010. In addition, a CNDDB RareFind search was conducted for all sensitive wildlife species reported within five miles of the project area. The results of this search are depicted in **Figure 4**. Species from both sources are listed in **Table 3**.

Several special status species could potentially use the site. Flat-tailed horned lizard (*Phrynosoma mcallii*) is a CDFG Species of Special Concern (SSC) that occurs in creosote bush scrub on sandy flats and valleys (FHLICC 2003). This species is known from Borrego Valley but would have a very low potential for occurrence onsite due to the disturbed nature of the site and the high density of non-native weed cover, specifically Saharan mustard.

Swainson's hawk (*Buteo swainsoni*), a state threatened species is a winter migrant in southern California. Borrego Valley within their migration corridor, and this species is known to use strips of tamarisk trees and nurseries for roosting (Unitt 2004). This species has a high potential for occurring onsite during its winter migration, although foraging habitat on the site is low quality compared to the surrounding area.

Ferruginous hawk (*Buteo regalis*), a CDFG Special Animal species, is another winter migrant species that migrates through Borrego Valley (Unitt 2004). This species would have a moderate potential for occurring onsite during its winter migration because few birds are known to migrate through the area, the disturbed nature of the site, and the low quality foraging habitat onsite.

Prairie falcon (*Falco mexicanus*), a CDFG Special Animal species, has been documented to migrate through the Borrego Valley (Unitt 2004). This species would have a low potential for occurring onsite because the closest nesting and quality roosting habitat is located approximately 3 miles west and east of the site in the mountains, although they may forage in the low quality foraging habitat onsite. They are more likely to forage in the higher quality areas closer to the mountains.

Loggerhead shrike (*Lanius ludovicianus*) is a CDFG SSC species that has a high potential for occurrence onsite. This species occurs within Borrego Valley (Unitt 2004), the site provides very low quality nesting habitat, and low quality foraging habitat is present onsite.

Pallid bat (*Antrozous pallidus*) is a CDFG SSC species that has a low potential for occurrence onsite. There is no roosting habitat onsite or immediately adjacent to the site, and the site provides low quality foraging habitat, although this species is more likely to forage in higher quality habitats closer to day roosts.

Borrego Substation Expansion

The flat-tailed horned lizard would have a low potential for occurrence on the Borrego Substation Expansion site due to the high density of non-native weed cover. Swainson's hawk, prairie falcon, ferruginous hawk, and pallid bat all have the potential to forage onsite due to the presence of the saltbush scrub habitat and presence of prey base e.g. Merriam kangaroo rats. Nesting and/or roosting habitat for these species is absent. The loggerhead shrike has a high potential for occurrence as foraging and nesting habitat are present. None of these species were observed during the April 6, 2011 survey.

TABLE 3 - SPECIAL STATUS SPECIES POTENTIALLY OCCURRING ON THE BORREGO 1 SOLAR PROJECT SITE						
Plants						
Scientific Name	**Common Name**	**Sensitivity Status**	**Habitat Preference or Requirements**	**Verified Onsite**	**Potential to Occur Onsite**	**Factual Basis for Determination of Occurrence Potential**
Astragalus crotalariae	Salton milkvetch	CDFG: Special Plant CNPS List: 4.3 County: List D	Barren, sandy locales in Sonoran Desert scrub (Reiser, 2001).	No	Not expected	No CNDDB populations in this portion of Borrego Valley. Reiser reports this species from the Borrego Salton Seaway to the east of the project area. Site is several miles to the west of the range of this species in San Diego County. Only small patches of low quality Sonoran Desert scrub habitat onsite. No barren sandy areas in this habitat, High cover of non-native weeds.
Astragalus insularis harwoodii	Harwood's milkvetch	CDFG: Special Plant CNPS List: 2.2 County: List B	Sonoran Desert scrub with gravelly, sandy washes or dunes (Reiser, 2001).	No	Not expected	No CNDDB populations in this portion of Borrego Valley. Three Herbarium specimens in SDNHM all in lower Carizzo Valley. Site is well north of this species known range in San Diego County. Sandy washes and desert dunes are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Astragalus magdalenae peirsonii	Peirson's milkvetch	USFWS: Threatened CDFG: Endangered CNPS List: 1B.2 County: List A	Well developed desert dunes (Reiser, 2001).	No	Not expected	One CNDDB population to the east of Peg Leg Road (S22). Reiser (2001) reports no recent sightings of this species in San Diego County. The SDNHM lone collection is from 1928 near the mouth of Hellhole Canyon. Desert dunes are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area, the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Ayenia compacta	Ayenia	CDFG: Special Plant CNPS List: 2.3 County: List B	Rocky canyons and desert arroyos (Reiser, 2001).	No	Not expected	Several CNDDB populations from San Ysidro Mountain. However no CNDDB populations are reported from Borrego Valley. SDNHM Herbarium specimens from San Ysidro Mountain and lower Borrego Valley near Borrego Sink. Rocky canyons and desert arroyos are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Bursera microphylla	Elephant tree	CDFG: Special Plant CNPS List: 4.3 County: List B	Sonoran Desert scrub (Reiser, 2001).	No	Not expected	No CNDDB populations or SDNHM Herbarium specimens from Borrego Valley. Nearest reported population is a SDNHM Herbarium specimen from near Split Mountain. Site is well north of known range of this species in San Diego County. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Carlowrightia arizonica	Arizona carlowrightia	CDFG: Special Plant CNPS List: 2.2 County: List B	Desert washes, sometimes at the base of sizeable granitic boulders (Reiser, 2001).	No	Not expected	Several CNDDB populations near Hellhole Canyon. SDNHM Herbarium specimens from alluvial fans of Hellhole and Palm canyons. Desert washes not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Chaenactis carphoclina var. *peirsonii*	Peirson's pincushion flower	CDFG: Special Plant CNPS List: 1B.3 County: List A	Open Sonoran Desert scrub with very little competition from perennial shrubs (Reiser, 2001).	No	Low	One CNDDB population near Borrego Springs southwest of the site. No SDNHM specimens. Reiser (2001) reports this species from the Borrego Salton Seaway east of the site. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Chamaesyce arizonica	Arizona spurge	CDFG: Special Plant CNPS List: 2.3 County: List B	Sonoran Desert Creosote bush scrub (Reiser 2001)	No	Not expected	No populations known from Borrego Valley. One CNDDB population and two SDNHM Herbarium specimens in San Ysidro Mountain west of De Anza Desert Country Club. Only one other SDNHM Herbarium specimen and that's in Coyote Mountains. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Colubrina californica	Las Animas colubrine	CDFG: Special Plant CNPS List: 2.3 County: List B	Localized around springs and in mesic rocky canyon bottoms in Mojavean Desert scrub (Reiser, 2001)	No	Not expected.	Not reported from San Diego County (Rebman and Simpson, 2006; Reiser 2001). No CNDDB populations from Borrego Valley, no SDNHM Herbarium specimens from the County.
Cryptantha costata	Ribbed cryptantha	CDFG: Special Plant CNPS List: 4.3 County: List D	Desert sand dunes (Reiser, 2001).	No	Low	No CNDDB populations for Borrego Valley. One SDNHM Herbarium specimen from near the terminus of DiGregorio Road north of the site. Desert dune habitat is not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Cryptantha ganderi	Gander's cryptantha	CDFG: Special Plant CNPS List: 1B.1 County: List A	Desert sand dunes (Reiser, 2001).	No	Low	Desert dune habitat is not present onsite. Site is also extremely disturbed from past agricultural activities. Several CNNDB locations and SDNHM Herbarium Specimens occur within a couple of miles of the site, however all locations are in natural areas. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Cryptantha holoptera	Winged cryptantha	CDFG: Special Plant CNPS List: 4.3 County: List D	Washes, plains and slopes in Sonoran and Mojave Desert scrub (Reiser, 2001).	No	Not expected.	No CNDDB locations in Borrego Valley. Two SDNHM Herbarium specimens, the closest being from near Split Mountain well south of the site. The site appears to be north of the range of this species. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Ditaxis californica	California ditaxis	CDFG: Special Plant CNPS List: 3.2 County: List C	Rocky desert chaparral (Reiser, 2001).	No	Not expected.	No CNDDB locations in Borrego Valley. One SDNHM Herbarium specimen from near Split Mountain. Rocky desert chaparral is not present onsite. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Galium angustifolium ssp. *borregoense*	Borrego bedstraw	CDFG: Rare CNPS List: 1B.3 County: List A	Sonoran Desert sage scrub (Reiser (2001)	No	Not expected	No populations reported from Borrego Valley. CNDDB population from San Ysidro Mountain. Closest SDNHM Herbarium specimen from Montezuma Valley Road near upper Culp Valley. Site is well east of range of species. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Horsfordia newberryi	Newberry's velvet-mallow	CDFG: Special Plant CNPS List: 4.3 County: List D	Rocky desert canyonlands in Sonoran Desert scrub (Reiser 2001).	No	Not expected	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimens from Hellhole and Palm canyons and Borrego Sink. Rocky desert canyonlands are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Lepidium flavum var. *felipense*	Borrego Valley peppergrass	CDFG: Special Plant CNPS List: 1B.2 County: List A	Sonoran Desert Scrub on relatively open flats and on dry lake bottoms (Reiser 2001).	No	Not expected	One CNDDB population in near Hellhole Canyon. Only two SDNHM Herbarium specimens and both from Little Blair Valley well south of Borrego Springs. Reiser (2001) reports these historical populations from Borrego Valley but no CNDDB or SDNHM Herbarium specimens from there. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities and relatively few bare open areas, mostly high cover of non-native weeds.
Lotus haydonii	Pygmy lotus	CDFG: Special Plant CNPS List: 1B.3 County: List A	Open Sonoran Desert scrub on dry, rocky slopes (Reiser (2001).	No	Not expected	No reported populations from Borrego Valley. One CNDDB population from San Ysidro Mountain. Closest SDNHM Herbarium specimen from Grapevine Canyon. No rocky slopes onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Lyrocarpa coulteri var. *palmeri*	Palmer's lyrepod	CDFG: Special Plant CNPS List: 4.3 County: List D	Sonoran Desert scrub particularly in gravelly soil and among boulders in desert canyons (Reiser 2001).	No	Not expected	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimens all south of site. Closest populations are near Borrego Sink and Yaqui Meadows south of Borrego Valley Road. Site appears to be north of species range in San Diego County. Desert canyons, gravelly soil and boulders are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Horsfordia newberryi	Newberry's velvet-mallow	CDFG: Special Plant CNPS List: 4.3 County: List D	Rocky desert canyonlands in Sonoran Desert scrub (Reiser 2001).	No	Not expected	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimens from Hellhole and Palm canyons and Borrego Sink. Rocky desert canyonlands are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Lepidium flavum var. *felipense*	Borrego Valley peppergrass	CDFG: Special Plant CNPS List: 1B.2 County: List A	Sonoran Desert Scrub on relatively open flats and on dry lake bottoms (Reiser 2001).	No	Not expected	One CNDDB population in near Hellhole Canyon. Only two SDNHM Herbarium specimens and both from Little Blair Valley well south of Borrego Springs. Reiser (2001) reports these historical populations from Borrego Valley but no CNDDB or SDNHM Herbarium specimens from there. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities and relatively few bare open areas, mostly high cover of non-native weeds.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Lotus haydonii	Pygmy lotus	CDFG: Special Plant CNPS List: 1B.3 County: List A	Open Sonoran Desert scrub on dry, rocky slopes (Reiser (2001).	No	Not expected	No reported populations from Borrego Valley. One CNDDB population from San Ysidro Mountain. Closest SDNHM Herbarium specimen from Grapevine Canyon. No rocky slopes onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Lyrocarpa coulteri var. *palmeri*	Palmer's lyrepod	CDFG: Special Plant CNPS List: 4.3 County: List D	Sonoran Desert scrub particularly in gravelly soil and among boulders in desert canyons (Reiser 2001).	No	Not expected	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimens all south of site. Closest populations are near Borrego Sink and Yaqui Meadows south of Borrego Valley Road. Site appears to be north of species range in San Diego County. Desert canyons, gravelly soil and boulders are not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Mirabilis tenuiloba	Slender lobed four o'clock	CDFG: Special Plant CNPS List: 4.3 County: List D	Sonoran Desert scrub on sandy, gravelly, or rocky slopes (Reiser 2001).	No	Not expected	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimen from San Ysidro Mountain. Most SDNHM Herbarium specimens well south of site and in rocky areas or alluvial fans. Site is essentially flat with no slopes (microhabitat for this species). Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Mentzelia hirsutissima	Hairy stickleaf	CDFG: Special Plant CNPS List: 2.3 County: List B	Sonoran Desert Scrub on rocky hillsides and desert mesas (Reiser 2001)	No	Not expected	No populations reported from Borrego Valley. One CNDDB population from San Ysidro Mountain. All SDNHM Herbarium specimens from south of SR78. Site is flat with only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Pectocarya peninsularis	Baja California comb bur	County: List D	Open Sonoran Desert scrub on sandy, silty or gravelly soils (Reiser 2001).	No	Not expected	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimens from Coyote Creek and alluvial fans of San Ysidro Mountain near Anza Borrego desert State Park HQ and just west of De Anza Desert Country Club. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Selaginella eremophila	Desert spike moss	CDFG: Special Plant CNPS List: 2.2 County: List B	Rocky terrain in Sonoran Desert scrub (Reiser 2001).	No	Not expected.	No CNDDB populations from Borrego Valley. SDNHM Herbarium specimens from alluvial fans of Hellhole Canyon. All other specimens from south of SR78. Rocky terrain not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Senna covesii	Cove's cassia	CDFG: Special Plant CNPS List: 2.2 County: List B	Sonoran Desert scrub on washes or plains (Reiser 2001).	No	Not expected	No CNDDB populations or SDNHM Herbarium specimens from Borrego Valley. Closest population is SDNHM Herbarium specimen from Grapevine Canyon. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Spermolepis echinata	Bristly scaleseed	CDFG: Special Plant CNPS List: 2.3 County: List B	Rocky desert terrain or on sandy flats (Reiser 2001)	No	Not expected	No populations recorded for Borrego Valley. One CNDDB population in San Ysidro Mountain. Only 2 SDNHM Herbarium specimens, both collections made in 1941, one from Box Canyon the other from Vallecito Valley well south of the site. All three populations in mountain areas. Project site appears to be outside the range of this species in San Diego County. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Xylorhiza orcuttii	Orcutt's woody aster	CDFG: Special Plant CNPS List: 1B.2 County: List A	Sonoran Desert scrub in rocky canyons and sandy washes (Reiser 2001)	No	Not expected	No populations reported from Borrego Springs. Several populations (CNDDB and SDNHM Herbarium specimens) from Borrego Badlands. Rocky canyons and sandy washes not present onsite. Site has only a small amount of low quality desert scrub habitat. With the exception of the substation expansion area the site is also extremely disturbed from past agricultural activities.
Animals						
Invertebrates						
Scientific Name	**Common Name**	**Sensitivity Status**	**Habitat Preference/Requirements**	**Verified Onsite**	**Potential to Occur Onsite**	**Factual Basis for Determination of Occurrence Potential**
Anomala carsoni	Carlson's dune beetle	CDFG: Special Animal	Sand dunes in creosote bush scrub in the Colorado Desert	No	Not expected	One CNDDB location southeast of Borrego Springs. Dune habitat not present.
Parnopes borregoensis	Borrego parnopes cuckoo wasp	CDFG: Special Animal	Anza Borrego State Park	No	Not expected	One CNDDB location southeast of Borrego Springs. Disturbed habitat at site is low quality.

Reptiles						
Scientific Name	**Common Name**	**Sensitivity Status**	**Habitat Preference/Requirements**	**Verified Onsite**	**Potential to Occur Onsite**	**Factual Basis for Determination of Occurrence Potential**
Coleonyx switaki	Barefoot banded gecko	CDFG: Threatened County: Group 2	Found only in areas of massive rock formations and rock outcrops at the heads of canyons (CDFG n.d.)	No	Not expected	No habitat present onsite. CNDDB records for vicinity are in mountains (Pinyon Ridge) of Anza Borrego.
Crotalus ruber ruber	Northern red diamond rattlesnake	CDFG: SSC County: Group 2	Occurs in chaparral, woodland, and arid desert habitats in rocky areas and dense vegetation. Occurs in rocky areas and in dense vegetation (CDFG 2010).	No	Not expected	No habitat present onsite.
Phrynosoma mcallii	Flat-tailed horned lizard	CDFG: SSC County: Group 1	Creosote bush scrub on sandy flats and valleys (FHLICC, 2003)	No	Low	Several CNDDB locations reported from within 5 miles of site. Effects of non-native weeds e.g. Saharan mustard unknown but expected to limit species (FHLICC, 2004). Density of Saharan mustard, disturbed nature of the site, and disturbed areas adjacent to the site, likely to preclude this species from occurring.
Sauromalus obesus	Chuckwalla	County: Group 2	Open flats and rocky areas especially where large boulders are present (Audubon Society, 1989).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Rocky areas not present onsite and site is surrounded by active and abandoned agriculture.
Birds						
Scientific Name	**Common Name**	**Sensitivity Status**	**Habitat Preference/Requirements**	**Verified Onsite**	**Potential to Occur Onsite**	**Factual Basis for Determination of Occurrence Potential**
Buteo regalis	Ferruginous hawk (winter)	CDFG: SA/WL County: Group 1	Open plains (Unit, 2004)	No	Moderate during migration	No CNDDB locations reported from vicinity (5 miles) of site. However, low numbers of this species (1-2) migrate through Borrego Valley during the winter (Unit, 2004). Low quality foraging habitat present.
Buteo swainsoni	Swainson's hawk (winter)	CDFG: Threatened County: Group 1	Borrego Valley is on migration corridor; use strips of tamarisk trees and nurseries for roosting (Unit, 2004).	No	High during migration	No CNDDB locations reported from vicinity (5 miles) of site. However Borrego Valley is within migration corridor, roosting habitat present and low quality foraging habitat present. Higher quality foraging habitat is present east of the site.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Aquila chrysaetos	Golden eagle	SSC fully protected	Mountains, foothills, and adjacent grassland open areas and canyons from 0 – 11,500 feet	No	Low potential to nest onsite	No suitable nesting habitat. 5-mile CNDDB search reports no nests in the vicinity.
Falco mexicanus	Prairie falcon	CDFG: SA/WL County: Group 1	Nests on ledges or cliffs or bluffs and forage in open desert or grassland (Unit 2004).	No	Low	No CNDDB locations reported from vicinity (5 miles) of site. However, prairie falcons reported from this portion of Borrego Valley and presumed to be migrants or non-breeders (Unit 2004). No breeding habitat onsite. Low quality foraging habitat present although higher quality foraging habitat is present closer to the mountains east and west of the site.
Lanius ludovicianus	Loggerhead shrike	CDFG: SSC County: Group 1	Desert floor and desert-edge scrub on eastern mountains. Breeds in native desert shrubs (Unitt, 2004).	No	High	No CNDDB locations reported from vicinity (5 miles) of site. Low amount of breeding habitat present. Foraging habitat present. Species is most numerous in Anza Borrego Desert, which includes large areas of Borrego Valley (Unit, 2004).
Mammals						
Scientific Name	**Common Name**	**Sensitivity Status**	**Habitat Preference/Requirements**	**Verified Onsite**	**Potential to Occur Onsite**	**Factual Basis for Determination of Occurrence Potential**
Antrozous pallidus	Pallid bat	CDFG: SSC County: Group 2	Grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging (CDFG n.d.)	No	Low	No CNDDB locations reported from vicinity (5 miles) of site. Foraging habitat present. No roosting habitat present onsite

Scientific Name	Common Name	Sensitivity Status	Habitat Preference/Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Chaetodipus fallax pallidus	Pallid San Diego pocket mouse	CDFG: SSC County: Group 2	Sagebrush, desert wash, desert scrub and desert succulent scrub (CDFG n.d.; Bond, 1977). Moderate canopy coverage of arid or juniper-pinyon habitats on or near rocky slopes and sandy areas.	No	Not expected	Two CNDDB locations from Yaqui Meadows and near Peg Leg Road. Very little, low quality habitat present onsite.
Corynorhinus townsendii	Townsend's big-eared bat	CDFG: SSC County: Group 2	Coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and deserts. Most abundant in mesic habitats. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting (CDFG n.d. and Williams 1986). Appropriate roosting, maternity and hibernacula sites must be free from human disturbance (Williams 1986). Reported from Borrego Palm Canyon (Bond 1977).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Marginal foraging and no roosting habitat present onsite.
Dipodomys merriami collinus	Earthquake Merriam's kangaroo rat	CDFG: Special Animal	Loose sandy, gravelly ground with sparse vegetation (Bond, 1977).	No	Not expected	CNDDB location in Coyote Creek north of site. No suitable habitat onsite. Vegetation onsite characterized by dense cover of non-native weeds.
Eumops perotis californicus	Greater western mastiff bat	CDFG: SSC County: Group 2	Chaparral, live oaks and arid rocky areas (Bond 1977)	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. No suitable habitat onsite.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Felis concolor	Mountain lion	County: Group 2	Found in nearly all habitats, except xeric regions of the Mojave and Colorado deserts that do not support mule deer populations. Require extensive areas of riparian vegetation and brushy stages of various habitats, with interspersions of irregular terrain, rocky outcrops, and tree/brush edges CDFG n.d.). In San Diego County found mainly in forested or chaparral covered mountains where deer, its chief food are present (Bond, 1977).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Site and adjacent areas too open, with minimal cover and do not provide suitable habitat.
Macrotus californicus californicus	California leaf-nosed bat	CDFG: SSC County: Group 2	Occupies desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis habitats. Roosts in rocky, rugged terrain with mines and caves; forages over nearby flats and washes. Most current records from mountain ranges bordering the Colorado River (CDFG n.d.). Limited to areas with suitable day roosts which must provide shelter from excessive hear and aridity. Only roost in caves and deserted old mines (Williams 1986). SDNHM specimens from Anza Borrego Desert State Park area (Bond 1977).	No	Not expected.	No CNDDB locations reported from vicinity (5 miles) of site. Roosting and foraging habitat not present.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Neotoma albigula venusta	Colorado Valley woodrat	CDFG: Special Animal	Desert scrub with cacti and mesquite with or without rock outcrops (CDFG, n.d.)	No	Not expected	One CNDDB location reported from near Borrego Sink in lower Borrego Valley. No suitable habitat present onsite.
Nyctinomops macrotis	Big free-tailed bat	CDFG: SSC County: Group 2	Rare in California. Records of the species are from urban areas of San Diego Co., and vagrants found in fall and winter (CDFG n.d.). Prefer rugged, rocky terrain. Roosts in buildings and caves, occasionally in holes in trees and also in crevices in high cliffs or rock outcrops. Prefers rugged, rocky canyons (CDFG n.d.; Williams 1986).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Preferred habitat not present onsite. No roosting habitat present. Species is rare in California.
Nyctinomops femorosaccus	Pocketed free-tailed bat	CDFG: SSC County: Group 2	Occurs in Riverside, San Diego and Imperial counties. Rare in California, more common in Mexico (CDFG n.d.). Few records in the arid lowlands of southern California (Williams, 1986). Habitats include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Prefers rocky desert areas with high cliffs or rock outcrops. Williams (1986) SDNHM specimen from Borrego Valley and Palm Canyon (Bond 1977).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Habitat not present.

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Odocoileus hernionus	Southern mule deer	County: Group 2	Widespread distribution throughout most of California, except in deserts and intensively farmed areas without cover. Occurs in scattered desert mountain areas. Prefers a mosaic of various-aged vegetation that provides woody cover, meadow and shrubby openings, and free water. Suitable habitat is a mosaic of vegetation, providing an interspersion of herbaceous openings, dense brush or tree thickets, riparian areas, and abundant edges (CDFG n.d.).	No	Not expected	No habitat present onsite. Species is generally absent from deserts and agricultural areas (CDFG n.d.) and little cover is present onsite.
Ovis canadensis nelsoni	Peninsular bighorn sheep	USFWS: Endangered CDFG: Threatened & FP County: Group 1	In San Diego County occurs on open, rough, barren slopes of the desert (Bond, 1977). This species uses rocky, steep terrain for escape and bedding and remain near rugged terrain while feeding in open habitat. Use steep, rugged slopes and canyons for lambing areas (CDFG n.d.).	No	Not expected	Nearest CNDDB location approximately 5 miles to west in Anza Borrego Mountains. No habitat present onsite.
Perognathus longimembris internationalis	Jacumba little pocket mouse	CDFG: SSC County: Group 2	Fine sandy ground in desert habitats (Bond, 1977).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Site appears to be out of range of species as reported by Bond (1977)

Scientific Name	Common Name	Sensitivity Status	Habitat Preference or Requirements	Verified Onsite	Potential to Occur Onsite	Factual Basis for Determination of Occurrence Potential
Taxidea taxus	American badger	CDFG: SSC County: Group 2	Suitable habitat characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils (CDFG n.d.). Grasslands, savannas and mountain meadows near timberline are preferred. Cultivation is adverse to badgers as they do not survive on cultivated land. Agricultural and urban developments have been the primary causes of decline and extirpation of populations in California (Williams 1986).	No	Not expected	No CNDDB locations reported from vicinity (5 miles) of site. Friable soils exist onsite but site has all been cultivated; therefore no suitable habitat present onsite.

USFWS: Endangered – Species that are listed as endangered under the Federal Endangered Species Act and are in danger of extinction throughout all or a significant portion of its range.

Threatened – Species that are listed as threatened under the Federal Endangered Species Act and are likely to become endangered species within the foreseeable future throughout all or a significant portion of its range

CDFG: Endangered – Species that are listed as endangered under the California Endangered Species Act as its prospects of survival and reproduction are in immediate jeopardy from one or more causes.

Threatened – Species that are listed as threatened under the California Endangered Species Act as although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

Rare – Species that although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens.

Special Plant - Species officially listed by California or the Federal Government as Endangered, Threatened, or Rare; a candidate for state or federal listing as Endangered, Threatened, or Rare; Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines; these taxa may indicate "none" under listing status, but note that all CNPS List 1 and 2 and some List 3 plants may fall under Section 15380 of CEQA. A Bureau of Land Management, U.S. Fish and Wildlife Service, or U.S. Forest Service Sensitive Species; Taxa listed in the California Native Plant Society's *Inventory of Rare and Endangered Plants of California*; Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation; Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California; and Taxa closely associated with a habitat that is declining in California at a significant rate (e.g. wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.).

Species of Special Concern (SSC) - Vertebrate species with declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

Special Animal (SA) – Taxa the CNDDB is interested in tracking regardless of their legal or protection status.

Watch List (WL) – Taxa not on the CDFG Species of Special Concern List but were on previous lists.

CNPS: List 1B Rare and endangered in California and elsewhere; List 2 Rare and endangered in California but more common elsewhere; List 3 Plants about which more information is needed – A Review List List 4 Plants of Limited Distribution – A Watch List Threat Extension: 1 – Seriously endangered in California; 2 – Fairly endangered in California; 3 – Not very endangered in California
County of San Diego: List A Plants rare, threatened or endangered in California and elsewhere; List B Plants rare, threatened or endangered in California but more common elsewhere; List C Plants which may be rare, but need more information to determine their true rarity status; List D Plants of limited distribution and are uncommon, but not presently rare or endangered

JURISDICTIONAL WETLANDS AND WATERWAYS

No jurisdictional wetlands or waterways were observed onsite. The site is very flat and disturbed due to past agriculture activities that would have eliminated any historical ephemeral washes that may have been present.

OTHER UNIQUE FEATURES/RESOURCES

The project site was under agricultural production as early as 1967-68. Much of this area of Borrego Valley from the center commercial area of Borrego Springs, north to the alluvial fan of Coyote Creek at the base of the Coyote Mountains, is under some form of development or lying fallow from previous agricultural activity as evidenced by the most recent Google Earth aerials and the aforementioned soil survey maps. Connectivity from San Ysidro Mountain, Indian Head and Palm Mesa to the west to Coyote Mountain and the Borrego Badlands is very restricted through Borrego Valley. The lack of natural features such as drainages and riparian vegetation, usually associated with wildlife movement corridors, is lacking as are extensive stands of natural vegetation west of Borrego Valley Road. Much of the site and adjacent areas are either orchards, nurseries, or in the case of the project area, non-native herbaceous weeds that provide little in the way of cover or forage for most native species. As such, wildlife movement through this area is probably restricted to migratory bird species.

The East County Multiple Species Conservation Program (MSCP) is a regional Natural Communities and Conservation Plan (NCCP) that is still in its early planning stages. Though no conservation areas have been designated, it is unlikely that the project site would ever be incorporated into any hard line conservation area given the disturbed condition of the property and much of the adjacent as well as adjacent land uses.

SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

Direct impacts are impacts that would result in the immediate loss of resources from the project such as the removal of habitat and subsequent loss of species. Indirect impacts are secondary effects from direct impacts that over time cause the degradation of a resource by changing its function, health or quality of that resource (County of San Diego 2010). Indirect impacts may occur to resources that are not directly impacted but in close proximity to the source of impacts. Permanent impacts are impacts that would persist throughout the life of the project (e.g., habitat loss). Temporary impacts would persist through specific project stages (e.g., fugitive dust from construction). For purposes of this analysis, it is assumed that the entire solar project site would be directly impacted with an impact width of 30 feet for the gen-tie line corridor.

Vegetation and Sensitive Natural Communities

Direct Impacts

Development of the proposed solar project site would result in the direct and permanent loss of a total of 307.9 acres of habitat: 281.8 acres of disturbed habitat; 17.4 acres of athel dominated non-native woodland; 2.6 acres of disturbed Sonoran creosote bush scrub; 2.2 acres of disturbed desert saltbush scrub; 1.6 acres of disturbed Sonoran mixed woody scrub; and 2.6 acres of developed. The substation expansion area would result in the loss of 2.2 acres of habitat: 0.3 acres of disturbed habitat and 1.9 acres of disturbed native saltbush scrub. These impacts are summarized by the respective project component in **Table 4**. The project would have a significant adverse direct effect on the following native vegetation communities: disturbed Sonoran creosote bush scrub, disturbed desert saltbush scrub and disturbed Sonoran mixed woody scrub as these communities provide habitat for a variety of native desert species.

TABLE 4 - IMPACTS TO VEGETATION AND MITIGATION

Vegetation Community (Holland Code)	**Impact Acreage**				**Mitigation**	
	Existing Acres	**Solar farm Onsite**	**Gen-Tie Line Offsite**	**Substation Expansion Area**	**Mitigation Ratio**	**Offsite Mitigation**
Disturbed Habitat (11300)	280	280.0	1.8	0.3	None	
Athel Dominated Non-Native Woodland (79000)	17.4	17.4	0	0	None	
Sonoran Creosote Bush Scrub- Disturbed (33100)	2.6	2.6	0	0	1:1	2.6
Desert Saltbush Scrub – Disturbed (36110)	2.2	2.2	0	1.9	2:1	8.2
Sonoran Mixed Woody Scrub (33210)	1.6	1.6	0	0	1:1	1.6
Developed (12000)	0.4	0.4	2.2	0	None	
Total	**304.2**	**304.2**	**4.0**	**2.2**		12.4 acres

Indirect Impacts

Indirect impacts to vegetation communities could arise from edge effects such as habitat fragmentation and isolation, invasion by non-native species, construction generated fugitive dust and offsite erosion and sedimentation due to construction generated runoff. Habitat fragmentation and isolation can reduce the remaining species diversity of an area. Smaller isolated habitats experience higher local extinction rates and lower immigration rates which reduce the biodiversity over time. Invasion by non-native species reduces biodiversity as non-native species tend to outcompete native species for resources and eventually can exclude these natives. Fugitive dust can reduce the photosynthetic rates of plant species affecting their ability to grow and compete.

Indirect impacts to native vegetation from habitat fragmentation and isolation would not occur from the proposed project. As mentioned previously, much of this portion of Borrego Valley is already under intensive agricultural use and has been for at least 40+ years. Much of the remaining native habitat within the vicinity of the project area is already fragmented and isolated from other high quality native habitats due to the presence of orchards, vineyards and nurseries that form a checkerboard land use pattern.

Indirect impacts from the invasion of non-native species would not occur from the proposed project. The project site is already dominated by several invasive weed species such as Saharan mustard and athel and these species are currently ubiquitous throughout Borrego Valley. Removing these species as part of the project would remove a source populations of these invasive that could invade surrounding areas.

Temporary indirect impacts to surrounding vegetation communities could arise from fugitive dust during construction of the project. Disturbed desert scrub habitats occur immediately offsite of the proposed project. These impacts are not considered significant due to the low quality of these offsite resources and the anticipated low amount of habitat that would be affected by construction generated fugitive dust. However, it is anticipated that the applicant will be required to develop and implement a fugitive dust program as a part of the grading plan. Such a program would include Best Management Practices (BMPs) to reduce fugitive dust.

Temporary indirect impacts resulting from offsite erosion and sedimentation from construction generated runoff may occur from the proposed project. These impacts are not considered significant due to the low potential for off-site runoff because of the flat slopes on and surrounding the site, the low quality of these offsite resources, and the anticipated low amount of habitat that would be affected by construction generated runoff. However, it is anticipated that the applicant will be required to develop and implement an erosion runoff prevention program as a part of the grading plan. Such a program would include BMPs to reduce runoff.

The Project would not have substantial adverse indirect effects on native vegetation communities due to the low amount and low quality of these communities directly offsite.

Special Status Plant Species

Direct Impacts

Direct impacts to special status plant species result from the direct loss of these species through habitat removal. No special status plant species are likely to be directly impacted from the proposed project. As mentioned previously, the entire project site has been or is currently under some form of agricultural activity for several decades and the site is dominated by non-native species such as Saharan mustard. As such, special status plant species are unlikely to be present onsite. The project is not expected to have a substantial adverse direct effect on any populations of special status species.

No special status plant species are likely to be directly impacted from the expansion of the Borrego Substation. As mentioned previously, the entire expansion area is dominated by the non-native species Mediterranean schismus and Saharan mustard. As such, special status plant species have a low potential to be present in the substation expansion area and impacts here are not expected to have a substantial adverse direct effect on any populations of special status species.

Indirect Impacts

Indirect impacts to special status plant species in adjacent offsite areas, could arise from edge effects such as habitat fragmentation and isolation, invasion by non-native species and construction generated fugitive dust and runoff. The effects of these indirect impacts are identical to those discussed under the vegetation sub-section.

The native habitat and any special status species they support in this portion of Borrego Valley is already subjected to habitat fragmentation and have a high component of non-native species. A CNDDB RareFind search and a SDNHM Plant Atlas database search did not reveal the presence of any sensitive plant species immediately adjacent to the project, so potential impacts from construction generated fugitive dust are also not anticipated.

As such, the project including the Borrego Substation Expansion area is not expected to have substantial adverse indirect effects on special status plant species.

Special Status Animal Species

Direct Impacts

Direct impacts to ferruginous hawk, Swainson's hawk, loggerhead shrike, and pallid bat resulting from the removal of low quality (solar site and gen-tie line) to moderate quality (substation expansion area) foraging habitat and potential roosting habitat could result from project implementation. Ferruginous hawks and Swainson's hawks are known to migrate through the area and they may forage at the site; however, higher quality foraging habitat is located east of the site, and they are not likely to forage in the active orchards and nurseries east and north of the site. The site vegetation would be removed in the initial week of project construction and would not be present throughout the construction period. However, removal of this low quality foraging habitat would still be a significant impact on these species. Implementation of Wildlife Mitigation 1 would reduce impacts to less than significant.

Shrubby habitats are very limited and fragmented on the solar farm and gen-tie site and do not provide quality nesting habitat for loggerhead shrike; however, there is a possibility that this species may nest on the site. It is also possible that shrikes forage on the site, although higher quality foraging habitat is present in areas surrounding the site.

Shrubby habitats are disturbed but present within the substation expansion area and would provide nesting and foraging habitat for loggerhead shrike so removal of this habitat would impact the loggerhead shrike. Therefore, impacts are expected to be less than significant with implementation of Wildlife Mitigation 2.

Impacts are not expected for the remainder of the sensitive wildlife species in **Table 3**.

Indirect Impacts

Based on the existing amount of fragmented habitat onsite and in the surrounding areas, habitat fragmentation resulting in indirect impacts is not expected from implementation of the Project. The Substation Expansion area contains a relatively small amount of disturbed native habitat that is at the edge of the native habitat/development interface. The small amount of impacts to this area would not result in habitat fragmentation.

Wildlife Movement and Nursery Sites

Direct Impacts

The Project would not substantially interfere with the movement of any native resident or migratory wildlife species. Large areas of orchards and ornamental nurseries occur on the north, south and east boundaries of the site. Disturbed abandoned agricultural land occurs on the western boundary. Native wildlife and nursery sites are not expected to occur onsite or adjacent to the site as these areas are either fallow fields, or active ornamental nurseries or orchards. Migratory birds, including Swainson's hawk, ferruginous hawk, and loggerhead shrike would likely fly over the site and roost and forage in higher quality habitats in the Borrego Valley. No direct impacts to wildlife movement are anticipated.

Indirect Impacts

Migratory birds, including Swainson's hawk, ferruginous hawk, and loggerhead shrike would likely fly over or around the site and roost and forage in higher quality habitats in the Borrego Valley. No indirect impacts to wildlife movement are anticipated.

Proposed Mitigation Measures

1. Vegetation Mitigation Measure

Impacts to the disturbed desert saltbush scrub (4.1 acres - 2.2 acres on the solar project site and 1.9 acres on the substation expansion area), disturbed Sonoran creosote bush scrub (2.6 acres) and Sonoran mixed woody scrub (1.6 acres) are considered significant because these are native desert scrub communities that provide potential habitat for native desert species. Per the County of San Diego's Guidelines to Determining Significance (2010), impacts to disturbed desert saltbush scrub would require a mitigation ratio of 2:1 (totaling 8.2 acres); impacts to disturbed Sonoran creosote bush scrub and Sonoran mixed

woody scrub would require a mitigation ratio of 1:1 each for a total of 2.6 acres for disturbed Sonoran creosote bush scrub and a total of 1.6 acres the Sonoran mixed woody scrub. A total of 12.4 acres of mitigation would be required.

At the present time, the Project is proposing to fully mitigate its impacts offsite via one of following mitigation alternatives:

1. Anza Borrego Foundation (ABF), fund the transfer of inholdings thru ABF to the state park. Lands must contain specified habitat or like functioning habitat.

2. Directly purchase inholdings or land adjacent to the Anza Borrego State Park that support the specified habitat or like functioning habitat. If inholdings or land are purchased, the lands will either (1) Be transferred to a government agency charged with conservation of natural resources via fee title (with demonstration of long term management capabilities), or (2) Dedicated in a conservation open space easement to the County and the land will be managed through an approved Resource Management Plan (RMP) to the satisfaction of the Director of Planning and Land Use.

3. Purchase habitat credit from County Parks and Recreation Department per Board of Supervisor Policy I-138.

When the final mitigation plan/location is determined a separate Mitigation Plan document shall be submitted to the County by DPLU as a supplement to this Biological Resources Report. Acquired habitat should be contiguous with large areas of similarly designated habitat that has high conservation value. Implementation of this mitigation measure would reduce impacts to native vegetation communities to below the level of significant.

2. Nesting Migratory Bird Mitigation Measure

The Project has the potential to impact nesting birds, including loggerhead shrike, through grading and other construction related activities. Ground and vegetation disturbing activities shall take place outside of the recognized nesting season, if practical. The nesting season typically occurs between early February 1 and August 15, but can vary slightly from year to year. If ground disturbing and vegetation disturbing activities must occur within the recognized nesting season, nesting bird surveys shall be performed starting within one week of commencing construction and weekly thereafter throughout the nesting season to identify any nests that may be impacted by construction activities. If any active nests are located within the proposed disturbance area or within 100 feet of ground disturbing activities, a 100-foot buffer area will be flagged around the nest (500 feet from any active raptor nest) and no activity will be allowed in the buffer area until nesting is completed as verified by the project biologist. Periodic monitoring by a biologist shall be performed to determine when nesting is complete.

The preconstruction survey must be completed within 10 calendar days prior to the start of construction, the results of which must be submitted to the County for review and approval prior to initiating any construction activities. If nesting birds are detected by the County approved biologist, a bio monitor should be present onsite during construction to minimize construction impacts and ensure that no nest is removed or disturbed until all young have fledged. Implementation of this measure would reduce potential impacts to nesting birds to less than significant.

3. Raptor Foraging Habitat Mitigation Measure

Implementation of Vegetation Mitigation Measure 1 (see above) would reduce impacts for the direct loss of raptor foraging habitat less than significant.

CUMULATIVE IMPACTS

The project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of plant, fish or wildlife species, cause a plant, fish or wildlife species population to drop below self-sustaining levels, threaten to eliminated a plant or animal community or reduce the number or restrict the range of a rare or endangered plant or animal species.

There are few native species present onsite and these exist at very low densities and small populations. Most of these species are very ubiquitous not only in San Diego County but also regionally throughout the Sonoran Desert. Loss of these resources would not result in incremental effects that are "cumulatively considerable", when viewed in connection with the effects of past, current and future projects. The Project would not compromise the participating agencies' ability to assemble a preserve system that would meet the goals of the East County MSCP.

At the present time, the following Projects are known to be pending in the Project's vicinity:

1a. Borrego Country Club (TM, Permit Type: 3100, Permit Number: 5309, APN 198-021-08-00, KIVA: 04-1224).

1b. Borrego Country Club (Rezone, Permit Type: 3600, Permit Number: 03-006, APN: 199-010-16-00, KIVA: 04-15936)

1c. Borrego Country Club (Specific Plan Amendment, Permit Type: 3813, Permit Number: 05-002, APN: 199-011-04-00, KIVA: 04-15936)

1d. Borrego Country Club (Tentative Map, Permit Type: 3100, Permit Number: 5319, APN: 199-010-16-00, KIVA: 04-15936)

2a. Borrego Springs Senior Condominiums (Site Plan, Permit Type: 3500, Permit Number: 06-039, APN: 141-384-11-00, KIVA: 06-0066994)

2b. Borrego Springs Senior Condominiums (Tentative Map, Permit Type: 3100, Permit Number: 5512, APN: 141-384-11-00, KIVA: 06-1166994)

3. Desert Diamond (Tentative Parcel Map, Permit Type: 3200, Permit Number: 21017, APN: 141-030-40-00, KIVA: 06-0061867)

4. Bowen/Jonas (Tentative Parcel Map, Permit Type: 3200, Permit Number: 21027, APN: 198-320-03-00, KIVA: 06-0064842)

5a. Borrego Sand and Rock Borrow Pit (Major Use Permit, Permit Type: 3300, Permit Number: 04-034, APN: 140-050-01-00, KIVA: 04-0025048)

5b. Borrego Sand and Rock Borrow Pit (Reclamation Plan, Permit Type: 3310, Permit Number: 04-003, APN: 140-050-01-00, KIVA: 04-0025048)

6a. Borrego 50 (Site Plan, Permit Type: 3500, Permit Number: 07-019, APN: 141-080-05-00, KIVA: 06-0066737)

6b. Borrego 50 (Tentative Map, Permit Type: 3100, Permit Number: 5511, APN: 141-080-05-00, KIVA: 06-0066737)

7a. Borrego Country Club Estates (Tentative Map, Permit Type: 3100, Permit Number: 5487, APN: 198-320-01-00, KIVA: 06-0058990)

7b. Borrego Country Club Estates (Site Plan, Permit Type: 3500, Permit Number: 07-052, APN: 198-320-01-00, KIVA: 07-0090163)

8. Miller (Tentative Parcel Map, Permit Type: 3200, Permit Number: 21038, APN: 141-080-12-00, KIVA: 06-0072455)

9a. Yaqui Pass (Specific Plan, Permit Type: 3810, Permit Number: 08-002, APN: 200-030-24-00, KIVA: 06-0072917)

9b. Yaqui Pass (General Plan Amendment, Permit Type: 3810, Permit Number: 08-005, APN: 200-030-24-00, KIVA: 06-0072917)

9c. Yaqui Pass (Tentative Map, Permit Type: 3100, Permit Number: 5552, APN: 200-030-24-00, KIVA: 06-0072917)

9d. Yaqui Pass (Site Plan, Permit Type: 3500, Permit Number: 08-021, APN: 200-030-24-00, KIVA: 06-0072917)

9e. Yaqui Pass (Administrative Permit, Permit Type: 3000, Permit Number: 08-033, APN: 200-030-24-00, KIVA: 06-0072917)

9f. Yaqui Pass (Rezone, Permit Type: 3600, Permit Number: 08-006, APN: 200-030-24-00, KIVA: 06-0072917)

9g. Yaqui Pass (Tentative Map, Permit Type: 3100, Permit Number: 5513, APN: 199-170-32-00, KIVA: 06-0067015)

10. Rainshadow (Tentative Parcel Map, Permit Type: 3200, Permit Number: 21137, APN: 141-010-26-00, KIVA: 08-0101502)

11a. Borrego 138, Inland Land Development (Tentative Map, Permit Type: 3100, Permit Number: 5528, APN: 199-011-18-00, KIVA: 06-0073663)

11b. Borrego 138, Inland Land Development (Major Use Permit, Permit Type: 3300, Permit Number: 06-101, APN: 199-011-17-00, KIVA: 06-0073663)

12. Friestedt Major Subdivision (Tentative Map, Permit Type: 3100, Permit Number: 5559, APN: 199-220-13-00, KIVA: 08-0106087)

13. Henderson Canyon (Tentative Parcel Map, Permit Type: 3200, Permit Number: 21058, APN: 140-110-03-00, KIVA: 07-0076451)

14. Eurus Solar Farm (Major Use Permit, Permit Type: 3300, Permit Number: 09-012 09-014, APN: 141-230-26, 141-230-33, KIVA: 09-0114916)

15. Avalon Solar (Major Use Permit, Permit Type: 3300, Permit Number: 10-030, APN: 140-070-24, KIVA: 10-0128409)

The impacts of these Projects are summarized in Table 5. All Projects, including the proposed solar facility, incorporated mitigation measures to reduce individual contributions to cumulative habitat losses to a level below significant.

Table 5. Cumulative Project Impact Table

Project Numbers	**Project Name**	**SCBS**	**DSS**	**SMWS**	**Notes**
TM 5319, R03-006, SPA 05-002	Borrego Country Club	95	104.8		
TM 5512, S 06-039	Borrego Springs Senior Condos	9.72			
TPM 21017	Desert Diamond	8.5			
TPM 21027	Bowen Jonas	39.08			
P04-034	Borrego Sand and Rock Borrow Pit		.10	32.20	
TM 5511, S 07-019	Borrego 50	46.46			
TM 5487, S 07-052	Borrego Country Club Estates	210.62			
TPM 21038	Miller	20.30			
GPA 08-005, TM 5552, AD 08-033 R08-006, S08-021	Yaqui Pass	32.72			
TPM 21137	Rainshadow	9.8			
P06-101, TM 5528	Borrego 138		110		

TM 5559	Friestedt	3.99			
TPM 21058	Henderson Canyon	1.10		26.6	
P09-012, 09-014	Eurus Solar		326.8		Approved project
P10-030	Avalon Solar				No native habitat, all farm land
P10-026	NRG Solar	2.6	4,1	1.6	Current Project
	Total:	479.89	545.8	60.4	

** SCBS= Sonoran creosote bush scrub, DSS= Desert saltbush scrub, SMWS= Sonoran mixed woody scrub

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Patrick Golden, Heritage Environmental Consultants, 2870 Emporia Court, Denver Colorado, 80238. 303.618.7910. pgolden@heritage-ec.com. Mr. Golden is a senior biologist (aquatic and terrestrial) with 16 years experience managing planning, NEPA, CEQA, and research projects for federal and private clients. His degree is in Environmental, Population, and Organismic Biology. Mr. Golden combines experience in managing environmental contracts, conducting biological and environmental assessments, and coordinating field surveys for fisheries and wildlife. He has prepared analyses that support the Endangered Species Act (BAs) and agency-specific analyses (EIRs, EISs, BAs, BEs, HCPs). These documents were prepared for a variety of federal agencies including the BOR, NPS, USFS, BLM, USFWS, FERC, and various state and local agencies.

Mr. Golden has extensive experience as a wildlife biologist. Prior to becoming a consultant, he worked for the Bureau of Reclamation as a fisheries technician, the U.S. Fish and Wildlife Service as a fisheries and wildlife biological technician, the Bureau of Land Management as a fisheries and wildlife biological technician, and the Colorado Division of Wildlife as a fisheries technician. He has been conducting biological surveys in the Mojave and Sonoran deserts for the past 12 years, and holds permits to conduct desert tortoise and southwestern willow flycatcher surveys in California, Arizona, Nevada, Utah, and Colorado. He regularly conducts wildlife and botanical surveys for projects in California, and is currently working on 15 projects in the Mojave and Sonoran deserts. He has broad experience working with federal and state wildlife and land management agencies at the local, state, regional, and national levels, including the USFWS and CDFG.

ATTACHMENTS

Attachment A Floral And Faunal Inventory

FLORAL INVENTORY	
Scientific Name	**Common Name**
Abronia villosa var. *villosa*	Desert sand-verbena
Ambrosia dumosa	Burro weed
Ambrosia salsola var. *salsola*	Cheeseweed
Atriplex canescens var. *canescens*	Four-wing saltbush
Atriplex polycarpa	Many-fruit saltbush
Brassica tournefortii	Saharan mustard
Camissonia claviformis ssp. *aurantiaca*	Pinnate-leaf primrose
Cercidium floridum ssp. *floridium*	Blue palo verde
Chaenactis sevioides	Desert pincushion
Cryptantha angustifolia	Narrow-leaf cryptantha
Datura discolor	Desert thornapple
Dicoria canescens	Desert dicoria
Encelia farinosa	Brittlebush
Eremalche exilis	Trailing mallow
Eriogonum sp.	Buckwheat
Isocoma acradenia var. *eremophila*	Desert alkali goldenbush
Langloisia setosissima ssp. *setosissima*	Bristly langloisia
Larrea tridentata	Creosote bush
Malacothrix glabrata	Desert dandelion
Oenothera deltoides ssp. *deltoides*	Dune evening primrose
Palafoxia arida var. *arida*	Desert Spanish-needle
Pectocarya linearis ssp. *ferocula*	Slender pectocarya
Prosopis glandulosa var. *torreyana*	Honey mesquite
Salsola tragus	Russian thistle
Schismus barbatus	Mediterranean schismus
Stephanomeria sp.	Wreath-plant
Tamarix aphylla	Athel
Tiquilia plicata	Plicate coldenia
Tribulus terrestris	Puncture vine

Faunal Inventory	
Scientific Name	**Common Name**
Birds	
Corvus corax	Common raven
Corvus brachyrhynchos	American crow
Buteo jamaicensis	Red-tailed hawk
Eremophila alpestris actia	California horned lark
Zenaida asiatica	White-winged dove
Zenaida macroura	Mourning dove
Zonotrichia leucophrys	White-crowned sparrow
Mammals	
Dipodomys merrami	Merriam's kangaroo rat (potential burrows present)
Sylvilagus audubonii	Audubon's cottontail
Canis latrans	Coyote (scat)
Procyon lotor	Raccoon (tracks)
Ammospermophilus leucurus	Antelope ground squirrel

PHOTOGRAPH 2: DISTURBED HABITAT WITH SAHARAN MUSTARD IN CENTRAL PORTION OF THE SITE

PHOTOGRAPH 3: WESTERN PORTION OF THE SITE WITH REMNANT VINEYARD TRELLISES

PHOTOGRAPH 4: NORTHEASTERN CORNER OF THE SITE WITH REMNANT VINEYARD TRELLISES

PHOTOGRAPH 5: DISTURBED CREOSOTE BUSH SCRUB ALONG EASTERN BOUNDARY OF SITE ALONG BORREGO VALLEY ROAD

PHOTOGRAPH 6: DISTURBED CREOSOTE BUSH SCRUB ALONG NORTHEASTERN BOUNDARY OF SITE ALONG BORREGO VALLEY ROAD

PHOTOGRAPH 7: DISTURBED DESERT SALTBUSH SCRUB IN SOUTHEASTERN PORTION OF SITE