

ATTACHMENT 4.4-D: QUINO CHECKERSPOT BUTTERFLY SURVEY REPORTS

2009 QUINO CHECKERSPOT BUTTERFLY SURVEY REPORT

**San Diego Gas &
Electric Company
East County
Substation Project
Quino Checkerspot
Butterfly Report**

July 28, 2009

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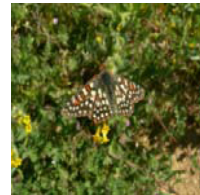
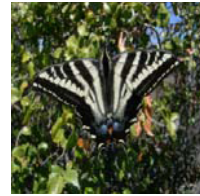
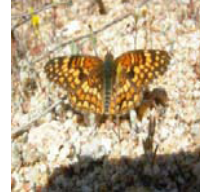
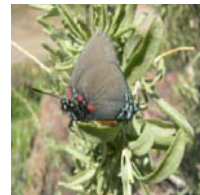
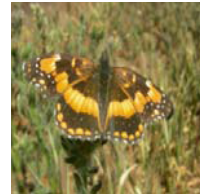
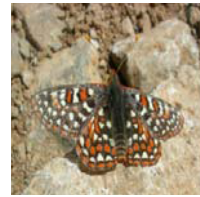


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I. Summary

Surveys for the endangered Quino Checkerspot Butterfly (*Euphydryas editha quino*; QCB) per U.S. Fish and Wildlife Service (USFWS) protocol were conducted March - May 2009 at the proposed San Diego Gas & Electric Company's (SDG&E's) East County Substation Project survey area (survey area). Survey results were positive for QCB and its primary larval host plant dot-seed plantain (*Plantago erecta*). Two secondary host plants were also documented within the survey area.

II. Project Description

The proposed East County Substation Project area lies partially within the town of Jacumba in southeastern San Diego County and runs to the town of Boulevard in unincorporated San Diego County. The project includes the construction of a new substation, an approximately 13.3-mile 138 kilovolt (kV) transmission line on new steel and wood poles, and rebuilding the Boulevard Substation. The transmission line will extend from the East County Substation, south of Jade Mountain then run west for 9 miles, and then turn north for approximately 4.5 miles to the new proposed Boulevard Substation (Figures 1 and 2). The transmission line portion of the project that runs east-west is located 150 feet from the existing 500 kV Southwest Powerlink (SWPL) transmission line. The site is on the U.S. Geological Survey 7.5 minute Live Oak Springs, Tierra Del Sol, and Jacumba Quadrangles (Figure 2) and in the USFWS recommended Survey Area 1, a Survey Area in which QCB are known to occur (2002). USFWS-designated critical habitat for the QCB is present along the survey area from approximately SP-52 to SP- 83 (milepost 3.5 to mile 7.5). All figures in Attachment A were provided by Insignia Environmental.

The survey area includes a 300-foot-wide transmission line corridor, substation footprints, and an area approximately 700 feet around the proposed substation sites. Also included are proposed new access roads, fly yards, pull sites, temporary work areas, staging yards, retention ponds, and areas where existing roads would be widened or re-graded.

The survey area is mostly undeveloped, but there are existing dirt roads that are frequently used by the Border Patrol for border surveillance and there is evidence of trash dumping and minor disturbances to vegetation. U.S. Interstate 8 is located to the north and the U.S./Mexico border is to the south of the survey area. U.S. Old Highway 80 crosses the survey area at three locations.

III. Previous QCB Surveys

The 2009 survey for QCB is the second survey of the proposed East County Substation footprint and buffer portion of the project; this location was also surveyed in 2008. The transmission lines, Boulevard Substation, and other project features were not surveyed in 2008. The 2008 QCB surveys were negative for both QCB and larval host plants.

IV. Adjacent QCB Surveys

The Baja Wind U.S. 60-acre substation project site extends from the southeastern corner of the survey site to the Mexican Border. The 60-acre site was surveyed for QCB by Mr. Rocks and Ms. Daverin in 2008 and 2009. Surveys for QCB at this site were negative and reports for these surveys have been submitted to USFWS.

V. Habitat Assessment

The habitat assessment for the East County Substation Project was conducted on March 10, 2009 to assess the phenology of nectar source plants on and near the site. Approximately 527 acres were deemed suitable for QCB during the habitat assessment. This area was the primary focus of the protocol surveys. A total of 205 acres were excluded based on habitat type (e.g. agriculture, riparian areas, barren areas) and density of vegetation.

Vegetation within the study area consists of mixed desert scrub, juniper woodland, chamise-redshank chaparral, shadscale scrub, oak woodland, riparian scrub, and fresh emergent wetland. Agriculture and residential/developed areas are also present. The mixed desert scrub, juniper woodland, shadscale scrub, and open chamise-redshank chaparral were considered suitable habitat under USFWS criteria and were surveyed for QCB. Areas that met the definition of excluded were dense chamise-redshank chaparral, oak woodland, riparian scrub, fresh emergent wetland, agriculture, and developed. Shadscale scrub was reclassified as excluded following the first survey due to plant density and a lack of food plants or nectar sources.

VI. Vegetation Communities

The dominant vegetation communities onsite are mixed desert scrub in the eastern portion and chamise-redshank chaparral in the western portion of the site. Common shrub and perennial species in the mixed desert scrub within the eastern substation area include jojoba (*Simmondsia chinensis*), waterjacket (*Lycium andersonii*), lotebush (*Ziziphus parryi* var. *parryi*), ephedra (*Ephedra* spp.), Gander's cholla (*Cylindropuntia ganderi* var. *ganderi*), Mohave yucca (*Yucca schidigera*) and creosote (*Larrea tridentata*). As the transmission lines heads west, some of these shrubs are replaced by boundary

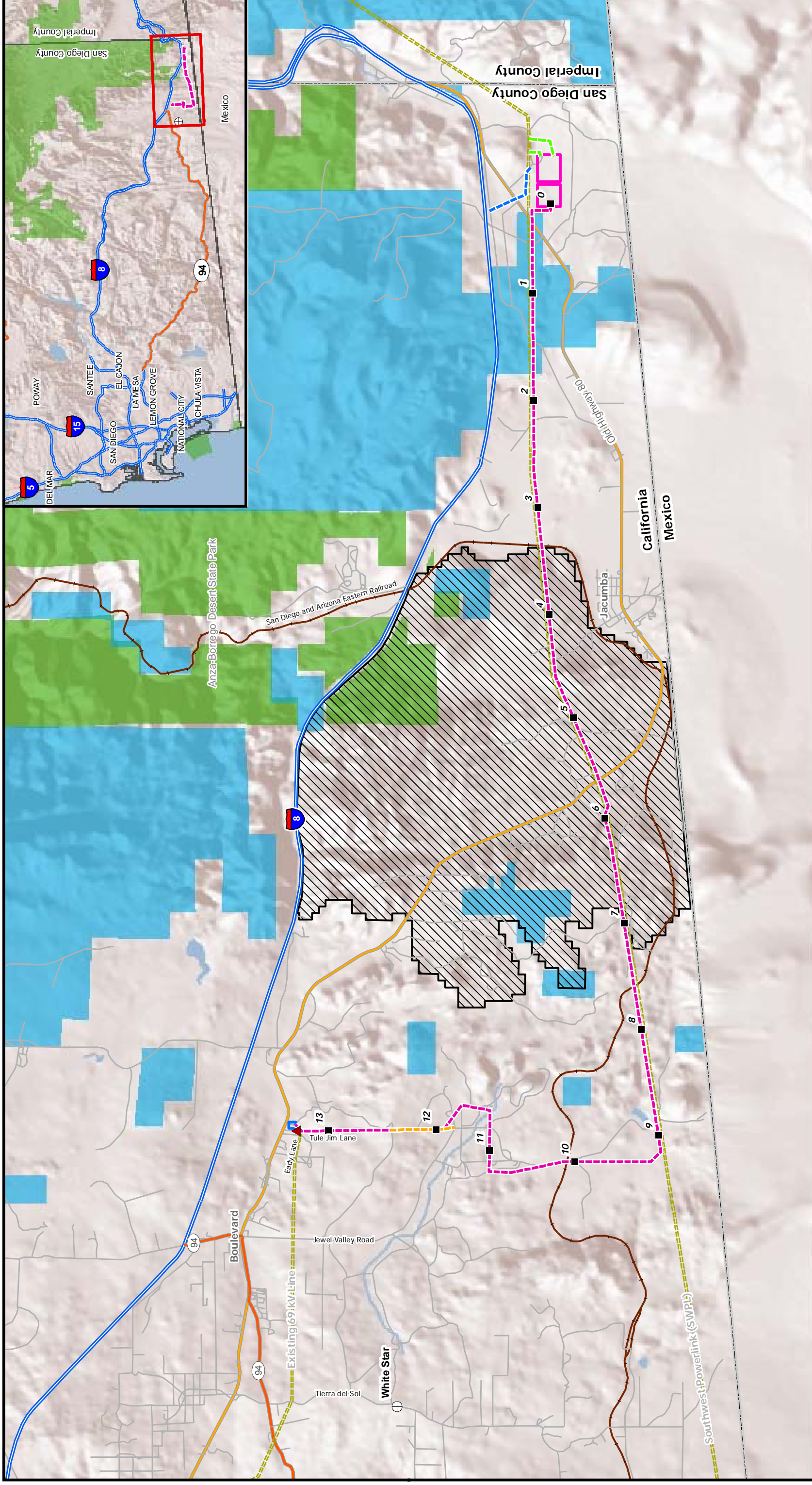




Figure 1: Project Vicinity Map

East County Substation Project


<ul style="list-style-type: none"> --- Proposed SWPL Loop-In — Proposed 138 kV Line --- Proposed 12 kV Temporary Distribution Tap --- 445 Circuit Collocated with 138 kV Line --- Existing Transmission Line Proposed ECO Substation Boulevard Substation Rebuild ▲ Existing Boulevard Substation ■ Proposed 138 kV Line Milepost + Communication Facility 	<ul style="list-style-type: none"> Quino Checkerspot Butterfly Critical Habitat Bureau of Land Management California State Park 	<ul style="list-style-type: none"> — Interstate — Highway — Local Road — Major Road — Railroad
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Miles

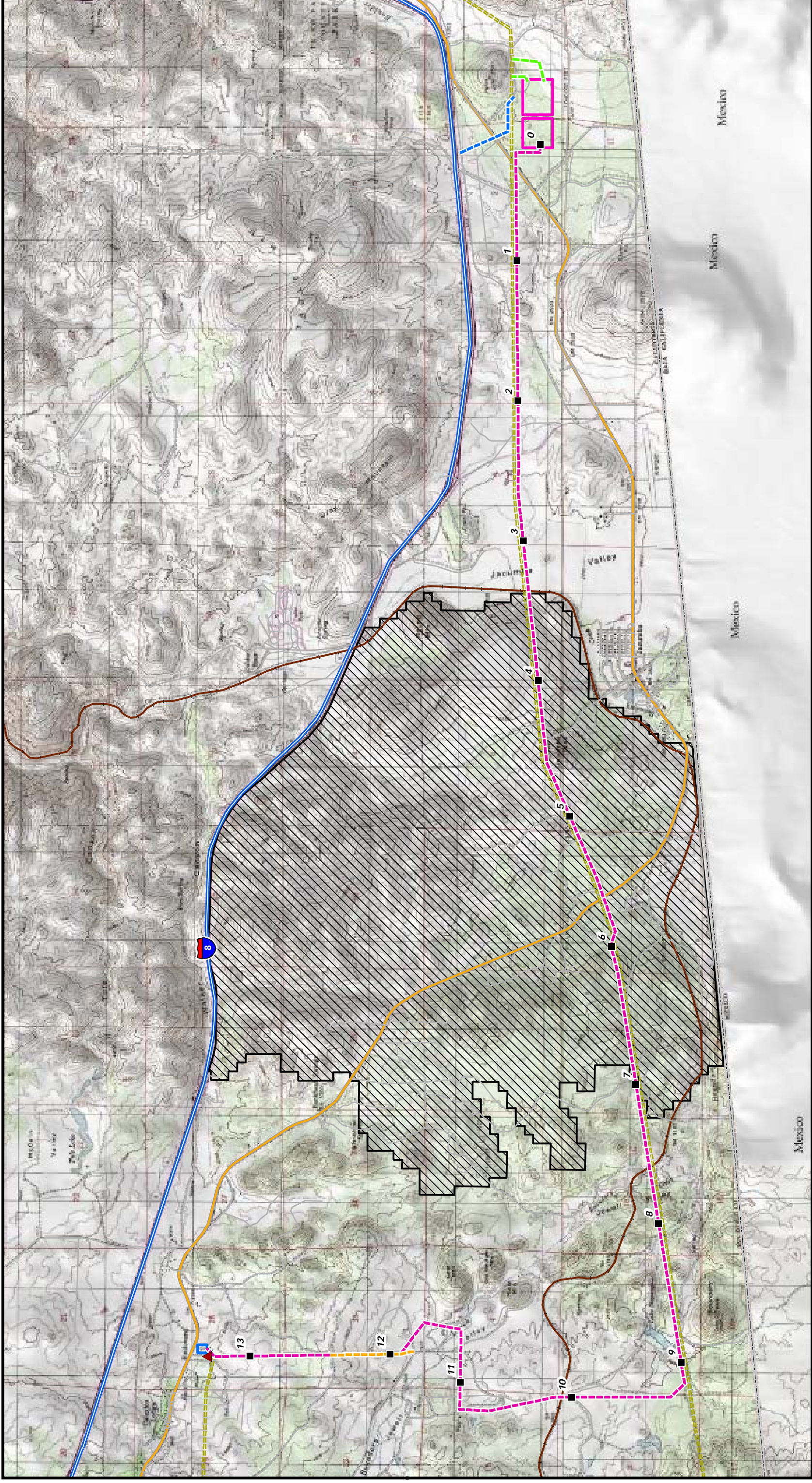
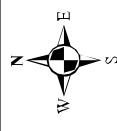


Figure 2: USGS Quadrangle Map

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Proposed ECO Substation
- Boulevard Substation Rebuild
- ▲ Existing Boulevard Substation
- Proposed 138 kV Line Milepost
- ⊕ Communication Facility
- Quino Checkerspot Butterfly Critical Habitat
- USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

East County Substation Project



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goldenbush (*Ericameria brachylepis*), desert apricot (*Prunus fremontii*), and catclaw acacia (*Acacia greggii*). In rock outcrops, yellow bush penstemon (*Keckiella antirrhinoides* var. *a*) is a dominant shrub.

Annuals present in the mixed desert scrub include dense patches of common goldfields (*Lasthenia gracilis*), desert dandelion (*Malacothrix glabrata*), wild heliotrope (*Phacelia distans*), California butterweed (*Senecio californicus*), California coreopsis (*Coreopsis californica* var. *c*), and pincushion (*Chaenactis* spp.).

Juniper woodland is present in the eastern portion of the survey area and is similar to mixed desert scrub in plant composition with the difference being the dominance of California juniper (*Juniperus californicus*). Other shrubs and perennials are present in lower numbers. Annuals are sparser in the juniper woodland than in the mixed desert scrub.

The chamise-redshank chaparral areas contain large boulder hills and outcrops along the east-west portion and is relatively flat, lacking boulder outcrops along the north-south portion. Thickets of chamise (*Adenostoma fasciculatum*) and red shank (*Adenostoma sparsifolium*) are dominant, with sugar bush (*Rhus ovata*), holly-leaf cherry (*Prunus ilicifolia*), point-leaf manzanita (*Arctostaphylos pungens*), California buckwheat (*Eriogonum fasciculatum*), and cane cholla (*Cylindropuntia californica* var. *parkeri*). The rock outcrops also support Jacumba monkey flower (*Mimulus aridus*). Openings in the chaparral that were surveyed between SP-38 and the Boulevard Substation support foothill buckwheat (*Eriogonum wrightii* var. *membranaceum*), common goldfields, weak-leaf bur-sage (*Ambrosia confertiflora*), and white-margin sandmat (*Chamaesyce albomarginata*).

Washes, with looser and sandier soils, contained many of the same plant species as the mixed desert scrub and chamise-redshank chaparral. Several washes are present throughout the survey area. Additional species found in the washes include cheesebush (*Ambrosia salsola* var. *salsola*), chaparral woolly-star (*Eriastrum densifolium* ssp. *elongatum*), Wallace's woolly daisy (*Eriophyllum wallacei*), and Schott's calico (*Loeseliastrum schottii*).

VII. Quino Checkerspot Butterfly Natural History

Quino checkerspot butterfly, a member of the brush-footed butterfly family (Nymphalidae), was federally listed as endangered in January 1997. The QCB is one of

12 subspecies of the *Euphydryas editha* checkerspot and was formerly known as *E. e. wrightii*.

Historically, QCB ranged from Los Angeles and western San Bernardino counties south through Orange, western Riverside, and San Diego counties into northern Baja California, Mexico. Currently, QCB are known to occur in portions of southwestern Riverside County, southern San Diego County, and northern Baja California (Mattoni et al. 1997). Habitat loss and degradation are considered primary causes of the dramatic decline of the species. Both the larval and adult stages have specific habitat requirements that have been impacted due to development, invasive non-native vegetation, overgrazing, poorly planned fire management practices, drought conditions, overcollection by butterfly collectors, and off-road vehicles (USFWS 1997). The QCB's distribution is defined primarily by location of its most common primary larval host plant, dot-seed plantain. White snapdragon (*Antirrhinum coulterianum*) has also been identified as a primary host plant as well (USFWS 2003). Female QCBs have also been observed depositing eggs on woolly plantain (*Plantago patagonica*) and thread-leaved bird's-beak (*Cordylanthus rigidus*) (USFWS 2002a). Purple owl's clover (*Castilleja exserta* ssp. *exserta*) and Chinese houses (*Collinsia heterophylla* and *C. concolor*) have also been identified as a secondary host plants.

Adults use a variety of wildflowers that bloom as nectar sources during the QCB flight period, including goldfields, popcorn flowers (*Cryptantha* and *Plagiobothrys* spp.), gilia (*Gilia* spp.), ground-pink (*Linanthus dianthiflorus*), chia (*Salvia columbariae*), and wild onion (*Allium* spp.) (USFWS 2002b). QCB will use a variety of sparsely vegetated habitats including open coastal sage scrub and chaparral, vernal pool complexes, oak woodland, and desert pinyon-juniper woodland. Densely vegetated areas and extensive open grasslands are not known to support QCB (Mattoni et al. 1997).

Typically, there is one adult generation of QCB per year, with a four- to six-week flight period beginning in late February and continuing through May (Emmel and Emmel 1973), although the timing of the flight period can vary considerably from year to year depending on rainfall and temperature patterns. Adult life span averages from 10 to 14 days, and emergence is staggered (USFWS 2002b). The full life cycle of a quino checkerspot butterfly includes egg, larva, pupa, and adult with larval stages divided into five to seven instars. Adult quino checkerspot butterflies spend their time searching for mates, feeding on nectar, defending territories, basking in the sun, and, in the case of females, searching for sites to deposit eggs (USFWS 2002b).

VIII. Methods

Surveys were performed in accordance with the USFWS's "Quino Checkerspot Butterfly (*Euphydryas editha quino*) Survey Protocol Information" dated February 2002. On March 15, 2009, a pre-survey notification letter (the 10-day letter) was sent to the USFWS announcing the intent to conduct surveys for QCB. The letter included a map of the project site and approximate date the surveys were expected to begin.

The flight season of QCB is dependent upon adequate rainfall and warm weather to produce supplies of larval food plants sufficient for allowing QCB larvae to feed, pupate, and emerge during the spring. In 2009, both in the southwestern and eastern portions of the QCB's range, rain fell in winter and early spring causing the germination of annual plants.

Following the winter rains, a site check for conditions that indicate QCB flight season is imminent or has started was conducted on March 10, 2009. These conditions include the presence of certain blooming annuals that could potentially be nectar sources, and larval host plants to support caterpillars.

The USFWS's "2009 Season Quino Checkerspot Butterfly (*Euphydryas editha quino*) Monitored Reference Site Information" website was frequently monitored to obtain information on 2009 QCB observations and locations. On March 13, the website stated that QCB were observed flying on Jacumba Peak. This initiated the QCB surveys on the site.

Butterfly surveys were conducted by walking slowly through all suitable QCB habitat and identifying butterflies with the aid of close-focus binoculars and use of a butterfly net for capturing and identifying specimens. Whenever possible, a photograph of each butterfly was taken with the intent to photo document all observed butterflies in the survey area. Of the 38 butterfly species observed within the survey area, 30 were photographed in the survey area by the authors of this report, Cindy Jones Daverin and Jim Rocks, and are included in Attachment B - Butterfly Species Accounts. The other eight species were very difficult to photograph, usually because they were flying quickly through the survey area, they generally avoid humans, and/or they are sensitive to nearby or sudden movement. Photos taken by the authors on other butterfly surveys within San Diego County or a drawing of butterfly anatomy has been provided in place of in-situ photographs.

All surveys were conducted by Jim Rocks (Permit# TE-063230-3), Cindy Jones Daverin (Permit# TE-811615-4), Erik LaCoste (Permit# TE-027736-4), Darin Busby (Permit# TE-

115373-0), Melissa Busby (Permit# TE-080779-1), Brian Lohstroh (Permit# TE-063608-4), Gretchen Cummings (Permit# TE-031850-3), and Margie Mulligan (supervised individual under Jim Rocks' permit). Field notes are included in Attachment D. Survey dates, conditions, and personnel are included in Table 1. During each survey, the number of acres surveyed per hour within suitable QCB habitat averaged approximately 10-15 acres per biologist.

Date (Survey Number)	Personnel	Time on Site	Temp (°F) Start-End	Sky Cover (%) (start- end)	Wind Speed (MPH)	Hours on Site
3-18-09 (1)	JR, CJD, MM	1030-1800	72-76	Clear	0-3	15
3-19-09 (1)	JR, CJD	0910-1700	67-85	10-20%, thin	0-10	15.5
3-20-09 (1)	DB, MB	0940-1525	69-74	Clear	1-8	11
3-21-09 (1)	EL	1000-1530	64-63	Clear	4-13	5.5
3-23-09 (1)	JR, CJD	1030-1530	52-66	Clear	3-10	10
3-24-09 (2)	CJD, MB, GC	1115-1645	65-64	Clear	3-10	16.5
3-25-09 (2)	JR, CJD, MM	0945-1645	62-72	Clear	0-12	14
3-29-09 (2)	JR	0915-1515	65-72	30-10%	2-15	6
3-30-09 (2)	JR, CJD	0950-1400	60-63	Clear	1-10	4.5
3-30-09 (2)	EL	1045-1545	60-61	Clear	5-13	5
3-30-09 (3)	JR, CJD	1630-1730	62-64	Clear	0-6	2
3-31-09 (3)	JR, CJD, MM	0930-1710	69-68	Clear	1-10	15.5
4-1-09 (3)	JR, CJD, MM	0930-1700	60-73	5%, thin	0-5	15
4-5-09 (3)	JR, EL, BL	1015-1700	63-63	Clear	2-12	20.25

4-6-09 (4)	JR	1130-1700	68-74	Clear	1-6	5.5
Date (Survey Number)	Personnel	Time on Site	Temp (°F) Start-End	Sky Cover (%) (start- end)	Wind Speed (MPH)	Hours on Site
4-7-09 (4)	JR, CJD, MM	1000-1630	72-72	15% - Clear	2-13	13
4-9-09 (4)	JR, CJD	1030-1700	64-66	Clear - 50%	1-7	13
4-16-09 (4)	JR, CJD	1300-1630	68-65	Clear - 5%	1-6	7
4-14-09 (5)	JR, CJD, MM	0900-1545	66-62	65-80%	1-10	13.5
4-17-09 (5)	JR	1100-1600	66-75	Clear	1-11	5
4-19-09 (5)	JR, BL	0945-1630	75-83	10-5%	4-8	12.5
4-22-09 (5)	JR, CJD	1000-1330	76-85	Clear - 5%	2-12	7
4-24-09 (6)	JR, EL, DB	0915-1630	62-69	15-60%, thin	3-12	21.75
4-29-09 (6)	JR, MM	0915-1630	55-71	Clear	1-10	7.25
4-30-09 (6)	JR, DB	0935-1600	69-82	40-5%	1-10	13
5-5-09 (6)	JR, CJD	0930-1530	73-82	10%, thin	1-12	12
Personnel: JR = Jim Rocks; CJD = Cynthia Jones Daverin; EL = Erik LaCoste; DB = Darin Busby; BL = Brian Lohstroh ; MB = Melissa Busby; GC = Gretchen Cummings; MM = Margie Mulligan (under supervision of JR)						

IX. Results

Survey results were positive for both QCB and larval host plant populations during 2009 QCB surveys. QCB were observed on Jacumba Peak and to the north, east, and west of SP-75 during surveys 1 through 4. QCB were not observed during surveys 5 and 6. Figures 3 and 4 show the location of the QCB sightings and primary and secondary host plant populations.

The area where QCB were observed in 2009 is known historically to support QCB, with Jacumba Peak and an area beneath the SWPL USFWS QCB reference sites. This area is also within USFWS designated critical habitat for QCB. Approximately 175 acres of

critical habitat was surveyed within the 300 foot survey area buffer and roads between SP-52 to SP-83 (approximately milepost 3.5 to 7.5). Except within a broad area around SP-75 (between milepost 4 and 5), QCB and its host plants were not observed elsewhere in critical habitat.

The clay soils north of Jacumba Peak support a large, dense population of dot-seed plantain mixed with Palmer's grappling-hook (*Harpagonella palmeri*), and pectocarya (*Pectocarya* spp.). Five QCB were observed in this area during the first survey on March 18. QCB were observed flying low over the ground landing on and near patches of dot-seed plantain, including four QCB together on March 25. QCB were also observed hilltopping on Jacumba Peak, on shrubs east of Jacumba Peak, and one individual was observed west of Jacumba Peak on one survey. Additional QCB observation dates were March 31 and April 6. QCB within the survey area were limited to the area that supports its primary host plant, dot-seed plantain. Photographs in Attachment B show QCB and all other butterflies observed during the surveys.

QCB were observed flying with chalcedon checkerspot (*Euphydryas chalcedona*), a butterfly that closely resembles the QCB. Both species were hilltopping on Jacumba Peak and hundreds of chalcedon checkerspots were present in the small canyons on the flanks of Jacumba Peak. Chalcedon checkerspots were much more abundant than QCB. The chalcedon checkerspot was common throughout the survey area in canyons and peaks near their host plant yellow bush penstemon.

In general, the survey area supports a high diversity of butterfly species, with a total of 38 butterfly species observed during the six surveys. The number of species observed during each survey was typically around 23, with a high of 29 species during survey four and a low of 19 during survey two. The site's relatively high diversity can be attributed to the diversity of habitat and food sources onsite. Table 2 lists the butterflies observed during each survey and a list of nectar sources and other plant species observed on the site is presented in Table 3. A complete list of observed plant species is included in Attachment C. Detailed information on each species is included in Attachment B - Butterfly Species Accounts.

Several butterflies were observed during all six surveys. These butterflies include anise swallowtail (*Papilio zelicaon*), checkered white (*Pontia protodice*), Sara orangetip (*Anthocaris sara*), Harford's sulphur (*Colias alexandra harfordii*), acmon blue (*Plebejus acmon*), Behr's metalmark (*Apodemia mormo virgulti*), chalcedon checkerspot, and painted lady (*Vanessa cardui*). Additional species that were commonly observed throughout the surveys include pearly marble (*Euchloe hyantis*), bramble hairstreak

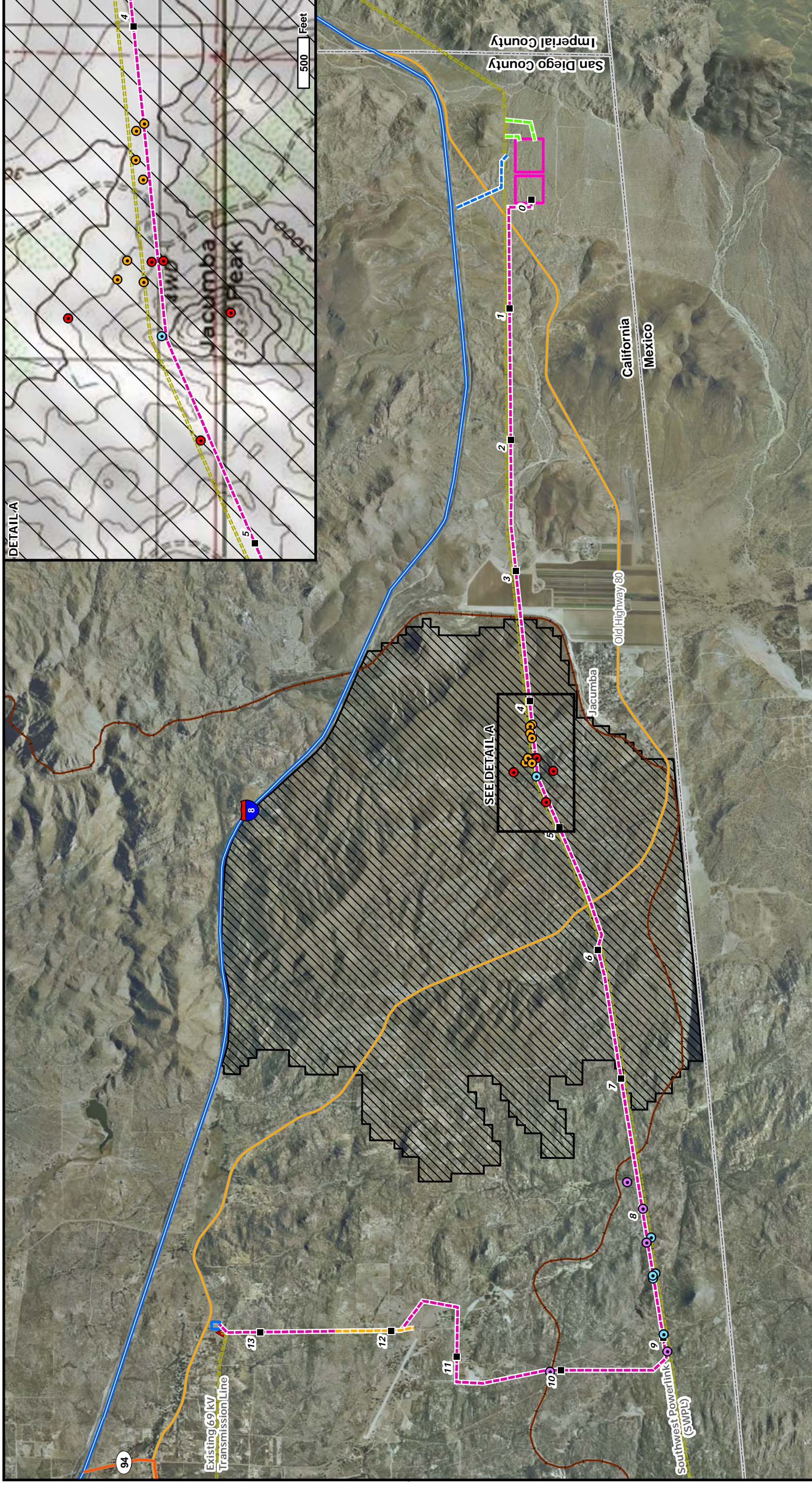


Figure 3: Quino Checkerspot Butterfly and Larval Host Plant Occurrence Map

<ul style="list-style-type: none"> Proposed SWPL Loop-In Proposed 138 kV Line Proposed 12 kV Temporary Distribution Tap 445 Circuit Collocated with 138 kV Line Existing Transmission Line 	<ul style="list-style-type: none"> Existing Boulevard Substation Proposed 69 kV Line Milepost Proposed ECO Substation Boulevard Substation Rebuild 	<ul style="list-style-type: none"> Primary Host Plant Dot-seed Plantain (<i>Plantago erecta</i>) Secondary Host Plants Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>) Chinese Houses (<i>Collinsia concolor</i>) 	<ul style="list-style-type: none"> Quino Checkerspot Butterfly Critical Habitat Quino Checkerspot Butterfly (<i>Euphydryas editha quino</i>) - Federally Endangered 	<ul style="list-style-type: none"> Interstate Highway Major Road Railroad 	<p>SDGE A Sempra Energy utility</p> <p>INSIGNIA ENVIRONMENTAL</p> <p>1:45,000</p> <p>0 0.5 1 2 3 Miles</p>
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East County Substation Project

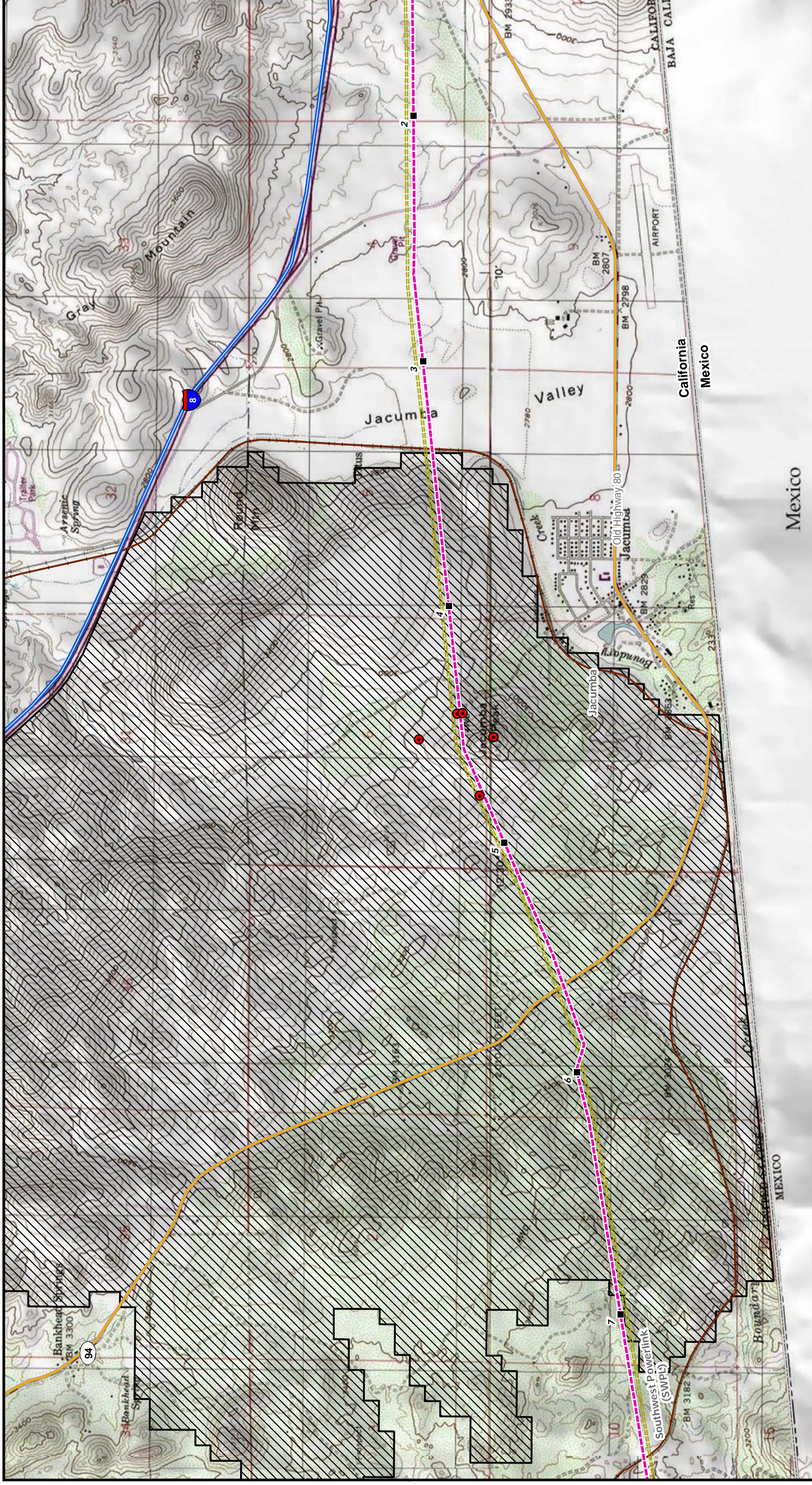


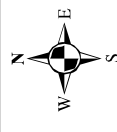
Figure 4: 2009 Quino Checkerspot Butterfly Location Map

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Existing Boulevard Substation
- Proposed ECO Substation
- Boulevard Substation Rebuild
- Quino Checkerspot Butterfly
- Critical Habitat
- Quino Checkerspot Butterfly
- (*Euphydryas editha quino*) - Federally Endangered
- USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

- Interstate
- Highway
- Major Road
- Railroad



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East County Substation Project

(*Callophrus dumatorum*), west coast lady (*Vanessa annabella*), and funereal duskywing (*Erynnis funeralis*).

Butterflies that were observed only during early-season surveys include spring white (*Pontia sisymbrii*), desert orangetip (*Anthocaris cethura*), and QCB. Becker's white (*Pontia beckeri*), dainty sulphur (*Natholis iole*), marine blue (*Leptotes marina*), and Bernardino blue (*Euphilotes battoides bernardino*) were only observed during the final two surveys.

Several butterflies were strong hilltoppers and were observed mainly on peaks and larger rock outcrops. These included pale swallowtail (*Papilio eurymedon*), desert orangetip, California patch (*Chlosyne californica*), and great purple hairstreak (*Atlides halesus*). Other butterflies were restricted to small portions of the survey area because their host plants were uncommon or restricted to smaller patches within the survey area. For example, the 'loki' juniper hairstreak (*Callophrys gryneus loki*) was found only in Junipers, the western-tailed blue (*Everes amyntula*) was found only near Jacumba milkvetch (*Astragalus douglasii* var. *perstrictus*), and Gabb's checkerspot (*Chlosyne gabbii*) was found near common sand-aster (*Corethrogyne filaginifolia* var. *f*).

Nectar sources for butterflies were present throughout the site, but the density varied widely, with extremely dense patches in some areas and few to no nectar sources in adjacent areas. Primary nectar sources onsite include common goldfields, desert dandelion, scale-bud (*Anisocoma acaulis*), California butterweed, California coreopsis, wild-heliotrope, and pincushion.

During the first survey, few nectar sources were blooming. The highest number and diversity of nectar sources occurred during the middle surveys when goldfields and other plants formed broad patches of flowers, particularly in the western portion of the survey area. By the final survey, early nectar sources had finished blooming and were replaced by later blooming plants, which were much less numerous. Late in the surveys, the plants in the washes remained viable as other areas declined. Nectar sources such as phacelia (*Phacelia* spp.) that grew beneath large, shady shrubs were also blooming during the final survey. Overall, the number of flowering plants was lower in 2009 than in 2008.

Table 2: Butterflies Observed East County Substation Project near Jacumba, San Diego County, CA							
Common Name	Scientific Name	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5	Survey 6
Anise Swallowtail	<i>Papilio zelicaon</i>	x	x	x	x	x	x
Western Tiger Swallowtail	<i>Papilio rutulus</i>	x			x		
Pale Swallowtail	<i>Papilio eurymedon</i>			x	x	x	x
Checkered White	<i>Pontia protodice</i>	x	x	x	x	x	x
Becker's White	<i>Pontia beckeri</i>					x	x
Spring White	<i>Pontia sisymbrii</i>	x	x	x			
Pearly Marble	<i>Euchloe hyantis</i>	x	x	x	x	x	
Sara Orangetip	<i>Anthocharis sara</i>	x	x	x	x	x	x
Desert Orangetip	<i>Anthocharis cethura</i>	x	x	x	x		
Orange Sulphur	<i>Colias eurytheme</i>	x		x		x	x
Harford's Sulphur	<i>Colias alexandra harfordii</i>	x	x	x	x	x	x
Dainty Sulphur	<i>Nathalis iole</i>				x	x	x
Great Purple Hairstreak	<i>Atlides halesus</i>	x		x	x		
Bramble Hairstreak	<i>Callophrus dumatorum</i>	x	x	x	x	x	
'Loki' Juniper Hairstreak	<i>Callophrus gryneus loki</i>		x		x		
Brown Elfin	<i>Callophrus augustinus</i>				x		
Gray Hairstreak	<i>Strymon melinus</i>				x		
Western Pygmy-Blue	<i>Brephidium exile</i>	x	x		x	x	x
Marine Blue	<i>Leptotes marina</i>						x
Reakirt's Blue	<i>Hemiargus isola</i>				x		
Western Tailed-Blue	<i>Everes amyntula</i>			x	x		x

Common Name	Scientific Name	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5	Survey 6
Bernardino Blue	<i>Euphilotes battoides bernardino</i>					x	x
Southern Blue	<i>Glaucopsyche lygdamus australis</i>			x	x		x
Acmon Blue	<i>Plebejus acmon</i>	x	x	x	x	x	x
Behr's Metalmark	<i>Apodemia mormo virgulti</i>	x	x	x	x	x	x
California Patch	<i>Chlosyne californica</i>			x	x	x	
Gabb's Checkerspot	<i>Chlosyne gabbii</i>			x	x	x	x
Chalcedon Checkerspot	<i>Euphydryas chalcedona</i>	x	x	x	x	x	x
Quino Checkerspot	<i>Euphydryas editha quino</i>	x	x	x	x		
West Coast Lady	<i>Vanessa annabella</i>	x	x		x	x	x
Painted Lady	<i>Vanessa cardui</i>	x	x	x	x	x	x
Common Buckeye	<i>Junonia coenia</i>		x	x	x	x	x
Propertius Duskywing	<i>Erynnis propertius</i>		x	x	x	x	x
Funereal Duskywing	<i>Erynnis funeralis</i>	x	x	x	x	x	
Sleepy Duskywing	<i>Erynnis brizo</i>	x				x	x
Afranius Duskywing	<i>Erynnis afranius</i>						x
Northern White- Skipper	<i>Heliopetes ericetorum</i>	x					
Sandhill Skipper	<i>Polites sabuleti</i>						x

Table 3. Potential QCB Nectar Sources and Other Noted Plants, March-May, 2009	
East County Substation Project	
QCB Larval Food Plants Observed	Common Name
<i>Plantago erecta</i>	Dot-Seed Plantain
<i>Castilleja exserta</i> ssp. <i>exserta</i>	Purple Owl's-Clover
<i>Collinsia concolor</i>	Southern Chinese Houses
Butterfly Nectar Sources Observed	Common Name
<i>Allium fimbriatum</i> var. <i>fimbriatum</i>	Desert Onion
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Rancher's Fiddleneck
<i>Antirrhinum nuttalianum</i>	Nuttall's Snapdragon
<i>Anisocoma acaulis</i>	Scale-Bud
<i>Astragalus palmeri</i>	Palmer's Locoweed
<i>Calandrinia ciliata</i>	Red Maids
<i>Calochortus splendens</i>	Splendid Mariposa Lily
<i>Camissonia californica</i>	False-Mustard
<i>Camissonia strigulosa</i>	Primrose
<i>Chaenactis fremontii</i>	Desert Pincushion
<i>Chaenactis glabriuscula</i>	Yellow Pincushion
<i>Chaenactis stevioides</i>	Desert Pincushion
<i>Cirsium occidentale</i> var. <i>californica</i>	Cobweb Thistle
<i>Coreopsis californica</i> var. <i>californica</i>	California Coreopsis
<i>Cryptantha decipiens</i>	Cryptantha
<i>Cryptantha intermedia</i>	Nievitas Cryptantha
<i>Cryptantha pterocarya</i> var. <i>pterocarya</i>	Wing-Nut Cryptantha
<i>Delphinium parishii</i> var. <i>subglobosum</i>	Oceanblue Larkspur
<i>Descurainia pinnata</i> var. <i>halictorum</i>	Alkali Western Tansy-Mustard
<i>Dichelostemma capitatum</i>	Blue Dicks
<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	Whispering Bells
<i>Encelia farinosa</i>	Brittlebush
<i>Ericameria linearifolia</i>	Interior Goldenbush
<i>Eriodictyon trichocalyx</i> var. <i>lanatum</i>	Hairy Yerba Santa
<i>Eriophyllum wallacei</i>	Wallace's Woolly Daisy
<i>Geraea viscida</i>	Sticky Geraea

Butterfly Nectar Sources Observed	Common Name
<i>Gilia diegensis</i>	Gilia
<i>Guillenia lasiophylla</i>	California Mustard
<i>Ipomopsis tenuifolia</i>	Scarlet Gilia
<i>Larrea tridentata</i>	Creosote Bush
<i>Lasthenia gracilis</i>	Common Goldfields
<i>Lathyrus splendens</i>	Pride-of-California, Campo Pea
<i>Layia glandulosa</i>	White Layia
<i>Layia platyglossa</i>	Tidy Tips
<i>Linanthus bellus</i>	Desert Beauty
<i>Linanthus lemmonii</i>	Lemmon's Linanthus
<i>Lotus argophyllus</i> var. <i>argophyllus</i>	Silver-Leaf Lotus
<i>Lotus scoparius</i> var. <i>brevialatus</i>	Short-Wing Deerweed
<i>Lotus scoparius</i> var. <i>scoparius</i>	Coastal Deerweed
<i>Lotus strigosus</i>	Bishop's/Strigose Lotus
<i>Lupinus bicolor</i>	Miniature Lupine
<i>Lupinus concinnus</i>	Bajada Lupine
<i>Lupinus truncatus</i>	Collar Lupine
<i>Lycium andersonii</i>	Waterjacket
<i>Malacothrix glabrata</i>	Desert Dandelion
<i>Mentzelia affinis</i>	Hydra Stick-Leaf
<i>Mimulus aridus</i>	Jacumba Monkey Flower
<i>Mimulus guttatus</i>	Seep Monkey Flower
<i>Mimulus pilosus</i>	Downy Monkey Flower
<i>Oenothera californica</i> ssp. <i>california</i>	California Evening-Primrose
<i>Nicotiana obtusifolia</i>	Desert Tobacco
<i>Pectocarya linearis</i> var. <i>ferocula</i>	Slender Pectocarya
<i>Pectocarya recurvata</i>	Curvenut Combseed
<i>Pectocarya setosa</i>	Bristly Pectocarya
<i>Penstemon centranthifolius</i>	Scarlet Bugler
<i>Penstemon clevelandii</i> var. <i>clevelandii</i>	Cleveland's Beardtongue
<i>Penstemon spectabilis</i> var. <i>spectabilis</i>	Showy Pentemon
<i>Phacelia cicutaria</i> var. <i>hispida</i>	Caterpillar Phacelia
<i>Phacelia distans</i>	Wild-Heliotrope
<i>Phacelia imbricata</i>	Imbricate Phacelia

Butterfly Nectar Sources Observed	Common Name
<i>Phacelia parryi</i>	Parry's Phacelia
<i>Pholistoma membranaceum</i>	White Fiesta Flower
<i>Plagiobothrys arizonicus</i>	Arizona Popcornflower
<i>Plagiobothrys tenellus</i>	Popcornflower
<i>Platystemon californicus</i>	Cream Cups
<i>Prunus fremontii</i>	Desert Apricot
<i>Rafinesquia neomexicana</i>	Desert Chicory
<i>Salvia apiana</i>	White Sage
<i>Salvia columbariae</i>	Chia
<i>Senecio californicus</i>	California Butterweed
* <i>Sisymbrium altissimum</i>	Tumble/Jim Hill Mustard
* <i>Sisymbrium irio</i>	London Rocket
<i>Sphaeralcea ambigua</i> var. <i>ambigua</i>	Apricot Desert Mallow
<i>Sphaeralcea ambigua</i> var. <i>rosacea</i>	Rose Desert Mallow
<i>Tauschia arguta</i>	Southern Tauschia
<i>Thamnosma montana</i>	Turpentine-Broom
<i>Viguiera parishii</i>	Parish's Golden-Eyes
<i>Ziziphus parryi</i>	Lotebush

* Non-native species

X. Conclusion

Survey results were positive for the federally endangered QCB near SP-75 within the USFWS Jacumba reference site in 2009. QCB's primary larval host plant, dot-seed plantain, and two secondary host plant species were also documented within the survey area. QCB and dot-seed plantain were only observed in one broad area north, east, and west of SP-75 (between milepost 4 and 5). Secondary host plants owl's clover and Chinese houses were observed between mileposts 7 and 9 in small patches, but no QCB were observed in these locations.

The USFWS Jacumba reference site supports a combination of clay soil, openings in shrubby vegetation, and a large host plant population that is unique within the survey area. The soils consist primarily of clay derived from the metavolcanic rock of Jacumba Peak. The clay soils are highly suitable for dot-seed plantain and woody shrubs and perennials do not grow as vigorously or dense in the clay soils. This has resulted in large openings in woody vegetation with sufficient host plant and nectar source

populations to consistently support a colony of QCB. Most of the remaining survey area supports coarse granitic soils with large boulder outcrops less suitable for dot-seed plantain and covered with dense chaparral vegetation.

XI. References

- Brown, J.W, H.G. Real, and D.K. Faulkner. 1992. *Butterflies of Baja California: Faunal Survey*, Natural History, Conservation Biology. Lepidoptera Research Foundation.
- Butterflies and Moths of North America. 2009. www.butterfliesandmoths.org
- Emmel, Thomas C., and John F. Emmel. 1973. *The Butterflies of Southern California*. Los Angeles: Natural History Museum of Los Angeles Co. Science Series: 26.
- Garth, J.S. and J.W. Tilden. 1986. *California Butterflies*. Regents of the University of California. 246pp.
- Glassberg, J. 2001. *Butterflies Through Binoculars – The West. A field guide to the butterflies of Western North America*. Oxford Univ. Press. 374pp.
- Hickman, J. C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, California. 1400 pp.
- Mattoni, R., G.F. Pratt, T.R. Longcore, J.F. Emmel and N.J. George. 1997. The endangered quino checkerspot butterfly, *Euphydryas editha quino* (Lepidoptera: Nymphalidae). *Journal of Research on the Lepidoptera* 34: 99-118.
- Rebman, J. and M.S. Simpson. 2006. *Checklist of the Vascular Plants of San Diego County*. 4th edition.
- U.S. Fish and Wildlife Service (USFWS)
1997 Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Laguna Mountains Skipper and Quino Checkerspot Butterfly. *Federal Register* 62(11):2313-2322, January 16.
- 2002a Quino Checkerspot Butterfly (*Euphydryas editha quino*) Year 2002 Survey Protocol.

2002b Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Quino Checkerspot Butterfly (*Euphydryas editha quino*); Final Rule. Federal Register 67(72):18355-18395, April 15.

2003 Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). Region 1. Portland, Oregon. August 11.

XII. Acknowledgements

USFWS Protocol Surveys: J. Rocks, C. Daverin, E. LaCoste, D. Busby, M. Busby, B. Lohstroh, G. Cummings, M. Mulligan (supervised individual)

Report Writing and Butterfly Photos: C. Daverin, J. Rocks

GIS Mapping: Insignia Environmental

XIII. Surveyor Signature Page

This report represents an accurate account of my work on the survey site.



Jim Rocks, Principal Biologist
Rocks Biological Consulting
Permit Number TE-063230-3

This report represents an accurate account of my work on the survey site.



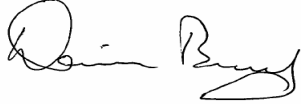
Cynthia Jones Daverin
Mariposa Biology
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Permit Number TE-115373-0

This report represents an accurate account of my work on the survey site.



Melissa Busby
Busby Biological Services
Permit Number TE-080779-1

This report represents an accurate account of my work on the survey site.



Brian Lohstroh
Permit Number TE-063608-4

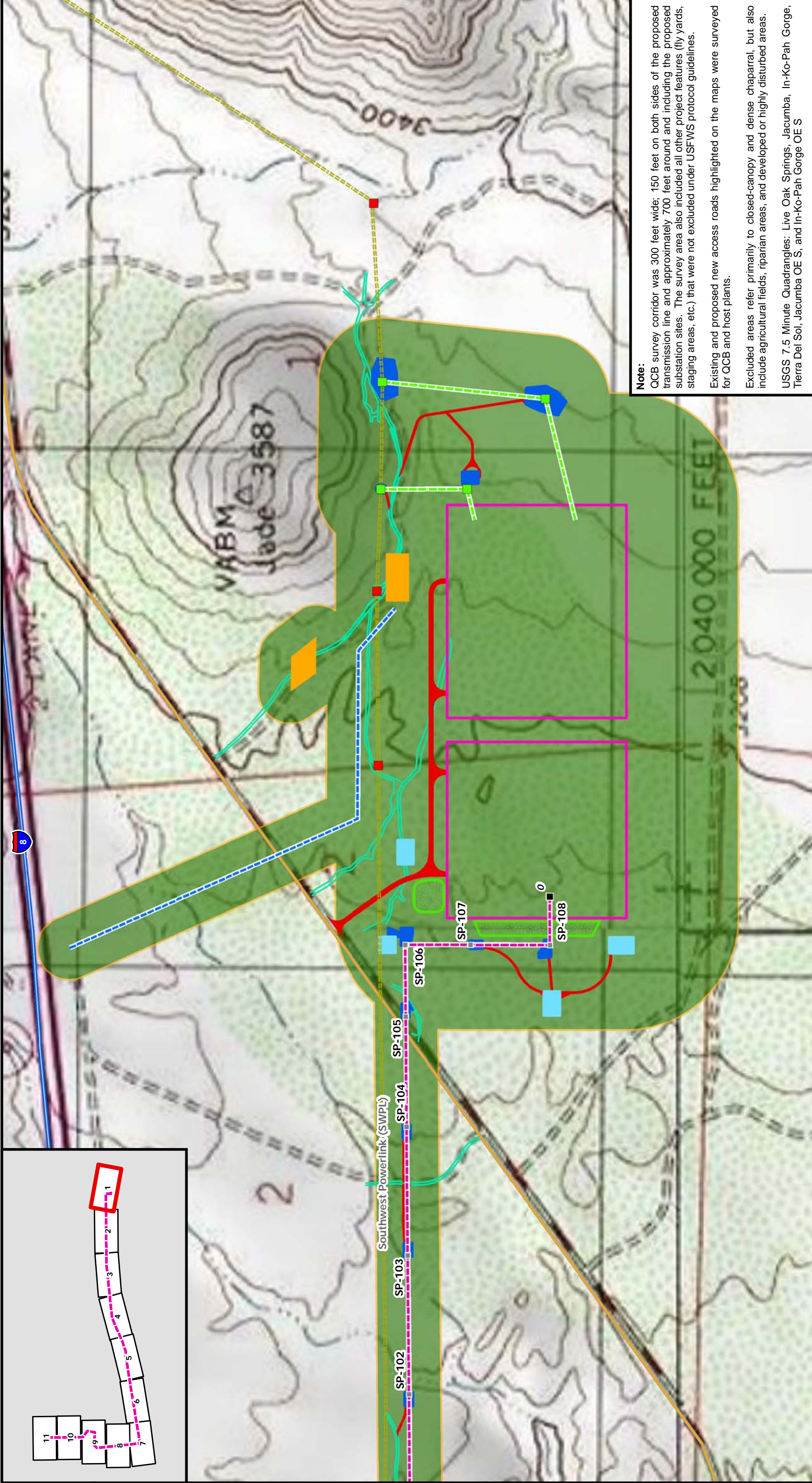
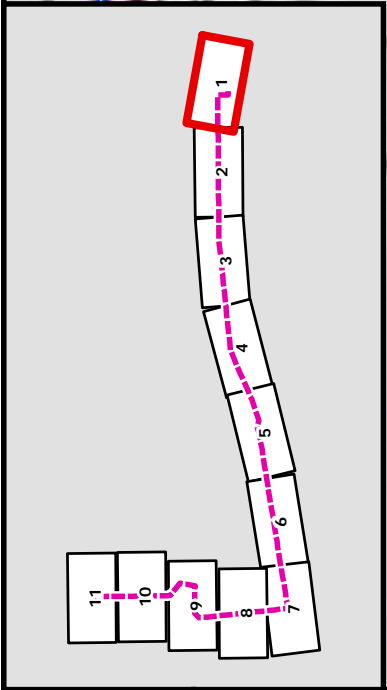
This report represents an accurate account of my work on the survey site.



Gretchen Cummings
Cummings & Associates
Permit Number TE-031850-3

Attachment A

Quino Checkerspot Butterfly Surveyed Area Maps



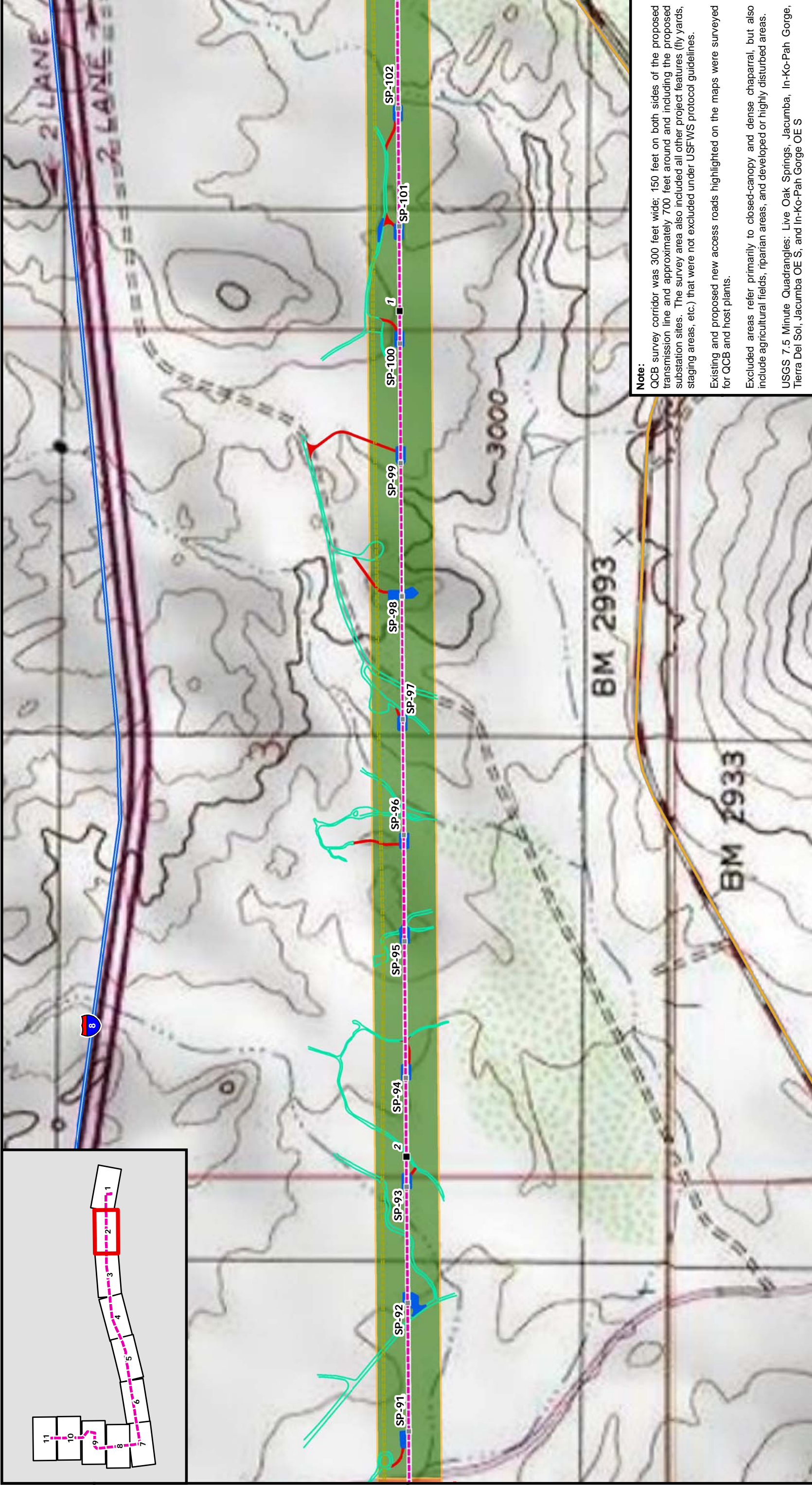
Note:
 QCB survey corridor was 300 feet wide; 150 feet on both sides of the proposed transmission line and approximately 700 feet around and including the proposed substation sites. The survey area also included all other project features (fly yards, staging areas, etc.) that were not excluded under USFWS protocol guidelines.
 Existing and proposed new access roads highlighted on the maps were surveyed for QCB and host plants.
 Excluded areas refer primarily to closed-canopy and dense chaparral, but also include agricultural fields, riparian areas, and developed or highly disturbed areas.
 USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 1 of 11

East County Substation Project

1:7,000

	Proposed SWPL Loop-In		Quino Checkerspot Butterfly (<i>Euphydryas editha quino</i>) - Federally Endangered
	Proposed 138 kV Line		Primary Host Plant Dot-seed Plantain (<i>Plantago erecta</i>)
	Proposed 12 kV Temporary Distribution Tap		Secondary Host Plants Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)
	Proposed 138 kV Line Milepost		Quino Checkerspot Butterfly Critical Habitat
	Proposed 138 kV Tower		Surveyed Area
	Existing SWPL Structure		Excluded Area
	Proposed SWPL Loop-In Structure		
	Existing Transmission Line		
	Existing Access Road		
	Retention Pond		
	New Access Road		
	Fly Yard		
	Pull Site		
	Temporary Work Area		
	Staging Yard		



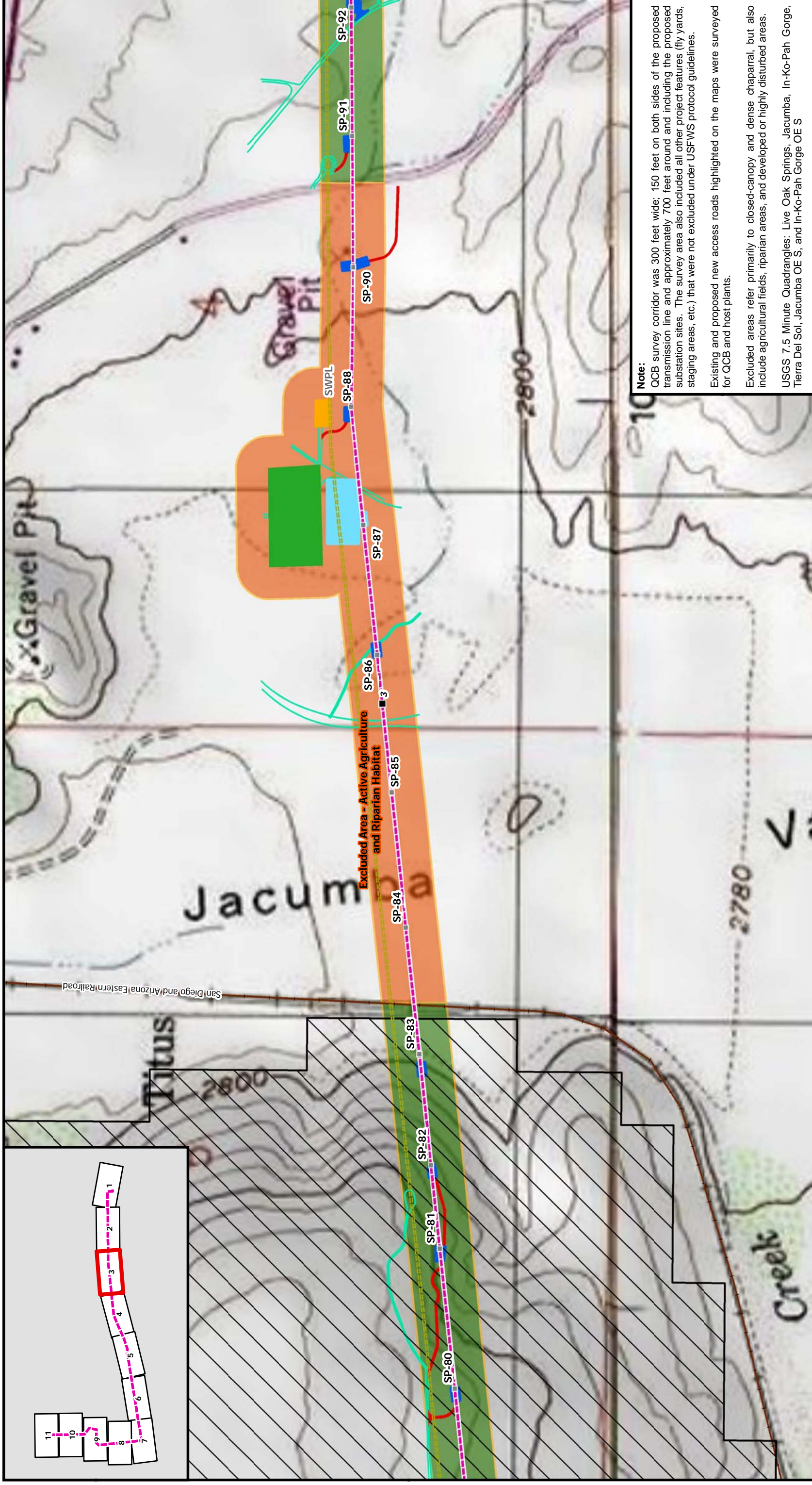
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Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 2 of 11

East County Substation Project

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	Proposed SWPL Loop-In		Retention Pond		Primary Host Plant		Quino Checkerspot Butterfly (<i>Euphydryas editha quino</i>) - Federally Endangered		Quino Checkerspot Butterfly Critical Habitat
	Proposed 138 kV Line		New Access Road		Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)		Surveyed Area		Surveyed Area
	Proposed 12 kV Temporary Distribution Tap		Fly Yard		Chinese Houses (<i>Collinsia concolor</i>)		Excluded Area		Excluded Area
	445 Circuit Collocated with 138 kV Line		Pull Site		Staging Yard				
	Existing Transmission Line		Temporary Work Area						
	Existing Access Road								



Note:
 QCB survey corridor was 300 feet wide: 150 feet on both sides of the proposed transmission line and approximately 700 feet around and including the proposed substation sites. The survey area also included all other project features (fly yards, staging areas, etc.) that were not excluded under USFWS protocol guidelines.

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USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 3 of 11

SDGE
A Sempra Energy utility

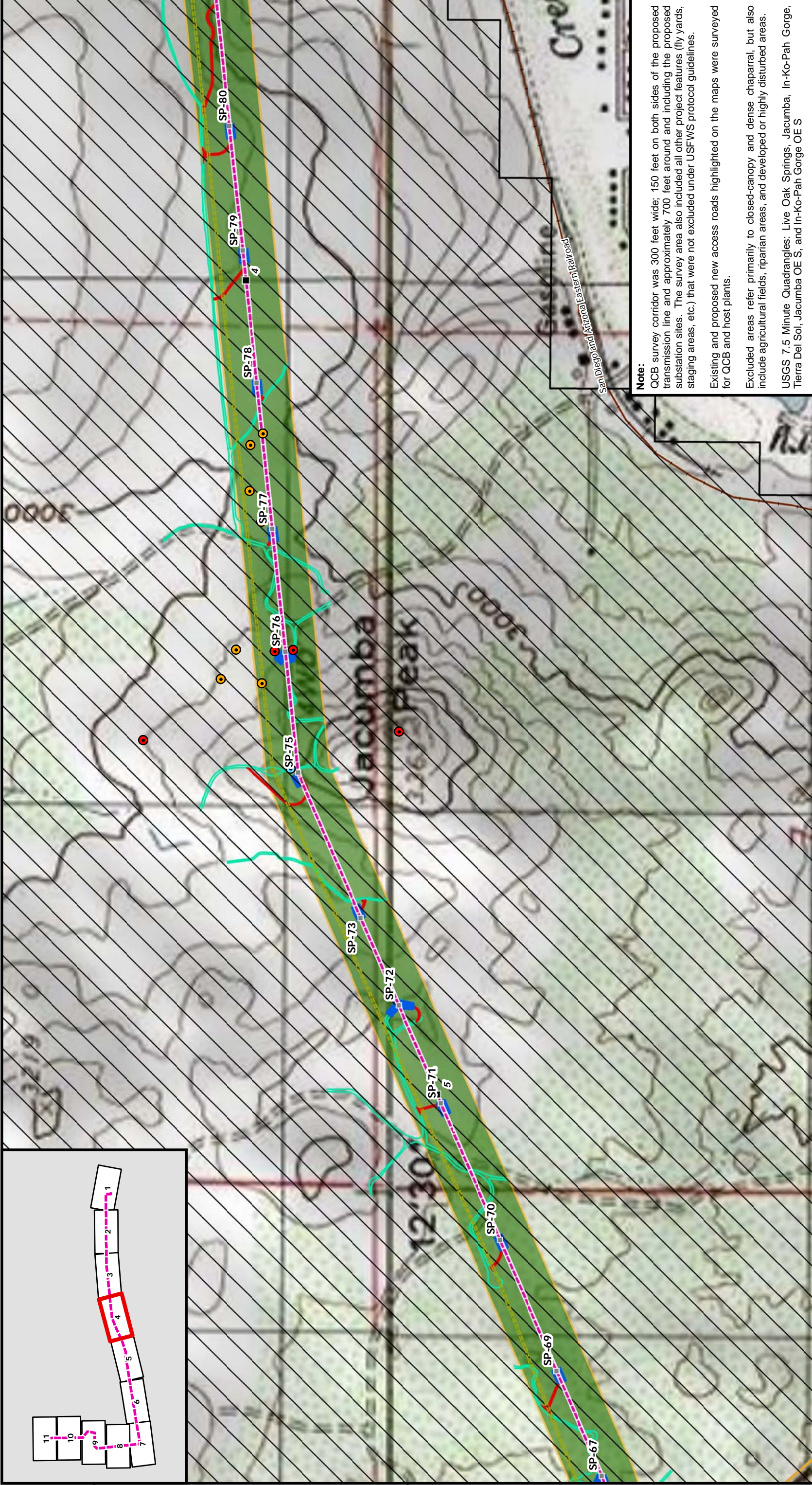
INSIGNIA
ENVIRONMENTAL

North Arrow

Scale: 1:7,000

0 250 500 1,000 1,500 2,000 2,500 Feet

	Proposed SWPL Loop-In		Quino Checkerspot Butterfly (<i>Euphydryas editha quino</i>)
	Proposed 138 kV Line		Federally Endangered
	Proposed 12 kV Temporary Distribution Tap		Quino Checkerspot Butterfly Critical Habitat
	Proposed 138 kV Line Millepost		Surveyed Area
	Proposed 138 kV Tower		Excluded Area
	445 Circuit Collocated with 138 kV Line		Primary Host Plant
	Existing Transmission Line		Dot-seed Plantain (<i>Plantago erecta</i>)
	Existing Access Road		Secondary Host Plants
	Retention Pond		Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)
	New Access Road		Chinese Houses (<i>Collinsia concolor</i>)
	Fly Yard		Temporary Work Area
	Pull Site		Staging Yard
	Temporary Work Area		
	Staging Yard		



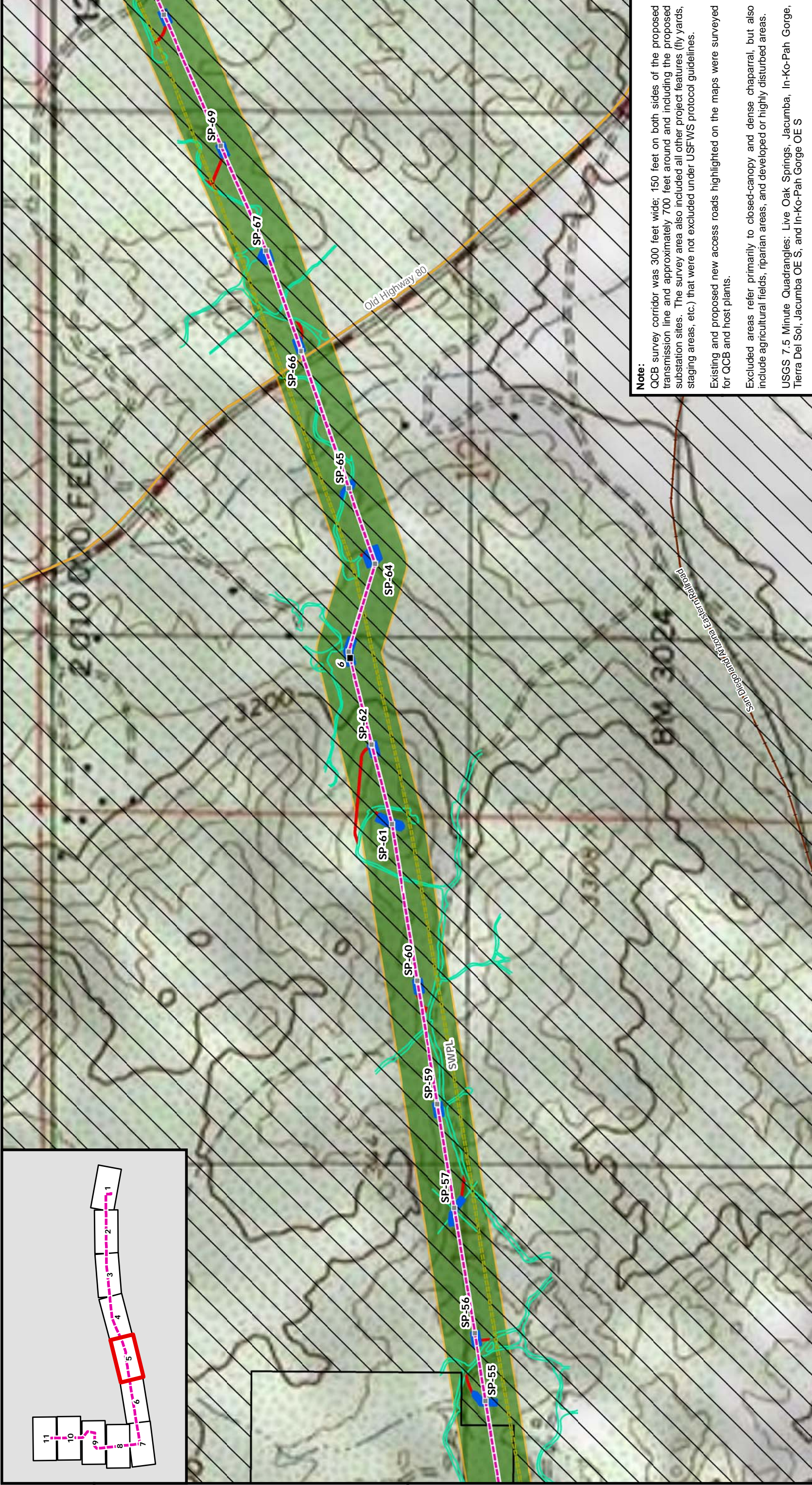
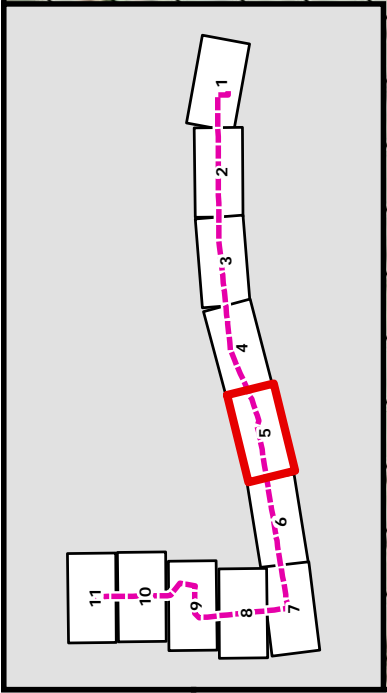
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Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 4 of 11

East County Substation Project

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	Proposed SWPL Loop-In		Retention Pond		Primary Host Plant		Quino Checkerspot Butterfly
	Proposed 138 kV Line		New Access Road		Dot-seed Plantain (<i>Plantago erecta</i>)		(<i>Euphydryas editha quino</i>)
	Proposed 12 kV Temporary Distribution Tap		Fly Yard		Secondary Host Plants		- Federally Endangered
	445 Circuit Collocated with 138 kV Line		Pull Site		Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)		Quino Checkerspot Butterfly
	Existing Transmission Line		Temporary Work Area		Chinese Houses (<i>Collinsia concolor</i>)		Critical Habitat
	Existing Access Road		Staging Yard				Surveyed Area
							Excluded Area



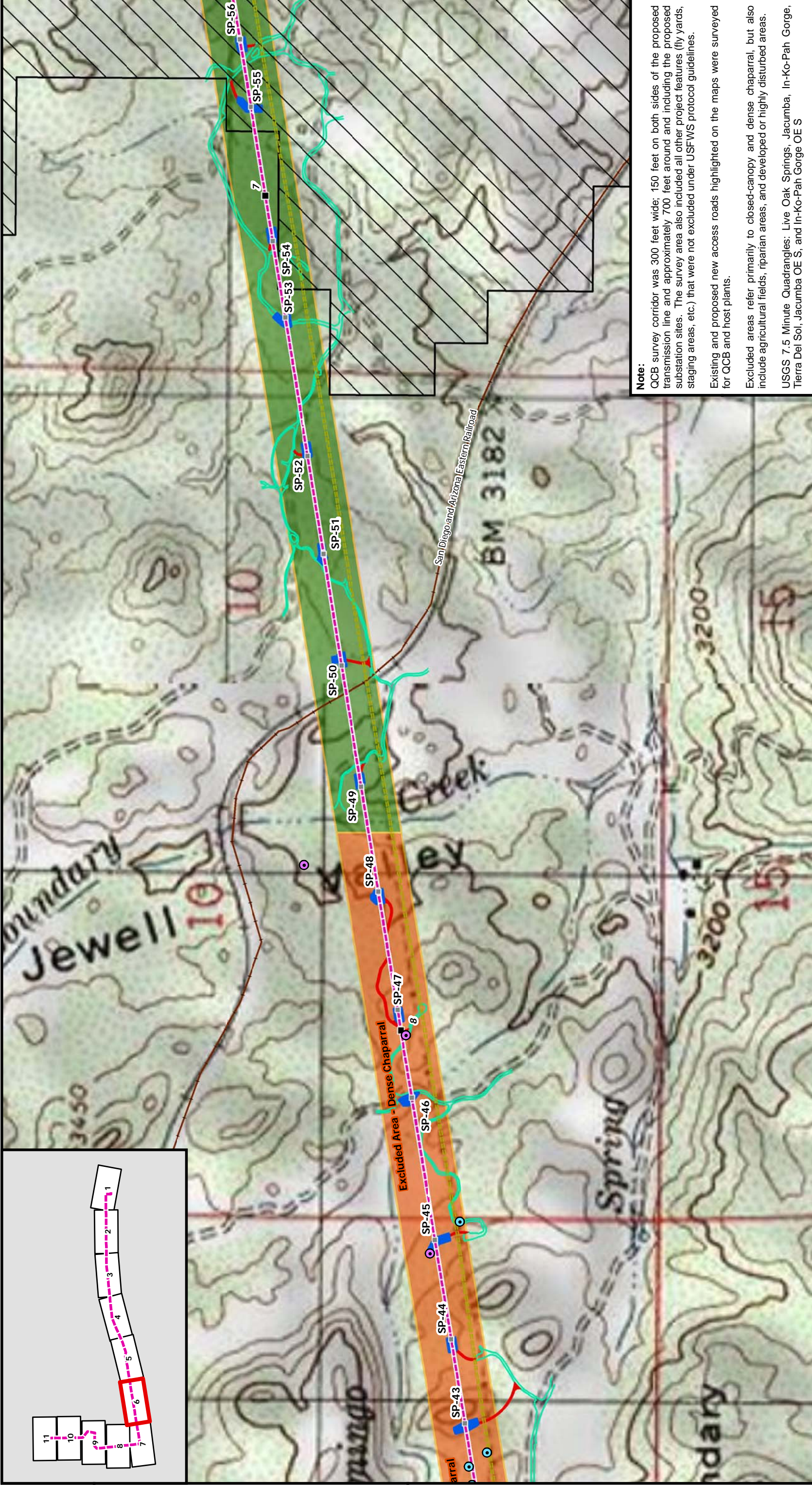
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Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 5 of 11

East County Substation Project

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Proposed SWPL Loop-In	Retention Pond	Primary Host Plant	Quino Checkerspot Butterfly	Surveyed Area	Excluded Area
Proposed 138 kV Line	New Access Road	Dot-seed Plantain (<i>Plantago erecta</i>)	Federally Endangered		
Proposed 12 kV Temporary Distribution Tap	Fly Yard	Secondary Host Plants	Quino Checkerspot Butterfly		
445 Circuit Collocated with 138 kV Line	Pull Site	Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)	Critical Habitat		
Existing Transmission Line	Temporary Work Area	Chinese Houses (<i>Collinsia concolor</i>)	Excluded Area		
Existing Access Road	Staging Yard				

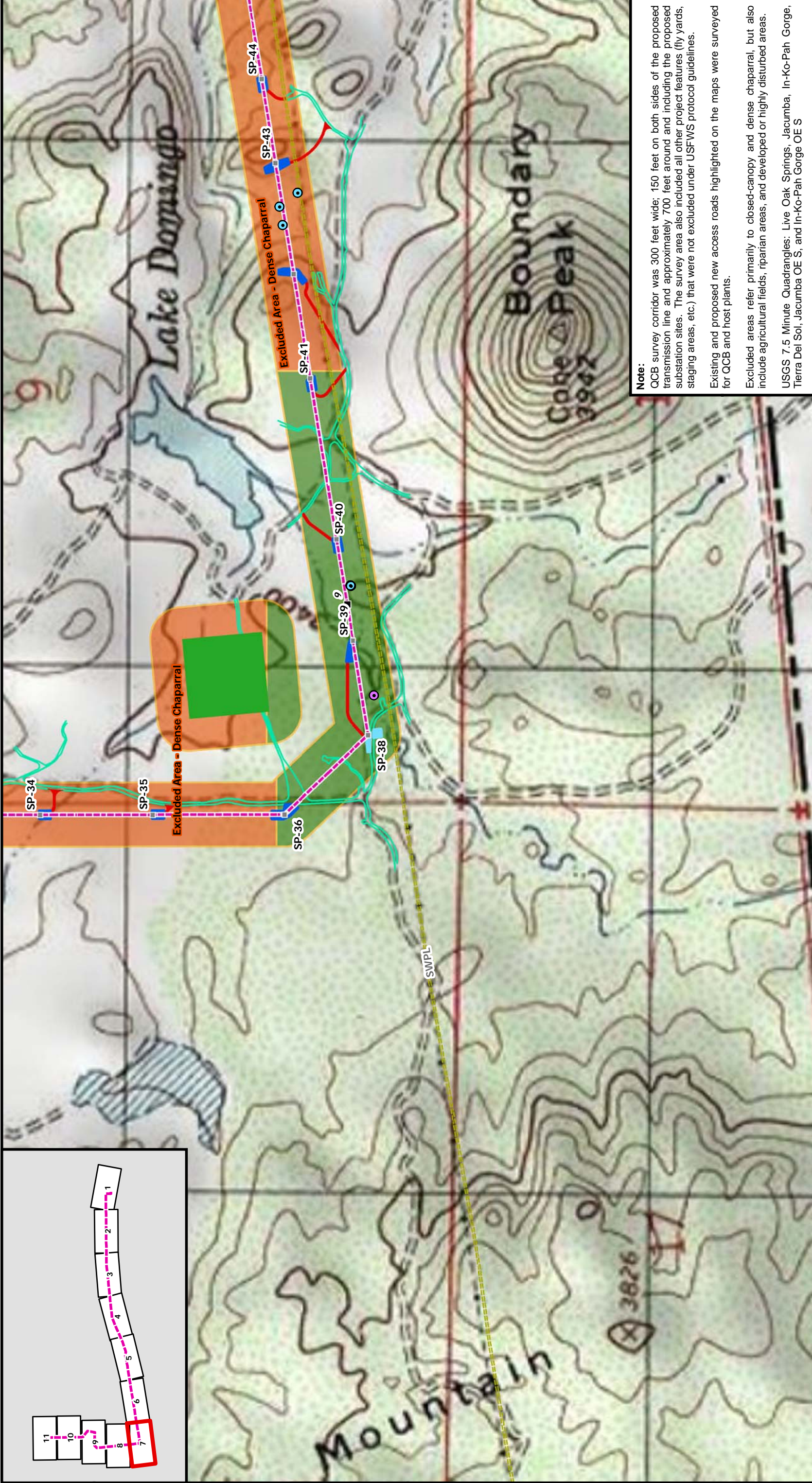
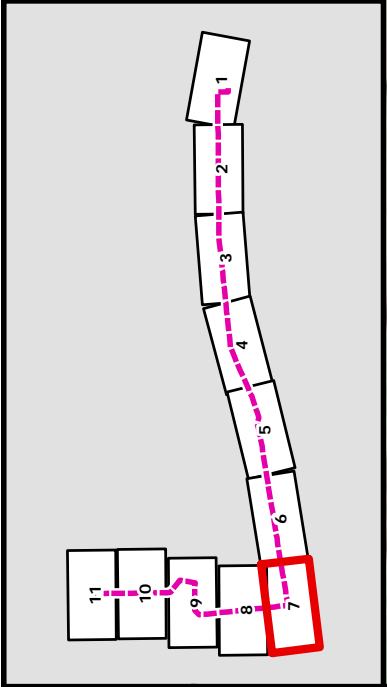


Note:
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 Excluded areas refer primarily to closed-canopy and dense chaparral, but also include agricultural fields, riparian areas, and developed or highly disturbed areas.
 USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 6 of 11

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<ul style="list-style-type: none"> — Proposed SWPL Loop-In — Proposed 138 KV Line — Proposed 12 KV Temporary Distribution Tap — 445 Circuit Collocated with 138 KV Line — Existing Transmission Line — Existing Access Road 	<ul style="list-style-type: none"> Proposed ECO Substation Boulevard Substation Rebuild Proposed 138 KV Line Milepost Proposed 138 KV Tower Existing SWPL Structure Proposed SWPL Loop-In Structure 	<ul style="list-style-type: none"> Retention Pond New Access Road Fly Yard Pull Site Temporary Work Area Staging Yard 	<ul style="list-style-type: none"> ● Primary Host Plant ● Dot-seed Plantain (<i>Plantago erecta</i>) ● Secondary Host Plants ● Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>) ● Chinese Houses (<i>Collinsia concolor</i>) 	<ul style="list-style-type: none"> Quino Checkerspot Butterfly Federally Endangered Quino Checkerspot Butterfly Critical Habitat Surveyed Area Excluded Area
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 QCB survey corridor was 300 feet wide: 150 feet on both sides of the proposed transmission line and approximately 700 feet around and including the proposed substation sites. The survey area also included all other project features (fly yards, staging areas, etc.) that were not excluded under USFWS protocol guidelines.

Existing and proposed new access roads highlighted on the maps were surveyed for QCB and host plants.

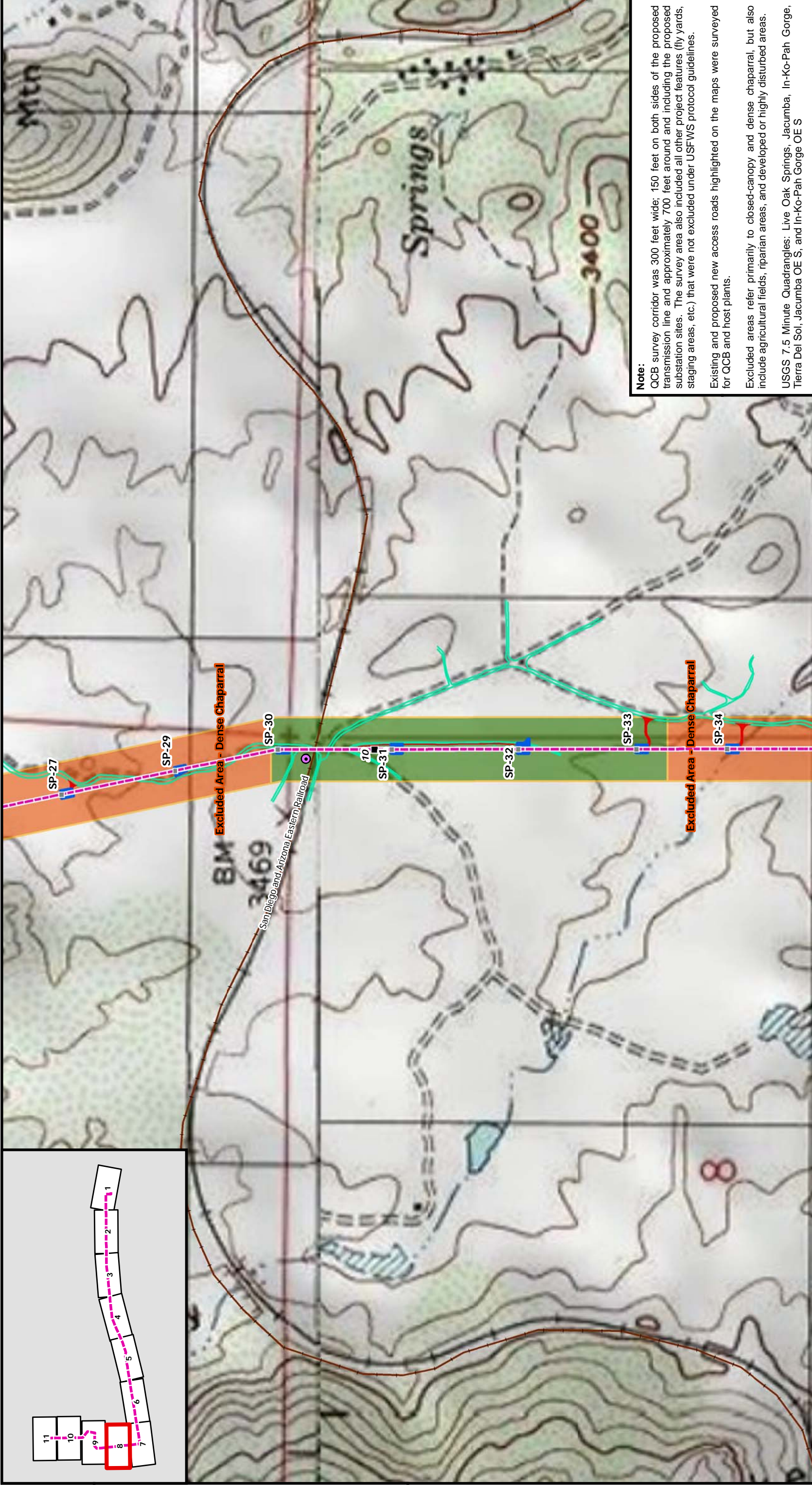
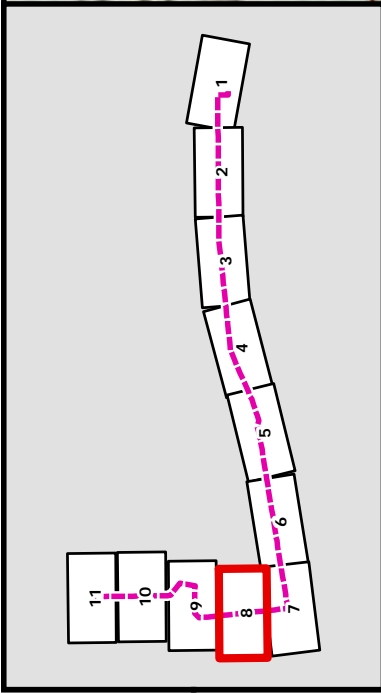
Excluded areas refer primarily to closed-canopy and dense chaparral, but also include agricultural fields, riparian areas, and developed or highly disturbed areas.

USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 7 of 11

Proposed SWPL Loop-In	Retention Pond	Primary Host Plant	Quino Checkerspot Butterfly
Proposed 138 kV Line	New Access Road	Dot-seed Plantain (<i>Plantago erecta</i>)	<i>Euphydryas editha quino</i>
Proposed 12 kV Temporary Distribution Tap	Fly Yard	Secondary Host Plants	Federally Endangered
445 Circuit Collocated with 138 kV Line	Pull Site	Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)	Quino Checkerspot Butterfly
Existing Transmission Line	Temporary Work Area	Chinese Houses (<i>Collinsia concolor</i>)	Critical Habitat
Existing Access Road	Staging Yard	Surveyed Area	Excluded Area

East County Substation Project



Note:
 QCB survey corridor was 300 feet wide: 150 feet on both sides of the proposed transmission line and approximately 700 feet around and including the proposed substation sites. The survey area also included all other project features (fly yards, staging areas, etc.) that were not excluded under USFWS protocol guidelines.
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 Excluded areas refer primarily to closed-canopy and dense chaparral, but also include agricultural fields, riparian areas, and developed or highly disturbed areas.
 USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 8 of 11

Proposed SWPL Loop-In

- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Existing Access Road

Proposed ECO Substation

- Boulevard Substation Rebuild
- Proposed 138 kV Line Milepost
- Proposed 138 kV Tower
- Existing SWPL Structure
- Proposed SWPL Loop-In Structure

Retention Pond

- New Access Road
- Fly Yard
- Pull Site
- Temporary Work Area
- Staging Yard

Primary Host Plant

- Dot-seed Plantain (*Plantago erecta*)
- Secondary Host Plants
- Owl's Clover (*Castilleja exserta* ssp. *exserta*)
- Chinese Houses (*Collinsia concolor*)

Quino Checkerspot Butterfly
 (*Euphydryas editha quino*)

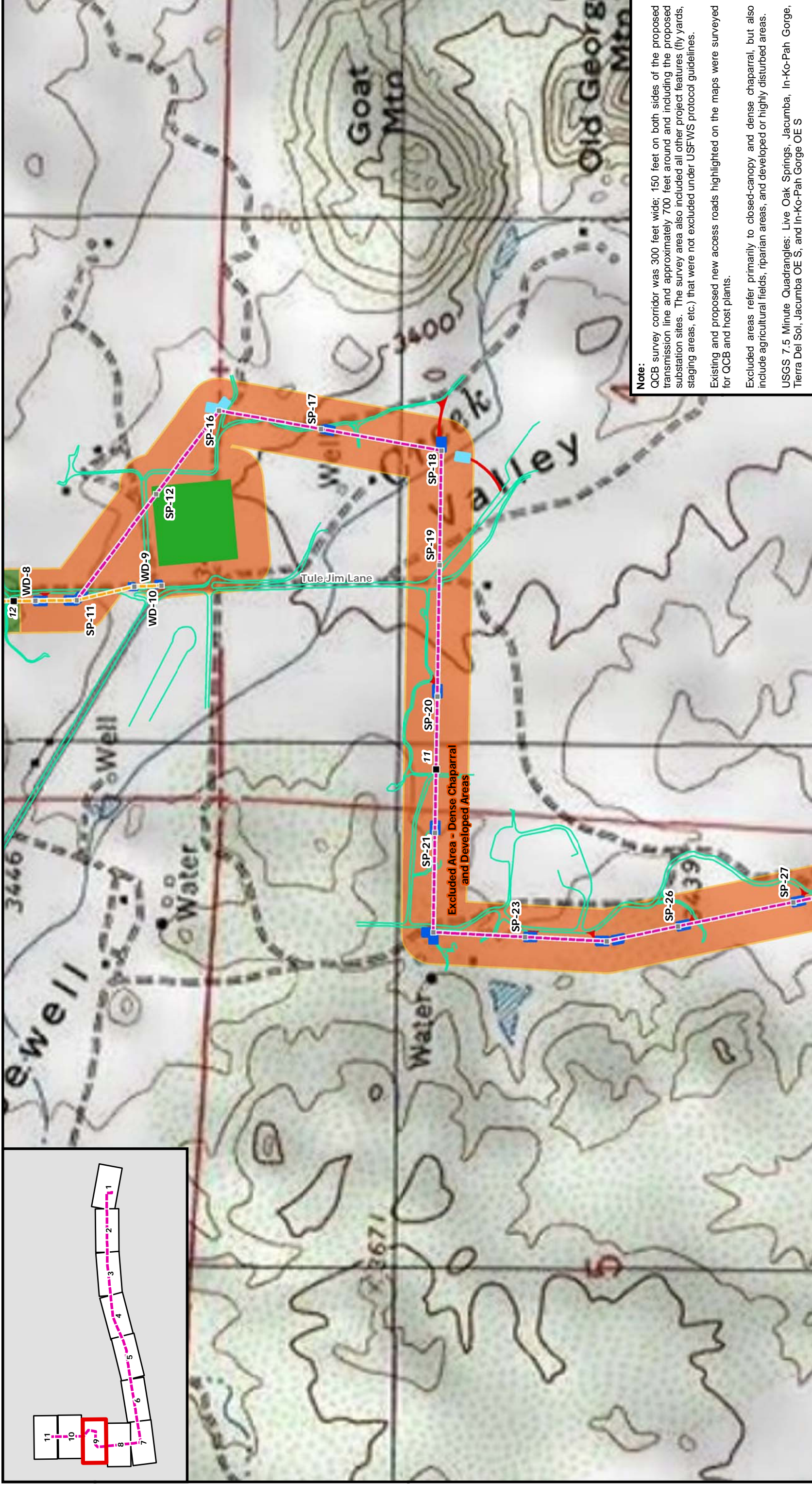
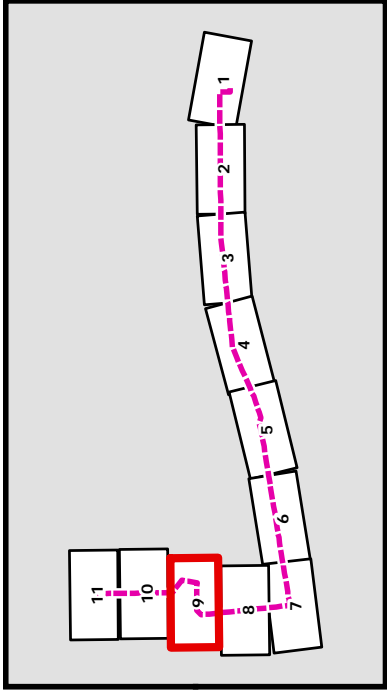
- Federally Endangered
- Quino Checkerspot Butterfly Critical Habitat
- Surveyed Area
- Excluded Area

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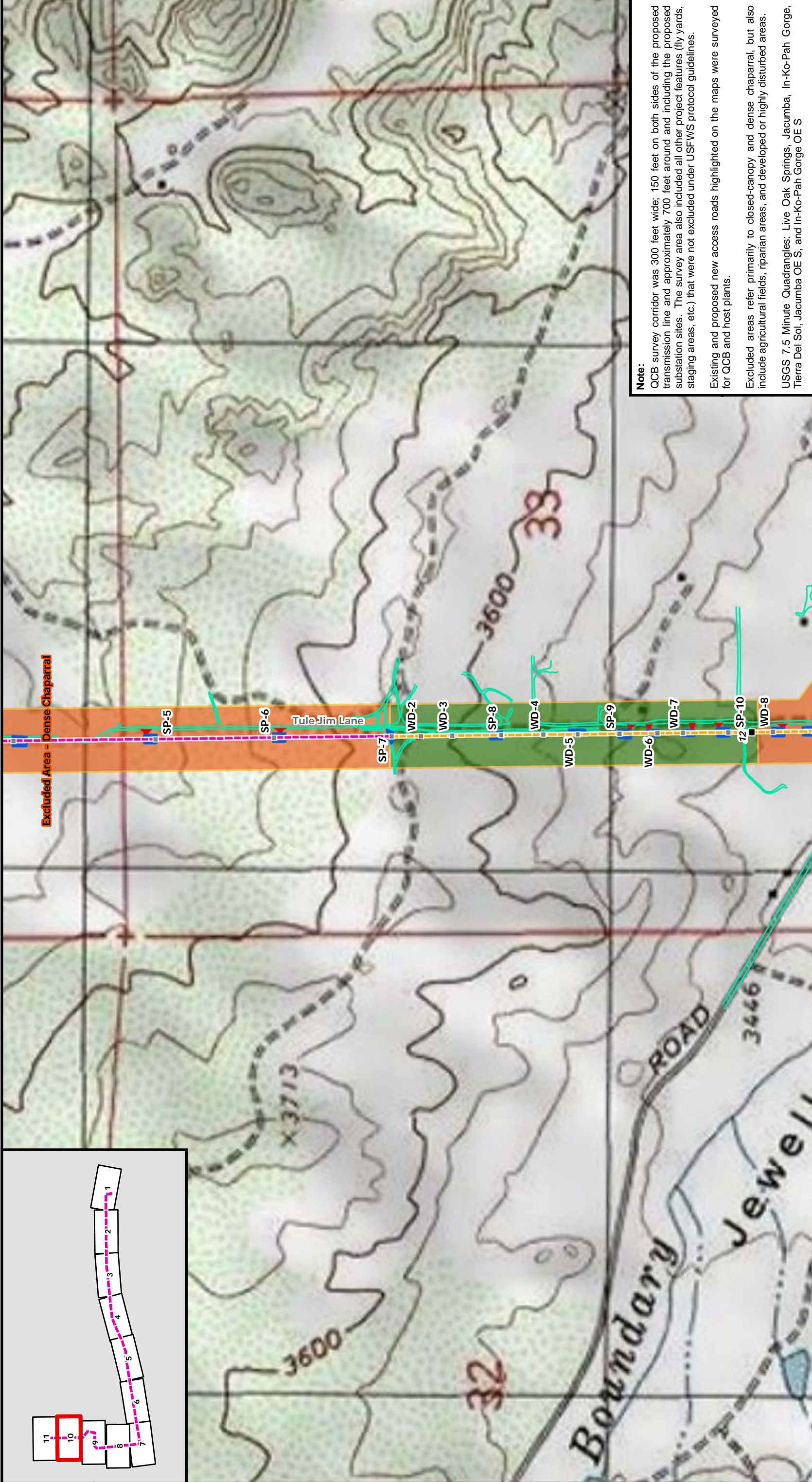
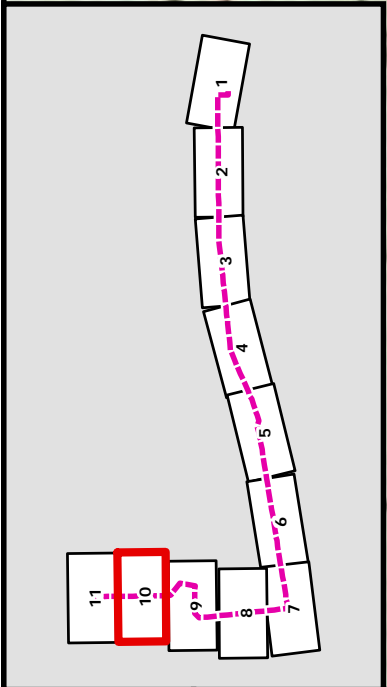
Note:
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 USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 9 of 11

East County Substation Project

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Proposed SWPL Loop-In	Proposed ECO Substation	Retention Pond	Primary Host Plant	Quino Checkerspot Butterfly	Excluded Area
Proposed 138 KV Line	Boulevard Substation Rebuild	New Access Road	Dot-seed Plantain (<i>Plantago erecta</i>)	Federally Endangered	Surveyed Area
Proposed 12 KV Temporary Distribution Tap	Proposed 138 KV Line Milepost	Fly Yard	Owl's Clover (<i>Casilleja exserta</i> ssp. <i>exserta</i>)	Quino Checkerspot Butterfly Critical Habitat	Excluded Area
445 Circuit Collocated with 138 KV Line	Proposed 138 KV Tower	Pull Site	Chinese Houses (<i>Collinsia concolor</i>)	Surveyed Area	
Existing Transmission Line	Existing SWPL Structure	Temporary Work Area			
Existing Access Road	Proposed SWPL Loop-In Structure	Staging Yard			



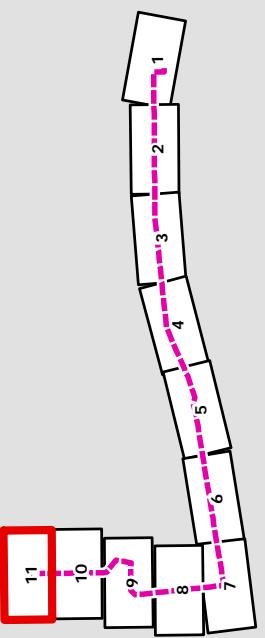
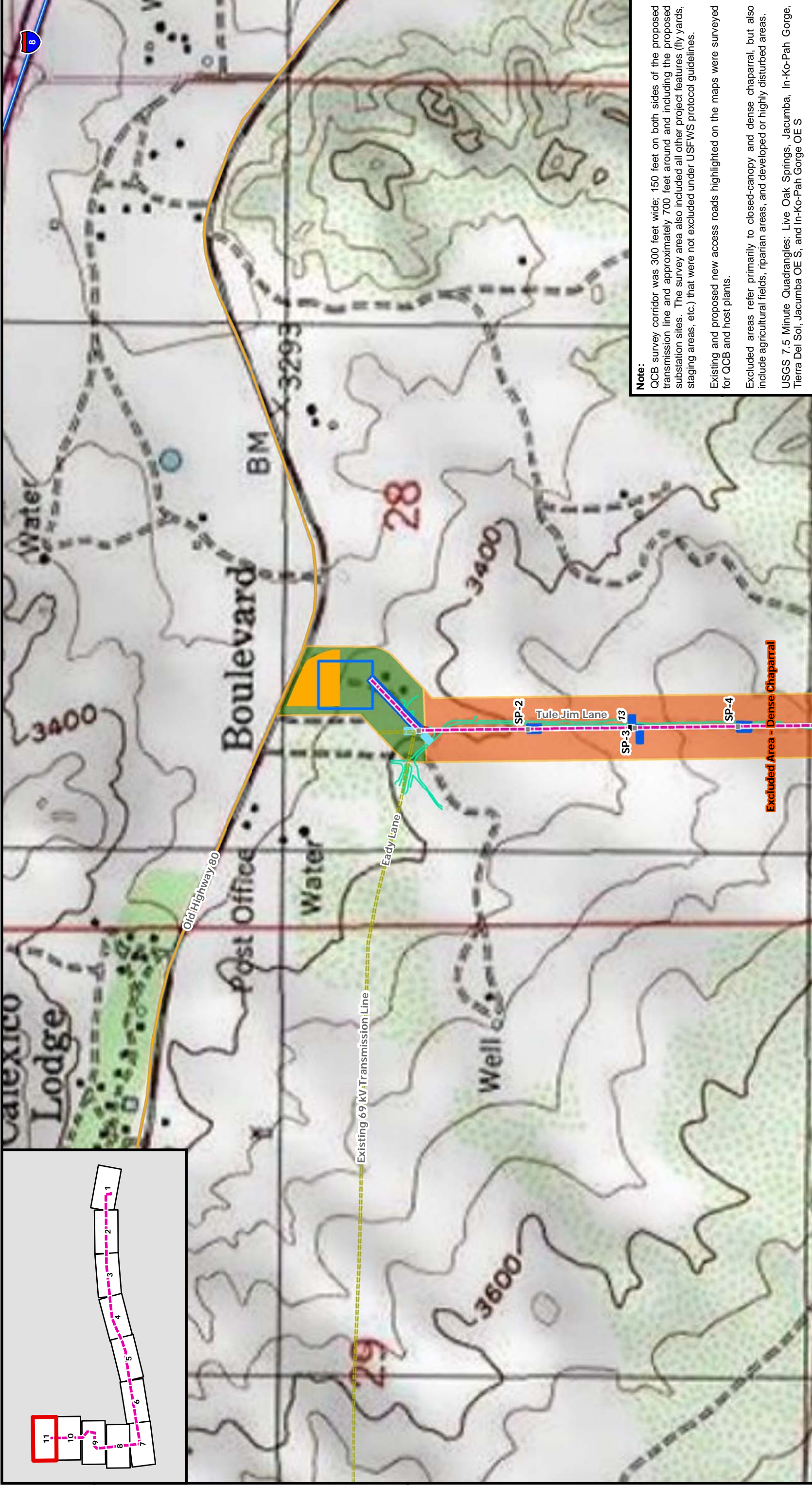
Notes:
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 Existing and proposed new access roads highlighted on the maps were surveyed for QCB and host plants.
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 USGS 7.5 Minute Quadrangles: Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Tierra Del Sol, Jacumba OE S, and In-Ko-Pah Gorge OE S

Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 10 of 11

East County Substation Project

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<ul style="list-style-type: none"> — Proposed SWPL Loop-In — Proposed 138 kV Line — Proposed 12 kV Temporary Distribution Tap — 445 Circuit Collocated with 138 kV Line — Existing Transmission Line — Existing Access Road 	<ul style="list-style-type: none"> Proposed ECO Substation Boulevard Substation Rebuild Proposed 138 kV Line Milepost Proposed 138 kV Tower Existing SWPL Structure Proposed SWPL Loop-In Structure 	<ul style="list-style-type: none"> Retention Pond New Access Road Fly Yard Pull Site Temporary Work Area Staging Yard 	<ul style="list-style-type: none"> ● Primary Host Plant <ul style="list-style-type: none"> Dot-seed Plantain (<i>Plantago erecta</i>) Secondary Host Plants <ul style="list-style-type: none"> Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>) Chinese Houses (<i>Collinsia concolor</i>) ● Quino Checkerspot Butterfly <ul style="list-style-type: none"> (<i>Euphydryas editha quino</i>) Federally Endangered Quino Checkerspot Butterfly <ul style="list-style-type: none"> Critical Habitat Surveyed Area Excluded Area
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Attachment A: Quino Checkerspot Butterfly Surveyed Area Map 11 of 11

Proposed SWPL Loop-In	Proposed ECO Substation	Retention Pond	Primary Host Plant	Quino Checkerspot Butterfly (<i>Euphydryas editha quino</i>)
Proposed 138 kV Line	Boulevard Substation Rebuild	New Access Road	Dot-seed Plantain (<i>Plantago erecta</i>)	Federally Endangered
Proposed 12 kV Temporary Distribution Tap	Proposed 138 kV Line Milepost	Fly Yard	Owl's Clover (<i>Castilleja exserta</i> ssp. <i>exserta</i>)	Quino Checkerspot Butterfly Critical Habitat
445 Circuit Collocated with 138 kV Line	Proposed 138 kV Tower	Pull Site	Chinese Houses (<i>Collinsia concolor</i>)	Surveyed Area
Existing Transmission Line	Existing SWPL Structure	Temporary Work Area	Excluded Area	Excluded Area
Existing Access Road	Proposed SWPL Loop-In Structure	Staging Yard		

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Scale: 1:7,000

0 250 500 1,000 1,500 2,000 2,500 Feet

North arrow pointing North (N), South (S), East (E), West (W).

East County Substation Project

Attachment B

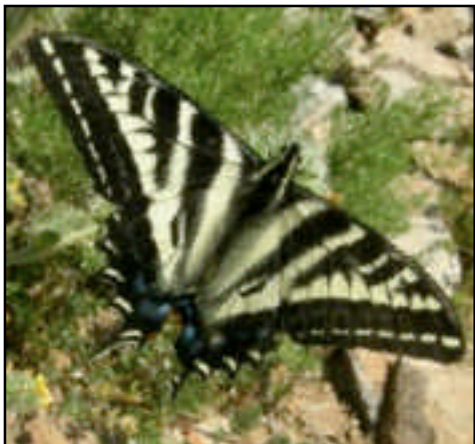
East County Substation Project Survey Area Butterfly Species Accounts



Species: Anise Swallowtail (*Papilio zelicaon*)
Larval Food Plants: Carrot family (Apiaceae) - esp. fennel
General Habitat: Lowlands, hills, and mountains
Notes: Anise swallowtail was observed during every survey. This species is a strong hilltopper and was present on hilltops and peaks throughout the survey area.



Species: Western Tiger Swallowtail (*Papilio rutulus*)
Larval Food Plants: Sycamores and willows
General Habitat: Riparian habitat, coastal and desert lowlands and mountains
Notes: Western tiger swallowtail was observed near riparian habitat at SP-49, and passing through the substation site.



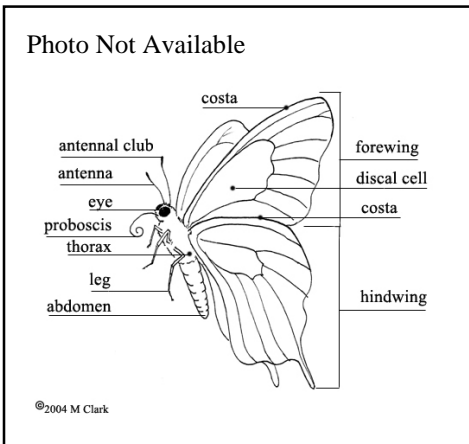
Species: Pale Swallowtail (*Papilio eurymedon*)
Larval Food Plants: Rhamnaceae or buckthorn family - *Rhamnus* and *Ceanothus* species
General Habitat: Chaparral
Notes: Pale swallowtail was present from the third survey on. This species is a strong hilltopper and was on peaks and hilltops throughout the survey area.



Species: Checkered White (*Pontia protodice*)
Larval Food Plants: Mustard Family (Brassicaceae) – esp. prince’s plume, also bladderpod
General Habitat: Coastal and desert lowlands
Notes: Checkered whites were common in the survey area. They were observed during every survey in all habitats, being most common near mustard plants.



Species: Becker’s White (*Pontia beckeri*)
Larval Food Plants: Mustard Family (Brassicaceae) – esp. peppergrass and tumble mustard
General Habitat: Deserts
Notes: Becker’s white was observed during the fourth and fifth surveys in all habitats throughout the survey area. This species was particularly common near patches of tumble mustard.



Species: Spring White (*Pontia sisymbrii*)
Larval Food Plants: Mustard Family (Brassicaceae) – esp. jewelflowers
General Habitat: Open area on hills and mountains
Notes: Spring white, an early butterfly, was observed early during the first, second, and third surveys. It was most common in chaparral and was also noted at the substation site.



Species: Pearly Marble (*Euchloe hyantis*)

Larval Food Plants: Mustard Family (Brassicaceae) – esp. jewelflowers

General Habitat: Open slopes of hills and mountains

Notes: Pearly marble was observed during all surveys except the sixth. This species is a hilltopper and was noted on top of outcrops, hills, and peaks. It was also observed at the base of Jade Peak in the substation site.

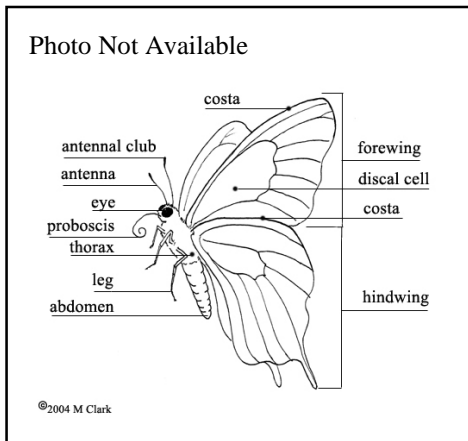


Species: Sara Orangetip (*Anthocharis sara*)

Larval Food Plants: Mustard Family (Brassicaceae) – esp. rock cress and tumble mustard

General Habitat: Canyons and washes in the foothills and desert

Notes: Sara orangetip was a common butterfly throughout the survey period and was observed during every survey. This species is a canyon cruiser instead of a hilltopper. It was observed in washes, canyons, and the substation site.



Species: Desert Orangetip (*Anthocharis cethura*)

Larval Food Plants: Mustard Family (Brassicaceae) – esp. tansy-mustard and tumble mustard

General Habitat: Desert hills and ridges

Notes: Desert orangetip is a hilltopping butterfly. This species was observed during the first 4 surveys on hilltops, peaks, and near mustard plants throughout the survey area.



Species: Orange Sulphur (*Colias eurytheme*)

Larval Food Plants: Pea Family (Fabaceae) – esp. alfalfa and deerweed

General Habitat: Lowlands, mountains, and deserts

Notes: Orange sulphur was observed in low numbers throughout the survey. They occur in a variety of habitats and were frequently observed flying through the survey area.



Species: Harford's Sulphur (*Colias alexandra harfordii*)

Larval Food Plants: Pea Family (Fabaceae) – esp. Jacumba milkvetch and related milkvetches

General Habitat: Coast and desert ranges and canyons

Notes: A few Harford's sulfurs were observed during every survey throughout the survey area.



Species: Dainty Sulphur (*Nathalis iole*)

Larval Food Plants: Sunflower Family (Asteraceae) - beggar-tick and bur marigold

General Habitat: Dry open areas on coastal and desert hillsides

Notes: This small butterfly was observed in only a few areas within chaparral habitat. These areas were open slopes or flats, most likely near its food plant.



Species: Great Purple Hairstreak (*Atlides halesus*)

Larval Food Plants: Mistletoe – esp. desert mistletoe (*Phoradendron californicum*)

General Habitat: Coast and desert hills where Mistletoe grows

Notes: Great purple hairstreak was uncommon onsite. This species is a strong hilltopper. It was observed on Jacumba and Jade Peaks and near mistletoe.

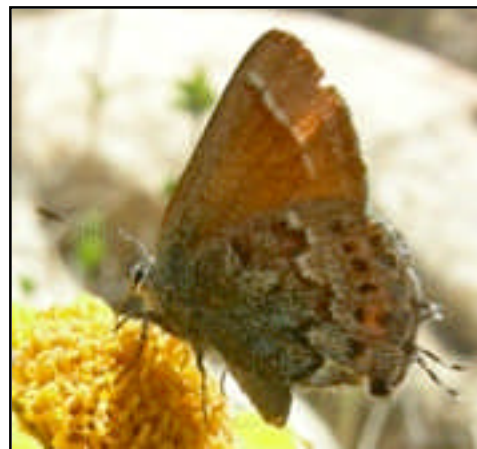


Species: Bramble Hairstreak (*Callophrys dumatorum*)

Larval Food Plants: Varied incl. deerweed, California buckwheat and mountain buckwheat

General Habitat: Coastal and desert chaparral

Notes: Bramble hairstreak was noted throughout the survey area. This species was observed in all habitats in low numbers. The iridescent green color of this butterfly is unique.



Species: Loki Juniper Hairstreak (*Callophrys gryneus loki*)

Larval Food Plants: California juniper

General Habitat: Juniper woodlands, chaparral and desert scrub with junipers

Notes: This species was observed in the juniper woodland at the substation site and the rocky canyons east of Jacumba.



Species: Brown Elfin (*Callophrys augustinus*)
Larval Food Plants: Dodder, a parasitic plant, *Ceanothus*, and others in various families
General Habitat: Chaparral and pine forests
Notes: Brown elfin was observed during the fourth survey. This species was uncommon in the survey area.



Species: Gray Hairstreak (*Strymon melinus*)
Larval Food Plants: Many plants, particularly mallow family (Malvaceae) such as desert mallow
General Habitat: Coastal lowlands and mountains, uncommon in the desert
Notes: One gray hairstreak was observed on a hilltop in chaparral west of Jacumba Peak. This species was uncommon.



Species: Western Pygmy-Blue (*Brephidium exile*)
Larval Food Plants: Amaranth Family (Amaranthaceae) - Saltbush and goosefoot plants
General Habitat: Coastal and desert lowlands
Notes: This tiny butterfly was observed throughout the survey period. The shadscale scrub provides numerous food plants for this species.



Species: Marine Blue (*Leptotes marina*)

Larval Food Plants: Fabaceae or Pea Family - pea and milkvetch

General Habitat: Coastal and desert lowlands

Notes: Marine blue is a late flying butterfly and appeared during the sixth survey. Two of the sensitive plants in the survey area, Jacumba milkvetch and pride-of-California, are potential food plants for this species.



Species: Reakirt's Blue (*Hemiargus isola*)

Larval Food Plants: Pea Family (Fabaceae) mesquite and other members

General Habitat: Inland deserts and lowlands – not a coastal species

Notes: Reakirt's blue was only observed during the fourth survey.



Species: Western Tailed-Blue (*Everes amyntula*)

Larval Food Plants: Jacumba milkvetch

General Habitat: Coastal lowlands to mountain meadows, not found in deserts

Notes: This butterfly was only noted in the large Jacumba milkvetch population near SP-49, and is at the eastern limit of the species' range. Western tailed-blues remain close to their food plants.



Species: Bernardino Blue (*Euphilotes battoides bernardino*)

Larval Food Plants: California buckwheat, inland buckwheat

General Habitat: Deserts and mountain ranges

Notes: This subspecies of the square-spotted blue appears at the end of the QCB flight season.

Bernardino blues were fairly common in all areas near their food plants during the fifth and sixth surveys, after QCB were no longer observed.



Species: Southern Blue (*Glaucopsyche lygdamus australis*)

Larval Food Plants: Deerweed

General Habitat: Coastal lowlands and canyon slopes

Notes: Southern blue was observed on slopes in the chamise-red shank chaparral near clusters of deerweed, but was seen rarely.



Species: Acmon Blue (*Plebejus acmon*)

Larval Food Plants: Deerweed, mountain and California buckwheats, milkvetch

General Habitat: Sea level to 10,000 feet, coast, desert, and mountains

Notes: Acmon blue was observed during all six surveys throughout the survey area. It was most common near its food plants, especially between Boulevard and Domingo Lake.

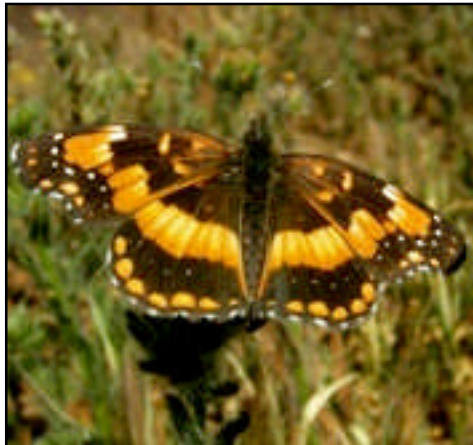


Species: Behr's Metalmark (*Apodemia mormo virgulti*)

Larval Food Plants: Inland California and mountain buckwheats

General Habitat: chaparral with buckwheats

Notes: Behr's metalmark was observed during all six surveys. The species was found in chaparral, mainly in the western portion of the survey area where larval food plants are common.



Species: California Patch (*Chlosyne californica*)

Larval Food Plants: Parish's Golden-Eyes

General Habitat: Canyons and washes in the Colorado and Mojave deserts

Notes: California Patch was observed on Jacumba Peak and in a canyon west of Old Highway 80.



Species: Gabb's Checkerspot (*Chlosyne gabbii*)

Larval Food Plants: Common sand-aster

General Habitat: Chaparral in foothills and canyons

Notes: Gabb's checkerspot was observed at one location near SP-49 where a large patch of common sand-aster grows to the east of the creek. Overall orange look to the wings help distinguish this butterfly from QCB.



Species: Chalcedon Checkerspot (*Euphydryas chalcedona chalcedona* and *E.c. hennei*)

Larval Food Plants: Yellow bush penstemon

General Habitat: Chaparral and coastal sage scrub

Notes: Chalcedon checkerspot was observed during all six surveys. It was most common in the rocky canyons and ridges where yellow bush penstemon occurs on and below Jacumba Peak. This butterfly is not as orange as the QCB and has white spots or bands on its abdomen.

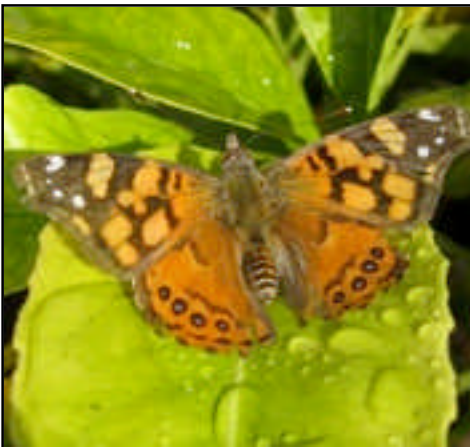


Species: Quino Checkerspot (*Euphydryas editha quino*)

Larval Food Plants: Dot-seed plantain

General Habitat: Coastal hills and mesas

Notes: QCB were observed on the first through fourth surveys on Jacumba Peak, north of Jacumba Peak, and directly west of the Peak. Dot-seed plantain is abundant on the plain north and east of Jacumba Peak and absent elsewhere. Generally, orange abdominal bands distinguish QCB from chalcedon checkerspots and distinct white pattern on the wings separates QCB from Gabb's checkerspot.

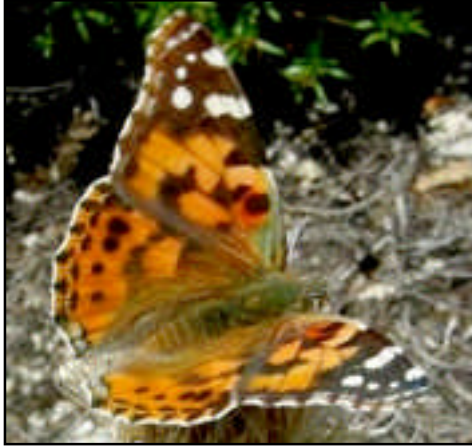


Species: West Coast Lady (*Vanessa annabella*)

Larval Food Plants: Desert mallows, nettles

General Habitat: A variety of habitats, less common in the desert

Notes: West coast lady was observed throughout the surveys in lower numbers than the painted lady.



Species: Painted Lady (*Vanessa cardui*)
Larval Food Plants: Desert mallows, nettles, thistles, cryptantha, fiddlenecks, and others
General Habitat: Deserts, coast, and mountains
Notes: A painted lady migration took place during the first weeks of the survey and this butterfly was numerous. Subsequently, numbers dropped dramatically. Painted lady was present in all habitats throughout the survey area.



Species: Common Buckeye (*Junonia coenia*)
Larval Food Plants: Dot-seed plantain, monkey flowers, snapdragons
General Habitat: Lowlands and hills, scarce in the desert
Notes: Common buckeyes were observed during five of the six surveys. This butterfly was most common near a creek with seep monkey flower (*Mimulus guttatus*) east of Domingo Lake.



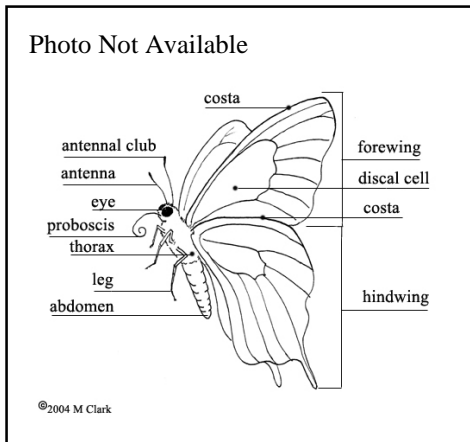
Species: Propertius Duskywing (*Erynnis propertius*)
Larval Food Plants: Coast live oak
General Habitat: Oak woodlands and chaparral with oak trees
Notes: Propertius duskywings were observed during the last five surveys. Oak trees are in the western portion of the survey area.



Species: Funereal Duskywing (*Erynnis funeralis*)
Larval Food Plants: Pea Family (Fabaceae) – esp. deerweed
General Habitat: Lowlands to mountains and deserts, prefers dry areas
Notes: Funereal duskywing was the most common duskywing onsite, with observations during all 6 surveys. This is the most common duskywing in Southern California.

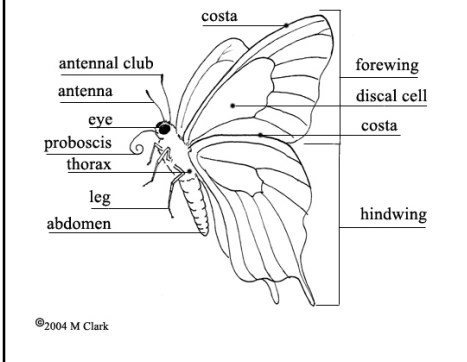


Species: Sleepy Duskywing (*Erynnis brizo*)
Larval Food Plants: Oaks
General Habitat: Chaparral with oaks
Notes: Sleepy duskywing was observed during the first survey and the final two surveys. This butterfly was uncommon, but was observed occasionally in chaparral habitat.



Species: Afranius Duskywing (*Erynnis afranius*)
Larval Food Plants: Pea Family (Fabaceae) - *Lotus* and other plants in this family
General Habitat: Mountains and hills, stream edges
Notes: Afranius duskywing was observed during the sixth survey in chaparral habitat. The males cruise canyons looking for females.

Photo Not Available



Species: Northern White-Skipper (*Heliopetes ericetorum*)

Larval Food Plants: Mallow Family (Malvaceae)
- esp. Desert Mallows and Chaparral Mallow

General Habitat: Chaparral and dry canyons

Notes: Northern white-skipper was observed in chaparral west of Hwy 80 west of Jacumba during the first survey.



Species: Sandhill Skipper (*Polites sabuleti*)

Larval Food Plants: Grass Family (Poaceae)
Saltgrass, Bermuda Grass, others

General Habitat: Dry grasslands in sandy areas

Notes: The sandhill skipper, a late flying butterfly, was observed during the sixth survey near Domingo Lake in the open grasses.

Attachment C

East County Substation Project Survey Area Plant Species List

<u>Family</u>	<u>Scientific Name</u>	<u>Common Name</u>
Adoxaceae	<i>Sambucus mexicana</i>	Blue Elderberry
Agavaceae	<i>Agave deserti</i> var. <i>deserti</i>	Desert Agave
	<i>Hesperoyucca whipplei</i>	Chaparral Candle
	<i>Yucca shidigera</i>	Mojave Yucca
Alliaceae	<i>Allium fimbriatum</i> var. <i>f</i>	Desert Onion
Amaranthaceae	<i>Atriplex canescens</i> var. <i>c</i>	Shadscale, Four-Wing Saltbush
	<i>Chenopodium californicum</i>	California Goosefoot
Anacardiaceae	<i>Rhus ovata</i>	Sugar Bush
	<i>Rhus trilobata</i>	Skunkbrush
Apiaceae	<i>Bowlesia incana</i>	American Bowlesia
	<i>Lomatium mohavense</i>	Mohave Lomatium
	<i>Tauschia arguta</i>	Southern Tauschia
	<i>Yabea microcarpa</i>	California Hedge-Parsley
Apocynaceae	<i>Asclepias californica</i>	California Milkweed
Asteraceae	<i>Acourtia microcephala</i>	Sacapellote
	<i>Adenophyllum porophylloides</i>	San Felipe Dyssodia
	<i>Ambrosia acanthicarpa</i>	Annual Bur-Sage
	<i>Ambrosia confertiflora</i>	Weak-Leaf Bur-Sage
	<i>Ambrosia psilostachya</i>	Western Ragweed
	<i>Ambrosia salsola</i> var. <i>s</i>	Cheesebush, Burrobrush
	<i>Anisocoma acaulis</i>	Scale-Bud
	<i>Artemisia dracuncululus</i>	Tarragon
	<i>Artemisia tridentata</i>	Great Basin Sagebrush
	<i>Bahiopsis parishii</i>	Parish's Golden-Eyes
	<i>Baccharis brachyphylla</i>	Short-Leaf Baccharis
	<i>Baccharis sergiloides</i>	Desert Baccharis
	<i>Brickellia desertorum</i>	Desert Brickellia
	<i>Chaenactis fremontii</i>	Desert Pincushion
	<i>Chaenactis glabriuscula</i> var. <i>g</i>	Yellow Pincushion
	<i>Cirsium occidentale</i> var. <i>californicum</i>	California Thistle
<i>Corethrogyne filaginifolia</i> var. <i>f</i>	Common Sand-Aster	
<i>Coreopsis californica</i> var. <i>c</i>	California Coreopsis	

<u>Family</u>	<u>Scientific Name</u>	<u>Common Name</u>
	<i>Encelia actoni</i>	Acton's Encelia
	<i>Encelia farinosa</i>	Brittlebush
	<i>Ericameria brachylepis</i>	Boundary Goldenbush
	<i>Ericameria cuneata</i> var. <i>spathulata</i>	Wedge-leaf Goldenbush
	<i>Ericameria linearifolia</i>	Interior Goldenbush
	<i>Eriophyllum confertiflorum</i> var. <i>c</i>	Long-Stem Golden- Yarrow
	<i>Eriophyllum wallacei</i>	Wallace's Woolly Daisy
	<i>Filago</i> sp.	Filago
	<i>Geraea canescens</i>	Desert Sunflower
	<i>Geraea viscida</i>	Sticky Geraea
	<i>Isocoma acradenia</i> var. <i>eremophila</i>	Desert Alkali Goldenbush
	<i>Lasthenia gracilis</i>	Common Goldfields
	<i>Layia glandulosa</i>	White Layia
	<i>Layia platyglossa</i>	Tidy Tips
	<i>Malacothrix glabrata</i>	Desert Dandelion
	<i>Malacothrix stebbinsii</i>	Stebbins's Malacothrix
	<i>Porophyllum gracile</i>	Odora
	<i>Pseudognaphalium canescens</i>	Everlasting Cudweed
	<i>Rafinesquia californica</i>	California Chicory
	<i>Senecio californicus</i>	California Butterweed
	<i>Senecio vulgaris</i>	Common Groundsel
	<i>Stephanomeria pauciflora</i>	Few-Flowered Wreathplant
	<i>Stylocline gnaphaloides</i>	Everlasting Nest- Straw
	<i>Tetradymia canescens</i>	Spineless Horsebrush
	<i>Uropappus lindleyi</i>	Silver Puffs
Bignoniaceae	<i>Chilopsis linearis</i>	Desert Willow
Boraginaceae	<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Rancher's Fiddleneck
	<i>Cryptantha decepiens</i>	Gravel Cryptantha
	<i>Cryptantha intermedia</i>	Nievitas Cryptantha
	<i>Cryptantha evadensis</i>	Nevada Cryptantha
	<i>Cryptantha pterocarya</i> var. <i>p</i>	Wing-Nut Cryptantha
	<i>Harpagonella palmeri</i>	Palmer's Grappling- hook
	<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	Slender Pectocarya
	<i>Pectocarya penicillata</i>	Winged Pectocarya
	<i>Pectocarya setosa</i>	Bristly Pectocarya

Family	Scientific Name	Common Name
	<i>Plagiobothrys arizonicus</i>	Arizona Popcornflower
	<i>Plagiobothrys tenellus</i>	Slender Popcornflower
Brassicaceae	<i>Brassica tournefortii</i>	Sahara Mustard
	<i>Caulanthus heterophyllus</i> var. <i>h</i>	San Diego Jewelflower
	<i>Descurainia pinnata</i> ssp. <i>halictorum</i>	Alkali Western Tansy-Mustard
	<i>Guillenia lasiophylla</i>	California Mustard
	<i>Lepidium</i> sp.	Peppergrass
	<i>Sisymbrium altissimum</i>	Tumble Mustard
	<i>Sisymbrium irio</i>	London Rocket
	<i>Sisymbrium orientale</i>	Hare's-Ear Cabbage
	<i>Thysanocarpus curvipes</i>	Lacepod, Fringedop
Cactaceae	<i>Cylindropuntia californica</i> var. <i>parkeri</i>	Cane Cholla
	<i>Cylindropuntia ganderi</i> var. <i>g</i>	Gander's Cholla
	<i>Echinocereus engelmannii</i>	Engelmann's Hedgehog Cactus
	<i>Ferocactus cylindraceus</i>	California Barrel Cactus
	<i>Mammillaria dioica</i>	Fishhook Cactus
	<i>Opuntia chlorotica</i>	Pancake Cactus
	<i>Opuntia phaeacantha</i>	Desert Prickly Pear
Cucurbitaceae	<i>Marah macrocarpus</i> var. <i>m</i>	Manroot, Wild- Cucumber
Cupressaceae	<i>Juniperus californica</i>	California Juniper
Ephedraceae	<i>Ephedra californica</i>	California Ephedra
	<i>Ephedra nevadensis</i>	Nevada Ephedra
	<i>Ephedra viridis</i>	Green Ephedra
Ericaceae	<i>Arctostaphylos glauca</i>	Big-Berry Manzanita
	<i>Arctostaphylos pungens</i>	Point-Leaf Manzanita
Euphorbiaceae	<i>Chamaesyce albomarginata</i>	White-Margin Sandmat
	<i>Chamaesyce melanadenia</i>	Rattlesnake Spurge
	<i>Stillingia linearifolia</i>	Linear-Leaf Stillingia
Fabaceae	<i>Acacia greggii</i>	Catclaw Acacia
	<i>Astragalus didymocarpus</i> var. <i>dispermus</i>	Desert Dwarf Locoweed
	<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba Milkvetch
	<i>Astragalus palmeri</i>	Palmer's Locoweed
	<i>Lathyrus splendens</i>	Pride-of-California, Campo Pea
	<i>Lotus argophyllus</i> var. <i>a</i>	Silver-Leaf Lotus

Family	Scientific Name	Common Name
	<i>Lotus scoparius</i> var. <i>brevialatus</i>	Short-Wing Deerweed
	<i>Lotus scoparius</i> var. <i>s</i>	Deerweed
	<i>Lotus strigosus</i>	Strigose Lotus
	<i>Lupinus andersonii</i>	Anderson's Lupine
	<i>Lupinus bicolor</i>	Miniature Lupine
	<i>Lupinus concinnus</i>	Bajada Lupine
	<i>Lupinus truncatus</i>	Collar Lupine
	<i>Melilotus indicus</i>	Indian Sweetclover
	<i>Pedimelum californicum</i>	Indian Breadroot
	<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey Mesquite
	<i>Trifolium willdenovii</i>	Valley Clover
Fagaceae	<i>Quercus x acutidens</i>	Torrey's Scrub Oak
	<i>Quercus agrifolia</i> var. <i>oxydenia</i>	Interior Coast Live Oak
Garryaceae	<i>Garrya veatchii</i>	Canyon Silk Tassel
Geraniaceae	<i>Erodium cicutarium</i>	Red-Stem Filaree/Storksbill
Grossulariaceae	<i>Ribes quercetorum</i>	Oak Gooseberry
Hydrophyllaceae	<i>Emmenanathe penduliflora</i> var. <i>p</i>	Whispering Bells
	<i>Eriodictyon trichocalyx</i> var. <i>lanatum</i>	Wild-Heliotrope
	<i>Eucrypta chrysanthemifolia</i> var. <i>c</i>	Common Eucrypta
	<i>Phacelia cicutaria</i> var. <i>hispida</i>	Caterpillar Phacelia
	<i>Phacelia distans</i>	Wild-Heliotrope
	<i>Phacelia minor</i> x <i>P. parryi</i>	None Listed
	<i>Phacelia parryi</i>	Parry's Phacelia
	<i>Pholistoma membranaceum</i>	White Fiesta Flower
Lamiaceae	<i>Salvia apiana</i>	White Sage
	<i>Salvia carduacea</i>	Thistle Sage
	<i>Salvia columbariae</i>	Chia
Liliaceae	<i>Calochortus splendens</i>	Splendid Mariposa Lily
Loasaceae	<i>Mentzelia montana</i>	Montane Mentzelia
Malvaceae	<i>Sphaeralcea ambigua</i> var. <i>rosacea</i>	Rose Desert/Mallow
	<i>Sphaeralcea ambigua</i> var. <i>a</i>	Desert/Apricot Mallow
Nyctaginaceae	<i>Mirabilis laevis</i> var. <i>villosa</i>	Hairy Wishbone
	<i>Mirabilis laevis</i> var. <i>crassifolia</i>	Coastal Wishbone
Oleaceae	<i>Menodora scabra</i> var. <i>glabrescens</i>	Rough Menodora
Onagraceae	<i>Camissonia californica</i>	False-Mustard
	<i>Camissonia strigulosa</i>	Sandysoil Sun Cup
	<i>Epilobium canum</i>	California Fuchsia
	<i>Oenothera californica</i> ssp. <i>c</i>	California Evening- Primrose
Orobanchaceae	<i>Castilleja exserta</i> ssp. <i>e</i>	Purple Owl's-Clover

Family	Scientific Name	Common Name
	<i>Castilleja</i> sp.	Indian Paintbrush
	<i>Orobancha californica</i> ssp. <i>feudgei</i>	Sagebrush Broom-Rape
Paeoniaceae	<i>Paeonia californica</i>	California Peony
Papaveraceae	<i>Argemone munita</i>	Prickly Poppy
	<i>Eschscholzia californica</i>	California Poppy
	<i>Platystemon californicus</i>	Cream Cups
Phrymaceae	<i>Mimulus aridus</i>	Jacumba Monkey Flower
	<i>Mimulus guttatus</i>	Seep Monkey Flower
	<i>Mimulus pilosus</i>	Downy Monkey Flower
Pinaceae	<i>Pinus quadrifolia</i>	Parry Pinyon
Plantaginaceae	<i>Antirrhinum nuttallianum</i> ssp. <i>n</i>	Nuttall's Snapdragon
	<i>Collinsia concolor</i>	So. Chinese Houses
	<i>Keckiella antirrhinoides</i> var. <i>a</i>	Yellow Bush Penstemon
	<i>Keckiella ternata</i> var. <i>t</i>	Summer Bush Penstemon
	<i>Penstemon centranthifolius</i>	Scarlet Bugler
	<i>Penstemon clevelandii</i> var. <i>c</i>	Cleveland's Beardtongue
	<i>Penstemon spectabilis</i> var. <i>s</i>	Showy Penstemon
	<i>Plantago erecta</i>	Dot-seed Plantain
Poaceae	<i>Achnatherum coronatum</i>	Giant Stipa
	<i>Achnatherum speciosum</i>	Desert Needlegrass
	<i>Avena barbata</i>	Slender Wild Oat
	<i>Avena fatua</i>	Wild Oat
	<i>Bromus diandrus</i>	Ripgut Grass
	<i>Bromus rubens</i>	Red Brome
	<i>Bromus tectorum</i>	Cheat Grass
	<i>Hordeum murinum</i> ssp. <i>glaucum</i>	Glaucous Barley
	<i>Melica frutescens</i>	Tall Melic
	<i>Melica imperfecta</i>	Coast Range Melic
	<i>Poa secunda</i> ssp. <i>s</i>	One-Sided Bluegrass
	<i>Schismus barbatus</i>	Arabian Schismus
	<i>Vulpia microstachys</i> var. <i>pauciflora</i>	Pacific Fescue
	<i>Vulpia octoflora</i> var. <i>hirtella</i>	Tufted Fescue
Polemoniaceae	<i>Eriastrum densifolium</i> var. <i>elongatum</i>	Chaparral Woolly-Star
	<i>Eriastrum eremicum</i>	Desert Woolly-Star
	<i>Eriastrum sapphirinum</i>	Sapphire Eriastrum
	<i>Gilia diegensis</i>	San Diego Gilia
	<i>Ipomopsis tenuifolia</i>	Scarlet Gilia
	<i>Leptosiphon lemmonii</i>	Lemmon's Linanthus
	<i>Linanthus bellus</i>	Desert Beauty

<u>Family</u>	<u>Scientific Name</u>	<u>Common Name</u>
Polygonaceae	<i>Saltugilia australis</i>	Southern Gilia
	<i>Chorizanthe brevicornu</i> var. <i>b</i>	Brittle Spineflower
	<i>Chorizanthe fimbriata</i> var. <i>f</i>	Fringed Spineflower
	<i>Eriogonum elongatum</i> var. <i>e</i>	Tall Buckwheat
	<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	Inland California Buckwheat
	<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	Mt. Buckwheat
	<i>Eriogonum gracile</i> var. <i>g</i>	Slender Buckwheat
	<i>Eriogonum wrightii</i> var. <i>membranaceum</i>	Foothill Buckwheat
	<i>Loeseliastrum schottii</i>	Schott's Calico
	<i>Pterostegia drymarioides</i>	Granny's Hairnet, G. C. P.
Portulacaceae	<i>Sidothea trilobata</i>	Three-Lobe Starry Puncturebract
	<i>Calandrinia ciliata</i>	Red Maids
Calyptridium	<i>Calyptridium monandrum</i>	Common
	<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	Utah Miner's-Lettuce
Pteridaceae	<i>Claytonia perfoliata</i> ssp. <i>p</i>	Miner's-Lettuce
	<i>Notholaena californica</i>	California Cloak Fern
Brake	<i>Pellaea mucronata</i> ssp. <i>mucronata</i>	Bird's Foot Cliff-
	<i>Pentagramma triangularis</i> ssp. <i>rebmanii</i>	Rebman's Silverback Fern
Ranunculaceae	<i>Clematis pauciflora</i>	Ropevine Clematis
Rhamnaceae	<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Oceanblue Larkspur
	<i>Ceanothus greggii</i> var. <i>perplexans</i>	Cup-Leaf-Lilac
Rosaceae	<i>Ceanothus leucodermis</i>	Chaparral Whitethorn
	<i>Rhamnus ilicifolia</i>	Holly-Leaf Redberry
	<i>Ziziphus parryi</i> var. <i>parryi</i>	Lotebush
	<i>Adenostoma fasciculatum</i>	Chamise
	<i>Adenostoma sparsifolium</i>	Red Shank
	<i>Cercocarpus betuloides</i>	Mountain Mahogany
Rubiaceae	<i>Prunus fremontii</i>	Desert Apricot
	<i>Prunus ilicifolia</i>	Holly-Leaf Cherry
	<i>Purshia tridentata</i> var. <i>tridentata</i>	Antelope Bitterbrush
	<i>Galium andrewsii</i> ssp. <i>andrewsii</i>	Phlox-Leaf Bedstraw
Rutaceae	<i>Galium aparine</i>	Common Bedstraw
Rutaceae	<i>Thamnosma montana</i>	Turpentine-Broom
Salicaceae	<i>Salix laevigata</i>	Red Willow
Simmondsiaceae	<i>Simmondsia chinensis</i>	Jojoba
Solanaceae	<i>Datura wrightii</i>	W. Jimson Weed
	<i>Lycium andersonii</i>	Waterjacket
	<i>Nicotiana obtusifolia</i>	Desert Tobacco

<u>Family</u>	<u>Scientific Name</u>	<u>Common Name</u>
	<i>Physalis crassifolia</i>	Greene's Ground-Cherry
	<i>Solanum umbelliferum</i>	Blue Witch
	<i>Solanum xanti</i>	Chap. Nightshade
Tamaricaceae	<i>Tamarix ramosissima</i>	Tamarisk, Salt Cedar
Themidaceae	<i>Dichelostemma capitatum</i> ssp. <i>c</i>	Blue Dicks
	<i>Dichelostemma capitatum</i> ssp. <i>pauciflorum</i>	Few-Flower Blue Dicks
Urticaceae	<i>Parietaria hespera</i> var. <i>h</i>	Western Pellitory
Viscaceae	<i>Phoradendron californicum</i>	Desert Mistletoe
Zygophyllaceae	<i>Larrea tridentata</i>	Creosote

Attachment D

QCB Survey Field Notes

Insignia Environmental
3/18/09 / SWPL Quino Survey #1

picked up Margie 0830; picked up
Cindy 0850

	Time	Temp	Wind	sky
Start	1030	72°	0-2	0%
Stop	1800	76°	1-3	20%

Starting survey at Jacumba Peak
& reference site area

HAPA 2 - Harpagornis
palmeri - scattered
but common 100's

Animals

Sara's O-Tip
Common White
Amise Swallow
QCB
Chalcedon Check
Pomp Hairstrick

1 QCB found north of large Pt. ere patch
QCB was cruising low over a large
area. Photos taken & GPS point

3/19/09

Insignia

SWPL QCB Survey

- picked up Cindy Jones 0800

Start	Time	Temp	wind	sky
Sta-t	0910	67	0-1	Thin cl ^{ds} 10%
	1530	85	2-10	10% thin
Stop	1700	85	1-10	20% thin

started at Jacumba Pk to check conditions

- Now starting walking survey
immed. east of Ag field going East- Saltbush scrub east of Ag field not QCB suitable
Dist w/ moderate to dense Atr Can + denseEuc Cic. Occasional Las Gra. Not good rare plant
habitat etnor. Area prev. grazed cattle pies present- Lg wash near Ag field supts scattered Pro Gk, Chi Lg,
Ambrosia salsola, Atr Can, Tet CanLimited to no QCB resources; no host plants few nectar
source

East of Ag field

Animals

Com White, Sara's Otip	Chal Check	Jacumba Peak
Pn Td Ldy, Chal Check, Fun Disk	Sara's Otip	
Wh Cr Spa, Gr Purple Hair	Perp Hair	
Sulphur sp., Loggerhd Shrike	Com White	Fun Disk
	Killdeer doing broken	wing trick

Hafa - various locales east of Ag field

Gervis - 4 indiv. (prob more) likely; just outside alignmt

Nectar Sources - Las Gra, Camissonia, Vig Par, Pha Dis

Pecto, Crypt, Lye And

Other plants - Mam Tet, Pur Tri, Adeno Par, Dwl Ariz

3/23/09

Insignia

SWPL QCB Survey

- picked up Cindy her house 0930

Start	Time	Temp	wind	SKY
	1030	52	3-10	0%
Stop	1530	66	3-10	0%

Plants

Garrya ventchii	
Arc Pun	Pen Cent
Ade spars	Pa Cal
Cer Bet	Euc Thick
Rhu Ora	
Pavill	
Ribes Quer	
Cea Gre Perp	
Ger Can	

Animals

W Coast Ldy (II)
Sara's Otip (III)
Behr's Mt Ink (III)
Com White
Harford's Sulphur
Fun Dusky
W Pigmy Blue
Pearly Marble (III)
Perp Hairstrk (III)

"GERA" - ~ 40 individuals in deep granite
along road (westside) near SP-8
Tule Jim

"GERA 1" - ~ 3 indiv. along road (east side)
near WD-4

"GERA 2" - ~ 2 indiv. westside of road

"GERA 2" - ~ 11 indiv westside of road
at WD-5

"GERA 4" - 1 indiv on westside of Tule Jim

"GERA 5" - ~ 50 indiv. on westside just north of SP-9

'Gera 6' - ^{100s} Many scattered indiv. along
west side of Tule Jim just north
of WD-3

'Gera 7' - Extension of popul. at
'Gera 6'

'GERA 8' - Extension of Gera 6 & 7
Individuals immed adj SP-7

'Gera 9 & 10' - Extension of Gera 6 (east of rd)

'Gera 11 & 12' - " "

'Gera 13' " " (25 ind in
small patch)

Animals

Horned Liz
Gopher Snake
Scel Orcuttii
Acmon Blue(!!!)

CalCil LotArg
Sphaeralcea AmbPsi
EriWriMem MuhRig
AmbAcanth EpilCan
Layia platy ArtDrac
Rhus tril

'GERA 14' - at least 7 indiv. in old road.

3/25/09

Insignia
Jacumba QCB #2

- picked up Margie & Cindy
Starting at ^{base of} Jacumba Pk and walking west

	Time	Temp	wind	sky cover
Start	0945	62°	0-2	0%
Stop	1500	78°	3-8	0%
Stop	1645	72°	4-12	0%

Plants

Ech Eng AtrCan MamDio
Jun Cal Sch Bar Opu Chl
Cyl Gan Las Gra Sal Coj
Dic Cap Lar Tri
Guillas Mir lae
Bro Rubs Chen Cal
Evo Lic Pros Gan
Har Pal Aca Gre
Pec Lin For Vig Par
Pec Rec Lyc And
Sim Chi End Fas PO
Lup Con Lot Str

Animals

w. Coldy Scorpion
Pntd Ldy (100)
Com White (few)
Fun Dusk (few)
Sulphur sp (1)
Chal Check (250)
Pearly Marble (~8)
Anise Swallow (4)
QCB (4)
Desert O-tip (1)
Acmon Blue (1)
Sara's O-tip (5)

Critical Habitat East of Jacumba Peak

- Some good habitat for several hundred feet & then turns to disturbed
Evo Lic dominated flat area
There is along stretch that doesn't look suitable.

- Continuing east the area approaches a hilltop that looks like Jade Mtn habitat - Dark rocky, thin soils w/ Evo Lic, Cyl Gan, Yuc Schid, Aca Gre Bro Rubs, Atr Can, Ech Eng. Area still not highly suitable as you approach the wetland & Ag field.

Jacumba Peak (lunch break)

Pearly Marble, Anise Swallow
Common White, Finereal Dusky
Acmon Blue, Sara's O-Tip, Desert O-Tip
Chalcedon Check (abundant)

Jacumba Reference Site & Crit Hab

- Now surveying ref site & then heading west towards HWY 80
Plantago erecta is just starting to send up flowering stalk. Many I looked at are at the base of the plant still.

Cerro Wall Lom Moh
Plant Erecta Evas Eavm
Hapag - very abundant at ref site

Anise Swal
QCB (4)

1 'QCB6' - 3-4 QCB found in area where previously observe. One indiv. was worn w/ break in HV, ~~to~~ Mangle & I observed them interacting in a small area - flying & landing. Photos were taken. ~~So~~ At least one indiv. appeared worn while the others appeared fresher.

Insignia
3/29/09 / SDGE Jacumba-Boulevard
QCB Survey

	Time	Temp	Wind	Sky Cover
Start	0915	65	2-10 (gusts to 12)	30%
	1200	68	4-12 >gusts	25%
Stop	1515	72°	8-15 >gusts	10%

Starting at Boulevard Substation & heading south towards existing 500KV line

Boulevard Sub - highly disturbed & developed area w/ some orn tree plantings & sparse veg nearby. No QCB potential here.

Animals
Pntd Ldy
Sara's Otter

Boil
Substation to SP 6-ish

Mix of Red-shank Chap & Mixed Chap too dense to be suitable for QCB
Ade Spar, Ade Fas, Leagre Per, Arc Lung, Que (Acu)
Rhw Ora, Cor Bet

Campy Pea (*Lith splendens*) - present sporadically btwn SP-4-7, and probably more areas in this portion of alignment.

[SP-7] - This area is more open than SP 1-6. Low-moderate quality w/ Las Gra very abundant in openings. Cyl gan, Cer Bet Prv III
Rhu Ora

Sara's OTip Behr's Mtlmk (THH)
Fun Dust Pntd Ldy (THH)
Felder's OTip (Harford's) Sulphur
Pearly Marble

Proposed Flyyard btwn SP35-36

~~This flat area has been disturbed/grazed. Supports dense Ericic, Las Gra
Some Amb Aca. Adj scrub is dense Red Shank Chap & nearby patch of Art Tri. Not QCB suitable~~

Flat area supports dense Great Basin Scrub w/ small openings of Ericic & Las Gra. Previous statement above is where Jeff Coward is suggesting they should place flyyard. The GBS is unmed. east of larger open areas

Acmon Blue
Common White

Black Throated Sparrow

[200] Now at Hwy 80 nr Ag field & heading east. Butterflies still flying, but gusty conditions

Pntd Ldy (THH)

This area open & I suitable, but lots of Ericic & no host plants Las Gra common too. Granite topsoil w/ finer grain underneath.

'GERA 17' Geraeanan
at least 6 on alluvial bench above stream
that is 3-4' wide

Desert Banded Gecko
(see photos) under large cover board
GPS → 'Gecko'
It vocalized w/ high pitch & weaker noise not loud.

Chalcedon Check (THH) Very active in large rock area east of ^{SP} 97 nr ^{SP} 98

Malacothrix glabrata

[515] - Conditions too windy w/ gusts exceeding 20 mph - Survey ceased.

3/30/09

Insignia
Jacumba PCB
Surrey

- picked up Cindy 0800 at her house
- starting at area btwn SP 98 & Hwy 80 to the east. I covered area from Ag field to SP 98 yesterday

	Time	Temp	WIND	sky cover
Start	0950	60	2-10	0%
Stop	1130	61	1-8	0%
Stop	1400	63	2-10	0%

Plants

Pur Trid
 Camis Cal
 Rat New
 Pel Muc
 Sim Chi
 Ero Cic
 Adeno Por
 Still Lin
 Pte Dry
 Emm Pen
 Sis Iri
 Aris Aca

Me/Fru
 URO Lin
 Lot Sco Bre
 Sphaeralea
 Ero Fas Pol
 Ans Men
 Aca Grse
 Mirlae
 Astragalus?
 Ipo Tenuifolia
 Cal Mon
 Chaenactis
 Poro grac

Animals

Pintd Ldy
 Uta Stan
 Chal Check
 Rowren
 Bl Thr Sparrow
 Ca Thrush
 Ca Towhee
 Sava's O-tip

GPS

'1P0'

Ipomopsis tenuifolia
 - At least 5 indiv. in flower
 in boundary protected area near
 58160

Chalcedon often seen recharging
 on Anis Menziesii. Keckella
 antirrhinoides common here in
large boulder areas among the rocks

3/30/09

Insignia
Jacumba QCB 3
Substations

	Time	Temp	Wind	SKY
Start	1630	62	1-6	0%
Stop	1730	64	0-5	0%

" GPS
HAPA 13 + HAPA 14' - Large
population of Har Pal - 1000's
on lower slope of Jade Mtn

Opu Chlr
Chor brevicornu
Agades

Animals
Rtd Ldy (111)
HofI

Unique Agave / Cactus
habitat on lower slope of
Jade Mtn. Volcanic derived
red-brown soil w/ lots of
small rocks in btwn
large linear outcroppings

3/31/09

Insignia SWFL

Jacumba QCB 3

Ag field to Hwy 80 heading
west

	Time	Temp	wind	sky
Start	0930	69	1-3	0%
Stop	1430	70	2-10	0%
Stop	1710	68	2-9	0%

Starting at slope that leads
down to Ag field.

Plants
YucSch

Animals

Pntd Ldy (iii)
Chal Check (iii)
Com White (iii)
Orange (Alfalfa) Sulphur
(above ag field on me)
Sara's O-tip
Behr's Wtlink
Pearly Marble
Fun Dusky
Scott's Oriole (Nest)
Rd T Hawk
Perp Hair
Ca Qu
Anise Swallow

QCB - I observed in
same spot on alignment
w/in reference site
observed only briefly
Moved south after viewing

'SC OR Nest' - Scott's Oriole nest in
Yucca schid. near road to Jacumba
Peak.

Plantago at ref site is still putting up
fls - lvs in good condition still green

Jacumba Peak Butterflies

Grt Purple Hairstreak (ii) Pntd Ldy

CA Patch (ii)

★ QCB (i)

Chal Check (iii)

Fun Dusk (iii)

Pale Swallow

Anise Swallow (ii)

Check White (iii)

Pearly Marble

GPS

'QCB 7' - 1 likely ♂ QCB hilltopping
on Jacumba PK. This indiv. stayed
on hilltop for long time allowing us
to observe carefully. This QCB is
starting to show signs of wear -
postmedian band is fading and
appearing whitish. Abdomen bands
very obvious orange - no white on
abdomen. Aggressive chasing Anise
& Fun Dusk etc.

1430 - Now off peak walking
 Habitat ~~are~~ area btwn Hwy 80
 & peak. Parked in middle &
 walking east back towards
 peak

Eri Fas Fas - coastal buckwheat in
 some areas here.

♀ Felder's (Desert) O-Tip
 Southern Blue

'GV13' - *Geraea viscida* - ~8 indiv
 in granite near old obscure road/trail

'HOL14' - Horned Lizard juvenile

Perp Hair
 Sara's O-Tip
 Pntd Ldy
 Check White
 Behr's Mtlmk

4/1/09 / Insignia
 Jacumba QCB 3
 Hwy 80 to Hwy 80

- picked up Margie 0745; picked up Cindy 0800

	Time	Temp	wind	sky cover
Start	0930	60	1-5	5% thin
Stop	1500	72°	1-5	5% thin
Stop	1700	73°	0-3	5% thin

- starting btwn SP 93 & 94
 heading west first towards Hwy 80

Plants	Animals
Mala Glab	SD Banded Gecko ^{GPS} Gecko
Sal Col	Pntd Ldy (THH) III
Chen Cal	Com White III
Mim Aur Aridus	Chat Check (THH) III
Notholaena calif.	Cactus wren orange Sulphur
(Helianthemum scoparium)	Desert O-Tip
	B-G Gnatcatcher (white open)
	Pearly marble (white T1)

500

Now at N-South alignment

Eoch Cal
 (Eriod Trich Lanatum)
 Behr's Mtlmk
 Pearly Marble
 Perp Hair
 Orange Sulphur

Plants

Rha III

Lup Tron

Ribes Quer

Gal Andrewsii

Pen Cent

Animals

RSitawk

Oak Titmouse

Fun Dusky

1600

Now at South end of N-S Segment
heading south to Flyyard

Ambsi

Cea Greg Perp

Rhu Tri

Aco Mic

Las Gra (abundant flds)

Lay Platy

Behr's mt/mk (M11)

Sara's OTip (31)

Acmon Blue (21)

Pearly Marble (3)

Mothra

Sunday

4/5/09

Insignia swFL

Jacumba - Boulevard

QCB

- B.Lo arrived my house 0745
- Picked up Eric LaCoste 0830 at Los Coches.

	Time	Temp	wind	spread
Start	1015	63°	5-12	0%
Stop	1430	63°	5-17	0%
Stop	1700		2-10	0%

Starting w of Hwy 80 east of Domingo Lake

Animals

Acan Blue (1)

Pac Chorus Frog

Pink Ldy

- Driving unsuitable areas + jugging out to check small spots
- Now in low area near Riparian Woodland an CLOW where old little farm enclosure is. - many butterflies present

Corethrogyne
is host plant which
is abundant near
this riparian
area.

Gabb's Check (1)

Chal Check (11)

Harford's Sulphur (1)

Saras O-Tip (1)

Tailed Blue (1)

Perp Hair (1)

Proteropus Duskywing (1)

4/6/09

Insidious SWP

Boulevard - Jacumba PCB
#4Starting at Hwy 80 east of Ag
field & walking east along T-line

	time	temp	wind	sky
Start	1130	68	1-6E	0% 0%
Stop	1420	71	1-6E	0%
Stop	1700	74	1-6E	0%

- Excellent survey conditions

Plants	Animals
Sal Col (Fl)	Chal Check (III)
Sphaeralcea (Fl)	Pnt'd Ldy (III)
Mal Gls (Fl)	Phainopepla
Leo Gra (Fl)	W. Whiptl
Acabre	Aconit Blue (1)
lyc Anl	Sara's OTip (1)
Eric Lin	Cactus Wren
Eye Chr (Fl shrub (than cactus))	Common White (1)
Ernog Elong	Junco Horstls (1 (lots))
Ernic	Scel Orcuttii
Ernic (Vign)	Pearly Marbled 'California'
Ernic Fas Pol	Rock Wren
Lot Sco Bre	(UnID Lizards) see photos
Art Palm	Banded Rock Lizard
Gichingy	Reakint's Blue (see photos)
Jun Cal	Uta Stansburiana
Bro Rub	

'Astra' - Astragalus that may be rare - not fls yet.
 This area should be checked during ~~any~~ rare plant survey.
 Many indiv. in this popul.

- Lath. splendens also present in this area

Plants		Animals	
Rhu Ora	Lath. splendens	Cea Leu	Behr's Mtl. King
Ade Spar	Eucalypt	Rhu Tri	
Ade Fas	Chaeblab	Kec Ant	
Qui Fas	Pol Laypla		
Lath. gra			
Pinus	Quad (2 lg indiv)		

Pearlly Marble
 Chal Check (on Crypt)
 Fun Dusk
 Jacumba Peak ← Anise Swallow
 W Coast Lady
 Grt Purple Heron
 Ref site - Common Buck
 Sara's O Tip

'QCB8' - 1 very worn indiv. at Jacumba Ref site just south of road to peak. HW very worn. Orange abdomen bands still visible.

Now at Substation Area walking transects North - south - north + back.

Cor Cal	Sall Col	Pntd Ldy (M)
Las Gra		Chal Check
Ambrosia dumosa	on Jade mtn.	Sara's O Tip
		Common White

Old Area

Jade Peak

Opachlor	Pntd Ldy	hilltopping
	Anise Swallow	
	Blue sp.	

All White Layia

^{GFS}
'Galium' - Lg Galium in rocks, not
in frt or fl yet. Check back

Phoradendron (sm Jun Cal)
(Noce dni)

Yucca weevil:
(on Her wh.)

Ave Bar

Sch Bar

Astrag didymo

Emm Pend

^{GFS}
'Ipo 2' - At least 65 indiv ^{from opp site top} in flower
in large rocks on south facing
slope. 1m deep soil ^{with}
large rocks. Assoc. incl.

Eucos along, Keck Ant, Eucelin-
Pro Fire, Arms Men

^{GFS}
'IPO3' - 2 more spots in large
rocks, south facing.

Ant Nut

Opu Chl

Achnat Spec.

Crotalus ruber

Banded Rock Lizard

'GV19' - 15 or more indiv. of Ger Vis along
road & wash. Not flowering.

'GV20' - Pops upto 50 indiv. ^{in coarse}
~~sand~~ granite w/ finer material under

Insignia SWP
4/7/09 / Boulevard - Jacumba
Critical Habitat Area

picked up Margie M 0815; Cindy 0830

	Time	Temp	wind	seas
Start	1000	72	2-10	15'
Stop	1630	73	3-13	0'

Start at Jacumba Peak

Felder's OTip

Chal Check

Cal Patch

Pearly Marble (alt)

Anise Swallow

Pale Swallow

Fun Dusk

Now below Jacumba PK near Ref Sta

Plants

Animals

Chae Stev

Chal Chk (11)

mal Gla

W Coast Ldy

Sen Cal

Pinto Ldy

Vig Parr

Sara's OTip (11)

Sal Cal

Brown Elf (11)

Lao Gra

Harford's Sulfur (6)

Chae Glab

Fun Dusk

Eric Linear

Behr's Mink

Pro Fire

Pearly Marble

Southern Blue

'Lin Bel' - Linanthus bellus - ~5
indiv. - likely more in the next
couple of days as these are in
early flower. Sandy wash
with Pedromelum. Finer sands than
the DG areas.

W. Cr. Jay

Insignia SWPC
4/9/09 / Boulevard - Jacumba
QCB #4

- picked up Cindy her house 0845

	Time	Temp	Wind	SEI Cond
Start	64	1030	1-7	0%
	1500	69	1-7	80%
Stop	1700	66	1-5 variable	very thin 50% rain (see shadow)

- starting of riparian area where
we saw Gabb's, Chalcidon, etc.

Plants
Astragalus
Bro Tect
Ade Spar
Kec Ant

Animals
Com Buckeye (III)
Chal Check (III)
♂ Western Tailed Blue
Gabb's Check (III)
2 or 2 ♀

Dainty sulfur
Western Tiger Swallow
Propertius Duskywing
Harford's Sulfur (II)
Sera's OTip (III)
Wilson's Warbler
Oak Titmouse
Chestnut
Pearly Marble
W. Pysmo Blue

Note photo of small greenish
metallic caterpillar - feeding
on Erodium frid (var. lan)

Southern Blue (I)
Purp Hairstrk (II)
Behr's Mtlmk (III)
Acmon Blue (II)

61 and beyond
59-60 to today

SPSS-56 - Rocky hilltops, Las Gra,
but weedy & too rocky. Chal Chk
Purp Hair, Behr's Mtlmk here, but
not good QCB habitat.

W. Coast Ldy
Gray Hairstrk's
Pnto Ldy
Fun Duskywing
Cal Patch

Finished late afternoon portion of
survey on N-S align.

Earlier visited hilltops & openings in
Critical Habitat immed. west of
HWY 80

4/14/09

Insignia SWFL
Jacumba - Boulevard
QCB

	Time	Temp	Wind	sky cov.
Start	0700 0900	66	1-8	75% th
	1345	68	1-8	65% th
	1415	68	1-8	65% th
	1545	62	8-10	80%

Starting at good canyon/hilltop area
on the Hwy 80 - Hwy 80 stretch

Plants

Mal Gla

Animals

Ptd Ldy (1)

Chal Check (III)

Sara's OTip (III)

Common White (II)

Anise Swallow (I)

1415 68° 1-8 65% th

Now at riparian area west of Hwy 80
w/ Gabbi's (1415 - 1345 time)

~~Carrizo~~ *Oenothera* calif

Salix laev

Lay Island

Astragalus (perst)

Gabbi's Check (II)

Propertius Dusky (I)

Resp Hair (I)

Chal Check (III II)

Funereal Dusky (II)

Insignia swpc

4/16/09 / Jacumba - Boulevard
 Substations 4 sky cover

	Time	Temp	winds	sky cover
start	1300	68	1-4	0%
	1500	68	1-6	0%
	1630	65 ^o	1-6	5% thin

- with Cindy
 - Now at Substation 5 at north end
 and on Jade Mtn

Plants Collection
Anemone tuberosa
 "Anemone" - Pop
 of > 10 indiv. on
 NE side of Jade Peak in basalt rock
 piles.

115 058 2884

361 0915

Mod-Steep slope. Photos taken

Plants		Animals
Aga Des	Mirlag	Common White (1)
Sim Chi	Yuc Sch	Pink Lady (1)
Ams Men Int	Eric Bachy	West Coast Lady (1)
Vig Par	Eric Fas Pol	Great Purple Hair (1)
Atr Can	Jun Cal	Funereal Dusky (1)
Opu Chf	Allium Fin	Log Shrike (1)
Eno Cic	Las Gra	White Swift
Chae Frem	Pha Dist	Del Par Sub

4/17/09 / ^{Missy's area} Boulevard - Jacumba
 GCB 5

Solo

	Time	Temp	wind	se/cover
Start	1100	66	4-11	0%
	1430	71	1-8	0%
	1600	75	1-5	0%

Excellent conditions today

Starting along N-S alignment just south of RR tracks heading south toward Boundary Peak. Starting at SP 30

Plants	Animals
Lasera (Cyl Cal Park)	Behr's Atlatl (11111111)
Erolia	La Qu
Art Tri	Aemon Blue (1111) II
Ade Fas	Common White (1111)
Lay Gls	Horned Lark
Linanthus lemniscatus	Funereal Duck G
Amb Conf	Perp Hairstrik G
Lotus Arg	Sara's O Tip (1)
Amb Poi	Harford's Sulfur G
pha Dist	Blch Sparrow
Solo	Sp To
Euc Lim	Printed Ldy (11)
Core Fil	

This area (SP 30 south to Domingo Lake) appears to have been grazed. Large openings w/ dense Las Gra, Erolia. Art Tri on open edges w Ade Fas too. Euc w/ gramin. Mamb also common here as rep. nearer SP 30.

Plants	Animals
Art Tri	No FI
Cism Occ	CORA
Acha Cor	Pearly Marble California
Core Cal	Be Wr
Gal Andrewsii	Ro Wr
Euch Cali	WS Jay
Core Lev	Kee Tern
Core Arg	Perp Guichoneta
Lup Trus	Pr Whl
Sel Appi	Poa Secunda
Rhi Ora	Tausch Arg
Euc Trich Lan	Perst Cleve

GIS ~~Bev Can Garden~~
 'Bev Can' - 'Cau Sim' poss. ~~Bev Can Garden~~ ^{Caulanthus, similar}
 under Ade Fas as I'm ascending how long outcrop immed. north of Fly Yard near Domingo Lake. At least 1 indiv. observed.

GPS
GV 23 - *Geraca viscida* at least
7 indiv. Not in fl.

Plants

Animals

Common Buckeye (1)
(only obs. in large *LasGr* patch
south of RR tracks & SP30)

1430 - Now at \pm open area near
SP-10. Small openings w/ dense *LasGr*

Are Pun
Cen Gray Parp
Eucalyptus
Ove Agr Oxay
Que (Acrobats)

W Coast Lady (1)
Harford's Sulfur (1)

GV 30 & 31 - Combined patch of >50
indiv. not in flower. North of SP 7

Astra 4 - 2 large indiv not in fl
of *Astrag. parviflorus* perstrictus

Eriost. densiflorum

Astra 5 - At least 7 *Ast* long per immed.
adjacent Pile Jim Rd on east side ~~north~~
near SP-2

Insignia SWPC
4/19/09 / Boulevard - Jacumba
QCB 5

B.R. met at my house 0800

	time	temp	wind	sky cover
Start	0945	75°	4-8	10%
stop	1300	82 ⁸⁸	46	10%

1630 ^{in low drainages} 83 4-6 5%
- Starting at Jacumba PK then
surveying Critical Habitat heading east
then surveying west

Animals

California Patch (11)
Common White (1)
Pearly Marble (1)
Chalcedon Chk (111)

- Now below peak in drainage & rolling
hills walking transects

Sail Col	Sari's O Tip (1)
Chae Fire (very abundant)	Chalcedon Check (11)
Chae Blab along wash	Pale Swallow (1)
LasGr	Pitd Ldy (11)
Del Par Sub ^{small} Allium?	Harford's Sulfur (1)
Euc Lin	West Coast Lady (1)
Glymphs Garbi	Bl Thr Sparrow
Euc Brachs	No Mo
	RT Hawk

~~1230~~

TuVu

- [1230] Now walking ref area
+ west.

[1315] 12 mph gusts, but steadier at 6-7
mph

Plants
Lot So Bro
Hes Whi
Sal Col
Cho Fern Fin
Emm Pan
Rhu Ora
Cer Bet

Animals
♀ ♂ Sara's Otip
Dainty Sulfur
Chalcedon Check (100)
Fun Dusk (1)

Vegetation at SP 71 westbound
is denser than east of SP 71

Coast
HO Lizard

LB1 - *Linanthus bellus* ~ 5 indiv. in wash
* Collection - *Pediomelum* calf - growing
along wash w/ Jun Cal, Evelyn
Lao Bra, Hes Whi; Flat wash area
DG on top of sandy loam

[1435] Temp 83° wind 2-5 sky cover 5% r

Plants

Ziz Par
Ade Fas
Collinsia
(small single fl
indiv. fl on
flank of Jacaranda
PK along off
road to peak)

Allium fimbriatum
Senecio cal
Crypt Int

Animals

Be W
Uta Stan
Ca Q
Western Whiptail
BNT
Mule Deer (scat)
Common White (100)
Pinfld Ldy (100)
Anise Swallowtail
Perp Hairstreak (1)
Chalcedon Check (100)
Behr's Mtlank (1)
Sara's Otip (100)
W. Coast Ldy (100)

7/2/09 / Boulevard - Jacumba
QCB #5

picked up Cindy her house 0830
- Starting at Hwy 80 - Hwy 80
Canyons

	Time	Temp	wind	sky cover
Start	1000	76	2-9	0%
	1330	85	2-10 gusts to 12	5%

Plants

Euc. fasciata (FI)
Vig Par (FI)
Lot Sco Pine (FI)
Mala Cleve (FI)
NIC OBTUS (FI)
Ams Men Int (FI)
Las Green (FI)
Pos Secunda
Euc. Chrys Phac Dist
Cham Albo Sm Chi
Cham Melan Cal Spl
Isocomz (acradema)
Euc. Cic Mirobilis (inc. v.)
Sch Bar Ephedra
Bro Rub Prior Calif

Animals

Square-spotted Blue (80⁺)
Chukardon Checksp (1)
W. Pygmy Blue
Dainty Sulfur (111)
Common White (1)
Common Buckeye (1)
Harford's Sulfur (11)
Pitd Lady (11)

1/15/19 SKPC
 4/22/09 Boulevard - Jacumba

- met Darin + Erik at Los Coches
 exit 0800

starting at Boundary Peak &
 surveying Cut Hats crest of
 Hwy 80

	Time	Temp	wind	sky
Start	0915	62	3-8	15% thin
	1430	69	4-12	50% thin
	1630	69	8-12	60% thin

Plants	Animals
Eriogonum	Pale Swallowtail (1)
Chae Art	BTH Spar
Sal Apr	Sp To
ChO Fin Fin	Sheepy Ducky (1)
Eriogonum	Acorn Blue (1)
Esch Cal	Dorothy Sulphur (11)
Cry lit	Gambel's Check (1111)
Eriogonum	Common white (1)
Long Gland	Common Buckeye (1)
Sal Col	Becker's White (11)
am Pen	Chalcedon Check (11)

4/24/09 Combined w/ E & E Energia -
 US Baja Wind PCB

Plants
 Gilia Cap
 Chae Fire

Animals #6
 Orange Sulphur ♀
 Propertus Ducky
 Behr's Metalink (1)
 Sarais OTip (11)
 Common Buckeye (1)
 ATFLY
 W. Coast Lady (1)

- Now at substations checking rocky
 areas in particular. Animals very
 dry now

Plants
 Am's Mentat

Becker's White (1)
 Chalcedon Check (1)

4/29/09

Insignia SWPL

Boulevard - Jacumba
Rare Plant + QCB

- picked up M. Mulligan @ 0800; no Cindy
teaching (sick)

Start	Time	Temp	Wind	SKY
	0915	55	1-5	0%
	1135	67	1-7	0%
	1630	71	1-10	0%

- Starting at existing Boulevard
Substation + surveying to the south
- Stopped survey at SP 18 area +

Plants	Animals	SP 30 near RR tracks
Mir Mul	Lot Arg	Common White (11)
Sum Mex	Ade Spa	Behr's Hawk (11)
Gar Veer	Sis Alt	AT Fly Sara's (1 type)
Cer Bet	Qui Gra	Moth McGillivray's warbler
Ade Fas	Eric Lin	Propheta Dusky (1)
Cue (Acw)	Gal Andrew	SOTB
Amo Men	Int Lye Bic	Western Tailed Blue (5 ♀)
Prull	Art Tri Lye Len	on Astrag Day Pers
Rhall	Trich Can	BITT Jack Dainty
Are Fun	Del Par Sub	Hanford's Sulfur Sulfur
Jet Corn	Sph Amb	Marine Blue West Bluebird
	Acc Mic	Southern Blue crew Black
		Acorn Olive ♀

AST' - 28 Ast Doug Pers
offsite near substation

VJ - ~ 9 indiv. offsite w the 'AST'

ST1 - AST 7" - typically just single
indiv. in early flower

AST 8' - loose cluster of 5 in ^{proposed}
area.

Proposed Substation Area - mostly barns,
sand w Sch Bar, ~~Scitostol~~, Las Brs
& Ast Doug Per which is only
rare plant here at sub

AST 15' - 4 indiv. SE of SP-1 approx
50'

AST 20' - 2 indiv in middle of road
off of Tule Jim btwn SP 5 + 6.

SVI 5' - At least 7 Ger Vis in meadow
adjacent SP-7. One indiv w/in 5 ft.

DP 15' - Del Par Sub - ~ 4 indiv. right next
to SP-7.

AST 27' - Immed along Tule Jim Rd
on shoulder bump.

AST 31 + 32' - ~ 30 indiv. in scattered ^{patch}
on private land

4/30/09 ^{Insignia SWPL}
Boulevard - Jacumba
OCB #6

- met Darin at Lou Cochran's
at 0830

	Time	Temp	Wind	SKY
Start	0935	69	1-10	40% thin
Stop	1600	82	1-8	5% thin

- Very Good Survey Conditions
Starting at Jacumba Peak &
surveying Critical Habitat
Area ()

Plants	Animals
Ger Vis	Anise Swallow (1)
Ziz Par	Acorn Blue (11)
Prv Fire	Common White (11)
Chie Glab	Chalcedon Check (11)
Echedra	W. Coast Lady (1)
Rho Cr	Saras OTip (1)
Emo Fas Pol	Dainty Sulfur (1)
Phac Dist	Painted Lady
Pens Cont	Behr's Mtlmark (1)
Paro Hub	Square-spotted Blue (1)

Asst Dov Per
Cov Fil
Quio Conf
Lang Gla
Lath Spl

Animals
Cactus Wrens ^{west} Blding
Bl Th Jack
Crotalus ruber
Horned Lizard 'Holis'
BEWR Family
Western Tid Blue (11)
Harford's Sulfur (1)
Orange Sulfur (1)
Cabb's Check (1)
Chalcedon Check (11)
Dainty Sulfur (1)

1415

Now Over at riparian
rocky areas west
of Hwy 80

'AST 62 & AST 63' - Jacumba
Milkvetch in access road down
to Boundary Creek oak-riparian

- ~ 75-100 indiv. at this riparian
popul. loosely clustered.

- Chalcedons in poor shape generally
Tattered wings, scales missing &
faded.

Insignia SWPL
Boulevard - Jacumba
QCB + Rare Plants

5-5-09

-picked up Cindy 0815

	Time	Temp	Wind	sky cover
Start	0930	73°	1-12	10% thin
	1530	82°	1-12	10% thin

Starting at Hwy 80 near Substations + walking west toward Canyonlands

Plants	Animals	
Cho Fin Fin	Cal Spl	Common White
Lot Seo Seo	All Fin Fin	Acorn Blue GN
Fun Cal	Cyl Gan	Pink Ldy
Asa Dec	Lyc Anc	Becker's White
Opo Chi	Sch Bar	Harford's Sulfur
Mir lae	Loe Sch	Sandhill Skipper (1)
Ero Lic	Sty On a	Bl Thr Sparrow
Raf. Cal	Eri Sap	Common Buckeye (1)
Sim Chi	Lar Tri Bro Rds	
Eric Bra	Chal Fre	
Ziz Par	As + Gas Rev	
Pro Frp	Arg Munita	
Amb Cont	Cham Albo	

[200]

Now parked near Dominga Lake heading west toward S-Pole 40
Red-shank Chap w/ Lay Pla, Cha Albo, Phac Pist, Las Gra

Orobanch (bulbosa or Calif fudge)
Need to confirm

↓
Near Art Tri

2 Trifolium	Rhw Tri
Uro Lind	Arc Pun
Mim Pil	Scabrig Perp
Triso Cal	Zmowid

SP 40-43 - Low plant spp diversity here
Mostly MESA or Ade Fas depending on
Soil? type, Mim Pil in the big bouldery outcrops
and aspect?

Tacumna OCB March 23, 2009
Week 1 Completing N-S tran

w/ Jim Rocks

10:30 am - 3:30

clear - clear Cindy Jones
Davenport

52°F 66

wind 3-10 mph - 3-10 mph

Additional plants added to bed # 25 - clear

Birds of the Flying

X Sharp-shinned Sparrow (saw 1)

X Blue Jay in oak ribbon wood

Redstart

X Kingbird in oak ribbon wood

X Geococcyx viscidus - pop near SP

4 Dippers in pop

2 others

3 others

50 near

X Flat-tailed Horned Lizard
near 60-3 sign

Gopher snake
granite spiny lizard

Butterflies OCB week 1
Saw orange tip IIII
Behr's metelmark IIII
Common blue IIII
Harford's sulfur II
Pearly ~~star~~ noble IIII
Violet star body II
Turnstone daisy II
Bramble finch II
Blue sp I
Acorn blue I

Nectar. Seewee
Loxtheria
Peregrina
Palanderia calista
Pole 33 & 41 to late w/ 1758c on is
of SP 33 in too dense w/
apronal & 685cm.
ALREADY INCLUDED 54-05
include - Railroad to SP 33

Quino Checkerspot General Form

Adult Survey

Location Jacumba Survey Segment I-80 to Domingo Lake
 Surveyor Erik LaCoste Date 21 March 2009 Survey Week Number 1
 Survey Partner(s) None
 Total Acres: _____ Portion Surveyed: All Appropriate Habitats Elevation: Max _____ Min _____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1000	0	clear patchy overcast drizzle shower	4 to 10 mph	64
1245	0	clear patchy overcast drizzle shower	10 to 13 mph	67
1345	0	clear patchy overcast drizzle shower	6 to 12 mph	67
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1530	0	clear patchy overcast drizzle shower	7 to 9 mph	63

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydras editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydras chalcedona</i> (Chalcedon Checkerspot)	25+		<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			Riodinidae (Metalmarks)		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	2	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			Papilionidae (Swallowtails)		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)	3	
<i>Vanessa cardui</i> (Painted Lady)	3		Pieridae (Whites and Orangetips)		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
Danaidae			<i>Anthocharis sara</i> (Sara's Orangetip)	50+	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
Hesperiidae			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)	1		<i>Colias harfordii</i> (Harford's Sulphur)	5	
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			Satyridae (Satyrids)		
<i>Erynnis funeralis</i> (Funereal Duskywing)	25		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			OTHERS:		
<i>Erynnis propertius</i> (Propertius Duskywing)			Sleepy duskywing	2	
<i>Ochlodes agricola</i> (Rural Skipper)			Spring white	1	
Lycaenidae (Hairstreaks)					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)	11				
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)	3				
<i>Celastrina ladon</i> (Echo Blue)					

Quino Checkerspot General Form

Adult Survey

Location Jacumba Survey Segment I-80 to Domingo Lake
 Surveyor Erik LaCoste Date 30 March 2009 Survey Week Number 2
 Survey Partner(s) None
 Total Acres: _____ Portion Surveyed: All Appropriate Habitats Elevation: Max _____ Min _____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1045	0	clear patchy overcast drizzle shower	9 to 13 mph	60
1145	0	clear patchy overcast drizzle shower	5 to 8 mph	61
1245	0	clear patchy overcast drizzle shower	5 to 8 mph	60
1345	0	clear patchy overcast drizzle shower	6 to 10 mph	64
1445	0	clear patchy overcast drizzle shower	5 to 8 mph	61
		clear patchy overcast drizzle shower		
Stop 1545	0	clear patchy overcast drizzle shower	5 to 9 mph	61

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydras editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydras chalcedona</i> (Chalcedon Checkerspot)	19		<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			Riodinidae (Metalmarks)		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	6	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			Papilionidae (Swallowtails)		
<i>Junonia coenia</i> (Common Buckeye)	1		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)	70+		Pieridae (Whites and Orangetips)		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
Danaidae			<i>Anthocharis sara</i> (Sara's Orangetip)	2	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	1	
Hesperiidae			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)	2	
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			Satyridae (Satyrids)		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			OTHERS:		
<i>Erynnis propertius</i> (Propertius Duskywing)	2		Sleepy duskywing		
<i>Ochlodes agricola</i> (Rural Skipper)			Spring white		
Lycaenidae (Hairstreaks)			Pearly marble	1	
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)	1				
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)	1				
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Erik LaCoste Segment # I-80 to Domingo Lake Date: 3/30/09

Comments:
 Many areas consist of thick chaparral and are not considered QCB habitat – particularly where the alignment gets closer to Domingo Lake.
 QCB critical habitat consists of open chaparral and interior sage scrub habitat – good quality for QCB.

Plant Communities and Habitat Information:
 See above comments

Host Plants Present:
 None

Nectar Plants Present: Lasthenia californica, Erodium sp., Pectocarya linearis, Cryptantha intermedia, Geranium viscidum, Whispering bells, Amsinckia menziesii, Salvia columbaryae, Mirabilis villosa, Mammillaria tetracostata, Thamnosma montana, Chamacyse sp., Phacelia parryi, Ericameria sp., Tidy tips, Chanactis sp., Escholzia californica, Castilleja foliosa, Arabis sparsiflora, Malacothrix californica, Lotus scoparius, Mustard sp., Lupinus conneinus

Quino Sighting Date: GPS Location:
 No QCB observations

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form

Adult Survey

Location Jacumba Survey Segment I-80 to Domingo Lake/Substation
 Surveyor Erik LaCoste Date 5 April 2009 Survey Week Number 2
 Survey Partner(s) Jim Rocks and Brian Lohstroh
 Total Acres: _____ Portion Surveyed: All Appropriate Habitats Elevation: Max _____ Min _____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1015	0	clear patchy overcast drizzle shower	5 to 7 mph	63
1430	0	clear patchy overcast drizzle shower	5 to 7 mph	63
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1700	0	clear patchy overcast drizzle shower	2 to 10 mph	63

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydras editha quino</i> (Quino Checkerspot)	1		<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydras chalcedona</i> (Chalcedon Checkerspot)	21		<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	5		<i>Everes amyntula</i> (Western Tailed-Blue)	2	
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			Riodinidae (Metalmarks)		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	3	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			Papilionidae (Swallowtails)		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)	16		Pieridae (Whites and Orangetips)		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
Danaidae			<i>Anthocharis sara</i> (Sara's Orangetip)	5	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
Hesperiidae			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)	4	
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			Satyridae (Satyrids)		
<i>Erynnis funeralis</i> (Funereal Duskywing)	8		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			OTHERS:		
<i>Erynnis propertius</i> (Propertius Duskywing)	3		Sleepy duskywing		
<i>Ochlodes agricola</i> (Rural Skipper)			Spring white	2	
Lycaenidae (Hairstreaks)			Pearly marble		
<i>Atides halesus</i> (Great Purple Hairstreak)	1				
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)	1				
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)	5				
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Erik LaCoste Segment # I-80 to Domingo Lake/Substation Date: 4/5/09

Comments:		
Many areas consist of thick chaparral and are not considered QCB habitat – particularly where the alignment gets closer to Domingo Lake.		
QCB critical habitat consists of open chaparral and interior sage scrub habitat – good quality for QCB.		
Substation area consists of open chaparral and open interior sage scrub habitat.		
QCB observed at the Jacumba Reference Site – photos by Jim Rocks		
Plant Communities and Habitat Information:		
See above comments		
Host Plants Present:		
Plantago erecta observed in the Jacumba reference site.		
Castilleja exerta observed in various areas.		
Nectar Plants Present: Cryptantha sp., Tidy tips, Lotus agrophyllus, Erodium sp., Sugar bush, Ceanothus greggii, Lasthenia californica, Cream cups, Ericameria sp., Escholzia californica, Castilleja exerta, Amsinkia menziesii, Camissonia sp., Linanthus sp., Phacelai distens, Salvia columabreae, Lotus scoparius, Chanactis sp., Whispering bells, Coreopsis californica, Chamascyce sp.		
■ Quino Sighting		
Date: 4/5/2009		GPS Location: Jacumba Ref. Site
Photographs Taken: By Jim Rocks		
1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form

Adult Survey

Location Jacumba Survey Segment I-80 to Domingo Lake/Substation
 Surveyor Erik LaCoste Date 24 April 2009 Survey Week Number 2
 Survey Partner(s) Jim Rocks and Darin Busby
 Total Acres: _____ Portion Surveyed: All Appropriate Habitats Elevation: Max _____ Min _____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 0915	15	clear patchy overcast drizzle shower	3 to 8 mph	62
1430	50	clear patchy overcast drizzle shower	4 to 12 mph	69
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1630	60	clear patchy overcast drizzle shower	8 to 12 mph	69

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydras editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydras chalcedona</i> (Chalcedon Checkerspot)	3		<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	5		<i>Everes amyntula</i> (Western Tailed-Blue)	4	
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			Riodinidae (Metalmarks)		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	1	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			Papilionidae (Swallowtails)		
<i>Junonia coenia</i> (Common Buckeye)	1		<i>Papilio eurymedon</i> (Pale Swallowtail)	2	
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			Pieridae (Whites and Orangetips)		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
Danaidae			<i>Anthocharis sara</i> (Sara's Orangetip)	2	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
Hesperiidae			<i>Colias eurytheme</i> (Orange Sulphur)	2	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			Satyridae (Satyrids)		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			OTHERS:		
<i>Erynnis propertius</i> (Propertius Duskywing)			Afranius duskywing	1	
<i>Ochlodes agricola</i> (Rural Skipper)			Becker's white	2	
Lycaenidae (Hairstreaks)			Dainty sulphur	4	
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)	1				
<i>Celastrina ladon</i> (Echo Blue)					

SW Powerlink - Eco Substation

3/20/09 QCB #1 for Jim Rocks
 SW Powerlink + Energia Sierravuarez
 Coordination: 7³⁰-8³⁰ (meeting @ Jim's)

Survey: 8³⁰-5³⁰

total hours: 10.0

TIME	TEMP	WIND	CLOS	PRECIP
Start 0940	69	1-3	clear	Ø
1210	74	5-8	clear	Ø
1320	76	5-8	clear	Ø
end 1525	81	3-5	clear	Ø

Other Species:

NAME TUVU ~~W~~OR
 CATO LOSH WSJA

sideblotched
 cottontail
 whiptail
 coyote
 bt jackrabbit

Butterflies

white sp II
 orange sulphur I
 fun dusky III
~~orange~~
~~white~~
~~sp~~
 (1st) ~~sp~~ of III III III III III
 WC lady II
 spring white II
 lady sp III III III
 painted lady III I
 Chalcidon III III III
 W Tig Swallowtail I
 Annec Swallowtail I

Flowering Plants

Erodium sp.
 Amsinkia sp.
 Phacelia pad
 Lasthenia Cal
 Phacelia dis
 Plagio sp.
 Mentzelia ~~sp~~ aff
 rattlesnake weed
 Cor Cal
 Lomatium sp.
 Lot SCO
 Lupinus sp. (small gravel)
 ? Concinus
 Pectocaryus
 Licium and

expenses

ROCKS

4/24/07

Southwest Roadlink

Boilerhead → Jaramila / RCB #5

leave time: 0730

arrive time: 1730 Fri. 5:00 pm

mileage: start - 148514 } 50 miles
(start) end - 148564 }

start: 0715, 62 F, 3-8 mph, 15% cover (thin)
69 F, 4-12 mph, 50% cover (thin)
end: 1630, 69 F, 8-12 mph, 60% cover (thin)

Host Plants

CAS EXE - small patch along road.

Other wildlife

ROWR

DTSP

BCSP

RTHA

GEWA

Gopher snake

whip snake

Black-tailed brush lg.

ATFL

DAB

JR

EL

Flora

Chenopodium glaberrimum

LAD CAL

Erodium sp.

RTHA OVA

Playa sp.

ERIO TRI var LAW

SAL API

CHA ART

LAT SCO

EXE CAL

ERI WAL

Twig tips

SAL COL

ECI ENG

butcher flies

Paleswarbent III

Distigony sp. I

Gibbs Chalcid sp. III

Parasite III

Dainty sulphur III

Acron III

Swamp skipper III

Chickadee Chalcid sp. III

Heartfinch sulphur II

Steff daisy I

Whitew-tailed blue III

AHA DIS

Gila sp.

MIR LAW var CAL

AHA EMM

PHA PAR

AHA CAL

PHA CIC

TANISCHIA ARGUTA

RHA BL

PEN CLE

DIS CAL

RHT IMB

Keckek hummer

PEN CEN

LAT SPL (Camp. Ar.) - Sw

Orange sulphur I

West Coast King II

Beebe's Warbler I

W of CH Ed Doming. Lake. 1145 END
 SPTD Tava
 Caca
 Logo
 Col X
 Lactal = lactarius
 Astrogly H = Parc x 4
 astragalus
 Gervise G Gervis
 S. otip 11
 W. tiled blue. x 2
 Pteropus skinner x 1
 Behr's 11
 Jacumba partly clear 63°F S. Furch 1430
 Ref site
 chely
 acb
 G Purple HS
 P. lady
 W. lady
 nearby meadow
 comm wht Hiked to Jade peaks
 P. lady.
 Anise SWT.
 W CSP
 Round
 END 63° 7-10 mph clear
 1700

April 5 2009 Jacumba QCB
 JR EL Subaru
 Starting @ Domingo Lake. of R. R. car.
 0930 10-16 mph 65° on ground clear
 Kill P. lady
 R. W. W
 Sph
 B. H. G. R.
 V. P. W. a
 G. O. P. A
 S. o. J. a
 S. P. O.
 M. O. D. o
 S. P. O.
 C. a. b. u.
 L. e. g. o.
 Rare plants
 Lathyrus splendens - Campo Pea
 Geranium viscidum - Sticky Geranium

Field Notes for Southeast Powerlink

24 March 2009

Today, Melissa Busby, Cindy Daverin, and I conducted a Quino survey over a portion of the Southeast Powerlink project for Jim Rocks (Cummings and Associates Job #1574.7B). The Quino survey occurred between 1115 and 1645 hours. At the onset of the visit, the temperature was 64.8°F, and the humidity was 22%. The sky was sunny and clear and winds were blowing from the east at speeds ranging from 3.6 - 9.7 mph with gusts up to 12.7 mph. Mid-way through the survey at 1430 hours, we re-took the weather conditions. The sky was still sunny and clear. Winds were blowing from the east at speeds ranging from 2.6 - 6.8 mph with gusts up to 11.2 mph. The temperature was measured at 76.3°F, and the humidity was recorded at 20%. By the end of the site visit at 1645 hours, the temperature was 63.5°F, and the humidity was 21%. The sky was partly cloudy with approximately 20% cloud cover. Winds were blowing from the east at speeds ranging from 3.1 - 6.8 mph with gusts to 10.1 mph. Butterflies observed during the observation period included:

Vanessa cardui (117) - most flying north with a few observed nectaring on-site
Euphydryas chalcedona (3) - seen in the same vicinity of each other along the dirt access road
Vanessa annabella (1) - observed heading north with *V. cardui*.
Anthocharis sara (44) - several were captured to ensure they were not *A. cethura*
Pontia protodice (1) - seen nectaring on *Phacelia*
Anthocharis cethura (3) - nectaring on-site
Papilio zelicaon (1) - seen flying eastward along a small ridge
Callophrys gryneus loki (1) - seen nectaring on *Phacelia*
Plebejus acmon (1) - seen next to *Callophrys gryneus loki* nectaring in the same patch of *Phacelia*

Other observations included Northern Mockingbird, Black-throated Sparrow, a male Scott's Oriole singing from the top of a dead Juniper, Loggerhead Shrike, Turkey Vulture, Yellow-rumped Warbler, and 1 Side-blotched Lizard (*Uta stansburiana*).

Flowering plants at the site included:

Amsinckia sp.
Phacelia sp.
Erodium cicutarium
Lasthenia californica
Salvia columbariae
Dichelostemma pulchellum
Chaenactis artemisiifolia

2008 QUINO CHECKERSPOT BUTTERFLY SURVEY REPORT

ROCKS BIOLOGICAL CONSULTING

June 11, 2008

U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Rd.
Carlsbad, CA 92009

Attention: Ms. Sandy Marquez

Permitted Biologists:

Jim Rocks: TE-063230-3
Cynthia Jones Daverin TE-811615-4

Subject: Year 2008 45-Day Report for Quino Checkerspot Butterfly Surveys at the Proposed SDG&E Substation Project Site in Jacumba, CA

Dear Ms. Marquez:

This letter presents the 45-Day Report for Quino Checkerspot Butterfly (*Euphydryas editha quino*, QCB) surveys at the proposed SDG&E Substation Project Site (site), near Jacumba in San Diego County, CA. Survey results were negative for both QCB and larval host plant populations during the 2008 surveys. The survey, including the habitat assessment, was conducted from March 6 to April 28, 2008. Figures showing the survey area boundary and copies of field notes are attached to this report.

Location

The site is located east of the town of Jacumba, CA, south of Old Highway 80, and immediately north of the international border. The site is on the USGS 7.5' Jacumba Quadrangle (see attached Figure). The site is in the US Fish and Wildlife Service (FWS) recommended Survey Area 1 (2002).

The site is undeveloped except for electrical transmission towers near the northern boundary of the site. The site is surrounded by relatively undisturbed open space with similar habitat to the project site on all sides with Interstate 8 offsite to the north. The attached project location figure shows the project site boundary on an aerial photograph. The figures included in this report were provided by Opus Environmental, Inc. and are assumed to be an accurate representation of the limits of the intended survey area.

Habitat Assessment

The site, except for a portion of Jade Mountain in the north, is relatively flat to gently sloping with deep alluvial granitic soils in most areas. Several ephemeral washes supporting a relatively high diversity of herbaceous annuals run west-east across the site. Elevation of most of the site is approximately 3,100 feet above mean sea level (msl) with the highpoint at the peak of Jade Mountain (3,587 feet above msl).

A habitat assessment was conducted on March 6, 2008 to assess the phenology of larval host plants and nectar sources if present. The vegetation communities, soils, and general conditions onsite were assessed for their suitability to support QCB.

Jade Mountain consists mostly of bedrock with very thin soils and open, sparse vegetation. Common plant species present include Hedgehog Cactus (*Echinocereus engelmannii*), Desert Agave (*Agave deserti*), Waterjacket (*Lycium andersonii*), Mountain Buckwheat (*Eriogonum fasciculatum* var. *polifolium*), Creosote (*Larrea tridentata*), and Gander's Cholla (*Cylindropuntia ganderi*). Herbaceous cover was very sparse and included mostly Filaree (*Erodium cicutarium*).

Immediately south of Jade Mountain the vegetation community changes to a Mixed Desert Scrub with a component of Juniper Woodland or Scrub in the northern portion of this area. Dominant shrubs include Jojoba (*Simmondsia chinensis*), Lotebush (*Ziziphus parryi* var. *parryi*), California Juniper (*Juniperus californica*), Waterjacket, Desert Agave, Hedgehog Cactus, Ephedra (*Ephedra* spp.), and Gander's Cholla. The herbaceous cover in this area, especially butterfly nectar sources, was sparse. Herb cover in this area consisted primarily of Filaree with scattered individuals of Wallace's Woolly Daisy (*Eriophyllum wallacei*), Chia (*Salvia columbariae*), Hydra Stick-Leaf (*Mentzelia affinis*) and Three-Lobe Starry Puncturebract (*Sidothea* [*Oxytheca*] *trilobata*).

The southern portion of the site lacks California Juniper. Common shrub or perennial species in this habitat include Jojoba, Waterjacket, Lotebush, Ephedra, Gander's Cholla, Mohave Yucca (*Yucca schidigera*) and Creosote. Annuals present in the southern portion include dense patches of Common Goldfields (*Lasthenia gracilis*), Desert Dandelion (*Malacothrix glabrata*), Scale-bud (*Anisocoma acaulis*), Wild Heliotrope (*Phacelia distans*), California butterweed (*Senecio californicus*), California Coreopsis (*Coreopsis californica* var. *californica*), and Pincushion (*Chaenactis* spp.)

Methods

The flight season of QCB is dependent upon adequate rainfall and warm weather to produce supplies of foodplants sufficient for allowing QCB larvae to feed, pupate, and emerge during the spring. In 2008, both in the southwestern and eastern portions of the QCB's range, rain fell in winter and early spring causing the germination of annual plants, but conditions became very dry as spring progressed and many surveyors reported rapid drying and senescence of potential host plants.

Mr. Rocks visited the FWS Jacumba "reference site" on March 29 and April 16, 2008 to compare the phenology of host plants and nectar sources between the reference site and

the survey area to best assess the appropriate survey commencement and duration to maximize the likelihood of observing QCB. In addition, the FWS's "2008 Season Quino Checkerspot Butterfly (*Euphydryas editha quino*) Monitored Reference Site Information" website was frequently monitored to obtain information on 2008 QCB observations and locations.

Please see Table 1 for survey dates, conditions, and personnel. Surveys were performed in accordance with the FWS's "Quino Checkerspot Butterfly (*Euphydryas editha quino*) Survey Protocol Information" dated February 2002. All surveys were conducted by Jim Rocks (Permit# TE-063230-3) and Cynthia Jones Daverin (Permit# TE-811615-4) except where noted. Due to the rapidly drying condition of nectar sources onsite during mid-April, an additional survey was added between weeks 2 and 3 of the survey to help maximize the potential to observe QCB.

It should be noted that the site is contiguous with an area that Mr. Rocks and Ms. Daverin surveyed for QCB in 2008. A portion of the approximately 295-acre site was surveyed in 2008 by Mr. Rocks and Ms. Daverin as part of a related, but separate project. The survey results for that area were negative for both QCB and its hostplants and a 45 day report will be submitted. To avoid confusion, field notes from both surveys are attached to this report as most of the surveys were conducted on the same day and all suitable QCB areas for both sites were thoroughly surveyed.

Table 1. Survey dates, personnel and field conditions.

Quino Checkerspot Butterfly Survey Dates/Conditions						
<i>SDG&E Substation Project Site</i>						
<i>near Jacumba, San Diego County, CA</i>						
Date	3-06-08	4-7-08	4-14-08	4-16-08	4-21-08	4-28-08
Time on site	1050-1350	1000-1630	0930-1630	1210-1510	0845-1630	0845-1530
Temp (°F) Start-End	59-63	64-70	75-85	69-72	60-74	74-85
Sky Cover (%) (start-end)	0-0%	40-0%	0-0%	0-0%	0-0%	30-10%
Wind Speed (MPH)	1-10	4-12	0-8	1-7	10-14	5-11
Personnel	JR (Habitat Assessmt)	JR, CJD	JR, CJD	JR	JR, CJD	JR, CJD

Personnel: JR = Jim Rocks; CJD = Cynthia Jones Daverin

Results

Survey results were negative for both QCB and larval host plant populations during the 2008 surveys. In general, the survey area supports relatively low diversity of butterfly species. Butterfly activity was very limited on Jade Mountain including the top of the peak and lower hilltop on the south side. Butterfly species detected during the surveys are presented in Table 2 and a list of nectar sources and other plant species observed within the potential QCB habitat is presented in Table 3.

Nectar sources for butterflies were present throughout the site, but were much higher in number and diversity in the southern portion of the site. The density of nectar sources varied widely with extremely dense patches in some areas and little to no nectar sources often in adjacent areas. The primary nectar sources onsite include Common Goldfields, Desert Dandelion, California butterweed, California Coreopsis, Wild-Heliotrope, and Pincushion.

During the initial surveys (weeks 1-3) the percent cover of nectar sources was very dense, up to 90% cover in some areas near the southern site boundary. During weeks 4-5, nectar sources in the washes remained viable as other areas declined, although the amount was sharply reduced and conditions for butterfly nectar sources worsened generally across the site.

Please call me at (619) 843-6640 if you have any questions.

This report represents an accurate account of my work on the survey site.

Sincerely,



Jim Rocks, Principal Biologist
Rocks Biological Consulting
Permit Number TE-063230-3

This report represents an accurate account of my work on the survey site.



Cynthia Jones Daverin
Mariposa Biology
Permit Number TE-811615-4

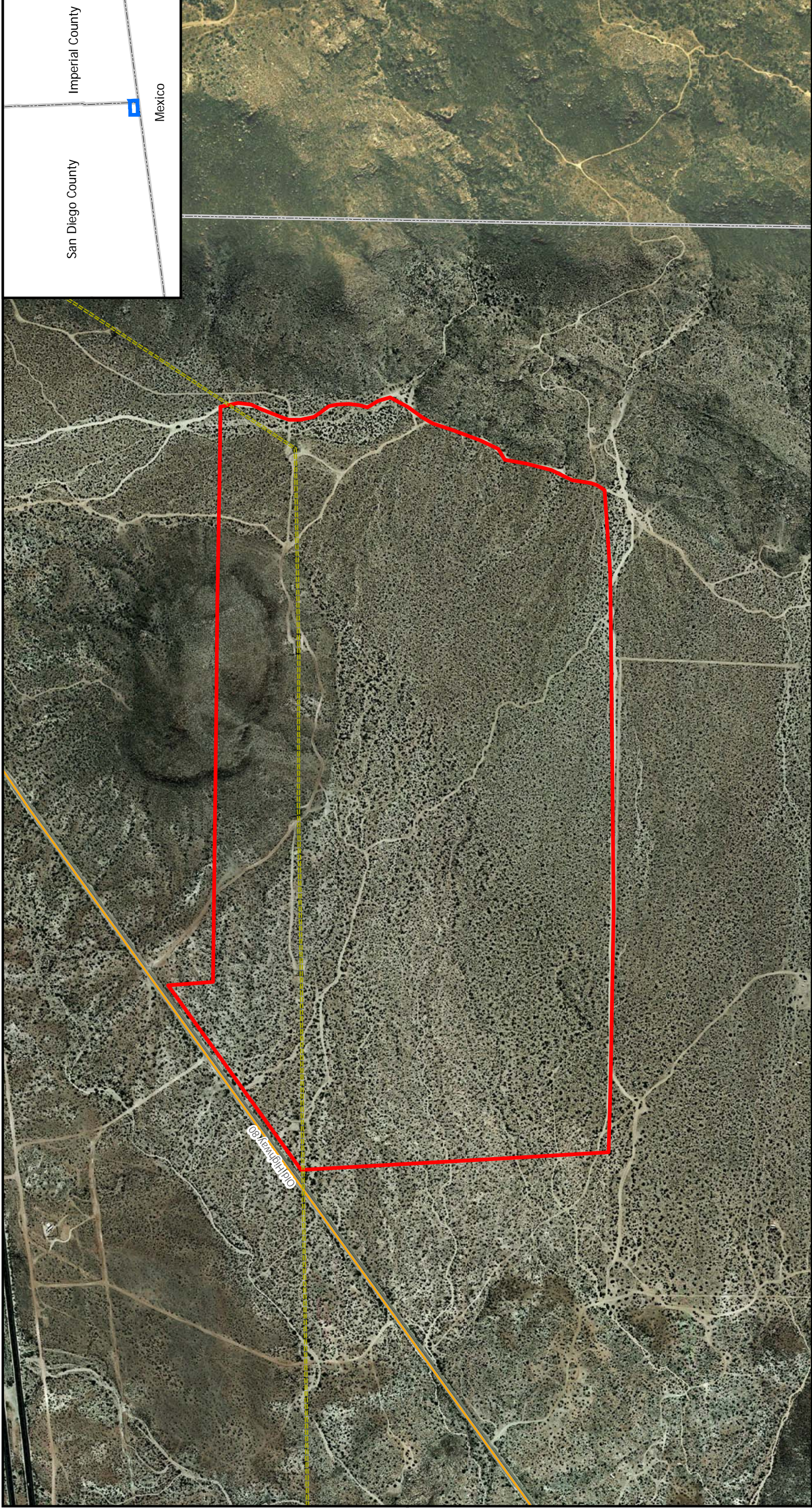
Table 2. Butterfly Species Detected by Survey Date

<i>SDG&E Substation Project Site near Jacumba, San Diego County, CA</i>						
Species Detected		Survey Date				
Common Name	Scientific Name	4-7-08	4-14-08	4-16-08	4-21-08	4-28-08
Painted Lady	<i>Vanessa cardui</i>	▪	▪	▪	▪	▪
Common White	<i>Pontia protodice</i>	▪	▪	▪	▪	▪
Becker's White	<i>Pontia beckeri</i>		▪			
Anise Swallowtail	<i>Papilio zelicaon</i>		▪		▪	▪
Sleepy Orange	<i>Eurema nicippe</i>					▪

Table 3. Potential QCB Nectar Sources and Other Noted Plants, April, 2008

SDG&E Substation Project Site	
Floral List (April 2008)	
Potential QCB Nectar Sources	Common Name
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Rancher's Fiddleneck
<i>Amsinckia tessellata</i> var. <i>tessellata</i>	Checker Fiddleneck
<i>Calochortus splendens</i>	Splendid Mariposa Lily
<i>Chaenactis fremontii</i>	Pincushion
<i>Chaenactis stevioides</i>	Desert Pincushion
<i>Cryptantha intermedia</i>	Nievitas Cryptantha
<i>Descurainia pinnata</i>	Tansy-Mustard
<i>Eriogonum thurberi</i>	Thurber's Buckwheat
<i>Eriophyllum wallacei</i>	Wallace's Woolly Daisy
<i>Gilia</i> spp.	Gilia
<i>Guillenia lasiophylla</i>	California Mustard
<i>Lasthenia gracilis</i>	Common Goldfields
<i>Lotus strigosus</i>	Bishop's/Strigose Lotus
<i>Malacothrix glabrata</i>	Desert Dandelion
<i>Mentzelia affinis</i>	Hydra Stick-Leaf
<i>Pectocarya linearis</i> var. <i>ferocula</i>	Slender Pectocarya
<i>Pectocarya recurvata</i>	Curvenut Combseed
<i>Pectocarya setosa</i>	Bristly Pectocarya
<i>Phacelia distans</i>	Wild-Heliotrope
<i>Pholistoma membranaceum</i>	White Fiesta Flower
<i>Plagiobothrys</i> sp.	Popcornflower
<i>Platystemon californicus</i>	Cream Cups
<i>Salvia columbariae</i>	Chia
<i>Senecio californicus</i>	California Butterweed
Other Plants Onsite	Common Name
<i>Agave deserti</i>	Desert Agave
<i>Allium fimbriatum</i> var. <i>fimbriatum</i>	Desert Onion
<i>Ambrosia</i> [<i>Hymenoclea</i>] <i>salsola</i>	Cheesebush, Burrobrush
<i>Atriplex canescens</i> var. <i>canescens</i>	Four-Wing Saltbush/Shadscale
<i>Bromus rubens</i>	Red Brome
<i>Calyptridium monandrum</i>	Common Calyptridium
<i>Camissonia californica</i>	False-Mustard
<i>Camissonia</i> sp.	Primrose
<i>Cylindropuntia ganderi</i> var. <i>ganderi</i>	Gander's Cholla
<i>Coreopsis californica</i> var. <i>californica</i>	California Coreopsis
<i>Chorizanthe brevicornu</i> var. <i>brevicornu</i>	Brittle Spineflower
<i>Chorizanthe fimbriata</i> var. <i>fimbriata</i>	Fringed Spineflower
<i>Delphinium</i> sp.	Larkspur
<i>Echinocereus engelmannii</i>	Englemann's Hedgehog Cactus
<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	Whispering Bells
<i>Ephedra californica</i>	California Ephedra

<i>Ephedra nevadensis</i>	Nevada Ephedra
<i>Ephedra viridis</i>	Green Ephedra
<i>Eriastrum eremicum</i>	Desert Woolly-Star
<i>Ericameria pinifolia</i>	Pine Goldenbush
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	Mountain Buckwheat
<i>Eriogonum gracile</i>	Slender Buckwheat
* <i>Erodium cicutarium</i>	Red-Stem Filaree/Storksbill
<i>Eschscholzia californica</i>	California Poppy
<i>Filago</i> sp.	Filago
<i>Galium</i> sp.	Bedstraw
<i>Juniperus californica</i>	California Juniper
<i>Krameria</i> sp.	Rhatany
<i>Larrea tridentata</i>	Creosote Bush
<i>Loeseliastrum schottii</i>	Schott's Calico
<i>Lomatium mohavense</i>	Mohave Lomatium
<i>Lotus scoparius</i> var. <i>brevialatus</i>	Deerweed
<i>Lupinus concinnus</i>	Bajada Lupine
<i>Lycium andersonii</i>	Waterjacket
<i>Mirabilis laevis</i>	Wishbone Plant
<i>Nama demissum</i> var. <i>demissum</i>	Purple Mat
<i>Opuntia chlorotica</i>	Pancake Prickly-Pear
<i>Opuntia phaeacantha</i>	Desert Prickly-Pear
<i>Phoradendron californicum</i>	Desert Mistletoe
<i>Prunus fremontii</i>	Desert Apricot
<i>Purshia tridentata</i> var. <i>tridentata</i>	Antelope Bitterbrush
<i>Rhus ovata</i>	Sugar Bush
<i>Ribes quercetorum</i>	Oak Gooseberry
* <i>Schismus barbatus</i>	Arabian Schismus
<i>Sidotheca</i> [<i>Oxytheca</i>] <i>trilobata</i>	Three-Lobe Starry Puncturebract
* <i>Sisymbrium altissimum</i>	Tumble/Jim Hill Mustard
<i>Simmondsia chinensis</i>	Jojoba
<i>Stephanomeria</i> sp.	Wreath-Plant
<i>Stillingia linearifolia</i>	Linear-Leaf Stillingia
<i>Tetradymia canescens</i>	Spineless Horsebrush
<i>Thamnosma montana</i>	Turpentine-Broom
<i>Thysanocarpus curvipes</i>	Lacepod, Fringepod
<i>Yucca schidigera</i>	Mohave Yucca
<i>Ziziphus parryi</i> var. <i>parryi</i>	Lotebush
* Non-native species	
Plant communities onsite include Juniper Woodland and Desert Chaparral.	



Quino Checkerspot Butterfly Protocol-Level Survey Area (Aerial-Based)

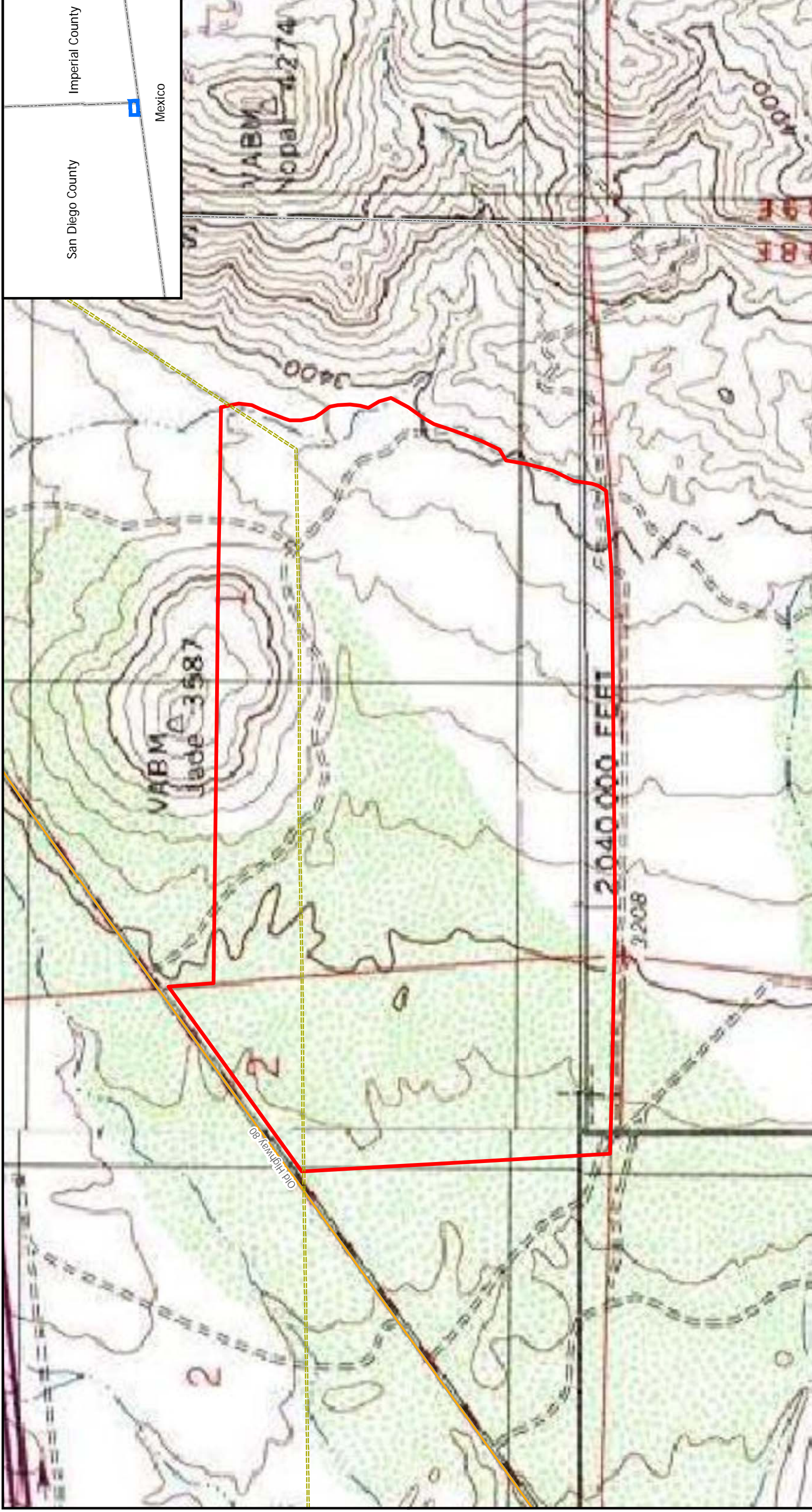
East County 500/230/69kV Substation Project

- Survey Area
- Southwest Powerlink (SWPL)



1:7,500





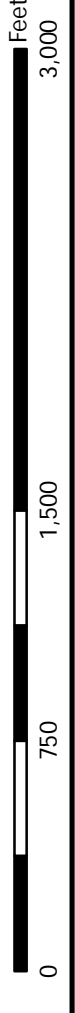
Quino Checkerspot Butterfly Protocol-Level Survey Area (Topo-Based)

- ▭ Survey Area
- - - - - Southwest Powerlink (SWPL)

East County 500/230/69kV Substation Project



1:7,500



3/6/08

Baja Wind Transmission

Jacumba PCB

Habitat Assessment

	Temp	Temp	Wind	segy
Start	1050	59	1-7	0%
Stop	1350	63	1-10	0%

- | | | | |
|---------------------------|---------------------|-------------------|----------------|
| Ero. Sic (don) | Ephedra sp. | wh Spa | <u>Animals</u> |
| Sci Bee - (don) | Cyl Gan | Pat d Ldg | |
| | Phacelia spp. | Cardinalis | |
| | Sim Cili | Woodpecker | |
| | Jun Cal | Black Tail Deer | |
| | Chaenactis sp. | Rabbit | |
| | Plagio sp. | Cow Seat (C) | |
| | Amsinckia sp. | White | |
| | Lupinus concinnus | Red Tail | |
| | Eriogonum (gracile) | | |
| | Lar Tri | | |
| | Phor Cal | | |
| | Atr Can | | |
| | Cyl Int | | |
| | Camissonia sp. | | |
| | Pecto (recurvata) | | |
| | Lomatium sp. | | |

- Echino Eng
- Sarcocolla
- Las Gra (dense in patches)
- Agave des
- Thysanocarpus
- Calyp mon
- Yuc Sch
- ~~Pro For~~
- Gui Las
- Senecio californicus
- Opuntia sp.
- Salvia columbaria
- sp. (Coronopsis californica)
- Eri fas var
- Esch
- Ziz par
- (Lyc and)
- Mirabilis sp
- Des pin

The site hab is consistent across the 200+ acres. Herb cover is moderate w/ many still unident. due to early season. Many nectar sources apparent

3/24/08

Jacumba GCB
#1

Rejira wind Project

Stand	0945	66°	0-3	0%
Stand	1615	78°	0-3	0%

Non-native Plants

Ecolic
S.S. Alt.
Sch Bar

Native Plants

Pec Set
Pockie
Sen Cal
Cano Cal
L45 Grn
Ziz Par
Phase Dig
Sim Chi
Eria vitall
Plageo
Anis Aracal
Pichla Gk
Cano Cal
Eru Fan
Eru Fan
Atr Can
Eru Fan
Cano Cal

Animals

Scott's Oriole
(as Anus) Pinta Ldy
Anise Swal
Phainopepla
Common Wren
Black Phoebe
Ceryle alcyon
(on Pacific distans)
Caki
Sara's O-Tj
Roff Hawk
St TI Jack
Fur Disk
Sulphur

Atr Can
Lyo And
Luplon
Cyl Cal
Yuc Sch
Lar Tri
Galium sp.
St. T. G. L.

Jung Cal
Mentzelia
Gnaphalium
(upright, lanceol)
(thin pods)
Vurshia frid
Nana crassica
Krameria sp.
Mirabilis

Ephedra
Lycium
Eucamecia
Derris
Pechin Fern
Anis Tess
Anis Nien Int
Sen Cal
Salvia Cal
Thamnosma montana
Schino eng
Thysanocarpus curvipes
Cryphaea inter
Platystemon Californicus
Quin phac
Calyst monardrum

3/31/08 / E+E
Jacumba PCB #2

w/ Cindy, James Paverm

	Time	Temp	Wind	SEY Cov
Start	1000	60°	3-5	0%
Stop	1600	64	6-8	0%

Starting in middle of site

Plants

W. Idfls still look good
but starting to fade
slightly.

Mentzelia affinis - un,
yellow, Mentzelia, rocky
dirt often near
shrubs or exposed to open
sandy areas

Animals

- Painted ldy (C)
- Common white E. G.
- Funereal Fly
- Silphus sp.
- Black Thr Sparrow
- Shrike molt - 3
preparing on log
- GTI
- Brewer's Sparrow
dark, long tail, still
- Phainopepla
- W. Shrike
- Geoff. Oriole

4/7/08 / E+E Bjo Wad
Jacumba PCB
Survey #3

	Time	Temp	Wind	SEY Cov
Start	1000	64	8-12 SW	40% H.
Stop	1500	68	4-5 gusts to 10	0%

Andrew's satohia
Rho G.A

Animals

- Red Admiral
- Painted ldy
- Phainopepla
- Scott's Oriole
- Brewer's Sparrow
- W. Shrike, Warbler
- Chalcedon (Chickadee)

Chalcedon observed nectaring
on flowers nearby in
old road w/ very sandy
soil:

Common white
preparing on log

* N. G. B. observed

4/14/06 E+8
 Jaromira GCB
 Survey #4

	Time	Temp	Wind Dir	Wind Spd
Start	0930	75	01	0
Stop	1500	85	4-8	0

Period in middle of site, heading north to runway

Plant Notes	Animals
Mil. Gla (fill/liner)	Painted Ldy
Charadri's (fill/lin)	Common Nighthawk
Lee Grass (weed)	Sphinx Moth
Flu Dis (flower/seed)	Back's White
Sai Col (fl.)	<small>(more birds here)</small>
American (fl/Gr)	Ath Fl
dry tree	BTh Sp
Amb Sucker	Scott's Oriole
Tetra Cassin's	W. Wren
Sch Thr	Chimney Swift
Com Cal (fl)	White Swallow
Lot Sw (fl/lin)	

4/21/06 Jaromira GCB
 Survey #5

	Time	Temp	Wind	Spd
Start	0545	100	05	10-14 SW
Stop	1630	74	11-14	0%

Plant's (road in/area)	Animals
Delphinium	Painted Ldy
Cal. Sp.	W. Wren
Almond (fruiting)	Red W. (fl/seed)
Loosestrife (fl/lin)	White Swallow
Eucalyptus	Black Swallowtail
E. (fl/seed)	Ash Thr Fly
Still. (meadow)	Com Wren
Flora	Phoebe
W. Wren (veg)	
Red-w. Wren, Still. Wren	
Charadri's	Cup Int.
Song Spar	American
Sai Col	
American	
W. Wren	

→ *Anderssonii*

Lycium (calyx tube short \ll $\frac{1}{2}$ corolla tube)
Corolla lobes short

Ambrosia *Filago* (arizonica)

Stylo Group

Chaenactis stercorioides

~~Cham~~ *Albo*

Chaenactis fremontii

Most of the Las Grs in dead and
in seed. Still some in Fl in
protected areas

Oxytelea tril

Layra gland

Scott's Oridy

Jim Rocks

Castanea gracilis - now completely in
seed w/ a couple of exceptions.

4/28/08

Sempra / E+E

Jacumba QCB #1

	Time	Temp	Wind	Stages
Start	1030	81	5-10	30%
Stop	1530	85	5-11	10% thin

- Nectar sources very scarce now

Senecio flaccidus var. *monensis*

Mal Gla

Chae (ster)

Ath Fly

Cryptantha

No Mo

Salt Col

Phos

Stil lin

Comm

Eric Hill

Red Fly

Phac Os

Ca QV

Phor Cal (on Ziz Par)

Bth Sparrow

Ribes quercetorum

Blue-Gray Gnat

Sage Thrasher

Amise Swallow

Gersea canescens - found offsite to the west
~ 25 indiv.

March 24, 2008 Cindy Jones
Daverin

Jacumba QCB #1

9:45 - 4:15 66°F - 78°F

clear - clear 0-3mph / 0-3mph

Butterflies

Painted lady 50

Painted lady migration

Anise swallowtail 1

White (checkered) 20

Columbus blue 1

Sara orange tip 1

Sulfur 1

Birds

Brewer's sparrow Black throated green

Phainopepla W. kingbird

N. mockingbird R.T. hawk

W.C. sparrow

Blooming Plants

Goldfields

Amsonia

Erodium

Pectocaryas (B)

Thaelia

Chicory Coreopsis

Chaenactis (white)

Camissonia

Chia

Daisy

Tansy mustard

Lupine

Prunus

cream cups

Mentzelia

Eriogonum hum. wellacei

Semio californica

March 31, 2008 Cindy Jones-Davaria

Jacumba QCB#2

10:00 - 4:00

60°F - 64°F

clear - clear

3-5 mph - 6-8 mph

Butterflies

Painted lady 100's

Common white III

Funereal dusky wings //

Sulfur //

Painted lady migration

Bt sparrow, raven, turkey vulture
P. hairy woodpecker, rock wren, mockingbird
~~Scott's oriole~~, bush tit
WC sparrow

Blooming Plants

Goldfields - some drying there

Popcorn flower

Camissonia

Pincushion - white

Alpine

Eriophyllum wallacii

Phacelia distans

Senecio

Coleopsis

Fiddleheads - mostly dried

Jalisco Sempre QCB#5
 10-3:00 Cindy Jones Dancer
 64°F - 68°F
 Clouds 40% high, thin
 8-12 mph - 4-5 mph

Butterflies

Painted lady Hundreds in migration
 Red admiral 1
 Checkered white 1111
 Chalcidon checker spot 1
 nectaring in dirt road. - photo

Juniper area has limited nectar sources. Butterflies drop in number.

Flowering Plants

Malacothrix - painted leaves nectar
~~Chenopodium~~
 Lactuca
 Cryptantha
 Lupinus ~~...~~
 Phacelia distans - check white nectar
 Eradivum
 Chia
 Chaenactis
 Camissonia cal.
 Crisphyllum wallacei
 Anisodama - chalcidon nectar

Most butterflies also in south part where Malacothrix is in full bloom.

Wildlife

SGOR	BTSP
BTGR Warbler	WVW
ATEL	COCA
WCSP	NOMO

Jacumba ECB#4 4-14-08

9:30 - 3:00

Cindy Jonas-Dawson

75°F - 85°

Clear - clear

Wind 0-1 - 4-8 mph

Butterflies

Checkered White IIII

Painted lady IIII IIII IIII II

Becker's white III

(Orange) sulfur I

Painted lady migration over

Nectar Sources / Notes

Goldfields - dried mostly

Senecio - mostly dry

White Clematis ^{good} (nectar)

Melaleucyris ^{good} (nectar)

Phacelia distans

Lupinus cosentinus

Chrys

Mustards

Fiddleneck

Eriophyllum wallacei

Popcorn flowers

Echinocereus

NAME
CORVA

BTSP
PHAI

SCOR
WCSP

TUVA

Jacumba QCB#5 4-21-08

Chris Jones-Jaworski

10:00 - 4:30

Clear - Clear

65°F - 74°F

11-14 mph - 8-10

Butterflies

Painted lady IIII

Black swallowtail I

Checkered white I/1

washed ~~hippie~~

ATL, NOMO, SCOR, ROVR

RTHA, BTSP, TUVU, jach

Blooming Plants

Onion Allium *fimbriatum* ^{var. fimbria}

Filaree

Goldfields (very dried)

Chaenactis (blooming)

Coleopsis *lyonix* seeding

Chia (mostly seed)

Eriogonum *eremicum*

Senecio cal

Eriophyllum *wallacei*

Eriogonum (small)

Anisogoma (S. end only)

Phacelia (S. end only)

Layia (white)

The washes in the S. part of site still blooming well
Malceothrix, Chaenactis, Chia, Coleopsis

4-7-08
Jacumba SDGE QUB#1
3:00-4:30 Cindy Jones Javarin
Clear - clear
4.5 mph gusts to 10 to 8-12
68°F - 70°F

Butterflies

Painted lady ###=###
Checkered white ||

TUVU, CORA, BTSP

Nectar sources

Cryptantha
Goldfields
Phacelia
Senecio
white tidy tips
Eriogonum willow
Lupine

Juniper woodland area
lacks nectar sources
& butterfly pop is scarce
compared to other habitat
This is north of a
small wash

Goldfields

Jacumba/Opus 4-14-08

Cindy Jones-Dawson

3:00 - 4:30

85° 81° F

7-8 to 6-8 gust to 12

Clear sky

Butterflies

Anise swallowtail III

Checkered white I

Nectar Sources

Goldfields - drying

Eriophyllum willacottii

Phacelia

Chia

Viguiera

Mustard

Buckwheat

Fiddleneck

Ephedra

Echinaceus

Cindy Jones Javarin

Jacumba SPAL 4-21-08

8:45 ~~8:45~~ 10:00, + 4:30-5:00

60°F + 1/2 hour

10-14mph clear

Clear sky 74°F

8-10mph

Butterflies

Painted lady 1

Checkered white III

Rock wren w/ 5 new fledglings on Tadetti!
RTHA

Nectar Sources

Cal buckwheat

Calochortus splendens

Delphinium

Filaree

Chaenactis-white

Goldfield (crispy)

Eriophyllum willacii

Chia

Buckwheat

4-28-08
 Jacumba Opus QCB#5
 8:45 - 10:30 Cindy Jones-Dawson
 74°F - 81°F
 5-8 mph wind - same
 sky sunny, high thin clouds
 at 30% same

Butterflies

- Painted lady 1
- White-checked 11
- Sleepy orange 1
- Amisil swallowtail 1

- Phainopepla
- RT Hawk
- Bt Sparrow
- Rock wren
- Turkey vulture
- Scrub ~~jay~~ jay

Nectaring Sources

- Creosote
- Sidalcea
- Calochortus splendens
- Wegmannia fasciculata
- Cactus - Echinocereus
- Viguiera
- Eriogonum
- Eriophyllum wallacei
- Chrysantheum bry & funarioid
- Chia
- Mentzelia
- Fibacea

E+E - Baja West
 H-7/0.8 / Jacumba QCB
 Survey #3

Time	Temp	wind	sky cover
Start 1700	64	8-12 SW 40% - 16 mi	
Stop 1900	68	4-5 gusts to 10	0%

Andrena sakala
Rhoda

nectar on *Malva*

Animals
 Red Admiral
 Painted Ldy
 Phainopepla
 Scott's Oriole
 Brewer's Sparrow
 Bl. Th. Gray Warbler
 (Chalcedon Checkerspot)

C. alcedo dissected nectary
 on *Artemisia* nectary on
 side road w/ very sandy
 soil

Copaxos white
 preening on flower
 distans

* N. GCB observed

DATE Ops Environmental
 H-7/0.8 / Jacumba QCB 60 acre
 Survey #1

Time	Temp	wind	sky
Start 1500	68	4-5 gusts to 10	0%
Stop 1630	70	8-12	0%

6th "Surt 50" = more suitable GCB habitat south of this point, other areas nearby are *Artemisia* scrub

Plants
~~Laurea~~
 Brodiaea, Lesquer, Euc. Wolf
 Sch Bar, Yucca, Sals, Pecker
 Eucali, San Cal, Singslas
 Epil Cal, Amthelut
 Ziz Bar, Mentiff
 Lar Tr, Gallego
 Lam Cal, Simulans
 Cyl Cal, Gullies
 Jun Cal
 Lycium
 Ph. Dis
 Phoro & d. on Jun Cal
 Long Stan
 Sph New
 Eriodera (Blue)

Painted Ldy
 Common White

* No GCB observed

Cho Fin Cho Reef
 Eucie
 Ani Aerial (E/F/R)
 Lang Sel
 Lip Cen
 Lo. Tri
 Zic Wr
 Echinsag (S)

Opus Fav.
 SDG d E
 Jacumba PCB #2

	Time	Temp	Wind	Stages
Start	1600	85	4-8	0
Stop	1630	81	6-8 gusts	0

Starting on Jade Mtn then heading SW

Plants	Animals
Fra Lic	(3) Anis Swallow
Sch Bar	(2) Becker's White
Bo Rub	(2) Common White
	Scall's Oriole
	Bl Thr Sparrow
	Sal Col
	Vig Par
	Chy Tri
Lat St	Cho Fin
Anis Wren	Cho Reef
Anis Tes	Lang Sel
Pla Dis	Eph Cal
Corymthia	Eph NW
Lycium	Yuc Sel
Sim Chi	Zic Wr
Juncus	No Fire

4/16/05
~~Malta~~
~~Europe~~

Cyprus Environmental
 SDGE Tacomba
 GCB #3

	Time	Temp	Wind	sky
Start	1210	69°	1-6	0%
Stop	1510	72°	1-7	0%

Excellent butterfly survey conditions.

Plants	Animals
Ambrosia dumosa	Common Wbr to
Eghebra viridis	Painted Lady
Sen Cal	* Bokerat
Lao Gra	Utastan

Very little cover of nectar
 sources in the northern
 2/3 of the west parcel.
 Lao Gra is present in some
 large patches to south
 closer to wide dirt road.

- Geo Geo
- Bro Miskub
- Sch Bar
- Geo Lar
- Sim Chi
- Cygl Gen
- Lar Tri
- Agg Deo
- Ge h Eng
- Cal Mian
- Phor (on Juniper)
- Rec Set
- Pr Lin to
- Rec Rec
- Mal Gla
- Ans Men lat
- Zo lar
- Astr Did

* No host plants of or GCB observed

Arvicola 50000?
Lepus californicus shot at 1/2 smooth side
Crotalus lateralis shot

Ambrosia Tilage (arizonae)
Sage Grouse
Geococcyx stansburiana
Tyrannus carolinensis
Chondestes fremonti

Most of the low grass is dead and
in seed. Still some in flower
in protected areas

Pythium foot
Layna glands

Scott's Oriole

4/21/08 / 585-10/opus
Jacumba GCB
#4

Stop 0815 60 10-14 SW 0%
Stop 1000 65 10-14 SW 0%

No birds of this peak to check
hill top.

Delphinium in rock

	Time	Temp	Wind	WSP
Re-start	1630	74	8-10	0
Stop	1700	74	8-10	0

nothing in flower area that
is only available on smooth
land

- low grass in seed ± throughout
Other water sources dry

ROCKSBIOLOGICAL CONSULTING

4/28/08

Opus Ev. / S/DG + E

Jacumba QCB #5

	Time	TEMP	WIND	SFO
Start	0845	74	5-8	30%
Stop	1030	81	5-10	20%

- Starting at Jade Mtn hiking to top.

Allium fimbriatum v.f.	Printed Ldy
Open chlor	B Thr Sparrow
Lyc and	RT Ha
Pur tri	Ash Thr Fly
Sat Col	Rock Wren
	CoRa
Nectar sources very dry & sparse now	Sleepy Orange
Las gra dried up.	Uta Stam
	W. Whiptl
	Phainopepla
	Scrub Jay
	Checkered White
	Anise Swallow

Lastenia gracilis - now completely in seed w/ a couple of exceptions.

4/28/08

Semptra / E+E

Jacumba QCB #6

	Time	TEMP	WIND	SFO
Start	1030	81	5-10	30%
Stop	1530	85	5-11	10% thin

- Nectar sources very scarce now

Sarcocolla flaccidus var. *monensis*

Ma Fla	
Chae (siev)	Athr Fly
Cryptantha	No Mo
Sat Coll	Phain
Styl Lin	Common White
Evo Walll	Red Ldy
Pha Dis	Ca Qu
Pho Cal (on Ziz Par)	B Thr Sparrow
<i>Ribes quercetorum</i>	Blue-Gray Gnat
	Sage Thrasher
	Anise Swallow

Gerard carnosus - found offsite to the west
→ 25 indiv.

