APPENDIX D Part 5

Biological Resources Technical Report

ATTACHMENT A-1

2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California

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July 18, 2011 6759-4.7

U.S. Fish and Wildlife Service
Attention: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92011

Subject: ***2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California***

Dear Recovery Permit Coordinator:

This letter report documents the Spring 2011 results of a focused survey conducted by Dudek for the federally-listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) for the Jewell Valley Wind Project, a proposed wind energy development project in the southeastern portion of the County of San Diego, California.

PROJECT LOCATION AND EXISTING CONDITIONS

The proposed Jewell Valley Wind Project site is approximately 6,660 acres in southeastern San Diego County, approximately 60 miles east of the City of San Diego near the town of Boulevard, CA (Figure 1). The project site includes two components consisting of the Northern Ranch located to the north of Interstate 8 (I-8) and the Southern Ranch located to the south of I-8. The site lies between two major drainage divides: the Tecate Divide to the west, and the In-Ko-Pah Mountains to the east. This area occurs within the Live Oak Springs U.S. Geographic Survey (USGS) topographic quadrangle (Figure 2).

The terrain in the area ranges from valley bottoms to house-sized boulder-covered ridgelines. The elevation ranges across the study area from approximately 3,280 feet above mean sea level (AMSL) to approximately 4,120 feet AMSL.

Soils on site include acid igneous rock land, Calpine coarse sandy loam, Kitchen Creek loamy coarse sand, La Posta loamy coarse sand, La Posta rocky loamy coarse sand, Las Flores loamy fine sand, Loamy alluvial land, Mottsville loamy coarse sand, Riverwash, and Rositas loamy coarse sand.

VEGETATION COMMUNITIES

Nine plant communities and land cover types were mapped within the focused QCB survey area, including: red shank chaparral, semi-desert chaparral, granitic northern mixed chaparral, valley and foothill grassland, field/pasture, open coast live oak woodland, dense coast live oak woodland, upper sonoran subshrub scrub, and freshwater marsh. The acreages of each community type within the project site are shown in Table 1. Descriptions of each vegetation community (with Holland numeric codes) are provided following Table 1. Holland (1986) and Oberbauer (1996) were used to describe vegetation communities on site.

Table 1
Vegetation Communities within the Focused Quino Checkerspot Butterfly Survey Area for the Jewell Valley Wind Project

Vegetation Community	Acreage On Site
Red shank chaparral	427.1
Semi-desert chaparral	264.1
Granitic northern mixed chaparral	263.8
Valley and Foothill Grassland	22.2
Field/pasture	13.8
Open coast live oak woodland	5.8
Upper Sonoran subshrub scrub	3.2
Freshwater marsh	2.6
Dense coast live oak woodland	0.2
Total	**1002.8**

Red Shank Chaparral (37300)

Red shank chaparral is made up of nearly pure stands of red shank (*Adenostoma sparsifolium*) (Holland 1986). This community is similar to chamise chaparral but is typically taller and somewhat more open (Holland 1986). In the study area, red shank chaparral intergrades with chamise chaparral and scrub oak chaparral. Like chamise chaparral, the understory in red shank chaparral is sparse and composed of flat-topped buckwheat, annual forbs, and brome grasses.

Semi-Desert Chaparral (37400)

Semi-desert chaparral is relatively open, with widely spaced shrubs and openings supporting annuals. This community is similar to mixed chaparral but occurs in areas with hotter, drier summers and colder winters. In the study area, this community is characterized by abundant rock outcrops. Semi-desert chaparral intergrades with flat-topped buckwheat and the other chaparral

communities. Perennial species common to this community include flat-topped buckwheat, silver cholla (*Cylindropuntia echinocarpus*), Mojave yucca, and Mormon-tea (*Ephedra californica*). Scattered occasionally throughout this community are other common chaparral shrubs, including sugarbush, mountain mahogany, and scrub oak. Annual species observed in the openings of this community include goldfields, red-stemmed filaree, golden yarrow (*Eriophyllum confertiflorum*) thread-leafed eriastrum (*Eriastrum filifolium*), chia, desert beauty, Lemmon's linanthus, San Diego gilia, popcorn flower, and red brome.

Granitic Northern Mixed Chaparral (37131)

Granitic northern mixed chaparral is similar to northern mixed chaparral (37130), but with granitic soils. This community consists of broad-leaved sclerophyll shrubs, 2–4 m tall, forming dense, often nearly impenetrable vegetation dominated by Nuttall's scrub oak (*Quercus dumosa*), chamise (*Adenostoma fasciculatum*), and any one of several taxa in *Arctostaphylos* and *Ceanothus*. Plants in this community are typically deep-rooted, with usually little or no understory vegetation, and often considerable accumulation of leaf litter. Granitic northern mixed chaparral is well adapted to repeated fires, to which many species respond by stump sprouting. A dense cover of annual herbs may appear during the first growing season after a fire, followed in subsequent years by perennial herbs, short-lived shrubs and re-establishment of dominance by the original shrub species in this community.

Valley and Foothill Grassland (42000)

Valley and foothill grassland is a native community dominated by large tussocks of perennial native needlegrass (*Nasella* spp.). The habitat is open and typically supports a variety of native and introduced grasses and forbs, often actually exceeding the bunchgrasses in cover. In San Diego County, native perennial herbs such as *Sanicula*, *Sidalcea*, *Sisirynchium*, *Eschscholzia* or *Lasthenia* are present. The percentage cover of native species at any one time may be quite low, but is considered native grassland if 20% aerial cover of native species is present. Other species commonly associated with valley and foothills grassland include wild oat (*Avena fatua*), common goldenstar (*Bloomeria crocea*), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madriatensis* ssp. *rubens*), California poppy (*Eschscholzia* spp.), and goldfields (*Lasthenia* spp.).

Open and Dense Coast Live Oak Woodland (71161 and 71162, respectively)

Both open coast live oak woodland and dense coast live oak woodland are generally similar to the coast live oak woodland (71160). Open coast live oak woodland has a canopy with less than 50% cover, while dense coast live oak woodland has a canopy with between 50% and 75% cover. Coast

live oak woodland is an evergreen woodland dominated by coast live oak (*Quercus agrifolia*). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), currant or gooseberry (*Ribes* spp.), laurel sumac (*Malosma laurina*), or dominated by Mexican elderberry (*Sambucus Mexicana*). The herb component is continuous and dominated by ripgut grass and several other introduced taxa. Open coast live oak woodland typically occurs along drainages at desert margin on north-facing slopes or mixed with Engelmann oak (*Quercus engelmannii*). Dense coast live oak woodland mostly occurs at the narrowing of valley flood plains, or valleys with deep alluvium and high perennial groundwater, mostly in riparian habitats.

Field/Pasture (18310)

Field/pasture includes areas of low-intensity agriculture typically involving dry farming or livestock grazing. In the study area, a small area of field/pasture occurs along McCain Valley Road near Interstate 8, where livestock grazing occurs in a floodplain area. In general, this area is characterized by non-native grasses, including *Bromus* and *Hordeum* species, and non-native herbaceous species, including tumble mustard (*Sisymbrium altissimum*) and red-stemmed filaree (*Erodium cicutarium*).

Upper Sonoran Subshrub Scrub (39000)

Upper sonoran subshrub scrub is a low, fairly penetrable scrub of soft-wooded, summer-dormant, drought- tolerant shrubs. Dominance varies among sites, but usually includes interior goldenbush (*Ericameria linearifolia*), interior California buckwheat (*Eriogonum fasciculatum polifolium*), bladderpod (*Isomeris arborea arborea*), or desert tea (*Ephedra californica*), with many annuals derived from nearby grasslands filling the spaces between the shrubs. Upper sonoran subshrub scrub typically occurs in fairly well drained soils derived from sandstone, shale, or even sterile white diatomaceous deposits. In San Diego County this community occurs at high elevations.

Freshwater Marsh (52400)

Freshwater marsh is a wetland habitat type that develops where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. It typically is dominated by tall, emergent monocots, such as cattail (*Typha* sp.) and bulrush (*Scirpus* sp.). With elevations on the Jewell Valley study area ranging from 2932–3534 feet AMSL, the freshwater marsh on site could most accurately be described as transmontane freshwater marsh (52420), which occurs from 3500–7500 feet AMSL. Transmontane freshwater marsh differs from coastal and valley freshwater marsh (52410) in having a shorter growing season, confined more strictly to the summer and subject to much lower temperatures in winter, often well below freezing.

Freshwater marsh is considered a wetland community and the marsh on site is under the jurisdiction of the CDFG, pursuant to Section 1601-1603 of the California Fish and Game Code, the ACOE, pursuant to Section 404 of the Clean Water Act, and the RWQCB, pursuant to Section 401 of the Clean Water Act. In addition, this wetland habitat is under the jurisdiction of the County of San Diego.

QUINO CHECKERSPOT BUTTERFLY SURVEY

Methods

The project developer is in the process of developing a site plan that will be based on meteorological data collected from MET facilities to be constructed onsite. Since a site plan was not available at the time Focused QCB surveys were completed, a survey program was developed by Dudek that included surveying specific areas located throughout the project site (Figures 3 and 4). The survey areas were developed by Dudek based on discussions with the project developer that identified potential areas onsite that would likely be most suitable for development and habitat onsite that would likely support QCB.

Focused QCB surveys were conducted over five visits within a 5-week period between March 9 and April 15, 2011. Surveys were conducted by QCB permitted biologists Anita M. Hayworth, Ph.D. (TE781084), Brock A. Ortega (TE813545-5), Jeff D. Priest (TE840619-2), Kam J. Muri (TE051250-0), Tricia Wotipka (TE840619-2), Paul M. Lemons (TE051248-2), Vipul R. Joshi (TE019949-0), Viviane Marquez (TE800930-9) and David Waller (TE025394-2) in accordance with current USFWS protocol (USFWS 2002a, 2002b).

The site was divided into 11 survey polygons, each representing a single day survey effort (i.e., in accordance with USFWS protocol) (Table 2). These survey areas were numbered and assigned to Dudek's permitted biologists. The biologists were provided with 200-scale (1 inch = 200 feet) aerial photographs of each survey polygon. These photographs were used for mapping host plant populations. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species. GPS units also were available for recording locations of host plant populations.

Table 2
2011 Quino Checkerspot Butterfly (QCB) Survey Polygons

Survey Area	Acreage of Survey Area
1	96
2	95
3	93

Table 2
2011 Quino Checkerspot Butterfly (QCB) Survey Polygons

Survey Area	Acreage of Survey Area
4	99
5	84
6	85
7	88
8	93
9	89
10	88
11	93

The survey methods consisted of slowly walking roughly parallel transects throughout all potential habitat within the survey area (i.e., all areas that are not excluded per the survey protocol, generally including sage scrub, open chaparral, grasslands, open or sparsely vegetated areas, hilltops, ridgelines, rocky outcrops, trails and dirt roads). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10–15 acres per hour.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; sustained winds greater than 15 miles per hour measured 4–6 feet above ground level; temperature in the shade at ground level less than 60° Fahrenheit (F) on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the QCB survey are shown in Table 3. Photocopies of the surveyor's field notes are included as Appendix A.

Table 3
Schedule of Focused Quino Checkerspot Butterfly Surveys and Environmental Conditions

Survey Area	Date	Time	Range of Conditions			Personnel*
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
Week 1						
1	3/11/11	0805–1400	64–81	0–0	3–5 to 6–10	AMH
2	3/9/11	0946–1530	60–60	0–0	0–10, gusts to 30	BAO
3	3/11/11	1000–1600	63–70	0–0	3–5 to 5–10, gusts to 15	BAO
4	3/11/11	0830–1505	61–80	0–20	3–6 to 4–8, gusts to 15	JDP
5	3/15/11	0850–1500	63–70	0–10	0–4 to 6–10, gusts 10–15	PML
6	3/15/11	1000–1600	68–72	5–15	2–3 to 2–5, gusts 8–15	VRJ
7	3/10/11	0910–1500	64–78	0–0	0–3 to 3–6, gusts 12–20	PML

Table 3
Schedule of Focused Quino Checkerspot Butterfly Surveys and Environmental Conditions

Survey Area	Date	Time	Range of Conditions			Personnel*
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
8 (north half)	3/11/11	0840–1400	60–69	0–5	0–5 to 4–10, gusts 10–15	PML
8 (south half)	3/11/11	0915–1530	68–86	0–0	4–7	TLW
9	3/10/11	0930–1530	64–67	0–0	0–1 to 0–5	VRJ
10	3/14/11	0915–1515	66–80	10–35	3–6 to 6–9	TLW
11	3/11/11	0945–1545	62–64	0–40	7–8 to 5–10	KJM
Week 2						
1	3/18/11	0930–1530	62–65	20–0	5–10, gusts to 15	BAO
2	3/18/11	0945–1515	64–64	20–0	1–3 to 5–10, gusts 10–15	AMH
3	3/15/11	1000–1610	65–70	0–20	5–10, gusts to 15	BAO
4	3/18/11	0930–1600	60–73	60–5	0–3 to 8–12, gusts to 15	JDP
5	3/29/11	1100–1630	66–70	10–10	5–10 to 3–5	BAO
6	3/17/11	0845–1525	64–69	10–40	0–5 to 2–9, gusts 10–14	PML
7	3/17/11	0905–1515	61–72	0–0 hazy	2–3 to 5–8	TLW
8	3/23/11	0945–1600	64–62	0–0	0–2 to 4–6	TLW
9	3/28/11	1100–1700	64–66	0–0	3–8, gusts to 15	VRJ
10	3/18/11	0905–1505	70–68	0–0 hazy	4–6 to 6–9	TLW
11	3/18/11	1000–1600	60–60	50–0	4–8 to 6–10, gusts to 12	KJM
Week 3						
1	3/29/11	0930–1615	64–72	0–80	3–5 to 5–8	AMH
2	3/23/11	1000–1630	60–64	0–15	2–4 to 8–12, gusts 15–25	JDP
2	4/1/11	1420–1720*	81–88	0–0	0–7	VM & DW
3	3/30/11	1015–1630	73–74	2–60	1–5 to 2–6, gusts to 8	JDP
4	4/5/11	1015–1700	67–72	40–80	3–7 to 2–8, gusts 10–14	PML
5	3/31/11	0920–1535	68–77	5–5	0–4 to 4–8, gusts 9–12	PML
6	3/30/11	0900–1500	64–74	10–20	0–4 to 4–8, gusts 9–15	PML
7	3/29/11	0900–1505	64–76	0–20	5–8 to 2–4, morning gusts to 12	TLW
8	4/1/11	0900–1515	74–86	0–0	2–3	TLW
9	3/30/11	1030–1350*	69–77	5–20	0–8	VM & DW
10	3/30/11	1350–1525*	75–76	25–35	0–8	VM & DW
10	4/1/11	1035–1305*	78–89	0–0	0–7	VM & DW
11	3/28/11	1015–1630	60–62	0–0	4–6 to 3–7	KJM
Week 4						
1	4/1/11	0830–1550	64–64	0–0	3–5	AMH
2	4/13/11	1030–1305*	60–67	0–5	0–7, gusts 7–9	VM & DW
3	4/2/11	0915–1530	68–74	50–60	0–5 to 4–9, gusts to 15	JDP

Table 3
Schedule of Focused Quino Checkerspot Butterfly Surveys and Environmental Conditions

Survey Area	Date	Time	Range of Conditions			Personnel*
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
4	4/1/11	0930–1600	74–88	0–0	0–2 to 0–4	JDP
5	4/4/11	0920–1545	64–72	0–0	3–8 to 4–8, gusts 9–15	PML
6	4/11/11	1000–1600	62–65	50–0	2–6 to 1–4, gusts 5–8	PML
7	4/4/11	0930–1545	70–74	0–0	5–8, gusts to 16	TLW
8	4/5/11	1030–1630	70–70	40–60	4–7 to 4–12, gusts to 20	KJM
9	4/1/11	1000–1500	63–66	0–0	3–5, gusts to 10	BAO
10 north	4/10/11	1405–1545*	62–64	0–0	0–7, gusts 7–9.5	VM & DW
11	4/4/11	1030–1630	62–67	0–0	2–4 to 0–2, gusts 6–10	KJM
Week 5						
1	4/12/11	1005–1605	64–68	0–0	4–8 to 5–10	AMH
1	4/15/11	1030–1400	67–69	0–0	5–9	AMH
2	4/15/11	1030–1630	66–69	0–0	5–7 to 4–7, gusts 10–12	KJM
3	4/14/11	1030–1640	61–64	0–0	3–7 to 2–5	KJM
4	4/11/11	0950–1415	62–65	50–0	3–5	AMH
5	4/12/11	0940–1600	60–65	0–0	2–4 to 2–6, gusts 7–10	PML
6	4/13/11	1040–1630	60–62	0–10	3–8 to 4–8, gusts 10–17	PML
7	4/12/11	1020–1625	62–64	0–0	2–6 to 4–7	KJM
8	4/13/11	1405–1630*	56–62	0–20	0–5, gusts 6–11	VM & DW
9	4/11/11	1015–1450*	60–67	15–70	0–7	VM & DW
10	4/14/11	1100–1700	63–65	0–0	3–5 to 2–10	BAO
11	4/10/11	1000–1405*	58–65	0–0	0–6 gusts 9–13	VM & DW

* Survey areas were split up and surveyed simultaneously by Viviane Marquez and David Waller. Survey times shown should be doubled to determine time spent in each survey area.
AMH = Anita M. Hayworth, PhD (TE-781084-6)
BAO = Brock A. Ortega (TE-813545-5)
JDP = Jeffrey D. Priest (TE-840619-2)
KJM = Kam J. Muri (TE-051250-0)
PML = Paul M. Lemons (TE-051248-4)
TLW = Tricia L. Wotipka (TE-840619-2)
VRJ = Vipul R. Joshi (TE-019949-0)
VM = Viviane Marquez (TE-800930-9)
DW = David Waller (TE-025394-2)

RESULTS

No QCB were observed during the 2011 focused survey. Thirty-three (33) butterfly species were observed during the surveys. The weeks in which these butterflies were observed are shown in Table 4.

Table 4
Butterflies Observed on Site

Scientific Name	Common Name	Week				
		1	*2*	*3*	*4*	*5*
Hesperiidae – Skippers						
Erynnis funeralis	Funeral duskywing	X	X	X	X	X
Erynnis propertius	Propertius duskywing	—	—	—	X	—
Erynnis sp.	Duskywing	X	X	X	X	X
Thorybes pylades	Northern Cloudywing	X	—	—	—	—
Nymphalidae – Brush-footed Butterflies						
Agraulis sp.	Fritillary	—	—	X	—	—
Coenonympha californica californica	California ringlet	X	X	—	X	—
Junonia coenia	Buckeye	—	—	—	X	X
Vanessa annabella	West coast lady	X	X	—	—	X
Vanessa cardui	Painted lady	X	X	X	X	X
Vanessa sp.	Lady	X	X	X	X	X
Lycaenidae – Blues and Hairstreaks						
Brephidium exile	Western pygmy blue	—	—	X	—	—
Callophrys perplexa	Perplexing (green) hairstreak	X	X	X	X	X
Glaucopsyche lygdamus australis	Southern blue	X	X	X	X	X
Icaria acmon acmon	Acmon blue	X	X	X	X	X
Incisalia augustinus	Brown elfin	X	X	X	—	—
Leptotes marina	Marine blue	X	—	—	—	—
Philotes sonorensis	Sonoran blue	—	—	X	—	—
Papilionidae – Swallowtails						
Papilio eurymedon	Pale swallowtail	X	X	X	X	X
Papilio rutulus	Western swallowtail	—	X	—	X	—
Papilo zelicaon lucas	Anise swallowtail	—	—	—	—	X
Peiridae – Whites and Sulfurs						
Anthocharis centhura	Felder's orangetip	X	X	X	X	X
Anthocharis sara	Sara orangetip	X	X	X	X	X
Colias eurydice	California dogface	X	X	—	—	—
Colias harfordi	Harford's Sulfur	X	—	X	X	X
Colias sp.	Sulfur	X	X	X	—	X
Euchloe hyantis	Pearly marble	X	—	X	—	—
Euchloe lotta	Desert marble	—	—	X	X	X
Pieris rapae	European cabbage white	—	X	X	—	—
Pontia beckerii	Becker's white	X	—	X	—	—
Pontia protodice	Common white	X	X	X	X	X
Pontia sisymbrii	California white	X	X	X	—	—

Table 4
Butterflies Observed on Site

Scientific Name	Common Name	Week				
		1	*2*	*3*	*4*	*5*
Riodinidae – Metalmarks						
Apodemia virgulti	Behr's metalmark	X	X	X	X	X
Calephelis wrightii	Wright's metalmark	X	—	—	—	—

One species of QCB larval host plant, common owl's-clover (*Castilleja exserta* ssp. *exserta*), was observed within the study area during focused surveys. Occurrences of the larval host plant are shown on Figure 4. Table 5 includes the known and observed adult QCB nectar plants (according to Mattoni et al. 1997, USFWS 2002a, USFWS 2002b, USFWS 2003). Larval host plants are also included in Table 5 and are in bold print.

Table 5
QCB Larval Food and Adult Nectar Plants[1]

Scientific Name	Common Name	Observed During Focused Survey
Apiaceae – Carrot Family		
Lomatium dasycarpum ssp. *dasycarpum*	woolly-fruit lomatium	—
Lomatium utriculatum	common lomatium	—
Asteraceae – Sunflower Family		
Achillea millefolium	yarrow, milfoil	—
Lasthenia californica	common goldfields	X
Lasthenia coronaria	southern goldfields	—
Layia platyglossa	common tidy tips	X
Boraginaceae – Borage Family		
Amsinckia menziesii	rancher's fireweed	—
Amsinckia menziesii var. *intermedia*	rancher's fiddleneck	X
Amsinckia menziesii var. *menziesii*	rigid fiddleneck	—
Cryptantha spp. or *Plagyobothrys* spp.	popcorn flower	X
Fabaceae – Pea Family		
Lotus spp.	deerweed, spanishclover, lotus	X
Hydrophyllaceae – Waterleaf Family		
Eriodictyon crassifolium var. *crassifolium*	thickleaf yerba santa	—
Eriodictyon trichocalyx var. *trichocalyx*	hairy yerba santa	—
Phacelia distans	wild-heliotrope	X
Lamiaceae – Mint Family		
Salvia columbariae	chia	X
Plantaginaceae – Plantain Family		
***Plantago erecta*[2]**	**dot-seed plantain**	**—**

Table 5
QCB Larval Food and Adult Nectar Plants[1]

Scientific Name	Common Name	Observed During Focused Survey
Plantago patagonica	**woolly plantain**	**—**
Polemoniaceae – Phlox Family		
Gilia angelensis	grassland gilia	—
Gilia capitata ssp. *abrotanifolia*	ball gilia	—
Linanthus spp.	ground pink	—
Polygonaceae – Buckwheat Family		
Eriogonum fasciculatum var. *foliolosum*	California buckwheat	X
Scrophulariaceae – Figwort Family		
Antirrhinum coulterianum	**Coulter's snapdragon**	**—**
Castilleja exserta	**common owl's-clover**	**X**
***Collinsia* sp.**	**Chinese houses**	**—**
Cordylanthus rigidus* ssp. *setiger	**dark-tipped bird's-beak**	**—**
Keckiella antirrhinoides var. *antirrhinoides*	yellow bush-penstemon	—
Keckiella cordifolia	climbing bush penstemon	—
Liliaceae – Lily Family		
Allium haematochiton	red-skin onion	—
Allium peninsulare	red-flower onion	—
Allium praecox	early onion	—
Dichelostemma capitatum	blue dicks	X
Muilla clevelandii	San Diego goldenstar	—
Muilla maritima	common muilla	—

[1] List derived from Mattoni et al. 1997; USFWS 2002a, USFWS 2002b; USFWS 2003 (for *Euphydras editha*)
[2] Plants listed in **bold** print are known QCB larval host plant species.

Dudek certifies that the information in this survey report and attached exhibits fully and accurately represents the work conducted by the QCB permitted biologists who conducted this focused survey.

Please feel free to contact us at 760.942.5147, plemons@dudek.com, or bortega@dudek.com if you have any questions regarding the contents of this report.

Sincerely,

Paul M. Lemons
Permit #TE051248-4

Brock A. Ortega
Permit #TE813545-5

Anita M. Hayworth
Permit #TE781084

Kam J. Muri
Permit # TE051250-0

Jeffrey D. Priest
Permit #TE840619-2

Tricia L. Wotipka
Permit # TE840619-2

Recovery Permit Coordinator

Subject: 2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California

Vipul R. Joshi	David Waller	Viviane Marquez
Permit # TE019949-0	Permit #TE025394-2	Permit #TE800930-9

Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, Biological Resources Map with Quino Survey Areas – North
Figure 4, Biological Resources Map with Quino Survey Areas – South
Appendix A – List of Wildlife Species Observed during the 2011 Jewell Valley QCB Survey
Appendix B – 2011 Jewell Valley QCB Survey Field Notes

cc: Joan Heredia, Enel Green Power North America
David Hochart, Dudek

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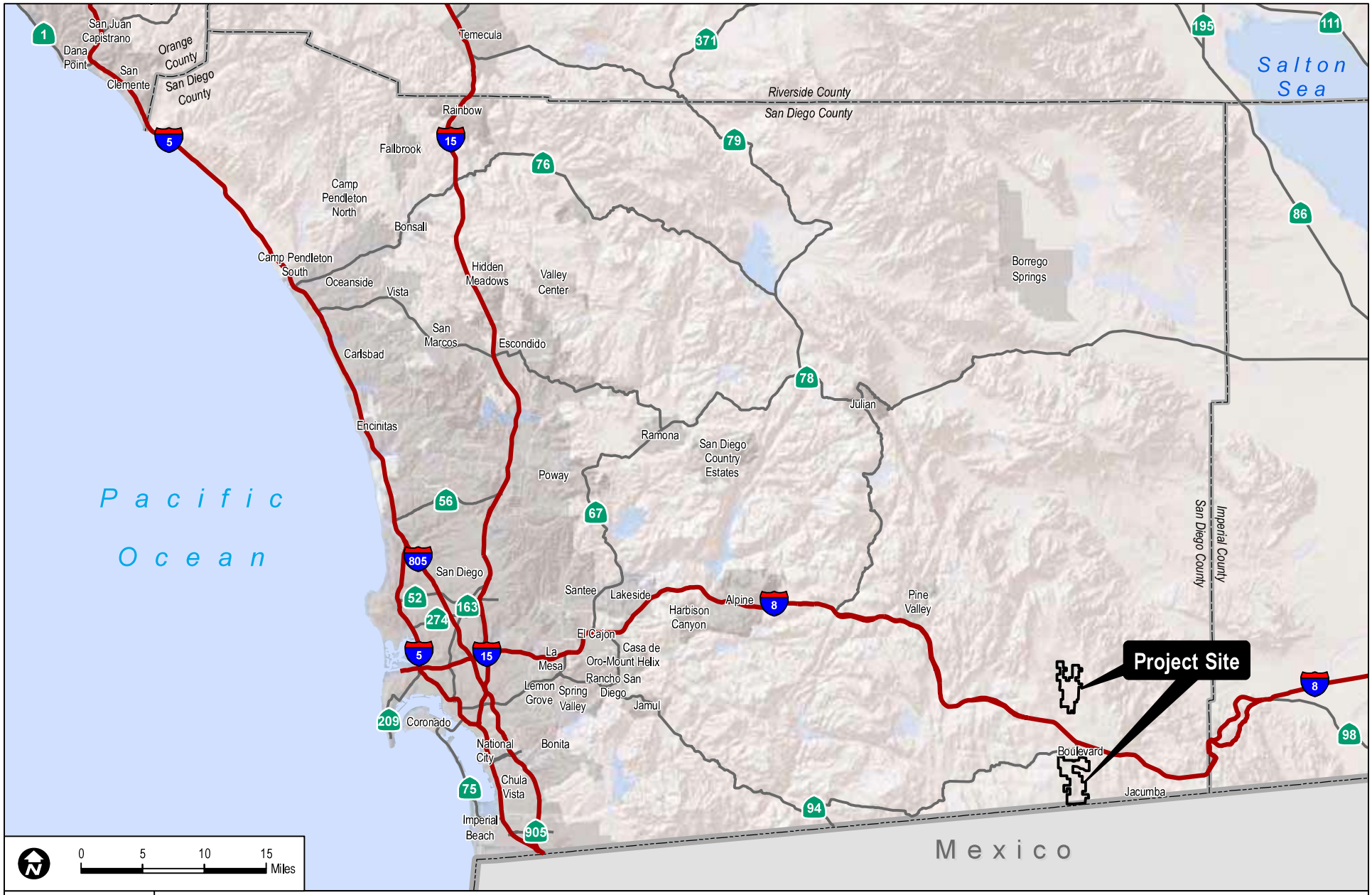

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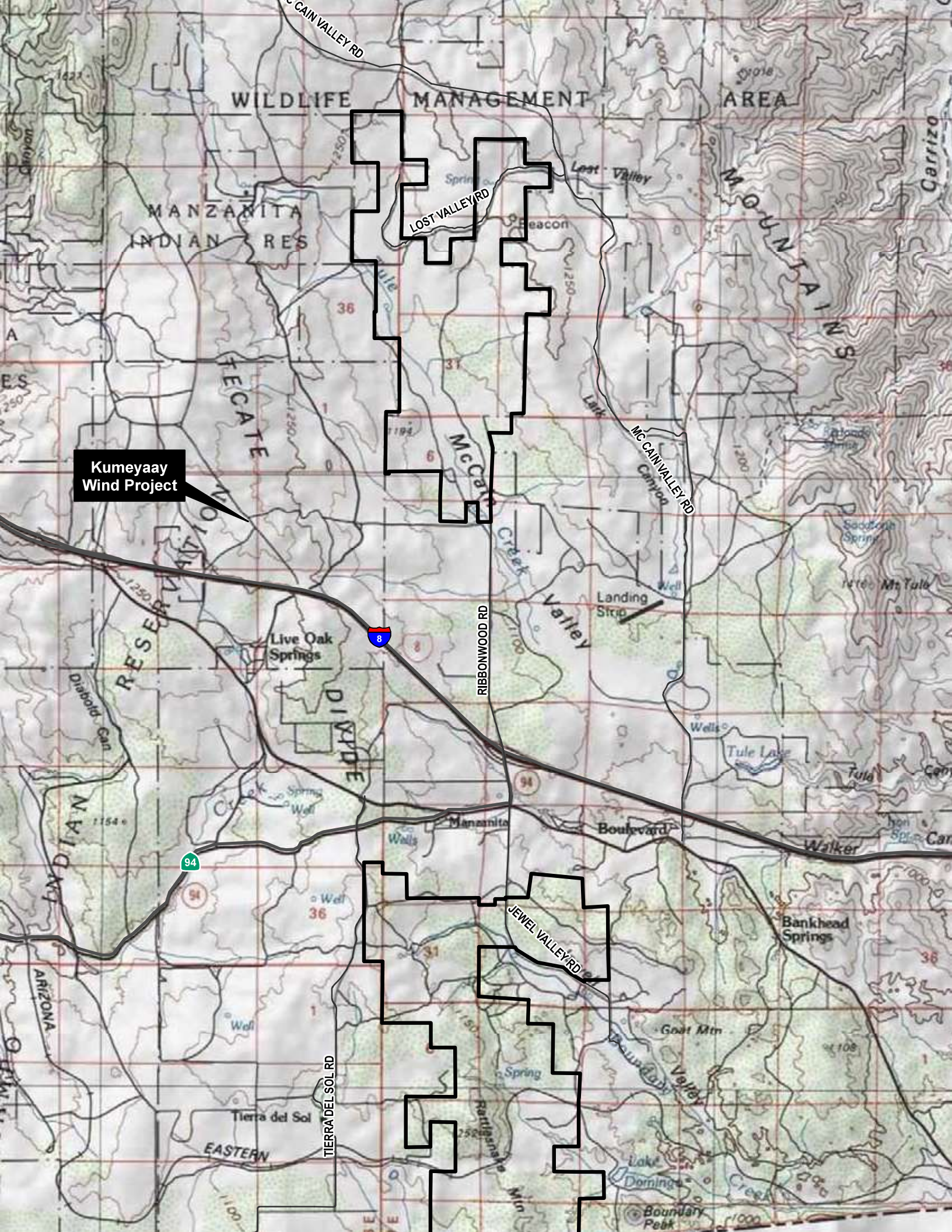
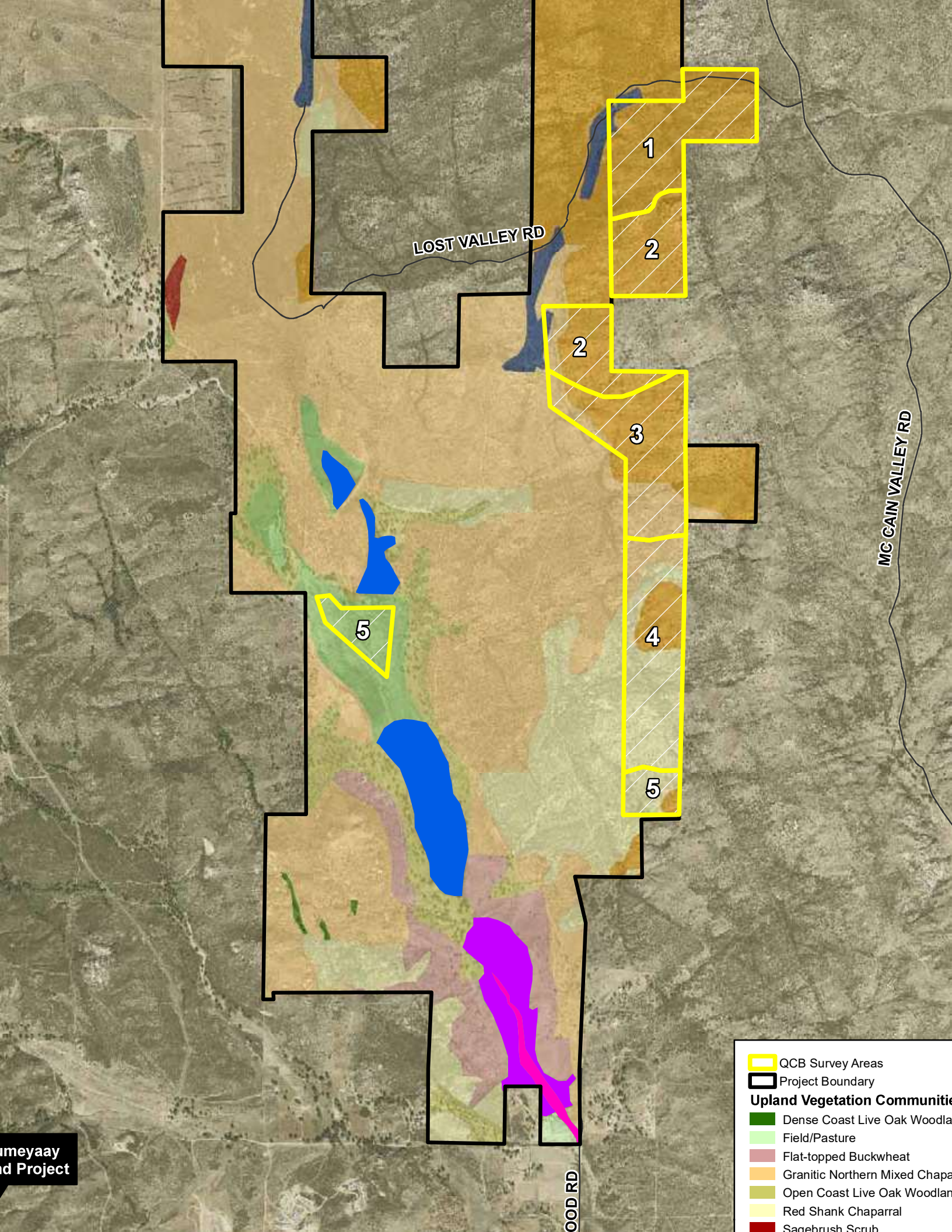
FIGURE 1

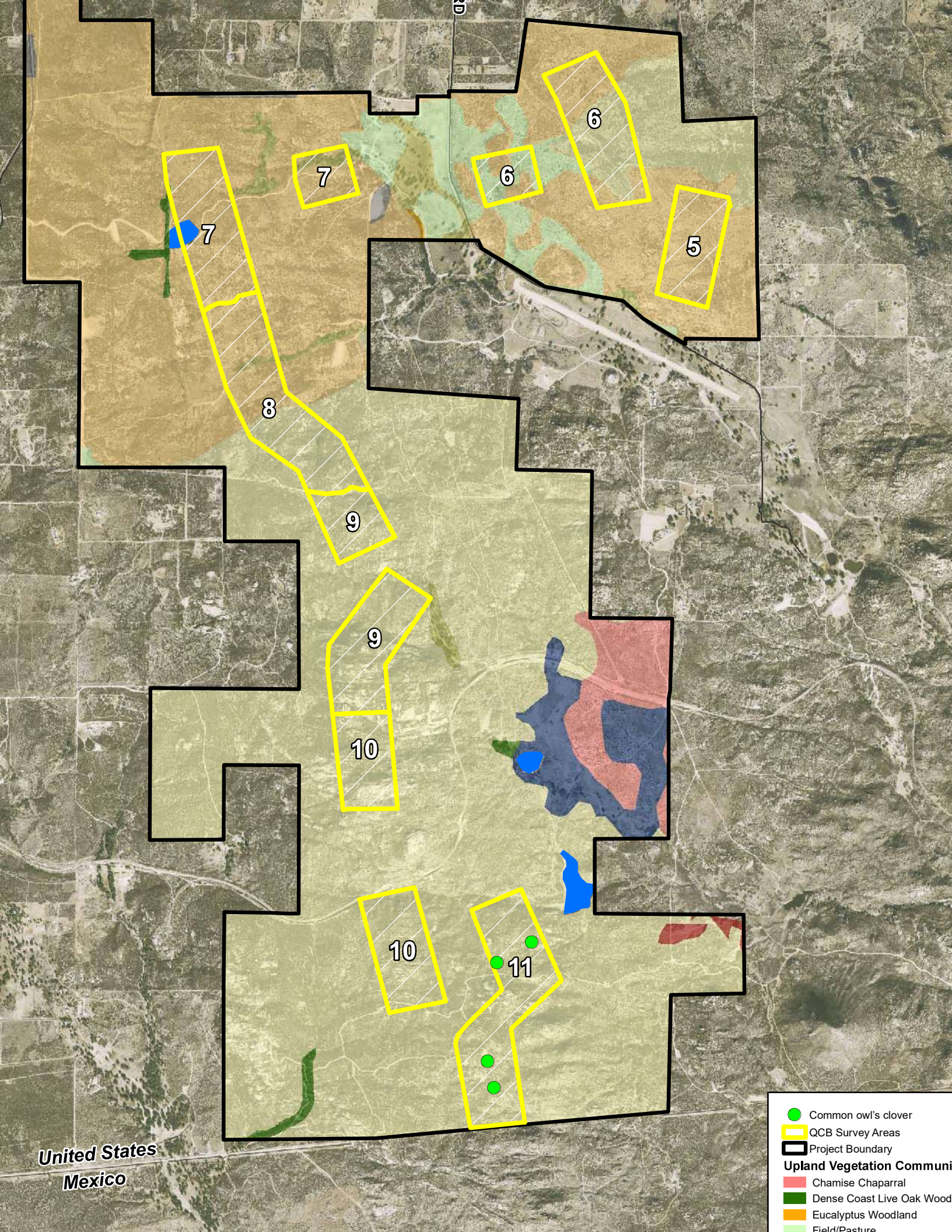
Regional Map

2011 Focused Quino Checkerspot Butterfly Survey Report for the Jewell Valley Wind Project



Kumeyaay Wind Project
WILDLIFE MANAGEMENT AREA
MANZANITA INDIAN RES
LOST VALLEY RD
MC CAIN VALLEY RD
RIBBONWOOD RD
JEWEL VALLEY RD
TIERRA DEL SOL RD
Lost Valley
Beacon
McCain Creek
Valley
Landing Strip
Live Oak Springs
Manzanita
Boulevard
Walker
Bankhead Springs
Tule Lake
Goat Mtn
Tierra del Sol
EASTERN
ARIZONA
Diabolo Can
Rattlesnake Mtn
Lake Domingo
Boundary Peak
Mt Tule
Carrizo
MOUNTAINS
TECATE
DIVIDE
INDIAN RESERVATION
8
94


LOST VALLEY RD
MC CAIN VALLEY RD
1
2
2
3
4
5
5
QCB Survey Areas
Project Boundary
Upland Vegetation Communitie
Dense Coast Live Oak Woodla
Field/Pasture
Flat-topped Buckwheat
Granitic Northern Mixed Chapa
Open Coast Live Oak Woodlan
Red Shank Chaparral
Sagebrush Scrub
umeyaay
d Project
OOD RD


6
7
6
5
7
8
9
9
10
10
11
United States
Mexico
Common owl's clover
QCB Survey Areas
Project Boundary
Upland Vegetation Communi
Chamise Chaparral
Dense Coast Live Oak Wood
Eucalyptus Woodland
Field/Pasture

APPENDIX A

List of Wildlife Species Observed during the 2011 Jewell Valley QCB Survey

APPENDIX A
List of Wildlife Species Observed during the 2011 Jewell Valley QCB Survey

WILDLIFE SPECIES – VERTEBRATES

AMPHIBIANS

***BUFONIDAE* – TRUE TOADS**

Bufo boreas – western toad

***HYLIDAE* – TREEFROGS**

Hyla cadaverina – California treefrog
Hyla regilla – Pacific treefrog

REPTILES

***IGUANIDAE* – IGUANID LIZARDS**

Gambelia wislizenii – long-nosed leopard lizard
Phrynosoma coronatum – coast horned lizard
Sceloporus graciosus – sagebrush lizard
Sceloporus occidentalis – western fence lizard
Sceloporus orcutti – granite spiny lizard
Uta stansburiana – side-blotched lizard

***TEIIDAE* – WHIPTAIL LIZARDS**

Cnemidophorus hyperythrus – orange-throated whiptail

***COLUBRIDAE* – COLUBRID SNAKES**

Coluber constrictor – racer
Masticophis lateralis – California whipsnake
Pituophis melanoleucus – gopher snake

***VIPERIDAE* – VIPERS**

Crotalus atrox – western diamondback rattlesnake
Crotalus ruber – red-diamond rattlesnake
Crotalus oreganus helleri – Southern pacific rattlesnake

BIRDS

***ARDEIDAE* – HERONS**

Ardea alba – great egret

***ANATIDAE* – WATERFOWL**

Anas platyrhynchos – mallard

***CATHARTIDAE* – NEW WORLD VULTURES**

Cathartes aura – turkey vulture

***ACCIPITRIDAE* – HAWKS**

Accipiter cooperii – Cooper's hawk
Buteo jamaicensis – red-tailed hawk
Parabuteo unicinctus – Harris's hawk

***FALCONIDAE* – FALCONS**

Falco sparverius – American kestrel

***PHASIANIDAE* – PHEASANTS AND QUAILS**

Callipepla californica – California quail

***CHARADRIIDAE* – PLOVERS**

Charadrius vociferus – killdeer

***COLUMBIDAE* – PIGEONS AND DOVES**

Zenaida macroura – mourning dove

***CUCULIDAE* – CUCKOOS AND ROADRUNNERS**

Geococcyx californianus – greater roadrunner

***STRIGIDAE* – TRUE OWLS**

Bubo virginianus – great horned owl

***APODIDAE* – SWIFTS**

Aeronautes saxatalis – white-throated swift

***TROCHILIDAE* – HUMMINGBIRDS**

Calypte anna – Anna's hummingbird

***PICIDAE* – WOODPECKERS**

Colaptes auratus – northern flicker
Melanerpes formicivorus – acorn woodpecker
Picoides nuttallii – Nuttall's woodpecker
Picoides scalaris – ladder-backed woodpecker

***TYRANNIDAE* – TYRANT FLYCATCHERS**

Sayornis nigricans – black phoebe
Sayornis saya – Say's phoebe
Tyrannus vociferans – Cassin's kingbird
Tyrannus verticalis – western kingbird

***HIRUNDINIDAE* – SWALLOWS**

Petrochelidon pyrrhonota – cliff swallow

***CORVIDAE* – JAYS AND CROWS**

Aphelocoma californica – western scrub-jay
Corvus brachyrhynchos – American crow
Corvus corax – common raven

***PARIDAE* – TITMICE**

Baeolophus inornatus – oak titmouse

***AEGITHALIDAE* – BUSHTITS**

Psaltriparus minimus – bushtit

***TROGLODYTIDAE* – WRENS**

Campylorhynchus brunneicapillus – cactus wren
Salpinctes obsoletus – rock wren
Thryomanes bewickii – Bewick's wren

***SYLVIIDAE* – GNATCATCHERS**

Polioptila caerulea – blue-gray gnatcatcher

***TURDIDAE* – THRUSHES AND BABBLERS**

Sialia mexicana – western bluebird

***TIMALIIDAE* – LAUGHINGTHRUSH AND WRENTIT**

Chamaea fasciata – wrentit

***MIMIDAE* – THRASHERS**

Mimus polyglottos – northern mockingbird
Toxostoma redivivum – California thrasher

***PTILOGONATIDAE* – SILKY-FLYCATCHERS**

Phainopepla nitens – phainopepla

***LANIIDAE* – SHRIKES**

Lanius ludovicianus – loggerhead shrike

***STURNIDAE* – STARLINGS**

* *Sturnus vulgaris* – European starling

***PARULIDAE* – WOOD WARBLERS**

Dendroica coronata – yellow-rumped warbler
Geothlypis trichas – common yellowthroat
Oporonis tolmiei – MacGillivray's warbler
Vermivora celata – orange-crowned warbler
Wilsonia pusilla – Wilson's warbler

***EMBERIZIDAE* – BUNTINGS AND SPARROWS**

Amphispiza bilineata – black-throated sparrow
Chondestes grammacus – lark sparrow
Junco hyemalis – dark-eyed junco
Melospiza melodia – song sparrow
Pipilo crissalis – California towhee
Pipilo maculatus – spotted towhee
Spizella atrogularis – black-chinned sparrow
Zonotrichia leucophrys – white-crowned sparrow

***ICTERIDAE* – BLACKBIRDS AND ORIOLES**

Agelaius phoeniceus – red-winged blackbird
Icterus bullockii – Bullock's oriole
Icterus parisorum – Scott's oriole
Molothrus ater – brown-headed cowbird
Quiscalus mexicanus – great-tailed grackle
Sturnella neglecta – western meadowlark

***FRINGILLIDAE* – FINCHES**

Carpodacus mexicanus – house finch
Carduelis psaltria – lesser goldfinch

MAMMALS

***LEPORIDAE* – HARES AND RABBITS**

Lepus californicus – black-tailed jackrabbit
Sylvilagus bachmani – brush rabbit
Sylvilagus audubonii – desert cottontail

***SCIURIDAE* – SQUIRRELS**

Ammospermophilus leucurus – white-tailed antelope squirrel
Spermophilus beecheyi – California ground squirrel

***GEOMYIDAE* – POCKET GOPHERS**

Thomomys bottae – Botta's pocket gopher

***HETEROMYIDAE* – POCKET MICE AND KANGAROO RATS**

Dipodomys sp. – kangaroo rat (sign)

***MURIDAE* – RATS AND MICE**

Neotoma lepida – desert woodrat
Peromyscys sp. – mouse

***CANIDAE* – WOLVES AND FOXES**

* *Canis familiaris* – domestic dog
Canis latrans – coyote

***PROCYONIDAE* – RACCOONS AND RELATIVES**

Procyon lotor – common raccoon

***MUSTELIDAE* – WEASELS, SKUNKS, AND OTTERS**

Mephitis mephitis – striped skunk
Mustela frenata – long-tailed weasel

***FELIDAE* – CATS**

Felis concolor – mountain lion

***CERVIDAE* – DEERS**

Odocoileus hemionus – mule deer

WILDLIFE SPECIES – INVERTEBRATES

BUTTERFLIES AND MOTHS

***HESPERIIDAE* – SKIPPERS**

Erynnis funeralis – funereal duskywing
Erynnis propertius – propertius duskywing
Erynnis sp. – Duskywing
Thorybes pylades – Northern Cloudywing

***PAPILIONIDAE* – SWALLOWTAILS**

Papilio eurymedon – pale swallowtail
Papilio rutulus – western tiger swallowtail
Papilo zelicaon lucas – anise swallowtail

***PIERIDAE* – WHITES AND SULFURS**

Anthocharis centhura – Felder's orangetip
Anthocharis sara – Sara orangetip
Colias Eurydice – California dogface
Colias harfordi – Harford's Sulfur
Colias sp. – Sulfur
Euchloe hyantis – Pearly marble
Euchloe lotta – Desert marble
Pieris rapae – European cabbage white
Pontia beckerii – Becker's white
Pontia protodice – Common white
Pontia sisymbrii – California white

***RIODINIDAE* – METALMARKS**

Apodemia mormo virgulti – Behr's metalmark
Calephelis wrightii – Wright's metalmark

***LYCAENIDAE* – BLUES, HAIRSTREAKS, AND COPPERS**

Brephidium exile – western pygmy blue
Callophrys dumetorum perplexa – perplexing (green) hairstreak
Glaucopsyche lygdamus australis – southern blue
Icaria acmon acmon – acmon blue
Incisalia augustinus – brown elfin
Leptotes marina – marine blue
Philotes sonorensis – sonoran blue

***NYMPHALIDAE* – BRUSH-FOOTED BUTTERFLIES**

Agraulis sp. – fritillary
Coenonympha californica californica – California ringlet
Junonia coenia – buckeye
Vanessa annabella – west coast lady
Vanessa sp. – lady
Vanessa cardui – painted lady

* signifies introduced (non-native) species

INTENTIONALLY LEFT BLANK

APPENDIX B

2011 Jewell Valley QCB Survey Field Notes

AMH

3/11/2011

0805	1100	1400	Jewel Valley
64	75	81	QCB
3-5MPH	8MPH	6-10	Area 1
Clear	Clear	Clear	

WSJA — deer poop + tracks
CAQU — BUSH
WCSP — BEWR
CORA
CATH
LEGO
RTHA-overhead
WTSW flyover
WREN
SPTO — CATO

Funereal type (skipper) ~~||||~~ many
Wht + black (skipper) |
blue (marine) |
Brown (Wright's metalmark) |||
White (Becker's) ~~||||~~ |
moth - underwing w/ yellow spots ~10
Behr's Metalmark ~~||||~~ |||
S. Blue |||
Acmon Blue |
"underwing" moth ~~||||~~ ~15
Harford's |

AMH

0945 Jewel Valley
64 grnd 3/18/2011
60 air Area 2
high wispy (sun's intermittent) QCB Survey
1-3 MPH

WSJA Pactreefrog
CAQU BTSP
CORA OATI
LEGO Kingbird sp (La or We-flewby)
BUSH WCSP
PHAI BEWR
SPTO RTHA (on nest in dead tree)
CATO DEJU
CATH

Behr's metalmark ~~||||~~ ~~||||~~ ~~||||~~ || many
Funereal type |||
Perplexing hairstreak ||||
Blackspotted moth ~~||||~~ |
Common white |
Nestern Coast Lady ||
Pale swallowtail |
Skipper Allblack |||
Acmon Blue ||

full sun conditions by 1100 then wind picked up but butterflies were active.

Nectar source (Lasth) was abundant between shrubs (photos).

Stopped recording B metalmark they are quite numerous

End
1515
64F
5-10 MPH
gusts to 15
Clear

AMH

0930 415 pm 3/29/2011
Clear 80% CC Week 3
3-5MPH 5-8mph Jewel Valley
64 72° Area 1

WREN CAQU
CATO CATH
DPTO ~~CATT~~
YRWA BEWR
WSIA GRRO
BTSP WCSP
CAWR TUVU flyover
BTGW DEJU
Striped racer

Sara O. tip ~~||||~~ ||||
White-Becker or Common |
Brn Elfin |||
Perplexing ~~||||~~ ||
Behr's m.m. ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ many
Silv. blue ||
white-large ||
Harford's sulfur |
Skipper, large black ~~||||~~ |
Desert marble ~~||||~~ |
Lady sp. |
Pygmy blue ||

AMH

Patches w/ carpet of annuals in bloom. popcorn, Lasth
Also patches of erodium.
Lot of bare sandy exp. soil Also patches with shrub cover.
Some shrub cover is pretty dense w/ shrub oak. In drainage at N. end is patch of redshank/chamise
Lots of scrub jays
conditions were excellent w/ lots wind, sun, warm temps. Lots of butterfly activity - many Behr's (stopped counting)

1/96

Site P

AMH

4/1/2011

76 F	83F	Jewel Valley
0830	350	QCB
3-5mph	3-5	week 4
Clear	Clear	

Harford	++++ |||
Sara Otip	+++ |||
black skipper	|| - many
Metalmark, Behr's	+++|| many
Blue, Southern	|||
Desert marble	+++
perplexing	+++ ||
Common white	|||
Pale swallow tail	|
very common - flitting around the bucket	
buckeye	|
Blue (acmon)	+++

NKSP	MODO
WREN	BTSP
CATO	NUWO
SPTO	PIHA 1
WSJA	THVI overflight - 3 overhead pretty low
DEJU	CATH
CAQU	ROWR
CORA	SCOR
CAWR	WTSW - also pretty low
small yellow (forgot the name)	||

AMth

Alot more whites (common, marble, sara o'tip) also more sulfurs this week. Metal marks are abundant both small & large. first buckeye this week.

Carpet of spring ephemerals in bloom now. Did a second pass thru the areas with the carpets

AMH

- Spp list for QCB survey
  - WREN
  - BEWR
  - BTSP
  - WCSP
  - NOFL
  - TUVU
  - ~~WESA~~ WSJA
  - CAWR
  - CORA
  - CAHI
  - CAQU
  - CATO
  - SPTO
  - GRRO
  - WTSW

AMH

1005 – leave with 1130 arrive | 405 | 4/12/2011
64 | 68 | Jewel
4-8 MPH | 5-10 | Area 1
Clear | Clear | Week 5
QCB

Harford's II
Alfalfa III
metalmark, Behr's many
Westcoast Lady I
Sarah O'tip IIII
Desert Marble III
Southern blue I
blk skipper ~~HH HH HH~~ IIII
Buckeye I
Common white I
Perplexing III
OATI BEWR
COHA - Flyover CATO
BUSH SPTO
WSJA
CORA
CATH
CAQU
BTSP
TUVU - Flyover

good carpet of flowers
Lasth esp.



Saddleback

CAWR - nest

AMH

1030	200	4/15/2011
5-9 mph	5-9 mph	Area 1
Clear	Clear	Jewel
69 grnd		QCB
67 air	69 air	

sulfur, Harford	HH	
Marble	+|	
Buckeye	|||	
metal flark	HHHHH	many
Acmon	||	
Sara Ort.	HH |	
Perplexing	||	
small moths orange underwings		
Black Skipper		
Small white - Common?	|	

CAQU CAWR
CATH
BTSP
TLVU
WSJA
BEWR
CARO
BUSA
WCSP!

Jewel Valley QCB 3/11/11
Area 11

Kam Muri KJM

0945h: 62°F ; 0% cc ; 7-8 mph @ SS
1545h; 64°F ; 40% cc; 5-10 mph @ W

WREN	GRRO	dogs (domestic/feral?)			Eratium
LEGO	BEWR	YRWA	CORA	HOFI	Lasthenia
WSCJ	SPTO	CATO	BGGN	BUSH	Cryptantha spp.
CATH	TAVU	CLSW	DEJU	ROWR	Brassicacea sp.
antelope squirrel	granite spiny liz	coachwhip? snake			Phacelia cic? (land)
					Amoinckia
Sara's orangetip ⊠ ::					~~[illegible]~~
Acmon blue ::					Escholzia cal.
duskywing					Lotus sp. (ann, yellow)
pearly marble (cat) ::					
sulphur					

No QCB detected. Most butterfly activity observed btw 1000 and 1300h. Lots of Lasthenia, pop corn fl, no host plant spp. observed.

Jewel Valley QCB
Area II

3/18/4

Kam Muri KJM

1000h: 60°F ; partly cloudy 50% cc; 4-8 mph @ SW
1600h: 60F ; 0% cc ; 8-10, 12+ gusts @ SW

DEJU CATO granite spiny
WREN WSCJ CA gr squirrel
YRWA TUVU antelope squirrel
BEWR SPTO
CORA

Sara's orangetip
silvery blue
funereal duskywing :
green hairstreak :
lady sp. :
Behr's metalmark :
Brown elfin :
moth sp. (brown)
pearly desert marble / checkered sch.?
acmon blue :

Lasthenia
Erodium
Lotus sp. yellow flo rocks
Phacelia
Lupinus
popcorn fl
Microseris ?
red maids
Castilleja affinis
Eriastrum sp

Jewel Valley OCB
Area 11

3/28/11

Kam Muni

KJM

1015 h: 60°F; 0% cc; 4-6 mph @ W
1630 h: 62°F; 0% cc; 3-7 mph @ W

YRWA WSCJ ROWR granite spiny liz
BUSH CATO WCSP CA gr squirrel
BEWR LEGO HOFI
SPTO WSCJ TUVU
DEJU? CORA

silvery blue :
Acmon/lupine blue ::
Sarah's orangetip ::
brown elfin ::
green hairstreak ⊏
Anise swallowtail :
pearly marble ::
moth - orange HW above w/ black eye spots

Behr's mm :
white/marble?

Leothenia
Erodium cic
Lotus sp. ang, red/yellow fls
Microseris?
Ceanothus verr
Cryptantha
Anesinckia
⊡ Lotus sp. yellow fls rocky outcrops
Eschholzia cal
Phacelia sp. annual
Dich cap
Lupinus sp.
miner's lettuce
Calindrinia

Jewel Valley QCB 4/4/11
Area 11

Kam Muni KJM

1030h: 62°F; 0% cc;
winds 2-4 mph, to 10 mph @ E.
gusts 12-14+ mph on hill tops
1630h: 67°F; 0% cc
winds 0-2 mph, to 6 mph

No QCB detected.

CATH CORA TUVU
HOFI CORA WREN
WSCJ SPTO BEWR
CATO ROWR CAQU

green hairstreak ⊠
pale swallowtail ⊔
Sarah's orangetip ⊠ ⊠
Behrs metalmark ⊥:
Acmon blue:
marble/white ⊥:
funereal duskwing ⊥:
moth sp.
sulphur sp.? (Hyby)
silvery blue

granite spiny liz
sage liz
OTW tiptail
Pac tree frog

Lasthenia
* Castilleja exserta
pop corn fl
Lepidium sp.
Erodium cic
Lupino sp.
Amsinckia
Ceanothus verr? white fls
Phacelia
Ceanothus tom.? purple fls
Lotus sp. rocks yellow fls
Salvia col
Dic cap

Jewel Valley QCB
Area 8

4/5/11

Kam Mini

KJM

1030h: 70°F; 40% cc, sunny; 4-7, 8+ mph W@SE
1430h: 72°F; 60% cc, sunny; 4-8 mph @ SE
1530h: 66°F; 90% cc, overcast; 3-7 mph @ SE

WSCJ CORA SCOR SPTO CA grsq
ROWR LEGO CATO CAQU granite spliz
WREN RTHA OATI
NUWO CORA

Lasthenia
Erodium
Amsinckia
popcorn flower
white aster?
Ceanothus verr?
~~Ceanothus [illegible]~~?
Lupinus sp.
Phacelia spp. annual,
Eschelzia sp.

pale swallowtail ? :·
silvery blue
funereal duskywing
Sarah's orangetip ⊠ ⁞
Behr's metalmark ⊠ ⊠ ⊠ ⊠ ⊠ :
blue sp. :·
white/marble? ⊠ :·
Acmon blue :·
moth sp.
green hairstreak ⊡
lady sp. (flyby) :·
sulphur sp. :·
checkered white ⁞

propertius duskywing

No QCB detected. Survey ended early due to cool temps < 70°F and overcast skies per protocol.

KTM

1545 1545h: 72°F ; sunny, 60% cc ; 3-8 mph @ W
1630h: 70°F ; sunny, 60% cc ; 4-12 mph @ W
gusts to 20 mph

Sun came back out — resumed survey.
Winds up to 12 mph, gusts to 20 mph
at 1630h at exposed locations / hilltops.
Continued survey at lower areas.

Jewel Valley QCB 4/12/14
Area 7

KJM

Kam Mumi

1020h: 62°F; 0% cc; 2-6mph @
1625h: 64°F; 0% cc; 4-7 mph @ SW

LEGO OATI brush rabbit
WREN BCSP WSCH CAQU
RWBL COFA SPTO WCSP
BEWR RTHA BUSH COHA
M-BTSR warbler sp.
snake - black, yellow stripe (side)

Lasthenia
popcorn fl
Eschscholzia
Erodium
Amsinckia
Lotus sp. (yellow, rocks)
Lupinus sp.

Acmon blue
blue sp.
green hairstreak
behrs metalmark
Sonalis orangetip
lady sp.
painted lady
silvery blue
buckeye

No QCB detected.

Jewel Valley QLB
Area 3

4/14/11

Kam Muni

KJM

1030h: 61°F; 0% cc; 3-7 mph @ NE
1640h: 64°F; 0% cc; 2-5 mph @

WSCJ CAQU granite spiny liz WREN
WCSP CATO CATH MAWA
NUWO BUSH brush rabbit *CAWR
WIWA OATI antelope sq CORA
TUVU BCSP BEWR SPTO
SCOR MODO blacktailed JR

Behrs metalmark ☒☒☒☒☒:
moth sp. :
Acmon blue
lady sp.
white/marble :
duskywing, tuworal :
Sarahs orangetip :
green hairstreak :

Lasthenia
Lupinus (ann)
popcorn fl
Erodium
Sal col
Camissonia sp. (ann)
Lotus sp. (ann)
~~Mal lava~~ Rhus ovata
Cean verr? white/yellow cream fls, warts
Asteraceae sp. pale yellow toothed basal lvs, red maghs streaks on water side calyx
ligulate fl
Asteraceae sp.? white - Eriophyllum? linear, alt lvs, hairy white ray, yellow disc
Ericameria

No QLB or host plant detected

Jewel Valley QCB
Area 2

4/15/11

Kam Mani - KJM

1030h: 66° F; 0% cc; 5-7 mph @ NE (gusts 10-12 mph)
1630h: 69° F; 0% cc; 4-7 mph @ NE

WSCJ ~~[illegible]~~ BTSP BEWR SPTO
antelope sq BUSH WCSP WTSW TUVU
CA ground sq CAQU CATH NUWO
RTHA nest M-BTJR LEGO MODO

blue sp.
Acmon blue
Behrs metalmark ⊠ ⊠ :. ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠ ⊠
Anise swallowtail
moth sp. (orange):
white ~~[illegible]~~ sp. :·
green hairstreak :·
Sarah's orangetip :
buckeye :·
duskywing sp. :
sulphur sp. :

Lasthenia
popcorn fl
Erodium
Ericamnia
Rhus ovata
Phacelia
Lupinus sp.
Lotus sp. (ann)
Lotus sp. (yellow, rock)
Amsinckia
Sal col
Chaenesyce
Camissonia

No QCB/host plant detected.

VRT

10 Mar 11 Jewel Valley Qcob
wk 1, SA 9

0930 - 1530 St. from Nathrd
64° - 67° blk moth - IIII
0-1 - 0-5 Sara orangtip - ~~IIII~~ III
0% - 0% hartford's sulf - III
+ See map

RSC - red shank chap.
on slopes w/ > 75% ~~[illegible]~~ shrub cover
~~impenetrable~~ some Que ber

CRC - chamise / red-shank chap.
more mod. slopes
30-70% total shrub cover
- Ad fa } dom.
- Ad
- Er fa Cry sp. (2)
- Ma la Clayt.
- Cean. sp. -
- Qu. be
Eri fri
Nas pul
Yucc sch
Gut sar
Lot sco
Cry sp. (1)
Erod. cic.
Bro mad.
Eri conf.

VRJ

Bac - cup shaped lvs. in rks. — concrete?
Rhu ovata ? - somewhat ilicifolia → ? Rhum.
Rhu tri
Prunus sp.
Cylind - light green ~4cm thick
golden spines
~~Er fa~~
Er fa - scrub

50% ~~ove~~ shrub cover
- Las cal - fields
currently still mostly in bud
~ 20% in flw

Gnaph. sp.
Clematis
Penstem.
another Bacc. ? or Eric.

Sanicula - Lomat. sp. - yell flw
prickly poppy light green
↳ no infl.

Most RGC has ~ 50-75% total shrub cover
Mal lau
Ad fa
Yuc ~~[illegible]~~ shi
Cean. sp.
Eri fa
Xyl bic

VRJ

Botrich ?
Lonicera ? - scroph ? - under rocks
Aco mac. lvs. clumped along long stems
Lot ~~strig.~~ purs. scroph flws/infl.
peony cal.
Arcto.
Less cal.
Muh rig
~~Trio sp.~~ - ? old flw, in rocks
infl. lvs perennial
long infl.

VRT

15 Mar 11 Jewel Valley QCB - Survey Area 5
wk 1.

~~[illegible]~~
1000 - 1230 — St. SW tip of W poly
68° 73° — end 1600, 72°
59 clouds 5% 15%
2-5, gusts to 8-12 occasional — 2-5, gusts to 12 occasional — 2-5, gusts 8-15 occassional - frequent

flows

common white - ~~||||~~ ||||
cal ring - 1
inter. live oak ?
Yuc whip
Astra doug pest.
perenn. polemon. shrub.
sm. tomentos. Lupin
westcoast lady - |||
Behr's meta - 1
red + blk moth, grey uw, like lady but size of metalmark - ||||
Epehedra sp.
Prunus sp.
Ericaceae sp.
Arcto pung. - Beechamp burl, 1
Ribes indec.?
other Arcto sp - darker stems, ~~could be~~ gray green lvs, tomentose infl.
Fun dusky wing skip - ||||
Phacelia sp.
Sara's orangetip - ~~||||~~ ||
Bramble hairstreak - ||
sm. red copper? - ||||

Las cal
Ero dic
Cry spp.
Cean cras.
Escho - common poppy
Lupinus
(fields ~ 30% in bloom)
Erig. wrightii?
annual Eriog. sp.
Cloudy wing? - |||
blue sp. - 1
painted lady - 1

VRJ

Jewel Valley QCB - Area 9 makeup

28 Mar 11

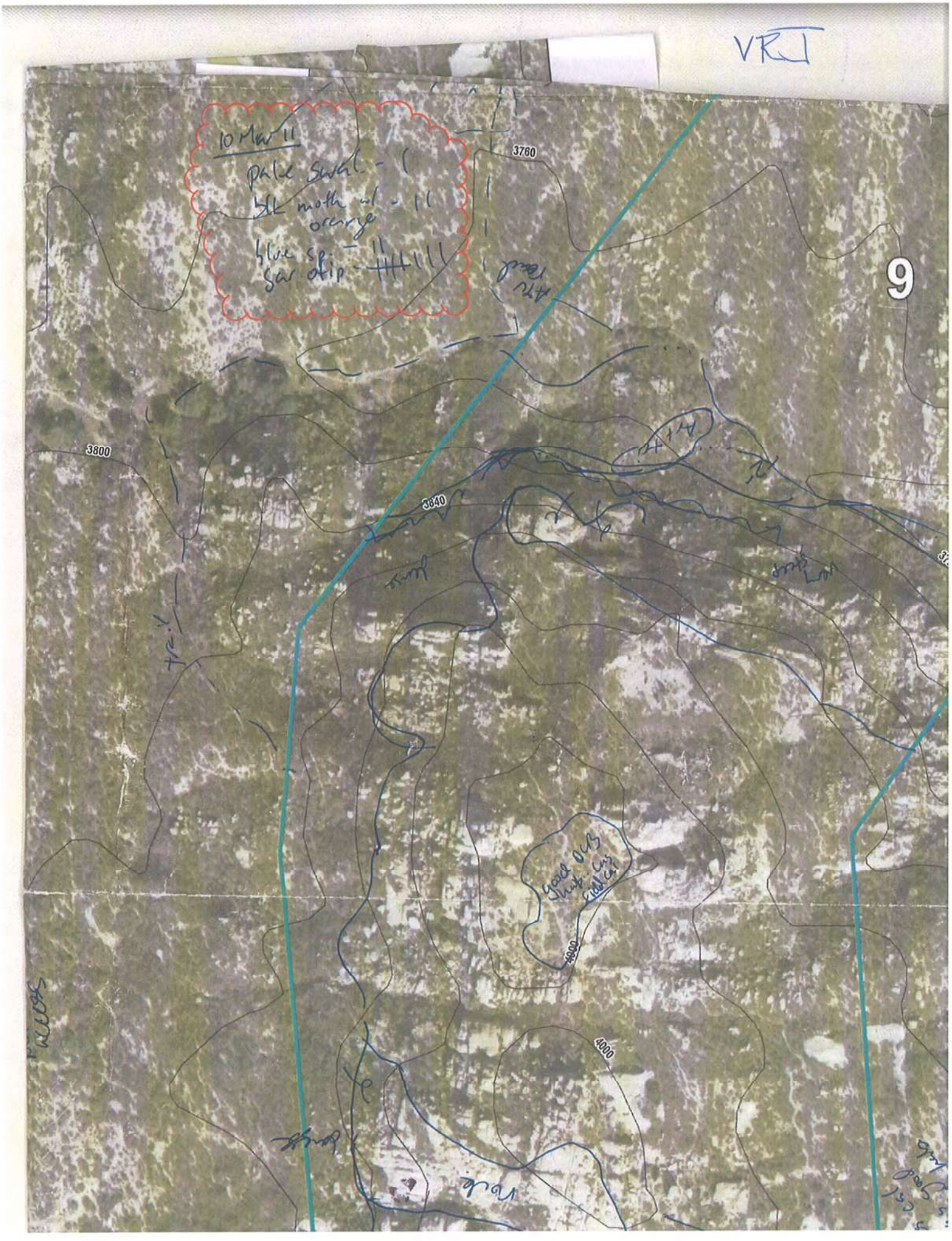
1100 - 1700.

0% 0%

3-8 3.8, gusts to 15 on peaks

64° 66°

See map


VRJ
10 Mar 11
pale swal - 1
blk moth w/ orange - 11
blue sp - 11
gar dip - 111
3760
9
3800
3840
4000
4000



Booking # B-BOL-119012
Ron Mahair 847-229-6484
Parkinson

3/11/11 Jewel Valley QCB (Area 4) JDP
0630-1630 10hr
@ Site: 0830 - 1505

miles: 154

0830
1 Wind 3-6 gusts to 8; 0% CC; ground 61°F; air 68°F
2 1100; W 2-5 gsts to 8; 0% CC; ground 84°F; air 78°F
3 higest pt: Wind 2-8 gusts 10-15; 5% CC; gr. 78°F; air 73°F
→ 1136 (N. fac slope)
5 1306; W 5-10, gusts 10-15; ground 80°F (micro-peak) → 10% haze; air 74°F
6 1505; ground 80°F; air 75°F; W 4-8, g to 15; 20% CC

R- fac. tr. frog.
Mule Dr (pr)
Coyote (sc)
Raccoon (pr)
B- BEWR
B- CATO
B- WREN
B- SPTO
B- MODO
B- CORA
M- po. go. (mo)
B- RTHA
Amphib egg masses
photos; CA tr fr calling nearby
around granite outcrops
B- CAQU
B- LEGO
B- BUSH

Funereal sk
Sora OT
So. blue
Orange sulph.
Felders OT
Blue sp
(fly-bys)
Lady sp
Perplex. HS
Behr's mm

B- CATH
B- TUVU
R- Gran. spiny liz.
M. K-rat (sign) (pr/bu) (f.d)
M- Woodrat sp. (mid)

Lasthenia F
Popcorn F
Lupin F

3/18/11 Jewel Valley QCB (A4) IOP
0800 - 1730
@ site: 0930 - 1600
miles: 13~~6~~

(1) 0930; WSW 3 mph; 60% hazy CC; air 60°F; g 60°F
(2) 1147; W 2-5 gusting to 8; 40% hazy CC; air 67°F; ground 73°F
(3) 1400; air 66°F; ground 72°F; winds 4-8, gusting 10-15
→ 5% CC
(4) Wind 8-12, gusting to 15; 5% haze; air 66°F, ground 73°F
end 1600

Flowing water still present in small drainages.

B-CATO
B-MODO
B-BUSH
M-Mule Dr.
A-Pac. Tr. frog
B-wren
B-RTHA
B-CAQU
B-BLPH
B-HOFL
B-BEWR
B-LEGO
M-CA g. sq.
M-Br. rab.
M-Racc (pr)
M-Woodrat sp. (midden)
B-PHAIN
B-CATH
B-AMKE

Moth sp ++
Felders or
Behr's mm
Perplex HS
Lady sp
fly-by
Painted Lady
Com W. B.
CA Dogface
CA Ringlet
So. Blue
Unk. Blue sp
fly-by
Pygmy Blue
Funereal sk
Acmon blue

Gold fields (F) lots ++
Popcorn (F) +
Lupin sp. (F)

B-SCJA

JDP

3/23/11 Jewel Valley @ CB (AZ) JDP
0830 - 6:30PM
@ site: 1000 - 1630
miles: ~~178~~

(1) 1000; 0% CC; W 2-4, gusts to 8; 60°F air; ground 60°F
(2) 1130; ground 67°F; W 1-5 gust to 8; 2% CC; air 63°F
(3) 1348; W 4-8 gust 10-15; 5% CC; air 62°F; ground 65°
(4) 1450; W 4-10 gusts 15-18; 15% CC; ground 66°F
↳ air: 62°F
(5) 1630; W 8-12 gusts 15-25; 15% CC; ground 64°F
↳ air 59°F

B-CATO
B-CAQU
B-SCJA
B-HOFI
B-LEGO
B-WREN
B-CATH
B-CORA
B-MODO
M-Br rab.
M-CA g-sq.
B-RTHA
B-BLPH
B-BEWR
B-WCSP
M-Mule Dr (pr)
B-BUSH
B-PHAIN
M-Po. 3° (Bottas)
M-Coyote (pr)

Behr's mm
Perplex HS
ACmon Bl.
Com. W.
So. Blue
Moth sp
↳ greyish-black w/ cream spots all over, spiny red berry?
Blue sp
↳ Hy-bs
WC Lady
CA Dogface
Felders OT
Lady sp.
↳ Hy-bs
Fun. skip.
Skipper sp

Goldfields (F)
Erodrum (F)
Lupin sp. (F)
Popcorn (F)
Johnny Jump up? (F)

* Goldfields - extensive in open habitat

Ceanothus sp (F)
R-WF Lizard
*R-red-diam. rattlesnake
white under-tail up over ramp-rattling
M-chipmunk or small ground squirrel
RTHA - perching @ top of MET tower
R-Granite spiny liz.
A-Pac. tr. frog
M-BTJR (mgs)
B-Turk

week 3

3/30/11 Jewel Valley QCB (A3) JDP

0830 – 6:30 PM

miles: ~~175~~

@ Site: 1015 – 1630

(1) 1015; W 1-5 gusts to 7; 2% CC; air 70°F; ground 73°F

(2) 1241; W 3-9 gust to 15 mph; 10% CC; ground 76°F; air 73°F

(3) 1320; winds 5-10 mph, gusts 15-18.

(4) 1508; W 2-6, gusts to 10; ground 74°F; 40% CC; air 72°F

(5) air 73°F; ground 74°F; W 2-6 gusts to 8; 60% CC; 1630

M-CA g-sq.	Behr's mm		Goldfields-extensive (F)
B-CAQU	Perplexing HS		Ceanothus (F)
B-BUSH	Fun. skipp.		Popcorn (F)
B-CAKI	White sp. (Fly-bys)		Erod. (F)
B-CORA	CA Dogface		J. jump-ups (F)
B-RTHA	Blue sp		Purple F sp.
B-SCJA	Fly by		M-Racc (pr)
B-PHAIN	WC Lady		B-MODO
M-Br. rab.	Tiger moth		A-Pac. tr. fr
B-WREN	pale/tattered		R-Uta st.
B-SPTO	Felder's OT		B-SPTO
B-AMCR	Acmon Bl.		~~[illegible]~~
B-CATO		B-WTSW	M-BTJR map
B-BEWR		M-AT Gr sq?	M-Woodrat sp. (mid)
M-Coyote (sc)			B-TUVU
B-CATH			B-AMKE
M-Bot. po. go.	B-LEGO		M-mule Dr. (pr)
R-Gran. spiny liz.	B-HOFI		

4/1/11 Jewel Valley (A4-(week4) JDP
0745 - 5:45pm ~~10hr~~ miles: ~~162~~
@Site: 0930 - 1600
st: 0% CC; W0-2; ground 74°F; air 78°F
(2) 1200; W1-5; 0% CC; air 82°F; ground 85°F
(3) 1411; W1-5; 0% CC; ground 90°F; air 88°F
(4) 1520; W0-2; 0% CC; ground 88°F; air 84°F
(5) 1600; W0-4; 0% CC; ground 88°F; air 84°F
(6)

Flowing water still present along access drainage.

B-PHAIN	Lady sp :	Goldfields - extensive (F)
B-CAQU	fly-by	Popcorn (F)
B-LEGO	Pearly Marble :	Erod. (F)
B-BEWR	Fun. skipp. :	Ceanothus (F)
B-CATO	Perplex HS :	Unk sp. (purple F)
B-HOFI	CA Dogface :	daisy sp? (F)
M-Coyote (sc)	Felder's OT :	Indian paint brush (B/F)
B-SPTO	Behr's mun :	Lupin sp. (F)
B-WREN	Blue sp. :	Unk. yellow (F)
B-MODO	fly by	
B-SOSP	Acmon Blue :	
M-Botta's po. go (mo)	WC Lady :	
M-Mule Dr (pr)	Orange Sulphur :	
B-SCJA	White sp :	
B-RTHA	fly by	R-HOLI
B-CORA	CA Ringlet :	R-SBLI (uta st.)
R-Gran. spiny liz	Sara OT :	M-Br. rab.
B-BUSH	Tiger moth :	B-OATM
A-Pac. tr. fr.	So. Blue :	M-AT Gr. sq.
B-WEME	Pale SW. tail :	M-Woodrat sp.

4/2/11 Jewel Valley QCB (43) (week 4) JDP
0730-5 PM
miles - 178
0915; ground 68; air 68°F; 50% CC; W 0-5
1115; ground 72°F; 60% CC; W 0-2; air 73°F
gusts 5-8
1215; ground 78°F; air 70°F; W 3-7; 70% CC
1320; 60% CC; ground 79°F; W 3-8. gusts 10-15;
air 73°F
1530; ground 74°F; W 4-9 gusts to 15; air 70°F

A - Pac. tr. fr.
B - CATO
B - MODO
M - Mule Dr. (pr)
R - Gran. spray 1/2.
B - RTHA
M - Botta po. sp. (mo)
B - SBTO
B - SCJA
B - LEGO
B - HOFI
B - AMKE
B - CORA
B - BHCO
B - WEKI

Behr's mm
CA Dogface
Perplex. HS
Acmon Blue
Fun. skipp
Blue sp
Hy-br
White sp
Fly-by
Tiger Moth

Goldfields extensive
Popcorn (F)
Lupin sp. (F)
Grad. (F)
Daisy sp. (F)
Yellow sp. (F)
Ceanothus (F)
Yellow Fiddleneck (F)
Purple Unk. (F)

PML 3/10/11 $\boxed{164\text{ mi}}$

JEWEL VALLEY QCB - AREA 7 - WEEK 1

Onsite		Offsite
0910	1140	1500
Skies: 0% cc	0% cc	0%
Wind: 0-3 mph	0-5, 6-12 gusts	3-6, occ. 20 mph gust 's
Temp: 64°F	75°F	78°F

Common White 卌 卌 卌 ||
Sarus OT 卌
CATO
CORA
CAQU
fence liz
BUSH
Pogo (mounds)
LEGO
SCJA
WREN
SPTO

Nectar
Erod cic.
Goldfields
Popcorn flower
Rancher's fiddleneck

(over)

3/10/11 Continued

PML

Area 7

Deer (pr)
SATH
Blue sp? 1
Arman Blue III (photos)

Lansing's Empire Ranch

3/11/11 PML

JEWEL VALLEY QCB - Area 8 - WEEK 1

Onsite		Offsite
0840	1130	1400
Skies: 0% cc	5% cc	5% cc
Wind: 0-5 mph	3-10 mph 10-20 gusts	4-10 mph, 10-15 gsts
Temp: 60°F	64°F	69°F

SCJA
CAQU
LEGO
Sara's OT 𝍸
Blue sp? Southern? 1
Pogo (mounds)
Other small mathmal burrows
Common White 𝍸 𝍸 III
RTHA
CORA
Granite spiny liz
Wright's mm 11

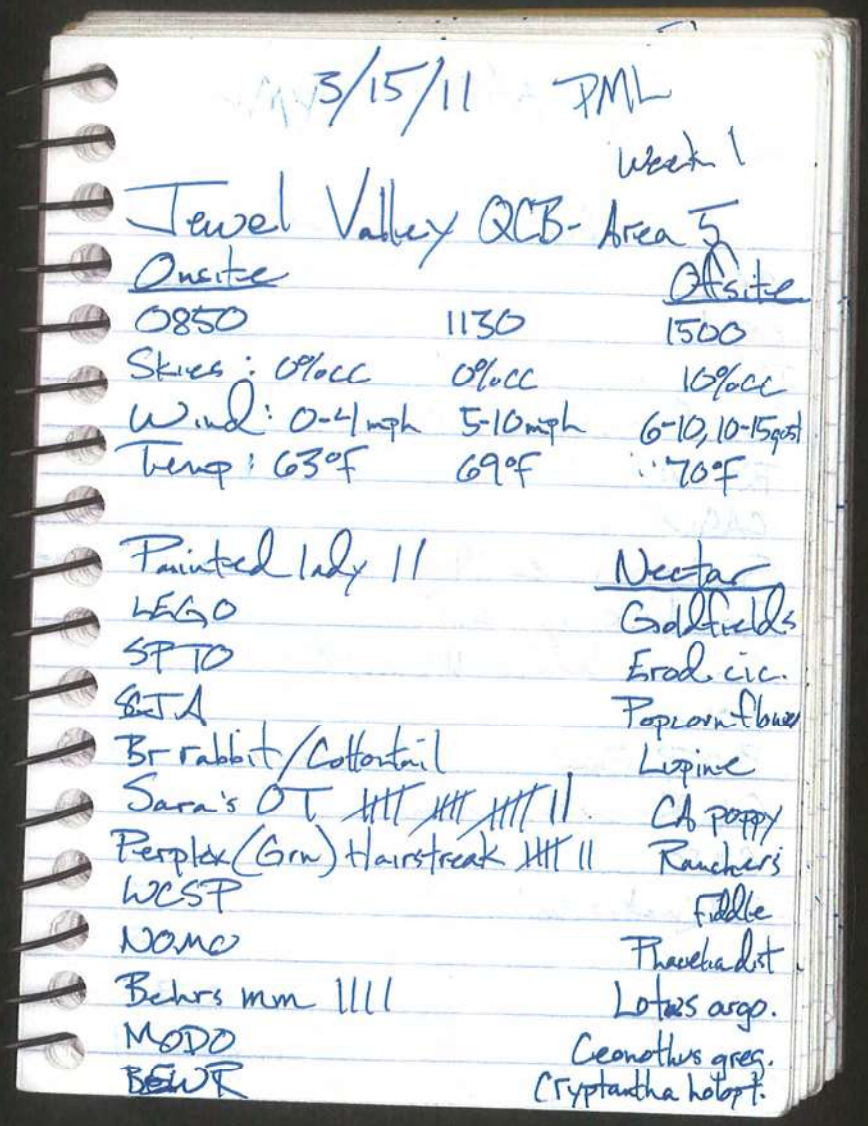
Nectar
Goldfields
Erod. cic

Trisha also did Area 8 today
TLW - South ½
PML - North ½

3/11/11
Continued FML

Area 8

Br rabbit
Pac. treefrog
WCSP
YRWA
BEWR
OAT
OCWA



3/15/11 PML

Week 1

Jewel Valley QCB - Area 5

Onsite		Offsite
0850	1130	1500
Skies: 0% cc	0% cc	10% cc
Wind: 0-4 mph	5-10 mph	6-10, 10-15 gusts
Temp: 63°F	69°F	70°F

Painted Lady II

LEGO

SPTO

SETA

Br rabbit/Cottontail

Sara's OT HHT HHT HHT II

Purplak (Grn) Hairstreak HHT II

WCSP

NOMO

Behrs mm IIII

MODO

BEWR

Nectar

Goldfields

Erod. cic.

Popcornflower

Lupine

CA poppy

Rancher's

Fiddle

Phacelia dist.

Lotus argo.

Ceanothus greg.

Cryptantha holop.

3/15/11 PML

Area 5 continued..

CATH
CORA
Po go (mounds)
Fun. duskywing ~~||||~~ ||||
RTHA
CAQU
Southern blue ||||
Granite spiny liz.
Common White ~~||||~~ ~~||||~~ ~~||||~~ |
ROWR
BTSP (Black-throated Sparrow)
CAWR - cactus wren
CATO
BT jack rabbit.

3/12/11 PML

Jewel Valley QCB - Area 6 - Wk 2

	Onsite		Offsite
	0845	1120	1525
Skies:	10% cc	30%	40%
Wind:	0-5 mph	2-9, 10-14 gusts → same	
Temp:	64°F	69°F	69°F

CAQU
SGTA
Behr's mm IIII I
Common White IIII IIII III
Green hairstreak IIII I
Pale Swallowtail I
Sara's OT II
BT jackrabbit
BUSH
LEGD
Fem. dustywing IIII

Nectar
Goldfields
Erodium cic.
Crypt. halopt.
Ranchers fiddleneck
Chap. whitethorn
buckwheat
→ flowers mostly gone

3/30/11 PML

Week 3

Jewel Valley QCB - Area 6 - Pass 3

Onsite		Offsite
0900	1150	1500
Skies: 10% cc	5% cc	20% cc
Wind: 0-4 mph	8-12, 13-20 gusts	4-8, 9-15 gusts
Temp: 64°F	73°F	74°F @ ridgetops

SCTA
Common White HHT IIII
Green hairstreak HHT HHT I
Funereal Duskywing HHT HHT III
GRRR
Fence lizard
BUSH
Behr's mm HHT III
Pale Swallowtail I
Deer (pr)

Nectar
Goldfields
Popcornflower
Cryptantha hal.
Eriodictyon cic.
Chap. whitethorn
Rancher's fiddleneck
Desert Ceanothus

3/31/11 PML week 3

Jewel Valley QCB - Area 5 - ~~[illegible]~~

Onsite		Offsite
0920	1200	1535
Skies: 5% cc	5% cc	5% cc
Wind: 0-4 mph	5-10, 10-17 gusts	4-8, 9-12 gusts
Temp: 68°F	75°F	77°F

CORA
Funereal duskywing ||| |||
BT jackrabbit
SCJA
LEGO
BUSH
Common white ||||
Green hairstreak ||||
Sara's OT ||
MODO
WCSP
Behr's mm ||||

(over)

Nectar
Goldfields
Crypt. halog.
Ramtree's fiddle
Erod. cic.
Phacelia dist.
Lupine sp.
↳ hairy one
Chap. whitethorn
CA poppy
Desert ceanothus

3/31/11 continued
PML

Area 5

W. fence lizard
CAWR (same area as before)
BEWR
Red diamondback

Area 5 North (Below Area 4)

OATI
SPTO
LEGO
GHOW pr + nest w/ nestlings (see map)
BUSH
Acmon blue II

Area 5 - Solar site - Monotype stand of Art. tri

CAQU BUSH
Sulfur III AMKE
Common White. III
Cdgr squirrel

Some goldfields
Erodium
Popcorn flower

4/4/11 PML

Jewel Valley QCB - Area 5 - Pass 4

Onsite		Offsite
0920	1200	1545
Skies: 0% cc	0% cc	0% cc
Wind: 3-8 mph	6-10, 10-15 gusts	4-8, 9-15 gusts
Temp: 64°F	67°F	72°F

		Nectar
CAQU	WEBL	Goldfields
SPTO	AMKE	Same
Common White 卌 卌 30+		↓
CATO	NOMO	
LEGO	Sara's OT 卌 1 ~15	
Sulfur 卌 IIII 20-30		
WCSP	CATH	
BEWR		
CA gr squirrel		
NUWO		
OATI		
Southern blue 卌 卌 11		

4/5/11 PML

Week 3

Jewel Valley QCB - Area 4 - ~~[illegible]~~

Onsite		Offsite
1015	1240	1700
Skies: 40% cc	50% cc	80% cc
Wind: 3-7 mph	3-7, 7-10 gusts	2-8, 10-14 gusts
Temp: 67°F	72°F	72°F

		Nectar
SCJA	Woodrat (midden)	Goldfields
CAQU		Lupinus con.
BEWR		Lupinus bi.
Behr's mm	卌 卌 卌 50+	Erod. cic
Sulfur spp	卌 卌 III'	Crypt. halop
Acmon Blue	卌	Layia gland.
Southern Blue	III	Chap whitetorn
Western toad (calls)		Chia
Fun. duskywing	III	Purple mat
Painted lady	II (flyby's)	
BUSH		

(over)

4/5/11 PML

Area 4 (Continued)

CORA
RTHA
TUVU
deer (pr)
WAHA → Harris's Hawk!

Nectar cont'd
Desert ceanothus
Ericameria lin.

4/11/11

PML Week 4

Jewell Valley QCB - Area 6

Onsite		Offsite
1000	1320	1600
Skies: 50% cc	0% cc	0% cc
Wind: 2-6 mph	1-6 mph	1-4, 5-8 gusts
Temp: 62°F	66°F	65°F

	Nectar
BTSP - Black-throated Sparrow	Goldfields
LEGO	Cryptanantha
CATO	Desert Ceano
Behr's mm 卌 卌 - 100's!	Chap.
Green hairstreak - 50-100	whitethorn
BTJR - jackrabbit	Sumac - flowering
CORA	↳ lots of insects/
WEKI	butterflies
Painted lady 卌	on sumac
Pale swallowtail 11 (over)	Erodium cic.
Southern blue 卌 卌 11	

4/11/11
continued

PML

Area 6
SCJA
Nomo
Funereal duskywing 30-50
MALL pr (flyby)

4/12/11 PML

Jewell Valley QCB - Area 5 - Wk 5

Onsite		Offsite
0940	1220	1600
Skies: 0% cc	0% cc	0% cc
Wind: 2-4, 5-9 gusts	2-8 mph	2-6, 7-10 gusts
Temp: 60°F	68°F	65°F

*CAWR - same area - see map

SCJA
Green hairstreak IIII - 50 - 100
Behr's mm IIII - 100's
Buckeye I
CORA
Painted lady I
CAGU
Fox duskywing III
Woodrat (middens in boulders)
Sara's OT III (over)

Nectar
Same
- Desert ceanothus
- Sumac - now flowering
- Goldfields everywhere
- Lupine
- Chia
- Parish Nightshade

4/12/11
Continued

PML

Area 5

Merriam's chipmunk?

BTSP - black-throated Sparrow

Nectar

Lotus argo
Encelia lin.
Calycoseris parry.
Phacelia parryi
Phacelia dist.
Lupinus bicolor
Penstemon cent.

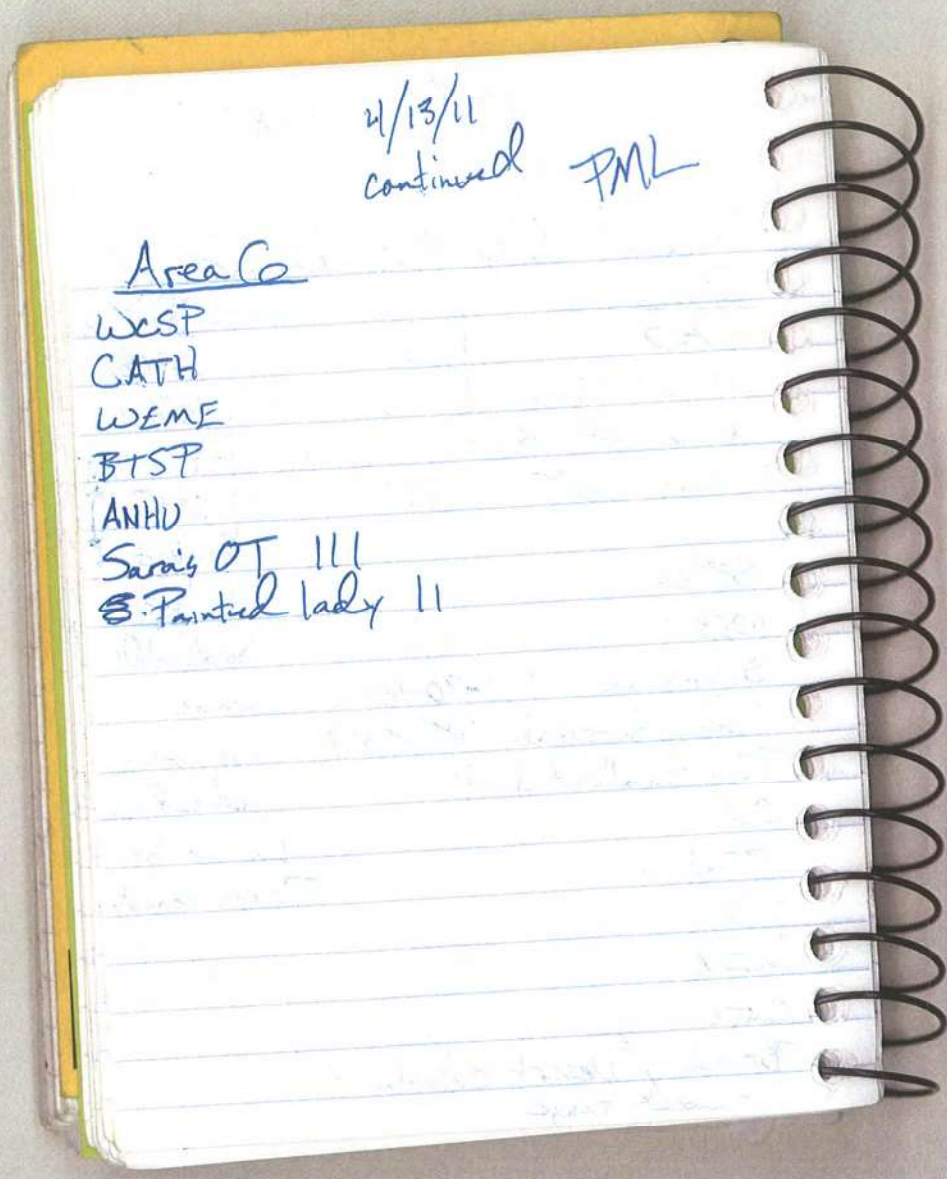
4/13/11 PML
Week 5

Jewel Valley QCB - Area 6

Onsite		Offsite
1040	1300	1630
Skies: 0% cc	15% cc	10% cc
Wind: 3-8, 9-13 gusts	5-10, 10-15 gusts	4-8, 10-17 gst
Temp: 60°F	62°F	60°F @ ridgetops

SPTO
WEK 1
Behr's mm HHT 11-20-40
Green Hairstreak HHT HHT HHT II
Pale Swallowtail II
CATO
RTHA pr
BUSH
SCJA
CATO
Br rabbit/Desert cottontail?
- Check range

Nectar
Goldfields
Sumac
Cryptantha
Phacelia dist.
Lupine bi.
Desert ceanoth.


4/13/11
continued PML

Area C6

WCSP
CATH
WEME
BTSP
ANHU
Sara's OT III
S. Painted lady II

(730) TLW

Week 1 - South 1/2 of site. PL Rd North 1/2

Area 8 Jewel Valley QCB

3/11/14

S: 0915

clear skies
winds 4-7mph
air temp: 69°F
ground temp: 68°F

1530

clear skies
winds
air temp: 78°F
ground temp: 86°F

Sara's orangetip
LEGO
SCJA

perplexing hairstreak
painted lady
Behrs metalmark
CA white
blue sp.
CA ringlet
MODO
CATO
CORA
LEGO

(7^{45}-5^{00}) TLW Week 1

Area 10 Jewel Valley 3/14/14

S: 0915
10t·cc
winds 3-6, gusts to 7mph
air temp 66°F
ground temp 66°F

E: 1515
35t·cc
winds 6-9 mph
air temp 76°F
ground temp 80°F

SWA
MODO
SPTO
CORA
Sara's orangetip (nectaring on ero cic)
CATO
Pale swallowtail
Behr's metalmark
CA white
brown elfin
California dogface
CATH
RTHA

(7:45)

TLW

Week 2

Area 7 Jewell Valley QCB Surveys 3/17/11

S: 0905
hazy / partial clear skies
winds 2-3mph (gusts to 5)
air temp 60°F
ground temp 61°F

E: 315
haze
winds 5-8mph
air temp: 68°F
ground temp: 72°F

CAQU
KILL
CORA
SPTO
perplexing hairstreak
Behr's metalmark
Sara's orangetip
oak titmouse
WREN
SOJA
brush rabbit
acmon blue
CA white
BUSH
RWBL
funereal duskywing
ground squirrel
oriole (Bullock's?) (confirmed BUOR)
↳ yellow, blackhead, white wing bars
↳ in shank

Lasthenia, erodium, + cryptantha are all in bloom.

temp increased at 11:45am to 68°F air temp, 70°F ground.

(730)

TLW Week 2

Area 10 Jewel Valley QCB Survey 3/18/11

S: 0905
hazy
winds 4-6 mph
air temp: 68°F
ground temp: 70°F

E: 305
clear skies
winds 6-9 mph
air temp: 64°F
ground temp: 68°F

acmon blue
perplexing hairstreak
blue sp.
Behr's metalmark
CA dogface
HOFI
BEWR
MODO
CAQU

(830)

TLW Week 2

Area 8 Jewel Valley OLB 3/23/11

S: 0945
clear skies
winds < 2mph
ground temp: 64°F
air temp: 60°F

E: 1400
clear skies
Winds 4-6mph
ground temp: 62°F
air temp: 60°F

Cabbage white
Behr's metalmark
Sara's orangetip
OATI
SPTO
painted lady
acmon blue
perplexing hairstreak
CA dogface
funereal dustywing

(730-)
TLW Week 3

Area 7 Jewel Valley 3/29/11

S: 0900
clear skies
winds 5-8mph gusts to 12
air temp: 66°F
ground temp: 64°F (soils were moist)

E: 1505
20% cc
Winds 2-4mph
air temp: 76°F
ground temp: 76°F

marbled white (confirm?) Pearly marble (confirmed)
Sara's orangetip
perplexing hairstreak
Behr's metalmark
sulfur sp.
acmon blue
CA thrasher
MODO
HOFI
CAQU
BUSH

(7:30-)
TLW

Week 3

Area 8 Jewel Valley

7/1/11

S: 0900

clear skies
winds 2-3 mph
air temp: 80°F
ground temp: 74°F

E: 1515

clear skies
winds 2-3 mph
air temp: 88°F
ground temp: 86°F

Sara's orangetip
Pearly marble
perplexing hairstreak
pale swallowtail
Behr's metalmark
CA white
acmon blue
brown elfin
Harford's sulfur

No QUB

(~~[illegible]~~)
730
TLW

Week 4

Area 7 Jewel Valley

4/4/11

S: 0930
clear skies
winds 5-8mph, gusts to 16mph
air temp: 66°F
ground temp: 70°F

E: 1545
clear skies
winds
air temp: 68°F
ground temp: 74°F

perplexing hairstreak
Behr's metalmark
Sara's orangetip
CA. ringlet
Brown elfin
HOFI
CORA
MODO
BUSH
SCJA

DW

Jewel Valley Wind Energy Proj
April 1, 2011

Butterfly List

Week 3

Site 10

(2)	Orange Tip Fellders (desert)	II
(1)	Perplexing Hairstreak	I
(6)	Metal Mark (Behrs)	IIII I

Site 2

(2)	Orange Tip Fellders (desert)	II
(2)	Orange tip Sara	II
(32)	Metal Mark (Behrs)	IIII IIII IIII IIII IIII II
(3)	Acom Blue III	III
(3)	Dusky wing Funeral	III

DW

Date 4/1/11 Jewel Valley Wind Energy Proj.
Time leave for site : 8:40 AM
Time arrive at site : 10:35 AM

Time leave site : 5:20 PM
Time end : 7:30 PM

Site 10 (South)
Time start : 10:35 AM
Cloud Cover : 100% clear
Wind Speed : max : 6.5 mph
min : 2.1 mph
ave : 3.9 mph
Temp : 78.0°

Site 10 (South)
Time : 11:35 AM
Cloud Cover : 100% Clear
Wind Speed : max. : 2.5 mph
min. : 1.0 mph
ave. : 1.4 mph
Temp : 88.4°

DW

Date: 4/1/11
Time: 12:45
Cloud Cover: 100% Clear
Wind Speed: max: 3.6 mph
min: 0.0 mph
ave: 2.3 mph
Temp: 88.4°

Time: 1:05 PM
Cloud Cover: 100% Clear
Wind Speed: max. 1.7 mph
min. 0.0 mph
ave. 0.7 mph
Temp: 85.6°

Site 2 (North)
Time: 2:20 PM
Cloud Cover 100% Clear
Wind Speed max 6.4 mph
min 0.0 mph
ave 2.0 mph
Temp: 86.6°

DW

Date: 4/1/11 Site 2 (south)
Time: 3:55 PM
Cloud Cover: 100% Clear
Wind Speed: max: 5.4 mph
min: 3.2 mph
ave: 3.8 mph
Temp 98.8°

Time: 5:20 PM
Cloud Cover: 100% clear
Wind Speed: max: 7.0 mph
min: 1.7 mph
ave: 2.5 mph
Temp: 81.0°

DW

Jewel Valley Wind Energy Proj
March 30, 2011

Butterfly Trist

Week 3

Site 9

(6)	Orangetip Felder (desert)	IIII I
(1)	Western Tiger Swallowtail	I
(1)	Sonoran Blue	I

Site 10

(4)	Orangetip Felders (desert)	IIII
(1)	Sonoran Blue	I
(2)	Perplexing Hairstreak	II
(2)	Dubiously sp.	II

DW

Date: 3/30/11 Jewel Valley Wind Energy Proj.
Time Leave for Site: 8:30 AM
Time Arrive at Site: 10:30 AM
Site 9
Time Leave Site: 3:25 PM
Time end: 6:30 PM
Time start: 10:45 AM
Cloud Cover: 5 %
Wind speed: max: 7.3 mph
min: 0.8 mph
ave: 1.6 mph
Temp: 69.1°

Time: 10:55 AM
Cloud Cover: 100% Clear
Wind Speed: max: 3.8 mph
min: 0.6 mph
ave: 1.7 mph
Temp: 74.3°

DW

Date: 3/30/11
Time: 12:55 pm
Cloud Cover: 20%
Wind Speed: max: 4.4 mph
min: 0.9 mph
ave: 1.5 mph
Temp: 76.3°

Site 10 (north)
Time: 1.50 pm
Cloud Cover: 25%
Wind Speed: max: 7.1 mph
min: 0.5 mph
ave. 2.7 mph
Temp: 75.0°

Time: 3:05 pm
Cloud Cover: 35%
Wind Speed: max 4.2 mph
min 1.5 mph
ave 2.3 mph
Temp:

DW

Date 3/30/11
Time: 3:25 PM
Cloud Cover: 35%
Wind Speed: max: 4.2 mph
min: 0.9 mph
ave: 2.2 mph
Temp: 75.5°

Time: 3:25 PM
surveyed 10 south area

DW

Jewel Valley Wind Energy Project
April 13, 2011

Butterfly List
Area 2 (all)

Week 4

Metal Mark Behrs ~~||||~~ |||| (9)
Dushyuung sp. ||| (3)
Acmon Blue: | (1)
Brown Elfin: || (2)

Area 3 (all)

Metalmark Behrs. || (2)

DW

Gate # 3333
Jewel Valley Wind Energy Proj.

Date: 4/13/11
Time leave for site: 7:45 AM
Time arrive at site: 10:10 AM

Time leave site: 4:30 PM
Time end: 6:00 PM

Site #2
Time start: 10:30
Cloud Cover: 95% clear
Wind speed: max: 2.1
min.: 0.7
ave: 1.1
Temp: 60°F

Time: 11:45
Cloud Cover: 100% clear
Wind Speed max: 6.5 mph
min: 0.9 mph
ave: 1.0 mph
Temp: 66.2°F

DW

Date: 4/13/11
Time: 12:40 PM
Cloud Cover: 95% Clear
Wind Speed: max 9.7 mph
min 0.5 mph
ave 1.7 mph
Temp: 61°F

Time: 1:05 PM
Cloud cover: 95% clear
Wind Speed: max
min
ave
Temp 63.5°F

Site #8
Time 2:10 PM
Cloud Cover: 100% clear
Wind Speed max 10.6 mph
min 1.0 mph
ave 2.4 mph
Temp: 61.3° 3

DW

Date: 4/13/11
Time: 3:10 PM
Cloud Cover: 20% cloud cover
Wind Speed: max: 2.9 mph
min: 0.5 mph
ave 1.4 mph
Temp: 60°F

DW

Jewel Valley Wind Energy Proj
April 11, 2011

Week 5

Butterfly List
Aved 4 (all)

Metal Mark	IIII	(Behrs) (6)
Dusky wing sp.	I	(1)
Orangetip Sara	II	(2)
Orangetip Desert	III	(3)
Buckeye	II	(2)
Blue Sp.	I	(1)
Perplexing	I	(1)

DW

Date : 4/11/11
Time leave for site : 7:15 Am
Time arrive at site : 9:00 Am

Time leave site : 4:15 PM
Time end : 6:00 PM

Time start : 9:00 Am
Cloud Cover : 15% Clear 85% Cloud Cover
Wind Speed max : 3.2 mph
min : 0.0 mph
ave : 0.3 mph
Temp : 55.7° F

Time : 10:15 Am
Cloud Cover : 70% cloud cover
Wind Speed : max : 6.6 mph
min : 1.4 mph
ave : 1.6 mph
Temp : 60.4° F

DW

Date: 4/11/11
Time: 12:05PM
Cloud Cover: 15% cloud cover
Wind Speed max: 4.9 mph
min: 0.5 mph
ave: 2.0 mph
Temp: 66.7°F

DW

Jewell Valley Wind Energy Proj.
April 10, 2011

Week 5

Butterfly List
Area 11 (all)

Blue sp.	II	(2)
Orangetip Desert	III	(3)
Metalmark	IIII (Behrs)	(4)
Perplexing	I	(1)

Area 10 (south only)

Orangetip Desert	II	(2)
Hartfords sulfur	I	(2)
Acmon Blue	I	(1)
Perplexing	IIII	(4)

DW

Date: 4/10/11
Time Leave for Site: 7:45 AM
Time arrive at site: 10:00 AM

Time Leave site: 3:45 PM
Time end: 5:30 PM

Time start: 10:00 AM
Cloud Cover: 100% clear
Wind Speed: max: 2.8 mph
min: 0.8 mph
ave: 1.1 mph
Temp: 59°F

Time: 10:45 AM
Cloud Cover: 100% clear
Wind Speed: max: 1.7 mph
min: 0.4 mph
ave: 0.6 mph
Temp: 60.4°F

DW

Date: 4/10/11
Time: 12:30 PM
Cloud Cover: 100% clear
Wind Speed max: 12.7 mph
min: 4.6 mph
ave: 6.9 mph
Temp: 65.1°F

Time: 2:05 PM
Cloud Cover: 100% clear
Wind Speed max: 9.5 mph
min 3.7 mph
ave 4.1 mph
Temp: 62.0°F

Time: 3:40 PM
Cloud Cover: 100% clear
Wind Speed max: 6.8 mph
min: 6.8 mph
ave: 2.5 mph
Temp: 63.7°F

VM

Week 3

Jewel Valley 4/1/11 P1
lower Area 10 8:40 am 0 miles
Start 10:35 east end
100% clear of lower 10 at
78° railroad tracks 85.3
2.1-6.5 3.9 avg mile
deer scat
perplexing hairstreak 11 (2)
goldfields
pale swallowtail (1)
1.0-2.5 1.4 avg 88.4°
11:35 100% clear
desert orangetip 1111 (4)
many openings with
goldfields some unsinckia
erodium sp.
blue sp (1)
12:45 p.m 100% clear
at roadway

VM

Lower Area 10 4/1/.. P2
0.9 - 3.6 2.3 avg
85.6° 12 45
1 05 88.7°
0.0 - 1.7 0.7 avg
100% clear - back at
car. finish lower P

VM

Week 3

Jewel Valley 41.111
P3
Area 2 (north)
86.6° 100% clear
2:20 p.m 0.0 - 6.4 2.0 avg
Funeral duskywing ~~||||~~ || (7)
Desert orangetip ~~||||~~ ||| (8)
Cryptantha
horned lizard (1) +10 ~~||||~~ +10 +10 (60)
Behr's metalmark ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~
duskywing sp. ~~||||~~ (5)
Acmon blue || (2)
Audubon rabbit
Pale swallowtail (1)
perplexing haustuck || (2)
1.55 100% clear
3.2 - 5.4 3.8 avg
88.0° at southern-eastern
end of southern Area 2

VM

week 3

4/1/11

Area 2 PY

Spotted towhee
Turkey vulture
California Quail
White crowned sparrow
rufous (spotted) sided towhee
deer tracks
Oregon Junco
black-throated sparrow
scrub jay
California Thrasher
bushtit
large raptor nest vs
large oak tree coordinates
N 32 45 04.4
W 116 17 39.9
3980 feet elevation
nest - 1 pr on-site
just off site to west

VM

4/1/11

Area 2 P5

mourning dove

blue sp. (1)

top of northernmost Area 2

100% clear 1.5 - 7.0 2.5 avg

81° 520 p.m.

end survey

7:30 end 185 miles

VM

Week 3

3/30/11 8:30 am

Boulevard

Jewel Valley Wind Energy

Areas 9 and Upper 10 - 10:45

5% clouds

.8-(1.6 avg) 7.3 max

69.1 desert orangetip ++++ ||| (8)

red shank chaparral

cryptantha

gold field

10:55 100% clear

0.6 - 3.8 1.7 avg

74.3° at bottom of

northerly #9 white throated

swifts - nesting in rock (?) ...

fiddle neck

Sonoran Blue || (2)

VM

Week 3

p2

Jewel Valley 3/30/11
0.9-4.4 1.5 avg 12 55
20% cloud 76.3°
Southern 9 (area)
Chisky wing sp. ~~IIII~~ 1 (6)
at southern end of
northern 10
1:50 p.m 75°
0.5 — 7.1 2.7 avg
25% cloud cover
deer scat
coyote scat
white sp 1 (1)
Sara's orangetip III (3)
Fritillary sp 1 (1)
blue sp. 1 (1)
Behr's metal mark II (2)

VM

p 3

Jewel Valley 3/30/11
35% cloud cover
3:05 p.m 75.6
1.5 - 4.7 2.3 avg
3:25 end
0.9 - 4.2 2.2 avg
35% cloud cover 75.5°
4:30 finish reconnaissance
of southern area 10
103 mile in I-8 return -
6:30 p.m. 183 mile end

VM

Week 4

P1

Jewel Valley 4/13/11

7^{45} 0 mile

gate 3333

100% clear 87 miles

10:00 am

arrive to area 2 north.

(1) .7-2.1 1.1 mph avg 60°

10^{30} conditions become suitable.

Behr's metalmark (20)

60.4° 1.2-4.0 2.1 avg

11^{10} 100% clear

Acmon blue (1)

11^{20} in south 2

Astragalus. 3 = 1 only seen

perplexing hairstreak (1)

dislywing sp 1 (1)

VM

P2
4/13/11

brown elfin 1 (1)
99% clear
63.5° 1.05 pm
2.7 - 6.2 3.9 avg.

Jewel Valley Area 8
2.05 95% clear ~~63.5~~ 61.3
Red tailed hawk
1.0 - 10.6 avg 2.4 mph
Scrub jay
Behrs metalmark III (3)
black tailed jackrabbit
California Quail
Lesser gold finch
Ground squirrel
Audubon rabbit
Common Buckeye (1)

VM

P3

Sewel Valley 4/13/11
60. 0.5 - 2.9 1.4 avg
20% cloud cover
Paddlerock
Gold Fields
Cryptantha sp.
Ceanothus
lupine sp
phacelia sp
at southern end of Area 8
at 3:30
Wrentit
California Thrasher
4:30 pm
h 5 - 4.5 2.5 avg
56' call survey
95% clear 105 miles
end 6:00 pm
191 miles

VM

Week 5

P1

Jewel Valley 4/10/11

Area 11 7 45 am

100% clear 0 m.

10 00 am 10.6

58° 0.8 - 2.8 1.1 avg

w/ Dave Waller

10 45 100% clear

60.4° 0.4 - 1.7 0.6 avg

Acmon Blue III (3)

Owl's clover

less than 50 in vicinity

Desert orange tip (1)

Sulfur sp (2)

perplexing hairstreak IIII (4)

buckeye (1)

Sulfur sp.

Behrs metalmark (1)

VM

P2

4/15/11

finish line 11 2 pm
100% clear 62.0
.7-5.5 3.4 avg

205 Area 10 south
0.7-5.5 3.4 avg 62.0°
100% clear
Desert orangetip III (3)
Behr's metalmark II (2)
perplexing hairstreak (1)
got to far north at
railroad track at
2:50 p.m.
Then headed back south
on western half
63.7° 0.8-6.8
avg 2.5 3.3
100% clear

VM

P3

Area 10 South 4/10/11

Wrentit

spotted towhee

white crowned sparrow

coyote scat

deer scat

bewick's wren

turkey vulture

Bushtits

3:45 end surveying 10 south

100% clear

1.0 miles

18.9 miles day total

end at 5:30

~~8~~ VM

Week 5

P1

Jewel Valley 4/11/11
0 m. 7^{15} am

arrive at 9 am 83 miles
at 9 north
55.7 85% cloud cover
9 am.
not suitable weather so went to see
access to Area 8
10^{15} 60.4°
1.4 – 6.6 1.6 avg
70% cloud cover start Area
9 north.
Behrs metalmark ~~111~~ (5)
Desert orangetip 111 (3)
in southern Area 9 at
11^{10}
Buckeye 111 (3)
Acmon blue 111 (3)
Sara's orangetip 11 (2)

Week 1

Jewel Valley QCB area 2
3/9/11 BAO

10 mph - 5-7-5 gusts to 30 mph
clr - clr
60 in shade ~ 60-60-60
0946 - 1200 1400 1530

CATH
SCJA ROWR
antelope GS BEWR
Desert woodrat midden
BOSHT SOSP
BTJR
POGO
TUVU
PHAI
CARU
Mule deer sent
CGS
CORA
RTHA
side-blotched lie
CATO
SPTO
LBWO
BCSP (no white on face)
BJSP too (white on face)
NOFL
OATI
WCSP
HOFI
WRENJ

BEMMark 1 X X
Funereal Dusky wing 1 V
blue III
Sulphur III
Painted lady X
small reddish one ~ 20' (moth)
mourlett V
marine blue? II

creeks flowing

bloomy
goldfields
Kal poppies flower
cradium

Jewel valley QCB
area 3
3/11/2011
Chr
1000 - ~~[illegible]~~ 1600
3-5 mph - 5-10 occ. gusts to 15
63° in shade - 70

Week 1

CAQU WCSP
WCSP RTHA
NOFL
SCJA
CATO
CORA
HOFI
muledeer
M-CGS
M-Desert Co.
TUVU
~~[illegible]~~ BTSP
WREN
M-POGO
M-lion tiks (maybe 2 sets?) 3x3 + ~18 in between steps
straight line thru veg.
RORU
BTJR
ROWR
R-URSP
Harvester ant.
R-brush lie?
M-Ant. gs
R- W. Diamond back ~3' lots of buttons
Desert woodrat.

Much of chap area would have been 100% closed prior to last fire

Green H.S. 1
Painted lady.
Cal ring let
Behrs MM (big)
Felders OT
a lot of diff. diurnal moths

Krat sp. tiks + tail drag
grey baby mouse white under

3/15/11 BAO
Jewel valley
area 3

Week 2

1000 – 1610
0 – 20%
65-70°F
5-10, gusts to 15 mph
TUVU
CORA
RTHA
CATO
CAQU
coyote
western fence lizard
desert cottontail
BUSH
YRWA
WCSP
SOSP
HOFI
LEGO
LOSH
NUWO
BTSP
M-BTJR
M- desert woodrat middens
Pac. treefrog
western toad
mule deer tiks
BHCO
GTGR

cal ringlet ||||
~~western~~ tiger swallowtail ||
pale swallowtail |
Behr's MM IVXI
Felders OT ||||
painted lady |
Green H.S. ||

Week 2

3/18/11
Jewel Valley QCB
area 1 - week 2

BAD

0730 - 1530
62 - 65 °F
20 - 0%
5 - 10, gusts to 15 mph

AMGS
BGAN
RTHA
M - striped skunk
SPTO w/ jaws in tow
CATO
HOFI
EUST
NOMO
WEBL
M - 'coon
M - CGS
M - Desert cottontail
M - Krat
BUSH
SCJA
NOMO
MODO
COHA
M - coyote
R - gopher snake - young
R - long-nosed leopard lz
BLPH
CAKI
TUVU

Painted lady III
purple H.S. I
Fritillary sp. II
blue sp. I
Funereal DW II
reddish moth V

WREN
LEGO
BHGO

Week 2

Enel Jewel valley area 5 BAD
3/29/2011

1100 - 1630
66°
5/10 mph
10%

an actual low flow channel / temp.

Solar site in flood plain but i: AF Sage scrub GBas scrub?
goldfields + little white flowers

dead mouse (JUV. peromyscus sp.)
little squirrel (antelope g.s.)
POLO
CAQU TUVU
Coyote AMKE
SCJA
BLPH
CATO
ACWO
NOFL
WREN
RORU
SBliz
WCSP
MODO
ANHU
~~BE~~ CATI
WTSW
CATH
COYT
SOSP
Pygon myrex ants
weasel

Brown elfin.
Acman Blue
BEMM.
Common white (dot on wing)

south 5
70°
3.5
10%

CATH BISH NOMO CORA mole door
CATO ~~CA~~ CAQU SCJA
SMGS.
~~[illegible]~~ funeral duskywing
tiger swallowtail
BEMM
acblue
checkered white
brown elfin
SWAOT
Perplex HS.

Week 4

4/1/11 Jewel Valley
QCB BAO
area 9 week 4

1000-1500
63-66°F
0-0%
3-5, gusts to 10

tiger swallowtail ||
perplex. H.S. |||
acmon blue ||
blue sp. |
Behr's mn. |||| |
Funeral |
Common white ||
Q.Tip |

MODO
ACWO
SCJA
R-So. pac. diamondback
m-antelope g.s.
R-long nosed lepp. liz.
R-S.B. liz
R-granite spiny
M-weasel
M-CGS
M-desert cottontail
ANHO
ACWO
BUSH
YRWA
HOFI
BTSP
LASP
WEBL
WEKI
BLPH
AMKE

LOSH
CAKI
GREG
TOVU

Area 10 Jewel Valley QCB

4/14/2011 B40

Week 5

11:00 - 17:00
63 - 65°F
0% clouds
3-5 — 2-10 mph

CORA
RTHA
CAKI
MTBL
HOWR
SCJA
NOMO
BUSH
Coyote
Desert cottontail
ANHU
BTSP
CATO
SOSP
CAQU
LEGO
bobcat scat
CGS
SASP
Southern prairie diamondback

Aehrs mm - XXXX
Painted lady - X
Pale swallowtail - 1
Sara OT - X
southern blue - X
Green hairstreak - XXXXX
Common white - X
acmon blue - XX
Funereal Duv - X

ATTACHMENT A-2

45-Day Summary Report of Focused Surveys for the Quino Checkerspot Butterfly for the Campo Wind Energy Project

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July 5, 2010

Ms. Sandy Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: 45-Day Summary Report of Focused Surveys for the Quino Checkerspot Butterfly for the Campo Wind Energy Project

Dear Ms. Marquez:

In compliance with the Special Terms and Conditions for Endangered and Threatened Wildlife Species Permit TE-820658-4.6, AECOM submits this letter report summarizing the results of focused surveys conducted during 2010 for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) associated with the Campo Wind Energy Project. AECOM currently holds an Endangered and Threatened Species Permit issued by the U.S. Fish and Wildlife Service (USFWS) under Section 10(a) of the federal Endangered Species Act. This permit authorizes AECOM to conduct presence/absence surveys for Quino and other species.

Project Description

The Campo Band of Mission Indians (a California federally recognized Indian tribe), Muht-Hei, Inc. (a tribally chartered corporation wholly owned by the Campo Band of Mission Indians), the Bureau of Indian Affairs, and Invenergy Wind California, LLC, propose construction and operation of a wind generation facility on the Campo Indian Reservation in southeastern San Diego County. This facility would be capable of generating up to 300 megawatts (MW) of electricity and would include turbine strings, substations, transmission facilities, and access roads. The exact footprint of project features is currently being designed. Generally, strings of 2.5-MW turbines are being considered for installation across ridgelines that do not contain residences throughout the reservation, including areas north and south of both Interstate 8 and State Route 94. Each turbine would be set on a large concrete foundation. Turbines would be connected by underground electrical cables to one or two substations. Each substation would be sited on approximately 2 to 3 acres and would consist of a graveled, fenced area containing transformer and switching equipment and an area to park utility vehicles. In addition, a three-phase overhead transmissions circuit would be constructed from each substation and would connect to the existing transmission network. Other likely facilities would include an Operations and Maintenance building; new access roads; and a temporary concrete batch plant. The biological survey area (BSA) identified for the proposed project includes approximately 4,417 acres. This acreage consists of all proposed project features with a 500-foot buffer around new, proposed features, and a 100-foot buffer around existing features of the site that are proposed to be used or modified (i.e., existing roads).

Site Description

The Campo Indian Reservation includes lands both north and south of Interstate 8 along the Tecate Divide, extending to a quarter of a mile north of the California and Mexico international border (Figure 1). The reservation is located between the communities of Old Campo and Jacumba, around the community of Live Oak Springs, and bisected by Church Road (Figure 2). On-site elevation ranges from approximately 3,030 to 4,320 feet above mean sea level.

The BSA supports a variety of habitat types and vegetation communities but is dominated by chamise chaparral with both a monotypic phase and a mixed chaparral phase. Additional vegetation communities found throughout the site and especially along ridges and slopes include redshank chaparral, big sagebrush scrub, and Sonoran subshrub scrub. A series of north-south-running ridges is located throughout the proposed project site separated by shallow valleys consisting of coast live oak woodland, nonnative grassland, and southern willow scrub vegetation. Buckwheat scrub is interspersed throughout the chamise chaparral primarily in shallow valleys, along washes and roads, and along firebreaks. Various large rock-outcrops are scattered throughout the site but are primarily located along the ridgelines.

Background Information

The Quino was added to the federal Endangered Species List by USFWS on January 16, 1997 (USFWS 1997). The species (*E. editha*) has a range extending from British Columbia and Alberta, Canada, south through Colorado and Utah, and west along the coast to northern Baja California. It is divided into 20 subspecies, each of which has its own range and biological and morphological characteristics. In California, there are 12 subspecies (Garth and Tilden 1986). Three other subspecies of *E. editha* are currently known to occur in Southern California. The Quino is the southwesternmost subspecies of *E. editha* (Mattoni et al. 1997).

The Quino is known to occur in association with a variety of plant communities, soil types, and elevations (up to 5,000 feet). The plant communities include clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub (Ballmer et al. 2001). The Quino is also associated with clay soils that possess cryptogamic crusts and vernal pools (USFWS 2002).

The Quino is a medium-sized butterfly (approximately 0.8- to 1.1-inch wingspan) belonging to the family Nymphalidae. The adults are primarily orange-red with white and have black markings on the dorsal wing surface. They are active primarily in March and April. This active period may vary depending on weather conditions (Ballmer et al. 2001). The adult butterfly feeds on nectar, which it obtains from spring annuals such as popcorn flower (*Cryptantha* spp.), Layia (*Layia glandulosa*), goldenbush (*Ericameria* spp.), pincushion (*Chaenactis* spp.), fiddleneck (*Amsinckia intermedia*), chia (*Salvia columbariae*), and blue dicks (*Dichelostemma pulchella*), among others. It cannot use flowers that possess deep corolla tubes, such as monkeyflower (*Mimulus* spp.), or those that can be opened by bees,

such as snapdragons (USFWS 2002). Adult males and virgin females sometimes "hilltop," or travel to elevated locations to find mates. While waiting for females to arrive, the males will often exhibit "territorial behavior" and will chase other butterflies that approach them. Frequently, the butterflies are observed in meadows or clearings where their host plants occur (Ballmer et al. 2001).

A female may lay 20 to 75 eggs at one time and may produce up to 1,200 eggs in her lifetime. The eggs hatch in approximately 10 days under favorable weather conditions and the young larvae will immediately begin to feed upon a host plant. The feeding larvae use the dot-seed plantain (*Plantago erecta*), Patagonia plantain (*Plantago patagonica*), white snapdragon (*Antirrhinum coulterianum*), and Chinese houses (*Collinsia concolor)* as their host plants (Pratt 2009). Dark-tipped bird's-beak (*Cordylanthus rigidus*) and owl's clover (*Castilleja exserta*) are considered secondary hosts (USFWS 2002). New evidence suggests that Chinese houses is a primary larval food plant for Quino in the 900 to 1,300-meter elevation range (Pratt 2009), which is within the range coincident with the BSA.

After feeding, the early larva enters an obligatory aestival diapause (dormant stage), which may be broken after fall or winter rains (Murphy and White 1984; Osborne 1998). If adverse weather conditions occur, the emergent larva may reenter a diapause stage repeatedly, for up to 5 or 6 years, until favorable weather conditions permit sufficient growth of the host plant to allow the larva to complete its development.

The Quino was once common in Southern California. It ranged north into Ventura County, west to the Pacific Ocean, east to the deserts, and south into northern Baja California. Currently, it is known to occur only in a few, probably isolated, colonies in southwestern Riverside County, San Diego County, and northern Baja California.

Reasons for the butterfly's reduction in population are not well understood. Habitat loss due to degradation and fragmentation caused by urban and rural development, agricultural conversion, off-road-vehicular use, the invasion of nonnative plants and insects, fire management practices, overcollecting, and adverse weather conditions have likely contributed to the species' decline (USFWS 1997).

USFWS recommends that focused Quino surveys be conducted a minimum of five times during the adult flight season by biologists possessing a recovery permit for this species pursuant to Section 10(a)(1)(A) of the Endangered Species Act. The Quino flight season within a given area is determined by the activity of known Quino populations that are monitored annually by USFWS.

Survey Methodology

Habitat Assessment

Prior to the initiation of surveys, a focused habitat assessment of the 4,417-acre BSA was conducted from March 1 through March 5 and March 15 through March 17. One additional

day of habitat assessments was conducted on March 22 for adjustments to the proposed project footprint that were added during the week of March 8. Habitat assessments were conducted by Project permitted biologists David Faulkner, Martha Heath, Michael Klein, Ken Osborne, and Dale Powell. These permitted biologists were assisted by project supervised biologists Andrew Fisher and Shirley Innecken.

An internal meeting took place on March 10, 2010, to compile, review, and discuss the results of initial habitat assessments with project biologists Barbra Calantas, Dave Faulkner, Andrew Fisher, Michael Klein, and Erin Riley. Upon review of the initial habitat assessment mapping, differences in the interpretation of the USFWS Quino survey protocol (USFWS 2002) with regard to chaparral density and areas to include or exclude from surveys were identified and discussed. The survey protocol recommends excluding “dense chaparral” and “small openings (less than an acre) completely enclosed within dense chaparral.” It further defines “dense chaparral” as “vegetation so thick that it is inaccessible to humans except by destruction of woody vegetation for at least 100 meters.”

Ken Osborne defined excluded habitat using a strict interpretation of the protocol definition of dense chaparral. David Faulkner and Michael Klein applied a more restrictive interpretation of the protocol as it applied to the BSA than initially assumed in many areas. Their interpretation of excluded areas resulted in a narrowing of habitat to be surveyed. This was based on refining the mapping of dense chaparral to include vegetation that was relatively easily traversed and thought to be the optimal Quino habitat on-site. It was decided at this meeting that field review of initial habitat assessments would take place to ensure a consistent interpretation of the survey protocol and approach on habitat assessment mapping throughout the BSA.

These conclusions regarding the mapping of potential Quino habitat during the habitat assessment were discussed at a meeting on March 11, 2010, with USFWS, Invenergy, Lisa Gover (Campo Environmental Protection Agency), AECOM, and subcontracted biologist David Faulkner. At this meeting, AECOM and Invenergy provided a background of the project and discussed biological surveys scoped for the project. AECOM and David Faulkner provided the results of the initial habitat assessment mapping. David Faulkner described conditions at various specific areas within the survey area boundary and adjacent areas based on his experience completing Quino surveys for the proposed Campo Landfill project in prior years. He explained why these areas were or were not suitable for Quino, stating that most excluded areas consisted of closed-canopy chaparral (AECOM 2010).

It was agreed upon at the March 11, 2010, meeting that focused surveys should likely start the week of March 22, 2010, based on site conditions and seasonal weather patterns. Also, it was discussed that a typical survey week could be expected to last as long as 9 to 10 calendar days instead of the usually 7-day week due to adverse weather conditions given the elevation and interior mountain location of the site. USFWS agreed on the approach to habitat assessments that was discussed at the March 11, 2010 meeting. USFWS also concurred on the start date and survey week length.

Follow-up field review of Quino habitat assessments took place from March 15 through March 17, 2010. AECOM staff, Michael Klein, and David Faulkner conducted this second round of habitat assessments. Thus, areas defined as suitable Quino habitat during the first week of habitat assessments were reassessed to further refine mapping of closed-canopy chaparral habitat. The resulting 1,806 acres of included habitat is depicted in Figure 3 (see "original survey area").

As the focused adult surveys ensued, some surveyors observed patches of open habitat in the dense chaparral they deemed suitable for the species. Starting in survey week 2, Quino observations were made outside of the original survey area (Figure 3). The survey area was expanded during survey week 2 to include additional trails and narrow openings in the chaparral that were not easily visible during habitat assessments. The expanded survey area is depicted in Figure 3 and constitutes approximately 541 additional acres.

The total original Quino survey area within the BSA is approximately 1,806 acres. Focused surveys were conducted for 6 weeks over this 1,806-acre survey area according to the most current USFWS protocol (USFWS 2002). The expanded survey area, comprised of 541 acres, was surveyed according to the survey guidelines during weeks 2 through 6, thus receiving a full 5 weeks of surveys and spanning the entire documented 2010 flight season of the species in the BSA (Figure 3). Thus, focused surveys were conducted for a minimum of 5 weeks over the entire 2,347-acre survey area according to the most current USFWS protocol (USFWS 2002).

The final habitat assessment map including both the original and expanded survey areas and depicting all excluded habitats is presented on USGS Quad maps at 200 percent (Figure 4). Host plant locations are also depicted on the habitat assessment maps. The criteria for including habitat in the final survey area include the following:

- chaparral and scrub communities with passable openings between shrubs
- dirt roads and trails
- open hilltops and ridges
- rock outcroppings
- areas with concentrated nectaring sources and host plants

Focused Adult Quino Surveys

The start date for focused adult Quino surveys was determined based on the following: (1) the first detection of Quino during surveys for another project on the Campo Indian Reservation directly adjacent to the proposed project the previous year; (2) conditions at the project site this year relative to last year; and (3) conditions at the Jacumba reference site monitored by USFWS. Project biologists Michael Klein and David Faulkner conducted focused surveys for the proposed Campo Landfill project in previous years and provided input that the first Quino detections at the Campo Landfill site occurred around the third week of March the previous year. Based on this information, Ken Osborne stated that the flight season would likely begin at the Jacumba reference site around the third week of

March (Osborne 2010). However, based on colder temperatures at the site in mid-March, which delayed the flight season by at least by another week, and the lack of Quino at the Campo Landfill site that was being monitored during that time, it later was agreed that the fourth week of March would be an appropriate start date for surveys. Thus, focused adult surveys commenced on March 22, 2010, by surveyors Natalie Brodie, Gretchen Cummings, David Flietner, Martha Heath, Erik LaCoste, Brian Lostroh, Viviane Marquez, Margie Mulligan, Ken Osborne, Andrew Pigniolo, and Dale Powell.

The survey routes of each permitted biologist were recorded and mapped electronically using Garmin Global Positioning System (GPS) units. A list of all biologists who conducted habitat assessments and focused surveys, and their corresponding permit numbers is provided in Table 1. A summary of the survey schedule is presented in Table 2.

Table 1
Survey Personnel and TE Permit Numbers

Biologist	#TE Permit Number
Erin Bergman	#TE-820658 (supervised)
Natalie Brodie	#TE-135948
Michael Couffer	#TE-782703
Gretchen Cummings	#TE-031850
Frank Dittmer	#TE-225938
David Faulkner	#TE-838743
Andrew Fisher	#TE-820658 (supervised)
David Flietner	#TE-008031
Antonette Gutierrez	#TE-797999
Martha Heath	#TE-099005
Bonnie Hendricks	#TE-820658
Shirley Innecken	#TE-820658 (supervised)
Diana Jensen	#TE-797999
Michael Klein	#TE-039305
Gina Krantz	#TE-797999 (supervised)
Erik LaCoste	#TE-027736
Brian Lohstroh	#TE-063608
Viviane Marquez	#TE-800930
James McMorran	#TE-820658 (supervised)
Margie Mulligan	#TE-233291
Ken Osborne	#TE-837760
Andrew Pigniolo	#TE-053020
Dale Powell	#TE-006559
Steve Rink	#TE-797999

Table 2
Quino Checkerspot Butterfly Survey Schedule

Survey Week	Date	Survey Team	# Calendar Days[2]	# Person Days	Survey Rate
1	03/22/2010 – 04/02/2010	Brodie, Cummings, Faulkner, Fisher[1], Flietner, Heath, Innecken[1], LaCoste, Lohstroh, Marquez, McMorran[1], Mulligan, Osborne, Pigniolo, Powell	12 (5 days cancelled, 3 days delayed due to weather)	24	75 acres/day
2	04/02/2010 – 04/17/2010	Bergman[1], Brodie, Couffer, Cummings, Faulkner, Flietner, Gutierrez, Hendricks, Innecken[1], Jensen, LaCoste, Lohstroh, McMorran[1], Mulligan, Osborne, Powell	14 (3 days cancelled, 2 days delayed due to weather)	29	81 acres/day
3	04/18/2010 – 04/26/2010	Bergman[1], Brodie, Couffer, Faulkner, Gutierrez, Hendricks, LaCoste, Lohstroh, Mulligan, Powell	7 (2 days cancelled, 2 days ended early due to weather)	27	87 acres/day
4	04/27/2010 – 05/05/2010	Bergman[1], Brodie, Couffer, Dittmer, Faulkner, Fisher[1], Flietner, Gutierrez, Krantz, Hendricks, Lohstroh, Mulligan, Pigniolo, Powell, Rink	9 (3 days cancelled due to weather)	30	78 acres/day
5	05/05/2010 – 05/11/2010	Brodie, Couffer, Faulkner, LaCoste, Marquez, McMorran[1], Mulligan, Osborne, Powell	8 (3 days cancelled due to weather)	24	97 acres/day
6	05/12/2010 – 05/20/2010	Brodie, Couffer, Faulkner, Flietner, Lohstroh, Marquez, Mulligan, Powell	8 (1 day cancelled, 1 day ended early due to weather)	23	99 acres/day

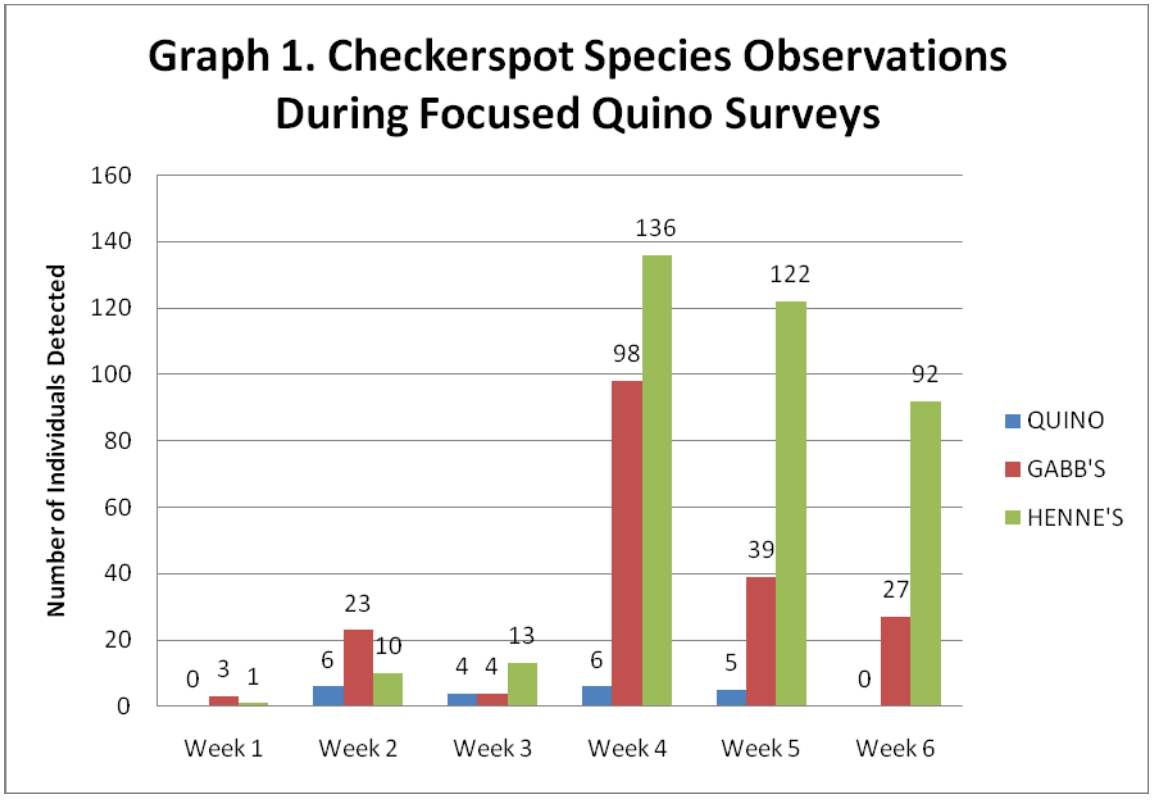
[1] Supervised to survey under TE# 820658.
[2] Cancelled calendar days, delayed calendar days, and calendar days where surveys were ended early are a result of unacceptable weather conditions outlined in the USFWS protocol.

Results

Six weeks of focused surveys were conducted for the approximate 1,806 acres of the original focused survey area, shown in Figure 3. The expanded focused survey area of approximately 541 acres was surveyed from weeks 2 through 6 according to the USFWS protocol (USFWS 2002).

After 5 weeks of surveys, it was determined that a sixth week of Quino surveys at the site was necessary, based on continued observations of Quino individuals during the fifth week that appeared in moderate condition with minimal fading of wing color and fraying of wing edges. Potential larval host plants, including Chinese houses, were blooming with increasing abundance during survey week 5. While the actual blooms of Chinese houses do not benefit Quino larvae, the blooming cycle indicates that Chinese houses were still green and supple, and had not yet dried up during the Quino survey season. Thus, the host plants were still available for Quino larvae to feed on during the Quino survey season. Based on the continued presence of adult Quino and blooming stage of potential larval host plants during survey week 5, a sixth week of focused adult Quino surveys was added to the season. Per discussions with USFWS during survey week 5, Eric Porter and the project team determined that area already surveyed during weeks 1 through 5 in the southern third of the BSA did not need additional focused surveys (Figure 3) (Meyer 2010). This determination was based on number of Quino observations that clearly established presence of the species in this area (Figure 3).

Three checkerspot species were detected on-site, Quino, Gabb's checkerspot (*Chlosyne gabbi*), and Henne's chalcedon checkerspot (*Euphydryas chalcedona*). Observations of these three species overlapped with the exception of survey weeks 1 and 6 (no Quino detected during these weeks). These observations are displayed in Graph 1.



Survey-specific weather conditions and personnel are presented in Appendix A. Field datasheets are included as Appendix B.

A total of 61 butterfly species and various moth species were detected within the survey area, with peak numbers generally occurring during survey weeks 3 and 4. A list of all butterfly species observed within the survey area each survey week is summarized in Appendix C. A list of potential nectaring plant species in flower each survey week is presented in Appendix D. Generally, nectaring plants increased in diversity and abundance during survey weeks 3 and 4, which coincided with the times that Quino and other checkerspots were observed in greatest abundance. A list of vertebrate species detected during focused Quino surveys is presented in Appendix E.

During spring 2010, vegetation mapping and rare plant surveys were ongoing and concurrent with focused Quino surveys for the project. Botanists conducting vegetation mapping and rare plant surveys across 100 percent of the BSA also mapped all potential Quino larval host plants observed, including Chinese houses, Coulter's snapdragon, and dark-tip bird's beak. On-site, Chinese houses was the most abundant potential host plant and was associated with the chaparral understory and adjacent open areas of habitat. Coulter's snapdragon was also associated with the chaparral understory and open areas. Of these three species observed within the survey area, only Chinese houses was vegetatively mature as early as April, during the peak of Quino observations. The blooming period for Chinese houses on-site during spring 2010 was from mid-April to late-June. This species was past its peak bloom and in full fruit by late June. The other two species documented on-site, dark-tip bird's beak and Coulter's snapdragon, were present only as small basal rosettes and/or diminutive, immature plants in April. Coulter's snapdragon began blooming in early May in some areas, and dark-tip bird's beak is not expected to fully mature and bloom until July. All host plants that were detected within the survey area, including observations made by Quino surveyors and botanists during rare plant surveys, are provided in Figure 5.

Twenty-one Quino observations were made during the survey period during focused surveys. Two of these observations were likely of the same individual Quino due to distinct markings; therefore, 20 distinct Quino individuals were observed during focused surveys. Six additional Quino observations occurred incidentally during non-Quino project-specific survey efforts, which represent at least four distinct Quino individuals. Therefore, a minimum of 24 distinct Quino individuals were observed within the Campo Indian Reservation during the survey period, with a maximum of 27 observations made. Among these, eight of the observations occurred just outside the project boundaries on the Campo Indian Reservation as surveyors walked to and from their vehicle to access the site. All Quino detections are displayed in Figures 3 and 4. Information for each Quino sighting, including the survey week (where applicable), date, time, weather conditions, surveyor, and number of Quino individuals detected, is provided in Table 3. Detailed information on each sighting, including weather conditions, habitat conditions, and photographs of the habitat and/or individual(s) detected as applicable, is provided in the corresponding 24-hour notification letter (Appendix F).

Table 3
Quino Checkerspot Butterfly Observations

Observation Number	Survey Week	Date	Time	Temp	Wind	% Cloud Cover	Observer/ Permitted Biologist	Date Reported to USFWS	Number of Quino Observed
1	2[1]	04/08/2010	12:40-13:15	68.0°F	1-3 mph	0	Andrew Fisher[2], James McMorran[2]	04/09/2010	3 individuals
2	2	04/09/2010	13:00-13:15	73.0°F	0	0	Dave Flietner, Erin Bergman[2]	4/12/2010	2 individuals
3	2	04/13/2010	10:30	58.0°F	3 mph	0	Michael Couffer	04/14/2010	1 individual
4	2	04/15/2010	15:48-15:57	73.0°F	0	10	Ken Osborne	04/16/2010	2 individuals
5	2[1]	04/15/2010	10:15	64.4°F	3.3 mph	0	Andrew Fisher[2]	04/16/2010	1 individual
6	2[1]	04/15/2010	13:15	72.0°F	3.5-8 mph	100	Andrew Fisher[2], James McMorran[2]	04/16/2010	1 individual[3]
7	2	04/16/2010	10:10	71.5°F	1.7-4.2 mph	0	Bonnie Hendricks	04/16/2010	1 individual
8	3	04/19/2010	13:45	75.0°F	0-5 mph	5	Michael Couffer	04/19/2010	2 individuals
9	3	04/24/2010	13:20	82.0°F	0-3 mph	0	Michael Couffer	04/26/2010	1 individual
10	3	04/26/2010	14:13	82.0°F	0-3 mph	0	Michael Couffer	04/27/2010	1 individual
11	4[1]	04/27/2010	11:45	74.0°F	1-7 mph	15	Andrew Fisher[2]	04/29/2010	1 individual
12	4	04/27/2010	12:40	80.0°F	7-13 mph	5	Michael Couffer	04/29/2010	1 individual[4]
13	4	04/27/2010	12:27	74.0°F	5-7 mph	0	Dale Powell, Andrew Fisher[2]	04/29/2010	1 individual
14	4	04/27/2010	14:45	76.0°F	0-2 mph	10	Michael Couffer	04/29/2010	1 individual
15	4	04/27/2010	15:40-15:47	76.0°F	0-4 mph	10	Michael Couffer	04/29/2010	1 individual
16	4	05/01/2010	09:58-10:08	64.0°F	2-5 mph	0	Michael Couffer, Andrew Fisher[2]	05/02/2010	2 individuals
17	5	05/06/2010	08:45	73.0°F	1-5 mph	0	Antonette Gutierrez, Gina Krantz[2]	05/07/2010	1 individual
18	5	05/06/2010	10:44	73.0°F	1-5 mph	0	Michael Couffer	05/07/2010	1 individual[5]
19	5	05/06/2010	10:28; 12:04	71.0°F; 76.0°F	1-3 mph; 0-5 mph	0	Michael Couffer	05/07/2010	2 individuals
20	5	05/07/2010	11:25	76.0°F	0-6 mph	0	Michael Couffer	05/07/2010	1 individual

[1] Quino not observed during a focused survey; individual(s) observed incidentally during project avian surveys.
[2] Supervised. All observations made by supervised biologists were verified through photographs taken of the Quino individuals (see Appendix F).
[3] Individual is likely the same as one of three individuals documented in Observation 1.
[4] Likely the same Quino individual observed in Observation 11.
[5] Likely the same Quino individual observed in Observation 17.

Quino detections are primarily concentrated in the southern portion of the project area south of State Route 94. There are also at least four sightings in the northern portion of the project area near Interstate 8. One area of habitat in the southern portion of the site was adjacent to a previously known Quino location (Faulkner 2010). This area had the highest density of Quino individuals observed, with a cluster of nine total Quino observations throughout the survey period in the expanded survey area (Figure 3 – Inset 3).

Discussion

A total of 27 individual Quino observations (representing a minimum of 24 individual Quino) were made during the flight season, with likely repeat observations of the same individuals in at least three cases (Figure 3 - Inset 2 and Inset 3).

As recorded in Table 3, no Quino were detected during survey week 1. The first detection of Quino this season occurred on April 8, 2010, during the week 2 survey period. Quino were detected during survey weeks 2 through 5. No Quino were detected during survey week 6 on-site. Thus, the survey window of March 22 to May 20 appears to have appropriately encompassed the flight season for Quino at the project site this year.

After conclusion of the field season on June 24, 2010, an internal meeting between AECOM biologists and subconsultant biologists (Barbra Calantas, Michael Couffer, David Faulkner, Andrew Fisher, Bonnie Hendricks, Scott McMillan, Antonette Gutierrez, Ken Osborne, and Erin Riley) took place to discuss focused survey results and conclusions.

This meeting assessed results of adult focused surveys, host plant mapping and vegetation mapping across the entire BSA. In comparing the focused Quino survey area to the larger BSA, spans of dense chaparral with small openings exist outside of the survey area. These areas may incur some use by Quino at a reduced level. These spans of dense chaparral are suitable for the overall persistence of the population but do not consist of high quality Quino habitat. These areas lack concentrations of resources that would be likely to support dense localized Quino numbers or use at this point in time given the maturity of the chaparral community based on lack of recent fire or other disturbances. These areas of dense chaparral include hilltops/ridgelines and populations of host plants and nectaring sources that may serve as a resource to some degree to the local Quino population despite being excludable by interpretation of the survey protocol.

The total area surveyed, including the original and expanded survey areas (2,347 acres), represents what is considered the optimal habitat for Quino on-site. Of the areas surveyed, Quino were observed in a small percentage of the total survey area. The Quino is known to undergo population fluctuations with extirpation of local populations and recolonization of new areas in a fashion characteristic of metapopulation dynamics (Osborne 1998). Thus, the participants of the June 24 meeting concluded that a larger area of suitable habitat totaling 3,456 acres is potentially supporting the persistence of the species. Much of this area was excluded from surveys based on the presence of dense chaparral. However, the larger area of suitable habitat defined in Figure 5 includes all chaparral with host plants and

occasional openings (>1 acre).This area of suitable habitat is most relevant for discussing the larger patterns of species distribution through space and time (Figure 5).

If you have any questions or comments regarding this letter report, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Associate Wildlife Biologist
barbra.calantas@aecom.com

Attachments:

- Figure 1 – Regional Map
- Figure 2 – Vicinity Map
- Figure 3 – Quino Survey Area and Detections
- Figure 4 – Quino Habitat Assessment (Map Pocket)
- Figure 5 – Quino Larval Host Plants and Suitable Habitat
- Appendix A – Daily Weather Conditions for Focused Quino Surveys on Campo Wind Energy Project
- Appendix B – Field Data Sheets
- Appendix C – Summary of Butterfly and Moth Species Observed during Focused Quino Checkerspot Butterfly Surveys for the Campo Wind Energy Project
- Appendix D – Weekly Flowering Plant Observations for Campo Wind Energy Project
- Appendix E – Vertebrate Species Detected during Focused Quino Surveys for Campo Wind Energy Project
- Appendix F – 24-hour Notification Letters to USFWS

Certification

Qualified biologists who conducted Quino checkerspot butterfly habitat assessments and focused adult surveys for the Campo Wind Energy Site certify that the information in this survey report fully and accurately represents the work performed by AECOM biologists. Signatures of permitted biologists as listed in Table 1 who conducted focused surveys (March 22 through May 20, 2010) are included below. The results of focused surveys for listed species are typically considered valid for 1 year by the resource agencies.



Bonnie Hendricks
AECOM Quino Surveyor



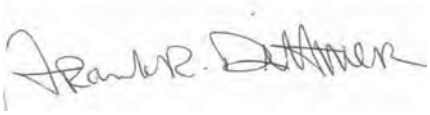
Natalie Brodie
Subcontracted Quino Surveyor



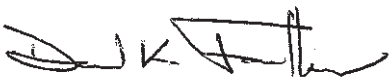
Michael Couffer
Subcontracted Quino Surveyor



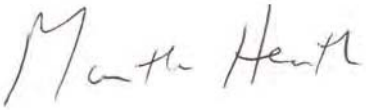
Gretchen Cummings
Subcontracted Quino Surveyor



Frank Dittmer
Subcontracted Quino Surveyor



David Faulkner
Subcontracted Quino Surveyor



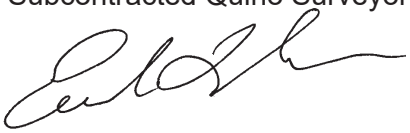
Martha Heath
Subcontracted Quino Surveyor



Steve Rink
Subcontracted Quino Surveyor



Diana Jensen
Subcontracted Quino Surveyor



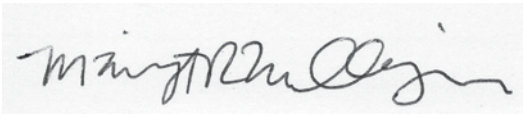
Erik LaCoste
Subcontracted Quino Surveyor



Brian Lohstroh
Subcontracted Quino Surveyor



Viviane Marquez
Subcontracted Quino Surveyor



Margie Mulligan
Subcontracted Quino Surveyor



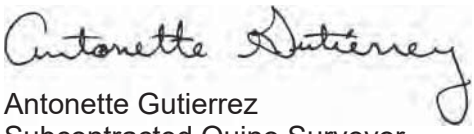
Ken Osborne
Subcontracted Quino Surveyor



Andrew Pigniolo
Subcontracted Quino Surveyor



Dale Powell
Subcontracted Quino Surveyor



Antonette Gutierrez
Subcontracted Quino Surveyor



David Flietner
Subcontracted Quino Surveyor

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FIGURES

Campo Wind Energy Project Quino Checkerspot Butterfly Survey 45-day Report

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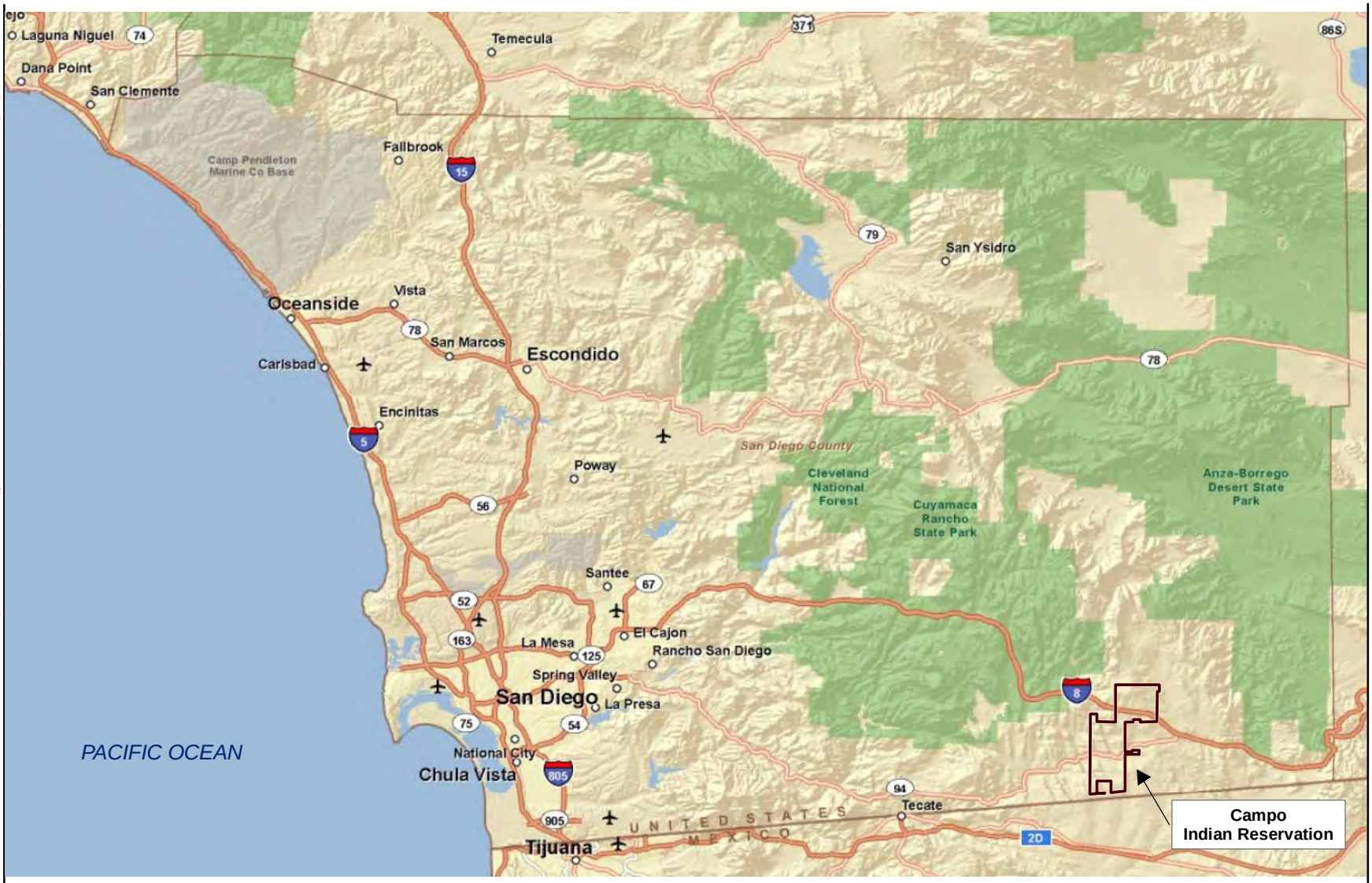
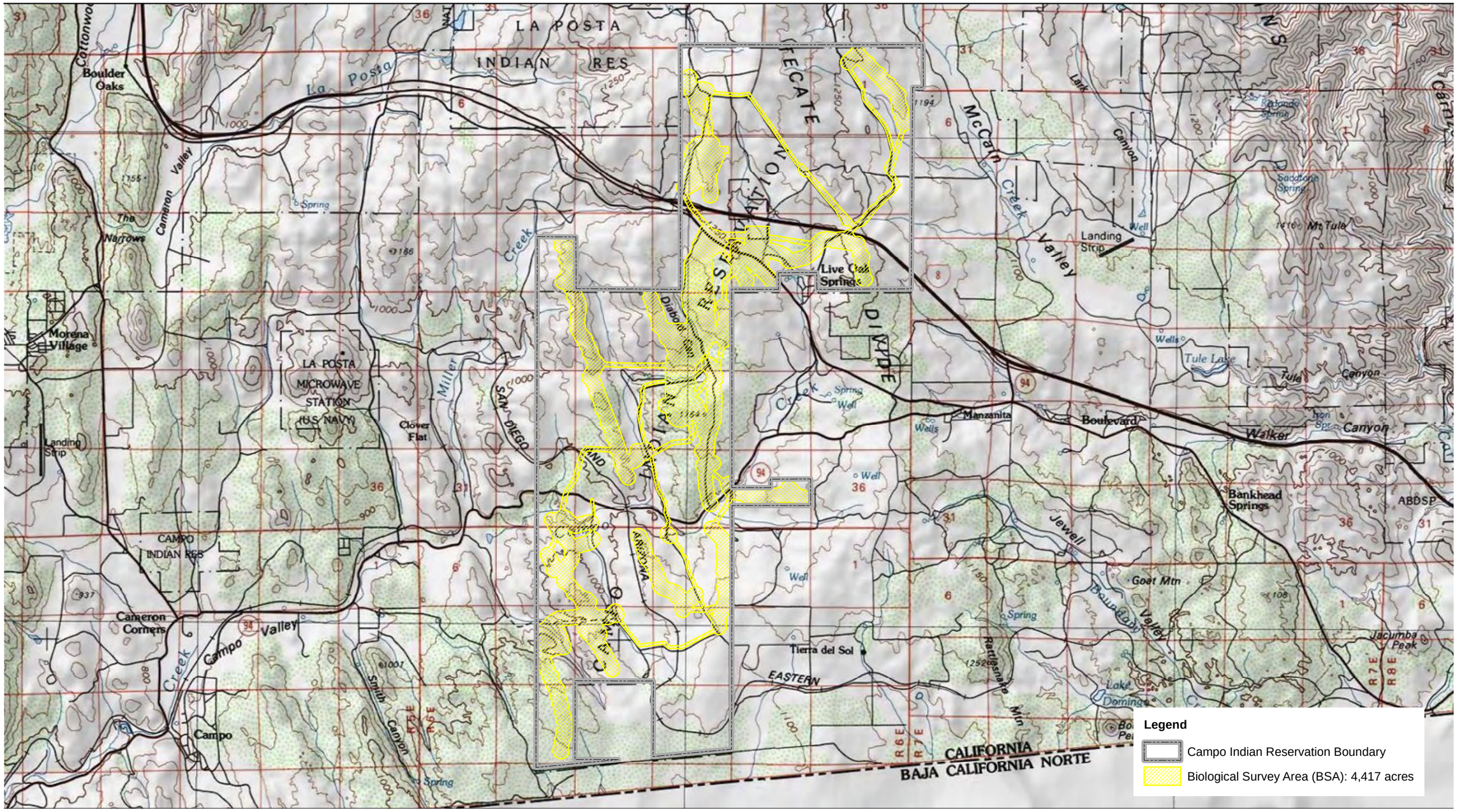


Source: ESRI 2009

12.8 0 12.8 Miles

Scale: 1 = 810,771.7; 1 inch = 12.8 mile(s)

Figure 1
Regional Map



Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

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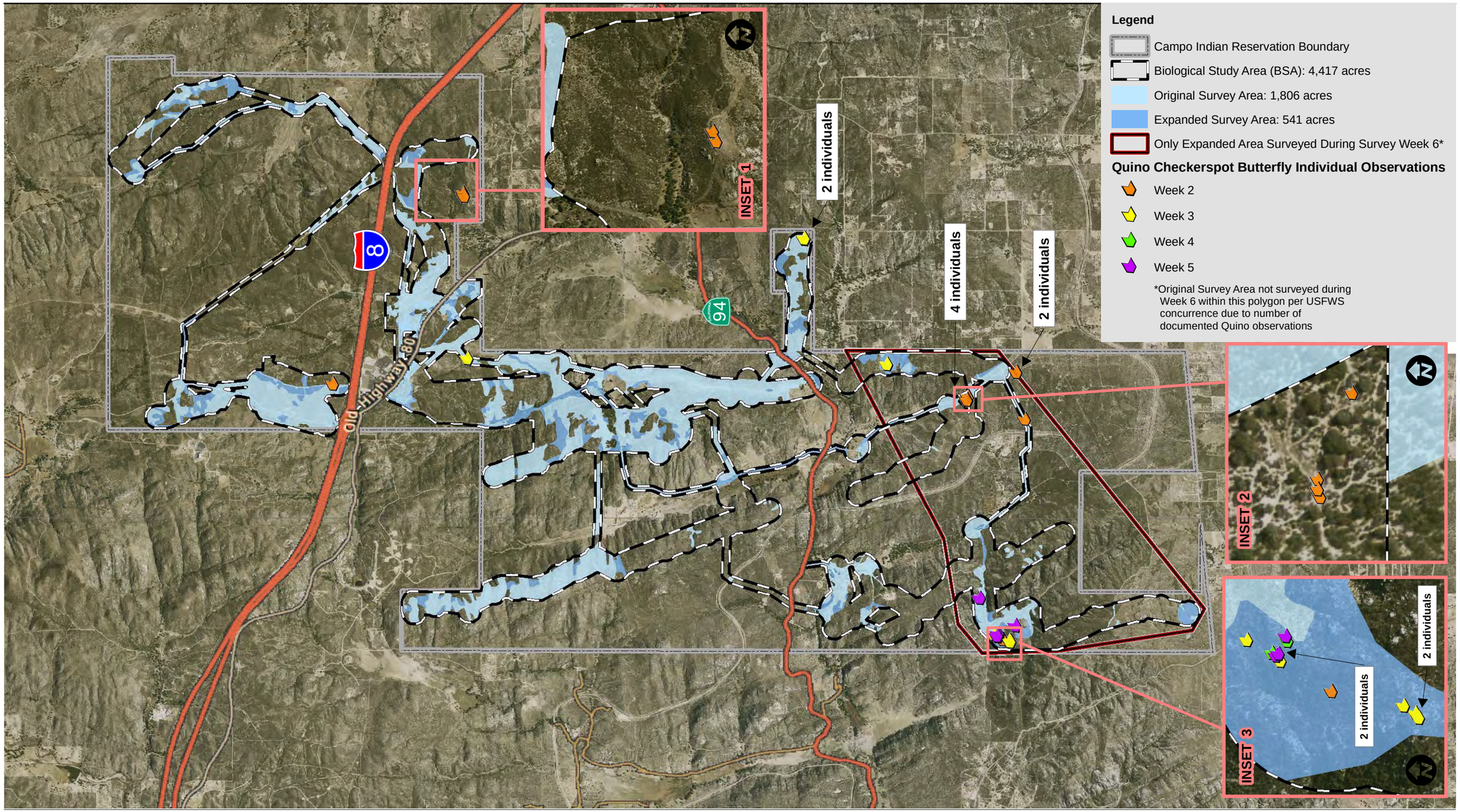

Source: DigitalGlobe 2008; Invenergy 2010

4,250 2,125 0 4,250 Feet

Scale: 1 = 51,000; 1 inch = 4,250 feet

Figure 3
Quino Checkerspot Butterfly Survey Area and Detections

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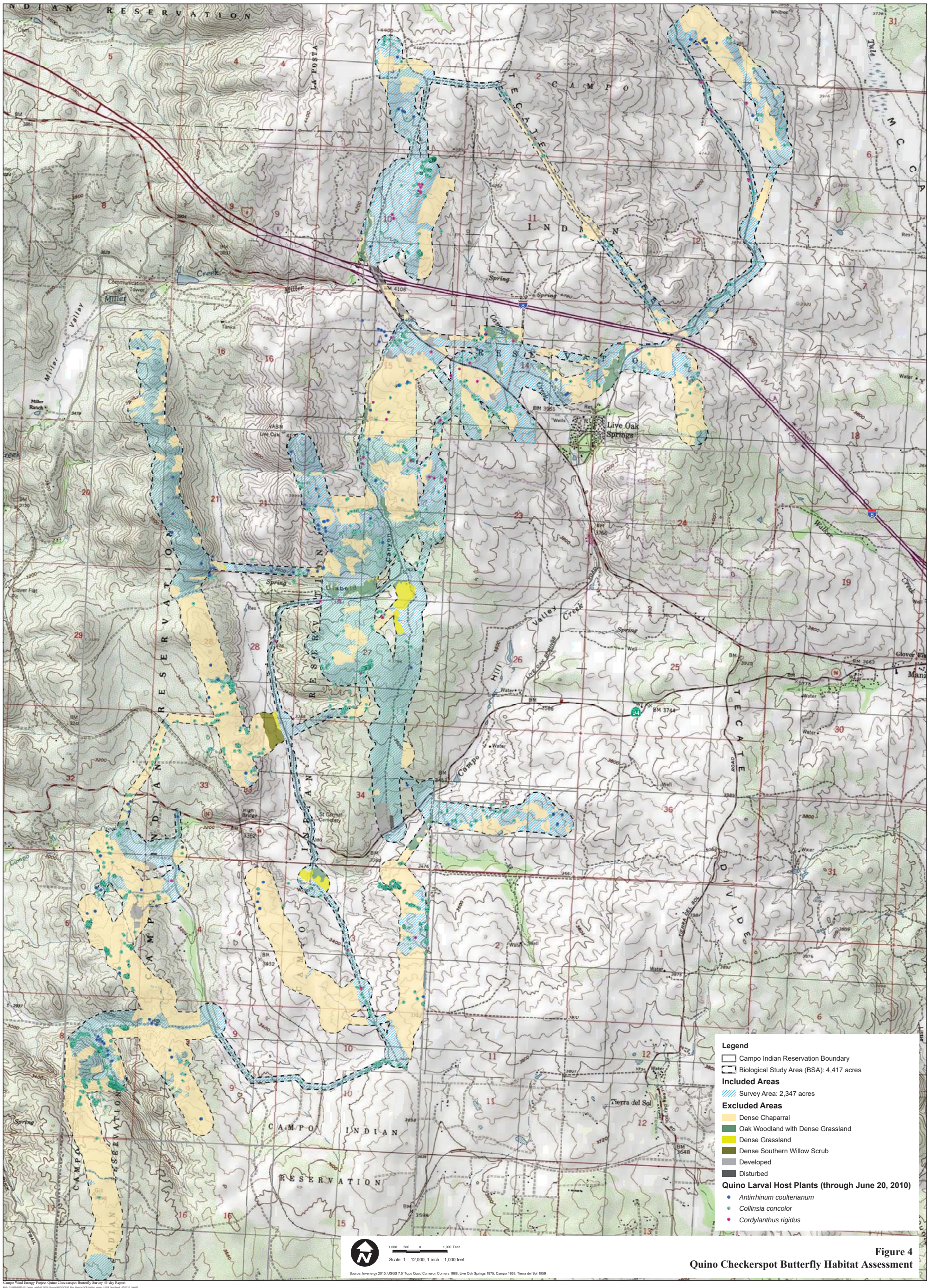
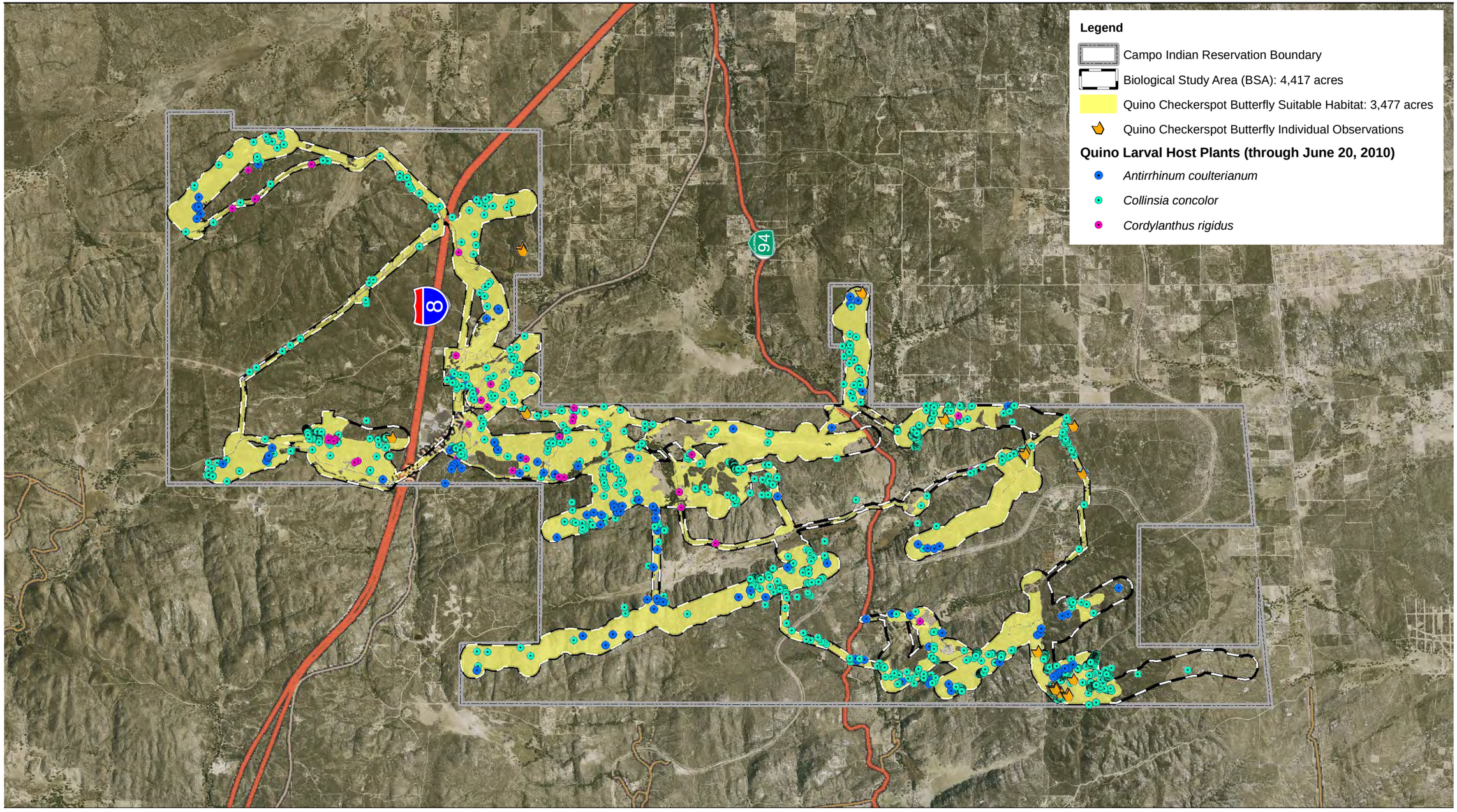


Figure 4
Quino Checkerspot Butterfly Habitat Assessment



Source: DigitalGlobe 2008; Invenergy 2010

4,250 2,125 0 4,250 Feet

Scale: 1 = 51,000; 1 inch = 4,250 feet

Figure 5
Quino Larval Host Plants and Suitable Habitat

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\45_Day_Reports\QCB_hostplants_suitablehab.mxd, 07/02/10, ShahS2

APPENDIX A

DAILY WEATHER CONDITIONS FOR FOCUSED QUINO SURVEYS ON CAMPO WIND ENERGY PROJECT

APPENDIX A
DAILY WEATHER CONDITIONS FOR FOCUSED QUINO SURVEYS ON CAMPO WIND ENERGY PROJECT

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
3/22/2010	1	Pigniolo	1030	61	0/2	20	patchy
3/22/2010	1	Pigniolo	1130	61	2/6	60	overcast
3/22/2010	1	Pigniolo	1230	63	2/6	85	overcast
3/22/2010	1	Pigniolo	1330	57	2/6	95	overcast
3/22/2010	1	Pigniolo	1400	58	2/6	100	overcast
3/22/2010	1	Marquez	1015	66.8	3.4/6.2	10	patchy
3/22/2010	1	Marquez	1140	67.2	0.6/1.6	60	patchy
3/22/2010	1	Marquez	1300	65.5	4.7/8.7	100	overcast
3/22/2010	1	Marquez	1400	63.8	2.1/4.8	100	overcast
3/22/2010	1	Marquez	1425	62.9	5.4/9.9	100	overcast
3/22/2010	1	Heath	1000	61	8/9	10	patchy
3/22/2010	1	Heath	1115	63	7.2/10.5	25	patchy
3/22/2010	1	Heath	1200	63	3.5/6.5	75	patchy
3/22/2010	1	Heath	1300	62	3.5/6.5	95	overcast
3/22/2010	1	Heath	1400	58.5	5.6/9.9	100	overcast
3/22/2010	1	Lohstroh	920	61	0/5	10	clear
3/22/2010	1	Lohstroh	1000	64	0/3	20	patchy
3/22/2010	1	Lohstroh	1100	61	3/5	40	patchy
3/22/2010	1	Lohstroh	1200	61	3/5	60	patchy
3/22/2010	1	Lohstroh	1300	60	3/5	100	overcast
3/22/2010	1	Lohstroh	1400	60	3/5	100	overcast
3/22/2010	1	Lohstroh	1445	60	3/5	100	overcast
3/22/2010	1	Faulkner	1000	65	2	30	patchy
3/22/2010	1	Faulkner	1100	68	3	50	patchy
3/22/2010	1	Faulkner	1200	68	5	70	patchy
3/22/2010	1	Faulkner	1300	65	6	100	overcast
3/22/2010	1	Faulkner	1400	64	6	100	overcast
3/22/2010	1	Faulkner	1500	63	2	100	overcast
3/22/2010	1	Faulkner	1600	59	13	100	overcast
3/22/2010	1	McMorran/Brodie	1315	66	2/4	90	overcast
3/22/2010	1	McMorran/Brodie	1415	64	8/12	90-100	overcast
3/22/2010	1	McMorran/Brodie	1015	68	2/6	10	clear
3/22/2010	1	McMorran/Brodie	1100	66	8/12	30-40	patchy
3/22/2010	1	McMorran/Brodie	1220	68	4/10	70-80	patchy
3/22/2010	1	McMorran/Brodie	1315	66	4/6	80-90	overcast
3/24/2010	1	Heath	930	60	5.6/8.6	0	clear
3/24/2010	1	Heath	1030	63	3.6/7.2	0	clear
3/24/2010	1	Heath	1130	67	2.6/4.5	0	clear
3/24/2010	1	Heath	1300	69.5	2.6/6.9	0	clear
3/24/2010	1	Heath	1400	64.5	2.9/7.8	0	clear
3/24/2010	1	Heath	1500	70	3.0/6.4	0	clear
3/24/2010	1	Heath	1600	65	15	0	clear
3/24/2010	1	LaCoste	950	60	10/15	0	clear
3/24/2010	1	LaCoste	1640	65	10/15	5	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
3/24/2010	1	Cummings	945	64	4.9/10.1		clear
3/24/2010	1	Cummings	1100	70	7.6/10.9		clear
3/24/2010	1	Cummings	1300	70	3.6/4.4		patchy
3/24/2010	1	Cummings	1415	71	2.1/3.0		patchy
3/24/2010	1	Mulligan/Innecken	1034	65	3/5	5	clear
3/24/2010	1	Mulligan/Innecken	1305	68	3/5	20	patchy
3/24/2010	1	Cummings	1520	75	2.0/6.3		patchy
3/24/2010	1	Mulligan/Innecken	1412	72	1	20	patchy
3/24/2010	1	Mulligan/Innecken	1512	72	5/6	20	patchy
3/24/2010	1	Mulligan/Innecken	1630	70	3/5	20	patchy
3/24/2010	1	Cummings	1520	75	2.0/6.3		patchy
3/24/2010	1	Cummings	1600	70	3.6/8.2		patchy
3/24/2010	1	Osborne	1121	72	1.0/3	0	clear
3/25/2010	1	Osborne	1140	72	2.8/5	0	clear
3/25/2010	1	Osborne	1215	60	6/10	0	clear
3/25/2010	1	Osborne	140	59	10/17	0	clear
3/25/2010	1	Osborne	410	61	1.7/4	0	clear
3/25/2010	1	Heath	1100	60	3.1/4.9	0	clear
3/25/2010	1	Heath	1220	61	7.2/10.3	0	clear
3/25/2010	1	Heath	1400	61	9.9/17.2	0	clear
3/25/2010	1	Heath	1500	61.5	5.5/14.7	0	clear
3/25/2010	1	Heath	1620	60.5	14.2/21.3	0	clear
3/25/2010	1	Faulkner	1300	63	7	0	clear
3/25/2010	1	Faulkner	1400	60	9	0	clear
3/25/2010	1	Faulkner	1400	60	9	0	clear
3/25/2010	1	Faulkner	1600	59	8	0	clear
3/25/2010	1	Faulkner	1100	60	7	0	clear
3/25/2010	1	Faulkner	1200	61	6	0	clear
3/25/2010	1	Faulkner	1300	63	7	0	clear
3/25/2010	1	Flietner/Innecken	1130	63	4/8	0	clear
3/25/2010	1	Flietner/Innecken	12	63	4/8	0	clear
3/25/2010	1	Flietner/Innecken	1220	70	0/3	0	clear
3/25/2010	1	Flietner/Innecken	1340	72	0/5	0	clear
3/25/2010	1	Flietner/Innecken	1410	72	3/7	0	haze
3/25/2010	1	Flietner/Innecken	1645	61	2/4	0	clear
3/26/2010	1	Flietner/Innecken	1020	63	0/2	0	clear
3/26/2010	1	Flietner/Innecken	1240	65	0/2	0	clear
3/26/2010	1	Flietner/Innecken	1450	72	0/2	0	clear
3/26/2010	1	Heath	1000	57	1.2/2.4	0	clear
3/26/2010	1	Heath	1130	64.7	0/2	0	clear
3/26/2010	1	Heath	1300	64.9	3.0/4.3	0	clear
3/26/2010	1	Heath	1430	67	2.1/4.1	0	clear
3/26/2010	1	Heath	1630	67.8	6.0/8.6	0	clear
3/27/2010	1	Faulkner	900	56	12	0	not available
3/27/2010	1	Faulkner	1000	56	10	0	not available
3/27/2010	1	Faulkner	1100	67	11	0	not available
3/27/2010	1	Faulkner	1200	63	7	0	not available
3/27/2010	1	Faulkner	1300	61	13	0	not available
3/29/2010	1	Brodie	1230	72	0/2	20	clear/patchy
3/29/2010	1	Brodie	13445	73	2/4	20-30	patchy

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
3/29/2010	1	Brodie	1445	72	2/4	10-20	overcast
3/29/2010	1	Brodie	1600	70	4/6	0	clear
3/29/2010	1	Brodie	930	64	0/2	0	clear
3/29/2010	1	Brodie	1040	68	0/2	0	clear
3/29/2010	1	Brodie	1130	70	0/2	10	clear
3/29/2010	1	Brodie	1215	72	0/2	20	clear
3/29/2010	1	Heath	900	69.2	0.8/1.6	0	clear
3/29/2010	1	Heath	1100	73.1	2.9/5.8	0	clear
3/29/2010	1	Heath	1200	72.2	3.0/5.6	0	clear
3/29/2010	1	Heath	1330	77	2.3/5.3	0	patchy
3/29/2010	1	Heath	1600	72	5.7/14.9	0	clear
3/29/2010	1	Powell	930	68	1/5	0	clear
3/29/2010	1	Powell	1100	75	5/7	0	clear
3/29/2010	1	Powell	1200	79	4/8	0	patchy
3/29/2010	1	Powell	1300	77	7/11	0	patchy
3/29/2010	1	Powell	1400	80	6/10	0	patchy
3/29/2010	1	Powell	1500	76	6/12	0	patchy
3/29/2010	1	Powell	1620	75	5/10	0	clear
3/29/2010	1	Pigniolo/Fisher	915	60	0	0	clear
3/29/2010	1	Pigniolo/Fisher	1015	60	0	0	clear
3/29/2010	1	Pigniolo/Fisher	1115	76	0/5	0	clear
3/29/2010	1	Pigniolo/Fisher	1215	78	0/6	20	patchy
3/29/2010	1	Pigniolo/Fisher	1315	79	0/6	40	patchy
3/29/2010	1	Pigniolo/Fisher	1415	81	2/7	10	clear
3/29/2010	1	Pigniolo/Fisher	1515	74	2/5	5	clear
3/29/2010	1	Faulkner	900	69	1	0	clear
3/29/2010	1	Faulkner	1000	73	1	0	clear
3/29/2010	1	Faulkner	1100	78	1	0	clear
3/29/2010	1	Faulkner	1200	81	1	0	patchy
3/29/2010	1	Faulkner	1300	83	5	50	patchy
3/29/2010	1	Faulkner	1400	81	2	50	patchy
3/29/2010	1	Faulkner	1500	81	5	0	clear
3/29/2010	1	Faulkner	1500	81	5	0	clear
3/29/2010	1	Faulkner	1600	62	15	0	clear
3/30/2010	1	Mulligan	1040	64	3/6	5	clear
3/30/2010	1	Mulligan	1205	73	4/6	0	clear
3/30/2010	1	Mulligan	1335	73	4/7	0	clear
3/30/2010	1	Powell	1235	67	8/11	0	clear
3/30/2010	1	Powell	1330	72	4/7	0	clear
3/30/2010	1	Powell	1430	68	7/11	0	clear
3/30/2010	1	Powell	1530	70	8/12	0	clear
3/30/2010	1	Powell	1625	65	5/9	0	clear
3/30/2010	1	Heath	1030	63.5	4.5/7.2	10	clear
3/30/2010	1	Heath	1230	66	8.7/12.4	20	clear
3/30/2010	1	Heath	1430	64.7	15.9/19.6	10	clear
3/30/2010	1	Heath	1600	60	15.0	10	clear
3/30/2010	1	Powell	1030	61	4/8	10	patchy
3/30/2010	1	Powell	1200	70	8/10	0	clear
3/30/2010	1	Lohstroh	1040	61.4	5/8	10	clear
3/30/2010	1	Lohstroh	1140	65	6/10	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
3/30/2010	1	Lohstroh	1240	67	4/7	0	clear
3/30/2010	1	Lohstroh	1400	69	6/8	0	clear
3/30/2010	1	Lohstroh	1500	70	3/5	0	clear
3/30/2010	1	Lohstroh	1600	64	3/7	0	clear
3/30/2010	1	Lohstroh	1610	65	5/10	0	clear
4/2/2010	1	Flietner	1045	63	0/2	0	clear
4/2/2010	1	Flietner	1420	75	0/2	0	clear
4/2/2010	1	Flietner	1635	66	2/5	10	clear
4/2/2010	1	Powell/McMorran	1050	59	8/12	0	clear
4/2/2010	2	Powell/McMorran	1210	60	10/17	0	clear
4/2/2010	2	Powell/McMorran	1245	62	7/15	0	clear
4/2/2010	2	Powell/Innecken	1140	63	1/3	0	clear
4/2/2010	2	Powell/Innecken	1300	68	1/3	0	clear
4/2/2010	2	Powell/Innecken	1400	69	4/8	0	clear
4/2/2010	2	Powell/Innecken	1500	65	4/8	0	clear
4/2/2010	2	Powell/Innecken	1600	61	4/8	0	clear
4/2/2010	2	Powell/Innecken	1700	59	5/8	0	clear
4/2/2010	2	Cummings	1040	66	3.3/4.9	0	clear
4/2/2010	2	Cummings	1230	68	3.8/5.4	0	clear
4/2/2010	2	Cummings	1245	68	3./5.4	0	clear
4/2/2010	2	Cummings	1245	68	3.8/5.4	0	clear
4/2/2010	2	Cummings	1545	62	3.6/8.2	0	clear
4/2/2010	2	Faulkner	1300	68	5	0	clear
4/2/2010	2	Faulkner	1400	69	4	0	clear
4/2/2010	2	Faulkner	1500	69	4	0	clear
4/2/2010	2	Faulkner	1600	67	9	0	clear
4/2/2010	2	Faulkner	1600	67	9	0	clear
4/2/2010	2	Faulkner	1700	65	9	0	clear
4/2/2010	2	Faulkner	1030	59	3	0	clear
4/2/2010	2	Faulkner	1100	66	1	0	clear
4/2/2010	2	Faulkner	1200	72	0	0	clear
4/2/2010	2	Faulkner	1300	68	5	0	clear
4/6/2010	2	Mulligan	1250	65	3/6	0	clear
4/6/2010	2	Mulligan	1340	63	5/8	0	clear
4/6/2010	2	Mulligan	1420	63	5/8	0	clear
4/6/2010	2	Mulligan	1000	60	5/9	0	clear
4/6/2010	2	Mulligan	1107	62	1/4	0	clear
4/6/2010	2	Mulligan	1210	63	3/6	0	clear
4/6/2010	2	Mulligan	1400	63	4/8	0	clear
4/6/2010	2	Mulligan	1522	63	4/8	0	clear
4/6/2010	2	Faulkner	1400	64	8	0	clear
4/6/2010	2	Faulkner	1500	65	9	0	clear
4/6/2010	2	Faulkner	1000	57	7	0	clear
4/6/2010	2	Faulkner	1100	57	7	0	clear
4/6/2010	2	Faulkner	1200	63	7	0	clear
4/6/2010	2	Faulkner	1300	61	13	0	clear
4/6/2010	2	Faulkner	1200	63	7	0	clear
4/6/2010	2	Faulkner	1300	61	13	0	clear
4/6/2010	2	Faulkner	1400	64	8	0	clear
4/6/2010	2	Faulkner	1500	65	9	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/6/2010	2	Faulkner	1600	63	8	0	clear
4/6/2010	2	Lohstroh	1000	60	5/8	0	clear
4/6/2010	2	Lohstroh	1100	60	10/14	0	clear
4/6/2010	2	Lohstroh	1200	61	4/9	0	clear
4/6/2010	2	Lohstroh	1300	61	4/7	0	clear
4/6/2010	2	Lohstroh	1400	61	8/12	0	clear
4/6/2010	2	Lohstroh	1445	62	7/12	0	clear
4/8/2010	2	Faulkner/Bergman	1500	78	2	0	clear
4/8/2010	2	Faulkner/Bergman	1600	78	5	0	clear
4/8/2010	2	Faulkner/Bergman	1000	68	5	0	clear
4/8/2010	2	Faulkner/Bergman	1100	69	6	0	clear
4/8/2010	2	Faulkner/Bergman	1200	72	7	0	clear
4/8/2010	2	Faulkner/Bergman	1300	77	0	0	clear
4/8/2010	2	Faulkner/Bergman	1400	78	5	0	clear
4/8/2010	2	Faulkner/Bergman	900	60	7	0	clear
4/8/2010	2	Faulkner/Bergman	1000	68	5	0	clear
4/8/2010	2	Osborne	914	59	2.5/5	0	clear
4/8/2010	2	Osborne	1120	69	1.7/2.8	0	clear
4/8/2010	2	Osborne	1400	72	0	0	clear
4/8/2010	2	Osborne	1625	74	0	0	clear
4/8/2010	2	Powell	1330	72	2/5	0	clear
4/8/2010	2	Powell	1435	75	0	0	clear
4/8/2010	2	Powell	1625	72	4/6	0	clear
4/8/2010	2	Powell	845	63	5/7	0	clear
4/8/2010	2	Powell	955	67	10/13	0	clear
4/8/2010	2	Powell	1130	71	3/7	0	clear
4/8/2010	2	Powell	1240	71	6/9	0	clear
4/8/2010	2	Powell	1310	74	5/9	0	clear
4/8/2010	2	Flietner	900	57	3/6	0	clear
4/8/2010	2	Flietner	930	61	3/6	0	clear
4/8/2010	2	Flietner	1620	70	0/2	0	clear
4/9/2010	2	Flietner/Bergman	1020	69	0	0	clear
4/9/2010	2	Flietner/Bergman	1235	73	0	0	clear
4/9/2010	2	Flietner/Bergman	1430	74	5/8	0	clear
4/9/2010	2	Flietner/Bergman	1550	73	3/6	0	clear
4/9/2010	2	Couffer	1430	74	3/5	0	clear
4/9/2010	2	Couffer	1500	73	1/4	0	clear
4/9/2010	2	Couffer	1600	72	1/6	0	clear
4/9/2010	2	Couffer	930	67	0/2	0	clear
4/9/2010	2	Couffer	1000	74	0/4	0	clear
4/9/2010	2	Couffer	1100	72	0/5	0	clear
4/9/2010	2	Couffer	1200	76	0/2	0	clear
4/9/2010	2	Couffer	1300	77	1/4	0	clear
4/9/2010	2	Couffer	1400	73	3/7	0	clear
4/13/2010	2	Lohstroh/Innecken	1040	62	2/5	0	clear
4/13/2010	2	Lohstroh/Innecken	1200	67	2/3	0	clear
4/13/2010	2	Lohstroh/Innecken	1300	64	0/3	0	clear
4/13/2010	2	Lohstroh/Innecken	1430	66	0/6	0	clear
4/13/2010	2	Lohstroh/Innecken	1520	62	3/8	30	patchy
4/13/2010	2	Lohstroh/Innecken	1640	59	3/8	30	patchy

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/13/2010	2	Powell	1330	62	2/4	25	clear
4/13/2010	2	Powell	1440	61	4/7	25	clear
4/13/2010	2	Powell	1550	58	1/3	20	clear
4/13/2010	2	Powell	1030	64	0	15	clear
4/13/2010	2	Powell	1210	60	2/4	30	clear
4/13/2010	2	Faulkner	1100	48	3	0	clear
4/13/2010	2	Faulkner	1200	55	2	0	clear
4/13/2010	2	Faulkner	1300	58	2	5	clear
4/13/2010	2	Faulkner	1400	61	3	5	clear
4/13/2010	2	Faulkner	1500	55	8	10	clear
4/13/2010	2	Faulkner	1600	52	9	10	clear
4/13/2010	2	Couffer	1000	58	0/3	0	clear
4/13/2010	2	Couffer	1100	58	0/3	0	clear
4/13/2010	2	Couffer	1200	56	0/2	0	clear
4/13/2010	2	Couffer	1300	65	0/1	0	clear
4/13/2010	2	Couffer	1400	67	1/2	0	clear
4/13/2010	2	Couffer	1500	66	0/3	0	clear
4/13/2010	2	Couffer	1600	63	1/5	0	clear
4/14/2010	2	LaCoste	930	65	3/7	5	clear
4/14/2010	2	LaCoste	130	70	3/6	75	overcast
4/14/2010	2	LaCoste	230	67	4/8	90	overcast
4/14/2010	2	LaCoste	300	66	80	80	overcast
4/14/2010	2	Cummings	945	60.3	1/2.2	20	patchy
4/14/2010	2	Cummings	1125	98.7	3.2/3.8	25	patchy
4/14/2010	2	Cummings	1345	70	2.6/3.9	40	patchy
4/14/2010	2	Cummings	1420	77	2.6/6.2	70	patchy
4/14/2010	2	Cummings	1600	74	.8/1.9	80	patchy
4/14/2010	2	Cummings	1645	69	1.3/2.1	70	patchy
4/14/2010	2	Powell/Mulligan	1015	63	0/2	0	clear
4/14/2010	2	Powell/Mulligan	1205	64	0	0	clear
4/14/2010	2	Powell/Mulligan	1300	72	1/3	0	clear
4/14/2010	2	Powell/Mulligan	1430	60	7/10	75	
4/14/2010	2	Powell/Mulligan	1645	70	3/5	50	
4/14/2010	2	Powell/Mulligan	945	62	0/2	0	clear
4/14/2010	2	Powell/Mulligan	1005	65	0/2	0	clear
4/15/2010	2	Osborne	900	63	2/4	0	clear
4/15/2010	2	Osborne	1030	66	3.9/6	0	clear
4/15/2010	2	Osborne	1400	72	2.4/6	10	clear
4/15/2010	2	Osborne	1600	73	0	10	overcast
4/15/2010	2	Powell	900	61	8/11	0	clear
4/15/2010	2	Powell	1015	66	11/14	0	clear
4/15/2010	2	Powell	1125	68	7/11	0	clear
4/15/2010	2	Powell	1410	72	4/7	0	clear
4/15/2010	2	Faulkner	900	64	6	0	clear
4/15/2010	2	Faulkner	1000	67	3	0	clear
4/15/2010	2	Faulkner	1100	64	9	0	clear
4/15/2010	2	Couffer	900	67	1/5	0	clear
4/15/2010	2	Couffer	1000	68	1/8	0	clear
4/15/2010	2	Couffer	1100	71	0/7	0	clear
4/15/2010	2	Couffer	1200	71	0/8	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/15/2010	2	Couffer	1300	70	2/6	0	clear
4/15/2010	2	Couffer	1400	71	0/3	50	patchy
4/15/2010	2	Couffer	1500	70	1/4	90	overcast
4/16/2010	2	Couffer	900	67	0/3	0	clear
4/16/2010	2	Couffer	1300	60	2/5	0	clear
4/16/2010	2	Couffer	1100	70	0/3	0	clear
4/16/2010	2	Couffer	1200	73	0/3	0	clear
4/16/2010	2	Couffer	1300	74	1/4	0	clear
4/16/2010	2	Couffer	1400	76	0/3	0	clear
4/16/2010	2	Couffer	1500	73	2/5	0	clear
4/16/2010	2	Powell	1510	75	4/7	0	clear
4/16/2010	2	Powell	1700	70	3/6	0	clear
4/16/2010	2	Powell	945	60	2/4	0	clear
4/16/2010	2	Powell	1055	72	5/8	0	clear
4/16/2010	2	Powell	1200	78	10/13	0	clear
4/16/2010	2	Powell	1400	72	5/8	0	clear
4/16/2010	2	Powell	1445	72	3/5	0	clear
4/16/2010	2	Hendricks	915	59.5	4.4/8.2	0	clear
4/16/2010	2	Hendricks	1020	71.5	1.7/4.2	0	clear
4/16/2010	2	Hendricks	1150	72	1.2/2.5	0	clear
4/16/2010	2	Hendricks	1230	72	2.0/3.0	0	clear
4/16/2010	2	Hendricks	345	73.5	3.2/10.3	0	clear
4/16/2010	2	Hendricks	1515	73.7	1.4/4.2	0	clear
4/16/2010	2	Hendricks	1700	67.2	2.3/5.8	0	clear
4/16/2010	2	Hendricks	1545	61.3	4.5/8.7	0	clear
4/17/2010	2	Mulligan	900	67	0/3	80	overcast
4/17/2010	2	Mulligan	1000	70	0/4	100	overcast
4/17/2010	2	Mulligan	1245	79	1/5	100	overcast
4/17/2010	2	Couffer	900	67	0/4	100	overcast
4/17/2010	2	Couffer	1000	67	0/2	100	overcast
4/17/2010	2	Couffer	1100	70	0/3	100	overcast
4/17/2010	2	Couffer	1200	73	0/4	100	overcast
4/17/2010	2	Couffer	1300	75	0/5	100	overcast
4/17/2010	2	Couffer	1320	75	0/5	100	overcast
4/17/2010	2	Powell	900	66	9/11	90	overcast
4/17/2010	2	Powell	1010	72	6/8	60	overcast
4/17/2010	2	Powell	1110	72	7/9	50	overcast
4/17/2010	2	Powell	1125	72	7/9	50	overcast
4/17/2010	2	Powell	1300	70	6/9	50	overcast
4/17/2010	2	Mulligan	1300	79	2/8	100	overcast
4/17/2010	2	Mulligan	1600	80	2/4	100	overcast
4/18/2010	3	Gutierrez	900	76	0	80	overcast
4/18/2010	3	Gutierrez	1000	78	0	40	patchy
4/18/2010	3	Gutierrez	1100	82	0	40	patchy
4/18/2010	3	Gutierrez	1600	84	2	30	patchy
4/18/2010	3	Powell	830	66	0	0	clear
4/18/2010	3	Powell	1000	77	0	0	clear
4/18/2010	3	Powell	1130	80	2/4	0	clear
4/18/2010	3	Powell	1145	80	3/6	0	clear
4/18/2010	3	Powell	1330	78	4/7	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/18/2010	3	Powell	1430	74	4/7	0	clear
4/18/2010	3	Couffer	844	70	0	0	clear
4/18/2010	3	Couffer	900	71	0	0	clear
4/18/2010	3	Couffer	1000	75	0	0	clear
4/18/2010	3	Couffer	1100	77	0/2	0	clear
4/18/2010	3	Couffer	1200	78	0/3	0	clear
4/18/2010	3	Couffer	1300	82	0/3	0	clear
4/18/2010	3	Couffer	1400	80	0/4	0	clear
4/19/2010	3	Powell	1550	76	3/6	0	clear
4/19/2010	3	Powell	1635	72	6/9	0	clear
4/19/2010	3	Faulkner	1500	71	4	0	clear
4/19/2010	3	Faulkner	1630	69	7/8	0	clear
4/19/2010	3	LaCoste	1640	64	2/4	30	patchy
4/19/2010	3	LaCoste	1215	62	5/10	5	clear
4/19/2010	3	LaCoste	1415	76	5/10	0	clear
4/19/2010	3	LaCoste	1530	70	5/10	0	clear
4/19/2010	3	Brodie/Bergman	1045	65	4/7	40	patchy
4/19/2010	3	Brodie/Bergman	1145	72	4/8	10	clear
4/19/2010	3	Brodie/Bergman	1330	74	2/5	0	clear
4/19/2010	3	Brodie/Bergman	1445	75	2/5	0	clear
4/19/2010	3	Brodie/Bergman	1540	73	3/6	0	clear
4/19/2010	3	Brodie/Bergman	1200	73	3/6	0	clear
4/19/2010	3	Brodie/Bergman	1300	72	3/6	0	clear
4/19/2010	3	Brodie/Bergman	1330	74	2/5	0	clear
4/19/2010	3	Powell	1045	69	2/4	20	clear
4/19/2010	3	Powell	1215	75	6/8	0	clear
4/19/2010	3	Powell	1330	79	5/7	0	clear
4/19/2010	3	Powell	1500	81	6/9	0	clear
4/19/2010	3	Couffer	1100	69	0/6	45	patchy
4/19/2010	3	Couffer	1200	70	1/6	5	clear
4/19/2010	3	Couffer	1300	75	0/5	5	clear
4/19/2010	3	Couffer	1400	75	0/4	5	clear
4/19/2010	3	Couffer	1500	76	0/5	0	clear
4/19/2010	3	Couffer	1600	75	0/6	0	clear
4/19/2010	3	Couffer	1630	75	0/3	0	clear
4/19/2010	3	Faulkner	1000	70	4	50	clear
4/19/2010	3	Faulkner	1130	71	6	30	patchy
4/19/2010	3	Faulkner	1200	73	5	0	clear
4/19/2010	3	Faulkner	1330	76	3	0	clear
4/19/2010	3	Faulkner	1400	76	4	0	clear
4/20/2010	3	Couffer	945	65	1/5	0	clear
4/20/2010	3	Couffer	1000	64	2/6	0	clear
4/20/2010	3	Couffer	1100	68	2/8	5	clear
4/20/2010	3	Couffer	1200	68	2/5	5	clear
4/20/2010	3	Couffer	1300	70	0/4	5	clear
4/20/2010	3	Couffer	1400	72	0/4	10	patchy
4/20/2010	3	Couffer	1445	70	2/8	50	patchy
4/20/2010	3	Faulkner	900	59	3		clear
4/20/2010	3	Faulkner	1000	67	1		clear
4/20/2010	3	Faulkner	1100	63	9		patchy

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/20/2010	3	Faulkner	1200	64	7		patchy
4/20/2010	3	Faulkner	1300	65	9	30	patchy
4/20/2010	3	Faulkner	1400	63	10	50	patchy
4/20/2010	3	Faulkner	1500	62	9	40	patchy
4/20/2010	3	Lohstroh/Faulkner	945	65	2-6/12	40	clear
4/20/2010	3	Lohstroh/Faulkner	1045	65	4/10	40	clear
4/20/2010	3	Lohstroh/Faulkner	1200	67	4/8	20	patchy
4/20/2010	3	Lohstroh/Faulkner	1300	69	6-9/12	40	patchy
4/20/2010	3	Lohstroh/Faulkner	1400	64	6/12	40	patchy
4/20/2010	3	Lohstroh/Faulkner	1440	67	6/12	50	patchy
4/20/2010	3	Lohstroh/Faulkner	1545	62	8/15	50	patchy
4/20/2010	3	Mulligan	1030	65	2/6	20	patchy
4/20/2010	3	Mulligan	1200	65	4/8	30	patchy
4/20/2010	3	Mulligan	1400	64	8/13	50	patchy
4/20/2010	3	Mulligan	1600	66	4/10	50	patchy
4/20/2010	3	Powell	1230	66	7/10	0	clear
4/20/2010	3	Powell	950	64	4/6	0	clear
4/20/2010	3	Powell	1045	66	4/6	0	clear
4/20/2010	3	Powell	1100	66	4/6	0	clear
4/20/2010	3	Powell	1320	66	7/10	0	clear
4/20/2010	3	Powell	1500	67	8/11	10	patchy
4/20/2010	3	Powell	1615	62	9/14	10	patchy
4/23/2010	3	Powell	1250	58	7/10	10	patchy
4/23/2010	3	Powell	1350	63	8/10	10	patchy
4/23/2010	3	Powell	1505	65	7/10	15	patchy
4/23/2010	3	Powell	1625	60	5/10	10	patchy
4/23/2010	3	Faulkner	1100	59	4	0	clear
4/23/2010	3	Faulkner	1200	60	6	0	clear
4/23/2010	3	Faulkner	1300	61	9	0	clear
4/23/2010	3	Faulkner	1400	62	5	10	patchy
4/23/2010	3	Faulkner	1500	65	3	50	patchy
4/23/2010	3	Faulkner	1600	64	4	40	patchy
4/23/2010	3	Couffer	1045	60	2/7	0	clear
4/23/2010	3	Couffer	1100	61	2/6	0	clear
4/23/2010	3	Couffer	1200	63	3/7	0	clear
4/23/2010	3	Couffer	1300	59	3/7	0	clear
4/23/2010	3	Couffer	1400	61	4/9	0	clear
4/23/2010	3	Couffer	1415	59	4/9	0	clear
4/23/2010	3	Hendricks	1155	59.5	4.3/8.2	0	clear
4/23/2010	3	Hendricks	1320	62.1	4.3/12.1	0	clear
4/23/2010	3	Hendricks	1415	65.3	2.6/4.9	0	clear
4/23/2010	3	Hendricks	1510	61.5	8.0/15.1	10	clear
4/23/2010	3	Hendricks	1615	57.2	4.2/8.1	1	clear
4/24/2010	3	Powell	835	63	0	0	clear
4/24/2010	3	Powell	945	68	1/3	0	clear
4/24/2010	3	Powell	1130	77	3/6	0	clear
4/24/2010	3	Powell	1315	77	4/6	0	clear
4/24/2010	3	Powell	1340	79	3/5	0	clear
4/24/2010	3	Powell	1540	75	4/6	0	clear
4/24/2010	3	Couffer	1518	73	2/6	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/24/2010	3	Couffer	1600	73	1/5	0	clear
4/24/2010	3	Couffer	1623	73	1/3	0	clear
4/24/2010	3	Couffer	1240	70	2/9	0	clear
4/24/2010	3	Couffer	1300	77	0/4	0	clear
4/24/2010	3	Couffer	1320	82	0/3	0	clear
4/24/2010	3	Couffer	1400	77	0/2	0	clear
4/24/2010	3	Couffer	1500	73	1/9	0	clear
4/24/2010	3	Couffer	900	66	0	0	clear
4/24/2010	3	Couffer	1000	70	0	0	clear
4/24/2010	3	Couffer	1100	73	0/3	0	clear
4/24/2010	3	Couffer	1200	71	0/3	0	clear
4/24/2010	3	Couffer	1210	71	0/3	0	clear
4/25/2010	3	Couffer	1150	80	0/4	0	clear
4/25/2010	3	Couffer	1200	80	0/4	0	clear
4/25/2010	3	Couffer	1300	85	0/1	0	clear
4/25/2010	3	Couffer	1400	78	0/4	0	clear
4/25/2010	3	Couffer	1500	75	3/7	0	clear
4/25/2010	3	Couffer	1515	75	3/7	0	clear
4/25/2010	3	Couffer	830	76	0	0	clear
4/25/2010	3	Couffer	900	74	0/1	0	clear
4/25/2010	3	Couffer	1000	77	0/1	0	clear
4/25/2010	3	Couffer	1100	78	0/3	0	clear
4/25/2010	3	Couffer	1130	79	0/2	0	clear
4/25/2010	3	Powell	1215	79	3/5	0	clear
4/25/2010	3	Powell	1410	77	5/7	0	clear
4/25/2010	3	Powell	1615	77	3/6	0	clear
4/25/2010	3	Powell	840	69	0	0	clear
4/25/2010	3	Powell	1010	74	3/5	0	clear
4/25/2010	3	Powell	1105	76	4/5	0	clear
4/26/2010	3	Brodie	930	69	0	0	clear
4/26/2010	3	Brodie	1030	72	0	0	clear
4/26/2010	3	Brodie	1130	76	2/4	0	clear
4/26/2010	3	Brodie	1235	75	0	0	clear
4/26/2010	3	Brodie	1340	76	0	0	clear
4/26/2010	3	Brodie	1520	74	0	0	clear
4/26/2010	3	Powell	830	74	0	0	clear
4/26/2010	3	Powell	1025	78	4/7	0	clear
4/26/2010	3	Powell	1130	83	2/4	0	clear
4/26/2010	3	Faulkner	1400	87	2	5	patchy
4/26/2010	3	Faulkner	1500	80	6	5	patchy
4/26/2010	3	Faulkner	1600	75	5	5	patchy
4/26/2010	3	Faulkner	900	75	0	0	clear
4/26/2010	3	Faulkner	1000	77	2	0	clear
4/26/2010	3	Faulkner	1100	79	4	0	clear
4/26/2010	3	Faulkner	1200	83	0	0	clear
4/26/2010	3	Faulkner	1300	83	0	5	patchy
4/26/2010	3	Faulkner	1400	87	2	5	patchy
4/26/2010	3	Couffer	1335	83	0/2	0	clear
4/26/2010	3	Couffer	1400	82	0/3	0	clear
4/26/2010	3	Couffer	1500	80	2/6	5	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
4/26/2010	3	Couffer	1600	79	2/6	5	clear
4/26/2010	3	Couffer	845	72	1/5	0	clear
4/26/2010	3	Couffer	900	73	0/3	0	clear
4/26/2010	3	Couffer	1000	72	0/3	0	clear
4/26/2010	3	Couffer	1100	80	0/6	0	clear
4/26/2010	3	Couffer	1130	82	0/2	0	clear
4/27/2010	4	Rink	912	70	1-2/5	2-5	patchy
4/27/2010	4	Rink	1030	70	2-3/5	3-5	patchy
4/27/2010	4	Rink	1130	71	2-3/5	5-7	patchy
4/27/2010	4	Rink	1230	73	3-4/5	10-12	patchy
4/27/2010	4	Couffer	1200	81	0/3	5	clear
4/27/2010	4	Couffer	1300	80	7/13	5	clear
4/27/2010	4	Couffer	1400	75	3/7	10	clear
4/27/2010	4	Couffer	1500	76	0/2	10	clear
4/27/2010	4	Couffer	1600	76	0/4	10	clear
4/27/2010	4	Couffer	848	72	0	0	clear
4/27/2010	4	Couffer	900	73	0/2	0	clear
4/27/2010	4	Couffer	1000	76	1/5	0	clear
4/27/2010	4	Couffer	1100	77	0/3	0	clear
4/27/2010	4	Powell	845	74	2/4	0	clear
4/27/2010	4	Powell	1115	77	5/8	0	clear
4/27/2010	4	Powell	1140	74	5/7	0	clear/patchy
4/27/2010	4	Powell	1345	72	6/9	0	clear
4/27/2010	4	Powell	1500	78	5/8	0	clear
4/27/2010	4	Powell	1555	73	7/10	0	clear
4/27/2010	4	Mulligan/Bergman	920	67	0/4	1	clear
4/27/2010	4	Mulligan/Bergman	1200	78	4/8	10	clear
4/27/2010	4	Mulligan/Bergman	1515	78	2/6	20	patchy
4/27/2010	4	Faulkner	900	65	1	0	clear
4/27/2010	4	Faulkner	1000	73	2	0	clear
4/27/2010	4	Faulkner	1100	73	4	0	clear
4/27/2010	4	Faulkner	1100	73	2	0	clear
4/27/2010	4	Faulkner	1200	77	2	0	clear
4/27/2010	4	Faulkner	1300	77	8	10	patchy
4/27/2010	4	Faulkner	1400	75	10	50	patchy
4/27/2010	4	Faulkner	1500	73	11	0	clear
4/30/2010	4	Couffer/Powell	1300	62	2/4	60	patchy
4/30/2010	4	Couffer/Powell	1400	61	2/7	50	patchy
4/30/2010	4	Couffer/Powell	1300	63	4/6	50	patchy
4/30/2010	4	Couffer/Powell	1405	61	4/7	50	clear/patchy
4/30/2010	4	Couffer/Powell	1550	55	5/9	75	patchy
4/30/2010	4	Faulkner	1100	63	2	30	patchy
4/30/2010	4	Faulkner	1200	65	1	40	patchy
4/30/2010	4	Faulkner	1300	67	5	50	overcast/drizzle
4/30/2010	4	Faulkner	1400	62	9	50	overcast/drizzle
4/30/2010	4	Hendricks/Bergman	1130	64.7	3.7/7	60	patchy
4/30/2010	4	Hendricks/Bergman	1215	57	4.9/8.8	80	overcast
4/30/2010	4	Hendricks/Bergman	1245	60.4	3.7/8.7	30	patchy
4/30/2010	4	Hendricks/Bergman	1350	67.6	5.1/7.5	40	patchy
4/30/2010	4	Hendricks/Bergman	1430	57.7	5.2/8.3	80	overcast

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/1/2010	4	Powell	1445	67	7/9	0	clear
5/1/2010	4	Powell	1605	65	6/7	0	clear
5/1/2010	4	Powell		62	4/6	0	clear
5/1/2010	4	Powell		6	5/7	0	clear
5/1/2010	4	Powell	1330	66	6/9	0	clear
5/1/2010	4	Powell	1425	67	6/8	0	clear
5/1/2010	4	Couffer/Fisher	930	63	0/3	0	clear
5/1/2010	4	Couffer/Fisher	1000	64	2/5	0	clear
5/1/2010	4	Couffer/Fisher	1100	67	0/4	5	clear
5/1/2010	4	Couffer/Fisher	1200	68	0/3	5	clear
5/1/2010	4	Couffer/Fisher	1300	72	0/5	5	clear
5/1/2010	4	Couffer/Fisher	1400	73	0/5	0	clear
5/1/2010	4	Couffer/Fisher	1500	68	2/5	0	clear
5/1/2010	4	Lohstroh	930	64	0/3	0	clear
5/1/2010	4	Lohstroh	1130	64	6/10	10	patchy
5/1/2010	4	Lohstroh	1300	65	5/13	5	patchy
5/1/2010	4	Lohstroh	1400	72	2/8	1	clear
5/1/2010	4	Lohstroh	1520	69	0/10	1	clear
5/1/2010	4	Lohstroh	1550	67	0/10	3	clear
5/1/2010	4	Mulligan	900	60	2/6	0	clear
5/1/2010	4	Mulligan	1200	66	4/10	40	patchy
5/1/2010	4	Mulligan	1300	67	8/12	25	patchy
5/1/2010	4	Mulligan	1530	37	6/8	25	patchy
5/2/2010	4	Powell	1055	59	4/6	0	clear
5/2/2010	4	Powell	1200	62	5/7	0	clear
5/2/2010	4	Powell	1230	67	4/6	0	clear
5/2/2010	4	Powell	1355	70	5/7	0	clear
5/2/2010	4	Powell	1615	72	4/7	0	clear
5/2/2010	4	Couffer	1020	60	0/3	0	clear
5/2/2010	4	Couffer	1100	66	0/3	0	clear
5/2/2010	4	Couffer	1200	64	0/7	0	clear
5/2/2010	4	Couffer	1300	73	0/3	0	clear
5/2/2010	4	Couffer	1400	76	0/2	0	clear
5/2/2010	4	Couffer	1500	74	0/6	0	clear
5/2/2010	4	Couffer	1600	71	2/8	0	clear
5/3/2010	4	Dittmer	900	68.9	2/4	0	clear
5/3/2010	4	Dittmer	1550	77	2/4	0	clear
5/3/2010	4	Pigniolo	1300	74	0/2	0	clear
5/3/2010	4	Pigniolo	1400	76	0/2	0	clear
5/3/2010	4	Pigniolo	1530	77	0/2	0	clear
5/3/2010	4	Pigniolo	915	60	2/6	0	clear
5/3/2010	4	Pigniolo	1015	66	2/6	0	clear
5/3/2010	4	Pigniolo	1115	69	2/6	0	clear
5/3/2010	4	Pigniolo	1215	69	2/4	0	clear
5/3/2010	4	Pigniolo	1245	68	0/4	0	clear
5/3/2010	4	Flietner	830	64	5/9	0	clear
5/3/2010	4	Flietner	1600	77	3/5	0	clear
5/3/2010	4	Faulkner	900	67	5	0	clear
5/3/2010	4	Faulkner	1000	71	4	0	clear
5/3/2010	4	Faulkner	1100	75	2	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/3/2010	4	Faulkner	1200	76	3	0	clear
5/3/2010	4	Faulkner	1300	78	1	0	clear
5/3/2010	4	Faulkner	1400	78	2	0	clear
5/3/2010	4	Faulkner	1500	83	1	0	clear
5/3/2010	4	Faulkner	1600	79	4	0	clear
5/3/2010	4	Couffer	835	67	3/6	0	clear
5/3/2010	4	Couffer	900	70	3/8	0	clear
5/3/2010	4	Couffer	1000	72	3/10	0	clear
5/3/2010	4	Couffer	1100	74	4/8	0	clear
5/3/2010	4	Couffer	1200	77	0/3	0	clear
5/3/2010	4	Couffer	1300	80	0/4	0	clear
5/3/2010	4	Couffer	1400	81	0/4	0	clear
5/3/2010	4	Couffer	1500	80	0/3	0	clear
5/3/2010	4	Powell	830	65	7/9	0	clear
5/3/2010	4	Powell	950	67	7/10	0	clear
5/3/2010	4	Powell	1115	75	4/7	0	clear
5/3/2010	4	Powell	1430	78	5/8	0	clear
5/3/2010	4	Powell	1600	81	4/6	0	clear
5/3/2010	4	Powell	1640	79	7/11	0	clear
5/4/2010	4	Lohstroh	840	68	0/1	0	clear
5/4/2010	4	Lohstroh	1040	78	0/4	0	clear
5/4/2010	4	Lohstroh	1300	80	3/8	0	clear
5/4/2010	4	Lohstroh	1420	83	3/8	0	clear
5/4/2010	4	Lohstroh	1515	79	4/8	0	clear
5/4/2010	4	Powell	850	68	2/3	0	clear
5/4/2010	4	Powell	1020	71	6/7	0	clear
5/4/2010	4	Powell	1115	78	2	0	clear
5/4/2010	4	Powell	1155	75	7/12	0	clear
5/4/2010	4	Powell	1325	78	5/9	0	clear
5/4/2010	4	Powell	1520	76	9/13	0	clear
5/4/2010	4	Powell	1545	76	8/11	0	clear
5/4/2010	4	Powell	1120	78	8/12	0	clear
5/4/2010	4	Powell	1145	75	7/12	0	clear
5/4/2010	4	Faulkner	900	70	0	0	clear
5/4/2010	4	Faulkner	1000	74	5	0	clear
5/4/2010	4	Faulkner	1100	77	4	0	clear
5/4/2010	4	Faulkner	1200	80	6/7	0	clear
5/4/2010	4	Faulkner	1300	83	8	0	clear
5/4/2010	4	Faulkner	1400	80	7	0	clear
5/4/2010	4	Faulkner	1500	80	7	0	clear
5/4/2010	4	Faulkner	1600	78	8	0	clear
5/4/2010	4	Flietner	820	58	0/2	0	clear
5/4/2010	4	Flietner	850	66	2/4	0	clear
5/4/2010	4	Flietner	1030	75	3/5	0	clear
5/4/2010	4	Flietner	1100	77	0/3	0	clear
5/4/2010	4	Flietner	1630	83	7/10	0	clear
5/4/2010	4	Couffer	1100	78	3/5	0	clear
5/4/2010	4	Couffer	1200	76	7/14	0	clear
5/4/2010	4	Couffer	1300	81	0/6	0	clear
5/4/2010	4	Couffer	1400	81	3/8	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/4/2010	4	Couffer	1500	81	0/5	0	clear
5/4/2010	4	Couffer	1530	80	0/5	0	clear
5/4/2010	4	Couffer	840	70	0/2	0	clear
5/4/2010	4	Couffer	900	69	0/2	0	clear
5/4/2010	4	Couffer	1000	73	0/3	0	clear
5/4/2010	4	Couffer	1015	73	0/2	0	clear
5/4/2010	4	Brodie	900	64	0	0	clear
5/4/2010	4	Brodie	1005	68	2/5	0	clear
5/4/2010	4	Brodie	1110	70	6/11	0	clear
5/4/2010	4	Brodie	1200	75	5/10	0	clear
5/4/2010	4	Brodie	1305	73	4/9	0	clear
5/4/2010	4	Brodie	1415	73	4/12	0	clear
5/4/2010	4	Brodie	1515	69	6/13	0	clear
5/4/2010	4	Gutierrez	1115	76	1.5/3	0	clear
5/4/2010	4	Gutierrez	1300	78	25/10	0	clear
5/4/2010	4	Gutierrez	900	72	0	0	clear
5/4/2010	4	Gutierrez	1000	76	0/2	0	clear
5/4/2010	4	Gutierrez	1100	78	2/5	0	clear
5/4/2010	4	Gutierrez	1310	78	2.5/10	0	clear
5/4/2010	4	Gutierrez	1500	78	2.5/10	0	clear
5/4/2010	4	Mulligan	1345	80	2/5	0	clear
5/4/2010	4	Mulligan	1530	80	3/6	0	clear
5/4/2010	4	Mulligan	900	75	0/2	0	clear
5/4/2010	4	Mulligan	1200	80	3/6	0	clear
5/4/2010	4	Mulligan	1330	80	4/6	0	clear
5/5/2010	4	Powell	1145	76	4/7	0	clear
5/5/2010	4	Powell	1400	78	3/5	0	clear
5/5/2010	4	Powell	1515	78	3/6	0	clear
5/5/2010	4	Powell	1615	78	5/8	0	clear
5/5/2010	4	Couffer	900	68	1/4	0	clear
5/5/2010	4	Couffer	1000	73	2/6	0	clear
5/5/2010	4	Couffer	1100	76	1/4	0	clear
5/5/2010	4	Couffer	1130	73	5/13	0	clear
5/5/2010	4	Brodie	1130	75	7/11	0	clear
5/5/2010	4	Brodie	1230	76	6/11	0	clear
5/5/2010	4	Brodie	1330	72	4/9	0	clear
5/5/2010	4	Brodie	1435	75	5/10	0	clear
5/5/2010	5	Marquez	915	70.7	2.6/4.3	0	clear
5/5/2010	5	Marquez	1015	69	2.1/4.4	0	clear
5/5/2010	5	Marquez	1140	72	3.8/5.4	0	clear
5/5/2010	5	Marquez	1255	75.5	5.3/6.8	0	clear
5/5/2010	5	Marquez	1355	75.1	6.2/8.5	0	clear
5/5/2010	5	Marquez	1455	74.9	7.6/9.8	0	clear
5/5/2010	5	Brodie	900	62	3/7	0	clear
5/5/2010	5	Brodie	1015	69	3/9	0	clear
5/5/2010	5	Brodie	1100	72	4/10	0	clear
5/5/2010	5	Mulligan	900	76	4	0	clear
5/5/2010	5	Mulligan	1200	80	6/10	3	clear
5/5/2010	5	Mulligan	1500	81	5/9	5	clear
5/5/2010	5	Osborne	906	70	0	0	clear

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5/5/2010	5	Osborne	1015	77	1.5/5.8	0	clear
5/5/2010	5	Osborne	1340	72	8.5/14	0	clear
5/5/2010	5	Osborne	1557	71	9.9/14.7	0	clear
5/5/2010	5	Couffer	1200	82	1/7	0	clear
5/5/2010	5	Couffer	1300	77	2/10	0	clear
5/5/2010	5	Couffer	1400	78	3/10	0	clear
5/5/2010	5	Couffer	1500	78	3/10	0	clear
5/5/2010	5	Couffer	1548	77	3/13	5	clear
5/5/2010	5	Powell	845	72	3/5	0	clear
5/5/2010	5	Powell	1015	72	5/6	0	clear
5/5/2010	5	Powell	1120	73	9/13	0	clear
5/5/2010	5	LaCoste	845	64	3/6	0	clear
5/5/2010	5	LaCoste	1100	71	4/8	0	clear
5/5/2010	5	LaCoste	1330	72	8/12	0	clear
5/5/2010	5	LaCoste	1430	76	6/10	0	clear
5/5/2010	5	Osborne	905	67	1.8/4.4	0	clear
5/5/2010	5	Osborne	1030	71	1.5/4.4	0	clear
5/5/2010	5	Osborne	1302	73	3.7/13.5	0	clear
5/5/2010	5	Osborne	1500	75	4.3/9.3	0	clear
5/5/2010	5	Osborne	1555	74	4/9.2	0	clear
5/6/2010	5	Powell	830	60	2/4	0	clear
5/6/2010	5	Powell	945	73	1/3	0	clear
5/6/2010	5	Powell	1010	74	3/5	0	clear
5/6/2010	5	Powell	1215	78	6/8	0	clear
5/6/2010	5	Powell	1430	76	4/6	0	clear
5/6/2010	5	Powell	1515	77	7/9	0	clear
5/6/2010	5	Brodie	1345	75	3/5	0	clear
5/6/2010	5	Brodie	1500	74	3/6	0	clear
5/6/2010	5	Brodie	1540	73	3/7	0	clear
5/6/2010	5	Couffer	830	69	0	0	clear
5/6/2010	5	Couffer	900	70	1/3	0	clear
5/6/2010	5	Couffer	1000	71	1/3	0	clear
5/6/2010	5	Couffer	1100	73	1/5	0	clear
5/6/2010	5	Couffer	1200	76	0/5	0	clear
5/6/2010	5	Couffer	1300	81	0/4	0	clear
5/6/2010	5	Couffer	1400	83	0/3	0	clear
5/6/2010	5	Couffer	1500	77	1/5	0	clear
5/6/2010	5	Brodie	930	69	2/5	0	clear
5/6/2010	5	Brodie	1100	73	4/7	0	clear
5/6/2010	5	Brodie	1230	75	3/5	0	clear
5/6/2010	5	Brodie	1315	75	4/7	0	clear
5/6/2010	5	Mulligan	900	62	4/7	0	clear
5/6/2010	5	Mulligan	1200	72	3/6	0	clear
5/6/2010	5	Mulligan	1430	75	4/8	0	clear
5/7/2010	5	Mulligan	900	65	6/10	0	clear
5/7/2010	5	Mulligan	1200	74	0/4	0	clear
5/7/2010	5	Mulligan	1245	76	2/4	0	clear
5/7/2010	5	Mulligan	1300	79	2/4	0	clear
5/7/2010	5	Mulligan	1530	82	2/5	0	clear
5/7/2010	5	Faulkner	1300	80	3	0	clear

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5/7/2010	5	Faulkner	1400	80	4	0	clear
5/7/2010	5	Faulkner	1500	80	3	0	clear
5/7/2010	5	Faulkner	1600	78	6	0	clear
5/7/2010	5	Faulkner	1100	76	6	0	clear
5/7/2010	5	Faulkner	1200	80	3	0	clear
5/7/2010	5	Faulkner	1300	80	3	0	clear
5/7/2010	5	Faulkner	900	69	03	0	clear
5/7/2010	5	Faulkner	1000	72	7	0	clear
5/7/2010	5	Faulkner	1100	76	6	0	clear
5/7/2010	5	Couffer	838	72	0/7	0	clear
5/7/2010	5	Couffer	900	73	0/8	0	clear
5/7/2010	5	Couffer	1000	75	0/8	0	clear
5/7/2010	5	Couffer	1100	76	0/6	0	clear
5/7/2010	5	Couffer	1200	83	0/4	0	clear
5/7/2010	5	Couffer	1300	88	0/2	0	clear
5/7/2010	5	Couffer	1400	80	1/6	0	clear
5/7/2010	5	Couffer	1500	84	1/4	0	clear
5/7/2010	5	Powell	1345	79	5/7	0	clear
5/7/2010	5	Powell	1455	78	6/9	0	clear
5/7/2010	5	Powell	845	71	5/6	0	clear
5/7/2010	5	Powell	1000	75	6/8	0	clear
5/7/2010	5	Powell	1245	78	5/8	0	clear
5/7/2010	5	Powell	1335	78	4/6	0	clear
5/8/2010	5	Couffer/McMorran	1215	79	4/11	0	clear
5/8/2010	5	Couffer/McMorran	1300	77	2/6	0	clear
5/8/2010	5	Couffer/McMorran	1400	78	4/14	0	clear
5/8/2010	5	Couffer/McMorran	1500	79	4/9	0	clear
5/8/2010	5	Couffer/McMorran	1520	78	2/7	0	clear
5/8/2010	5	Couffer/McMorran	845	66	0/3	0	clear
5/8/2010	5	Couffer/McMorran	900	71	0/3	0	clear
5/8/2010	5	Couffer/McMorran	1000	72	1/4	0	clear
5/8/2010	5	Couffer/McMorran	1100	72	1/4	0	clear
5/8/2010	5	Couffer/McMorran	1200	74	4/9	0	clear
5/8/2010	5	Powell	830	63	4/6	0	clear
5/8/2010	5	Powell	1025	71	7/8	0	clear
5/8/2010	5	Powell	1210	71	8/12	0	clear
5/8/2010	5	Powell	1430	76	8/11	0	clear
5/8/2010	5	Powell	1515	77	11/14	0	clear
5/8/2010	5	Powell	1520	78	5/7	0	clear
5/8/2010	5	Powell	1620	75	6/9	0	clear
5/11/2010	5	Mulligan	1330	74	2/4	5	clear
5/11/2010	5	Mulligan	1545	74	3/6	0	clear
5/11/2010	5	Mulligan	900	65	0/2	0	clear
5/11/2010	5	Mulligan	1110	75	0/5	0	clear
5/11/2010	5	Mulligan	1300	76	2/5	3	clear
5/12/2010	6	Powell	915	67	4/6	0	clear
5/12/2010	6	Powell	1110	71	5/8	0	clear
5/12/2010	6	Powell	1340	75	4/5	0	clear
5/12/2010	6	Powell	1600	72	6/8	0	clear
5/12/2010	6	Brodie	1100	67	0	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/12/2010	6	Brodie	1220	70	0	0	clear
5/12/2010	6	Brodie	1415	70	0/2	0	clear
5/12/2010	6	Brodie	900	61	0	0	clear
5/12/2010	6	Brodie	1010	65	0	0	clear
5/12/2010	6	Brodie	1100	67	0	0	clear
5/12/2010	6	Brodie	1415	70	0	0	clear
5/12/2010	6	Brodie	1435	71	0/2	0	clear
5/12/2010	6	Brodie	1445	71	2/5	0	clear
5/12/2010	6	Brodie	1600	69	2/6	0	clear
5/12/2010	6	Marquez	1045	71.4	1.2/1.7	0	clear
5/12/2010	6	Marquez	1240	76.3	1.6/4.6	0	clear
5/12/2010	6	Marquez	1400	75.8	2.1/5.4	0	clear
5/12/2010	6	Marquez	1520	70.5	2.8/4.6	0	clear
5/12/2010	6	Marquez	835	65.3	.5/1.2	0	clear
5/12/2010	6	Marquez	945	69	2.2/2.8	0	clear
5/12/2010	6	Marquez	1045	76.3	2.3/5.4	0	clear
5/12/2010	6	Lohstroh	1330	76	3/7	0	clear
5/12/2010	6	Lohstroh	1430	74	3/8	0	clear
5/12/2010	6	Lohstroh	1530	73	3/12	0	clear
5/12/2010	6	Lohstroh	845	63	0/1	0	clear
5/12/2010	6	Lohstroh	1210	74	0/3	0	clear
5/12/2010	6	Lohstroh	1300	79	0/4	0	clear
5/12/2010	6	Couffer	845	65	0	0	clear
5/12/2010	6	Couffer	857	67	0/1	0	clear
5/12/2010	6	Couffer	1400	72	3/5	0	clear
5/12/2010	6	Couffer	1500	73	3/11	0	clear
5/12/2010	6	Couffer	900	67	0/1	0	clear
5/12/2010	6	Couffer	1000	71	0/2	0	clear
5/12/2010	6	Couffer	1100	72	1/4	0	clear
5/12/2010	6	Couffer	1200	74	1/3	0	clear
5/12/2010	6	Couffer	1300	73	1/4	0	clear
5/12/2010	6	Couffer	1345	72	3/5	0	clear
5/12/2010	6	Faulkner	1200	79	4	0	clear
5/12/2010	6	Faulkner	1300	79	4	10	clear
5/12/2010	6	Faulkner	1400	77	4	10	clear
5/12/2010	6	Faulkner	1500	76	7	0	clear
5/12/2010	6	Faulkner	1600	76	5	0	clear
5/12/2010	6	Faulkner	900	68	1	0	clear
5/12/2010	6	Faulkner	1000	75	1	0	clear
5/12/2010	6	Faulkner	1100	76	0	0	clear
5/12/2010	6	Faulkner	1200	79	4	0	clear
5/13/2010	6	Mulligan	900	67	2/5	1	clear
5/13/2010	6	Mulligan	1115	78	0/4	10	clear
5/13/2010	6	Mulligan	1515	79	3/6	15	clear
5/13/2010	6	Brodie	1230	72	4/8	10-20	clear
5/13/2010	6	Brodie	1330	74	2/8	10-20	clear
5/13/2010	6	Brodie	1600	70	3/6	10-20	clear
5/13/2010	6	Lohstroh	940	74	0/1	0	clear
5/13/2010	6	Lohstroh	1200	78	3/5	20	patchy
5/13/2010	6	Lohstroh	1300	80	0/3	20	patchy

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/13/2010	6	Lohstroh	1400	81	0/3	30	patchy
5/13/2010	6	Lohstroh	1530	82	0/9	10	patchy
5/13/2010	6	Lohstroh	850	69	0/1	0	clear
5/13/2010	6	Lohstroh	930	72	0/1	0	clear
5/13/2010	6	Brodie	850	60	0	0	clear
5/13/2010	6	Brodie	1015	65	0	0	clear
5/13/2010	6	Brodie	1145	69	2/6	10	clear
5/14/2010	6	Powell	1325	85	4/6	0	clear
5/14/2010	6	Powell	1435	80	5/7	5	clear
5/14/2010	6	Powell	1530	75	6/9	10	clear
5/14/2010	6	Powell	1600	80	4/5	5	clear
5/14/2010	6	Powell	1325	85	4/6	0	clear
5/14/2010	6	Powell	1435	80	5/7	5	clear
5/14/2010	6	Powell	1530	75	6/9	10	clear
5/14/2010	6	Powell	1600	80	4/5	5	clear
5/14/2010	6	Couffer	1030	77	0/3	0	clear
5/14/2010	6	Couffer	1100	78	0/5	0	clear
5/14/2010	6	Couffer	1200	80	0/3	0	clear
5/14/2010	6	Couffer	1230	79	0/3	0	clear
5/14/2010	6	Couffer	1330	74	0/5	0	clear
5/14/2010	6	Couffer	1400	73	0/3	5	clear
5/14/2010	6	Couffer	1500	75	0/3	20	clear
5/14/2010	6	Couffer	1600	75	0/1	20	clear
5/14/2010	6	Couffer	1621	77	0/2	20	clear
5/14/2010	6	Couffer	851	75	0/2	0	clear
5/14/2010	6	Couffer	900	75	0	0	clear
5/14/2010	6	Couffer	1000	81	0/2	0	clear
5/14/2010	6	Mulligan	900	70	2/7	0	clear
5/14/2010	6	Mulligan	1215	75	4/6	10	clear
5/14/2010	6	Mulligan	1515	79	4/6	20	clear
5/14/2010	6	Lohstroh	850	70	0/4	0	clear
5/14/2010	6	Lohstroh	1015	75	0/4	0	clear
5/14/2010	6	Lohstroh	1140	79	0/7	0	clear
5/14/2010	6	Lohstroh	1320	76	3/6	20	patchy
5/14/2010	6	Lohstroh	1430	79	3/5	20	patchy
5/14/2010	6	Lohstroh	1500	78	0/2	30	patchy
5/14/2010	6	Faulkner	1300	74	0	0	clear
5/14/2010	6	Faulkner	1400	75	4	0	clear
5/14/2010	6	Faulkner	1500	77	2	30	patchy
5/14/2010	6	Faulkner	1600	74	2	50	patchy
5/14/2010	6	Faulkner	900	69	5	0	clear
5/14/2010	6	Faulkner	1000	74	3	0	clear
5/14/2010	6	Faulkner	1100	78	2	0	clear
5/14/2010	6	Faulkner	1200	80	5	0	clear
5/14/2010	6	Faulkner	1300	74	0	0	clear
5/14/2010	6	Powell	845	74	4/6	0	clear
5/14/2010	6	Powell	1100	80	3/5	0	clear
5/14/2010	6	Powell	1230	81	7/9	0	clear
5/15/2010	6	Flietner	1210	80	5/8	0	clear
5/15/2010	6	Flietner	1510	80	4/6	5	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/15/2010	6	Flietner	840	74	6/10	0	clear
5/15/2010	6	Powell	1150	74	5/10	0	clear
5/15/2010	6	Powell	1315	81	5/7	0	clear
5/15/2010	6	Powell	1415	78	7/9	0	clear
5/15/2010	6	Powell	1510	81	3/4	0	clear
5/15/2010	6	Powell	840	72	6/8	0	clear
5/15/2010	6	Powell	1010	73	7/12	0	clear
5/15/2010	6	Powell	1135	76	7/9	0	clear
5/15/2010	6	Couffer	830	74	4/9	0	clear
5/15/2010	6	Couffer	900	74	3/9	0	clear
5/15/2010	6	Couffer	1000	78	0/4	0	clear
5/15/2010	6	Couffer	1100	80	0/5	0	clear
5/15/2010	6	Couffer	1200	76	0/6	0	clear
5/15/2010	6	Couffer	1300	80	0/7	0	clear
5/15/2010	6	Couffer	1400	84	0/4	0	clear
5/15/2010	6	Couffer	1415	84	0/4	0	clear
5/16/2010	6	Powell	1515	80	7/9	0	clear
5/16/2010	6	Powell	1610	81	5/7	0	clear
5/16/2010	6	Powell	845	71	8/11	0	clear
5/16/2010	6	Powell	950	76	6/10	0	clear
5/16/2010	6	Powell	1130	78	6/9	0	clear
5/16/2010	6	Powell	1255	81	5/6	0	clear
5/16/2010	6	Powell	1450	79	4/7	0	clear
5/16/2010	6	Faulkner	900	70	4	0	clear
5/16/2010	6	Faulkner	1000	75	5	0	clear
5/16/2010	6	Faulkner	1100	77	5	0	clear
5/16/2010	6	Faulkner	1200	75	7	0	clear
5/16/2010	6	Faulkner	1300	73	6	0	clear
5/16/2010	6	Faulkner	1400	81	3	0	clear
5/16/2010	6	Faulkner	1500	80	4	0	clear
5/16/2010	6	Faulkner	1600	77	8	0	clear
5/17/2010	6	Flietner	1040	69	3/5	100	overcast
5/17/2010	6	Flietner	1120	73	2/4	100	overcast
5/17/2010	6	Flietner	1600	68	3/6	10	clear
5/17/2010	6	Faulkner	1500	68	8	0	clear
5/17/2010	6	Faulkner	1600	66	11	0	clear
5/17/2010	6	Faulkner	1400	75	8	50	patchy
5/17/2010	6	Faulkner	1500	68	8	0	clear
5/17/2010	6	Faulkner	1100	68	5	100	overcast
5/17/2010	6	Faulkner	1200	69	5	100	overcast
5/17/2010	6	Faulkner	1300	72	4	100	overcast
5/17/2010	6	Faulkner	1400	75	8	50	patchy
5/17/2010	6	Faulkner	1000	69	5	100	overcast
5/17/2010	6	Couffer	1000	69	0/5	100	overcast
5/17/2010	6	Couffer	1100	69	0/3	100	overcast
5/17/2010	6	Couffer	1200	74	0/3	100	overcast
5/17/2010	6	Couffer	1300	70	0/2	100	overcast
5/17/2010	6	Couffer	1400	73	0/3	80	overcast
5/17/2010	6	Couffer	1500	70	2/8	20	patchy
5/17/2010	6	Couffer	1545	69	2/5	20	patchy

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
5/17/2010	6	Powell	1050	60	3/5	100	overcast
5/17/2010	6	Powell	1210	65	6/8	100	overcast
5/17/2010	6	Powell	1125	67	6/8	100	overcast
5/17/2010	6	Powell	1300	67	5/10	100	overcast
5/19/2010	6	Couffer	840	668	0/1	0	clear
5/19/2010	6	Couffer	900	69	081	0	clear
5/19/2010	6	Couffer	1000	71	0/1	0	clear
5/19/2010	6	Couffer	1100	85	0/2	0	clear
5/19/2010	6	Couffer	1200	84	0	0	clear
5/19/2010	6	Couffer	1300	82	0/1	0	clear
5/19/2010	6	Powell	930	67	0	0	clear
5/19/2010	6	Powell	1045	82	4/6	0	clear
5/19/2010	6	Powell	1230	84	5/8	0	clear
5/19/2010	6	Lohstroh	1230	74	0/5	0	clear
5/19/2010	6	Lohstroh	1300	78	3/10	0	clear
5/19/2010	6	Lohstroh	1400	81	0/5	0	clear
5/19/2010	6	Lohstroh	1500	83	0/6	0	clear
5/19/2010	6	Lohstroh	1530	86	0/5	0	clear
5/19/2010	6	Lohstroh	845	66	0/1	0	clear
5/19/2010	6	Lohstroh	1000	70	0/3	0	clear
5/20/2010	6	Couffer	848	71	3/4	0	clear
5/20/2010	6	Couffer	900	73	2/4	0	clear
5/20/2010	6	Couffer	1000	78	2/6	0	clear
5/20/2010	6	Couffer	1100	77	2/6	0	clear
5/20/2010	6	Couffer	1200	75	1/5	0	clear
5/20/2010	6	Couffer	1300	80	3/6	0	clear
5/20/2010	6	Couffer	1315	80	3/5	0	clear

APPENDIX B

FIELD DATASHEETS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Osborne Add'l Person: Josh Date: 3/25/2010

Project: Campo Wind Energy Project Map #: "15" Survey Sxn: N/A

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1121	72	1.0/3	0	clear	patchy	overcast	drizzle	shower
1121	-1140	72	2.8/5		clear	patchy	overcast	drizzle	shower
1215		60	6/10	C	clear	patchy	overcast	drizzle	shower
1240		59	10/12		clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
410		61	1.7/4		clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
C. perplexa (Callophrys)	> XXX	~ 32
V. cardui (Vanessa)	2 IIII	9
B. brizo (Erynnis)	1 IIII	6
A. mormo (Apodemia)	1 IIII	6
E. hoyenatis (Euchloe)	1 IIII III	10
A. sara (Anthocharis)	III II	5
Nymphalis californica	I	1
Papilio eurymedon	IIII	4
Celastrina ladon	II	2
Incisalia augustinus	II	2
Moths:		
Euproserpinus phaeton		
Litocala sexigutta		
Leptarctia		
Alypia ridingsi		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Arctostaphylos sp. common on N end of map 14. (a nectar source)
		Eriodictyon crassifolium (nectar) generally common.
		Map 15 (not used) but covered on

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Andrew Pigniolo Add'l Person: Philip Paipa Date: 3/22/10

Project: Campo Wind Energy Project Map #: 9 Survey Sxn: _____

GPS Unit : #1 QCB Protocol Survey # 1 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1030	61	0-2	20	clear	(patchy)	overcast	drizzle	shower
	1130	61	2-6	60	clear	patchy	(overcast)	drizzle	shower
	1230	63	2-6	85	clear	patchy	(overcast)	drizzle	shower
	1330	57	2-8	95	clear	patchy	(overcast)	drizzle	shower
	~~1430~~				clear	patchy	overcast	drizzle	shower
	~~1530~~				clear	patchy	overcast	drizzle	shower
END	~~1630~~ 1400	58	2-6	100	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Pale Swallowtail	I	1
Sara Orangetip	|||||	8
Spring White	||||| ||	10
Perplexing Hairstreak	||||| |||||	12
Southern blue	|||	3
Dusky wing skipper	|||||	7
Tortoise Shell	I	1
		42

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Viviane Marquez Add'l Person: Dave Shupp Date: 3/22/10

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: _____

GPS Unit : 4 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START					clear	patchy	overcast	drizzle	shower
	10:15	66.8	3.4/6.2	10	clear	(patchy)	overcast	drizzle	shower
	11:40	71.2	0.6/11.6	60	clear	(patchy)	overcast	drizzle	shower
	1:00	65.5	4.7/8.7	100%	clear	patchy	(overcast)	drizzle	shower
	2:00	63.8	2.1/4.8	100%	clear	patchy	(overcast)	drizzle	shower
end	2:25	62.9	5.4/9.9	100%	clear	patchy	(overcast)	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	𝍸 𝍸 𝍸 |||	13
Checkered White	𝍸 ||	7
Perplexing hairstreak	𝍸	5
Lady sp.	𝍸 ||	7
Funereal Dusky wing	||	2
VMEP01	excluded polygon dense chaparral	
VMEP02	excluded polygon dense chaparral	
NO QCB		
transferred to second page		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
VMEP01	excluded polygon	dense chaparral
VMEP02	excluded polygon	dense chaparral

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Heath Add'l Person: Joshua Paipa Date: 3/22/10

Project: Campo Wind Energy Project Map #: 12 Survey Sxn: _____

GPS Unit : 3 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:00	61	8/9	10	clear	(patchy)	overcast	drizzle	shower
	11:15	63	7.2/10.5	25%	clear	(patchy)	overcast	drizzle	shower
	12:00	63	9.5/20	75%	clear	patchy	(overcast)	drizzle	shower
	13:00	62	3.5/6.5	95%	clear	patchy	(overcast)	drizzle	shower
	14:00	58.5	5.6/9.9	100%	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara OT Orange Tip	II	2
Blue species	II	2
Acmon Blue	I	1

LOOK. DATA ON BACK!

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Calif Poppy – flowering
		Baby Blue eyes "
		Erodium flowering
MHHL02	Sensitive Sp	Map 12 Coast Horn Lizard $VV
		Goldfields? few
	Mexican	Manzanita flowering – not good host thru
		Buckbrush flowering
		Miner's lettuce flowering

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOHSTROH Add'l Person: OMAR (Escort) Date: 3/22/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: _____

GPS Unit : 6 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0920	61	0-5	10	clear	patchy	overcast	drizzle	shower
	1000	64	0-3	20	clear	patchy	overcast	drizzle	shower
	1100	61	3-5	40	clear	patchy	overcast	drizzle	shower
	1200	61	3-5	60	clear	patchy	overcast	drizzle	shower
	1300	60	3-5	100	clear	patchy	overcast	drizzle	shower
	1400	60	3-5	100	clear	patchy	overcast	drizzle	shower
END	1445	60	3-5	100	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
orange tip	IIII III	8
common white	IIII I	6
Funereal Duskywing	III	3
Perplexing Hair Streak	IIII III	8
Southern blue	II	2
Cal. Tortoiseshell	IIII II	7
Brown elfin	IIII I	6

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Bush
		RTHa
		Scja
		CaTh
		CORA
		Bobcat scat + track
		SCOC (W. fence Lizard)
		UTST (side-blotch Lizard)
BL DB01	Desert beauty	Desert beauty Linanthus
		Gopher & Nacke
		Anhu
		WCSP
		CALT
		ORJU
		HuVi
		SPTO
BLCP01	Campo pea?	Campo pea, need to verify when blooming, photos
BLJR01	SD BT jackrabbit	2 indiv
		cotton tail

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pebbles Date: 22 March 2010

Project: Campo Wind Energy Project Map #: 26/25 Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 1 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	65	2 W	30	clear	(patchy)	overcast	drizzle	shower
	1100	68	3 W	50	clear	(patchy)	overcast	drizzle	shower
	1200	68	5 W	70	clear	(patchy)	overcast	drizzle	shower
	1300	65	6 W	100	clear	patchy	(overcast)	drizzle	shower
	1400	64	6 W	100	clear	patchy	(overcast)	drizzle	shower
	1500	63	2 W	100	clear	patchy	(overcast)	drizzle	shower
END	1600	59	13 W	100	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), various nectar sources

Butterfly Species	Tally	Total
A. Sara	~~HHT~~ ~~HHT~~ I	11
C. perplexa	II	2
N. Californica	III	3
V. Cardui (Worn)	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
~~26, DFCH 001~~ DFCH01	1 pt.	Collensia sp. - Common

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie (Jimmy McMorran) Add'l Person: David Dyche Date: 22 Mar 2010

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: 15

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1315	66°	2/4	90%	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1415	64°	8/12	90-100%	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

* ENDED SURVEY DUE TO WEATHER

Butterfly Species	Tally	Total
unidentified lg.	1	1

NO DATA ON BACK

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie (Jimmy McMorran) Add'l Person: David Dyche Date: 22 Mar 2010

Project: Campo Wind Energy Project Map #: 10 Survey Sxn: 10

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1015	68°	2 / 6	<10%	(clear)	patchy	overcast	drizzle	shower
	1100	66°	8 / 12	30-40%	clear	(patchy)	overcast	drizzle	shower
	1220	68°	4 / 10	70-80%	clear	(patchy)	overcast	drizzle	shower
	1315	66°	4 / 6	80-90%	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1315	66°	4 / 6	80-90%	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): (open soils, hilltops, ridges, rock outcrops), soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara orangetip	IIII II	7
Purplering hairstreak	III	3
Pale swallowtail	I	1
Unidentified lady (probably Painted)	I	1
Acmon blue	I	1
Funereal Duskywing	I	1
Southern blue	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NBAR-01	Point	Ant Cou. on slight hillside, few individuals scattered up slope
		CATT
		CORA
		DATI
	Rombback of map	BEWR
		WEBJ
		DEJU
		RTHA
		stripedracer
		ROWR
		SPTO
		NUWO
		ANTH
		BTSP

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Mulligan Add'l Person: S. Innecken, P Paipa Date: 3.24.10

Project: Campo Wind Energy Project Map #: 9 Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:34	65	3-5	5	(clear)	patchy	overcast	drizzle	shower
	1305	~~68~~	3-5	20	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources
dg

Butterfly Species	Tally	Total
SARA'S ORANGE TIP	||	2
? DUSKYWING	||||	4
COMMON WHITE	|||	3
ACMON BLUE	||	2
BROWN ELFIN	||	2
BOISDUVAL'S METALMARK	|||	3
PERPLEXING HAIRSTREAK	||||	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCS01	sensitive ~~nectar~~ plant	Caulanthus simulans ~250 plants
MMHL01	Sensitive reptile	Horn Lizard
MMHL02	Sensitive reptile	Horn Lizard
MMCS02	Sensitive plant	Caulanthus simulans ~25 plants
	nectar plant	Cryptantha sp.

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Heath Add'l Person: Joshua Paipa Date: 3/24/10

Project: Campo Wind Energy Project Map #: 12 Survey Sxn:

GPS Unit : #3 QCB Protocol Survey # #1 of 5

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky				
START 09:30	60	5.6 / 8.6	0%	(clear)	patchy	overcast	drizzle	shower
10:30	63	3.6 / 7.2	0%	(clear)	patchy	overcast	drizzle	shower
11:30	67	2.6 / 4.5	0%	(clear)	patchy	overcast	drizzle	shower
13:00	69.5	2.6 / 6.9	0%	(clear)	patchy	overcast	drizzle	shower
14:00	64.5	2.9 / 7.8	0%	(clear)	patchy	overcast	drizzle	shower
15:00	70	3.0 / 6.4	0%	(clear)	patchy	overcast	drizzle	shower
END 16:00	65	/ 15	0%	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, (rock outcrops) soil crusts, clay soils, (old roads) various nectar sources

Butterfly Species	Tally	Total
Painted Lady	𝍸 IIII	10
Blue species	I	1
Dusky wing	I	1
Sheep Hairstreak	IIII III	8
Sara Orange Tip	𝍸 𝍸 IIII I	16
[redacted] Spring white	I	1
White sp?	II	2
Behr's metalmark	IIII III	8
Common Blue	𝍸	5
Wright's Metalmark ?	I	1

40 sq km
2.5 / 1000

Page 1 of 2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium - many flowers
		Goldfields - flowers
		SCJA, CAQU, ACWO, AMCU, CATO, NOFL
		Calif GS, Pocket Gopher
		Audubons Cottontail rabbit
		Buckbrush flowering / bees
		Mexican Mangarita pink/white flowers
		Baby blueeyes
		Calif Poppy
		Grand Lotus? - small yellow flower
		Sagebrush lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Erik LaCoste Add'l Person: _____ Date: 3/24/10

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0950	60	10/15	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	340	65	10/15	5	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Painted LADY	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	35
Duskywing SP	1	1
Perplexing hairstreak	𝍸 1	6
Checkered white	1	1
California MARBLE	11	2
Sara ORANGE TIP	𝍸	5
Acmon Blue	11	2
Spring AZURE	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Goldfields (Lasthenia.)
		filaree (Erodium sp)
		Baby Blue eyes
		Cryptantha
ELNL01	Point	Lotus sp - small yellow flower.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Gretchen Cummings Add'l Person: Eugene Date: 3/24/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: _____

GPS Unit : 4 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0945	64	4.9/10.1		(clear)	patchy	overcast	drizzle	shower
	1100	70	7.6/10.9		(clear)	patchy	overcast	drizzle	shower
	1300	70	3.0/4.4		clear	(patchy)	overcast	drizzle	shower
	1415	71	2.1/3.0		clear	(patchy)	overcast	drizzle	shower
	[illegible]	[illegible]	[illegible]		clear	(patchy)	overcast	drizzle	shower
					clear	(patchy)	overcast	drizzle	shower
END	1520	75	2.0/6.3		clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Callophrys affinis (Green Hairstreak)	𝍸 ||	7
Vanessa cardui (Painted Lady)	𝍸 𝍸 𝍸 𝍸 ||	22
Sphyngid moth	|||	4
Nymphalis californica (California Tortoiseshell)	|	1
Erynnis pacuvius	||	2
Anthocharis sara (Sara's Orangetip)	𝍸 𝍸 𝍸 ||	17
Pontia sp.	|	1
Colias sp.	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
GCNL1	Woodrat nest	San Diego Desert Woodrat nest in Yucca
		WEST 1111
		Plagiobothrys sp.
GCBJ1	Jackrabbit fresh pellets	Black-tailed Jackrabbit pellets fresh
		Arctostaphylos sp.
		Amsinckia menzesii
		CORA 111
GCBJ2	Jackrabbit	Jackrabbit between shrubs startled out
		Pectocarya
		BUSH 11
		Thomomys bottae burrows
		CATH 1
		Uta stansburiana 11
		Sylvilagus auduboni 11
		Spermophilus beecheyi 11
		HOWR 1
		Sceloporus orcutti 1111
		Neotoma fuscipes nest under Oak
		Lasthenia sp. (Goldfields)
		Sceloporus occidentalis 111
		LEGO 11
		OATI 11
		SPTO 1
GCNL2	Woodrat Nest	San Diego Desert Woodrat nest in boulders
		Nemophila menziesii lots!
		Descurainia pinnata

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: S. Innekin P Paipa Date: 3.24.10

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START					clear	patchy	overcast	drizzle	shower
	1412	72	1-8	20	clear	patchy	overcast	drizzle	shower
	1512	72	5-6	20	clear	patchy	overcast	drizzle	shower
	1630	70	3-5	20	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
BROWN ELFIN	III	3
SARA'S ORANGE TIP	~~IIII~~	5
COMMON WHITE	III	3
LADY — ? FLYING THRU	I	1
PERPLEXING HAIRSTREAK	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		PRAIRIE FALCON
		REDTAIL
	NECTAR SOURCE	CRYPTANTHA SP. (INTERMEDIA)
MMCS03	sensitive Plant	Caulanthus simulans - 3 plants scattered
MMCH01	host plants	Collinsia host plants
MMCS04	sensitive plant	Caulanthus simulans - end pt of plants scattered midslope ~~across~~ below ridge - between MMCS03.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Gretchen Cummings Add'l Person: Eugene Date: 3/24/10

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: _____

GPS Unit : 4 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1520	75	2.0/6.3		clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	70	3.6/8.2		clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), various nectar sources

Butterfly Species	Tally	Total
None		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
GCEP1	excluded polygon	dense Chaparral - excluded habitat

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Heath Add'l Person: Lewis Connolly Date: 3/25/10

Project: Campo Wind Energy Project Map #: 12, 13 Survey Sxn: NA

GPS Unit: 8 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:00	60	3.1/4.9	0%	clear	patchy	overcast	drizzle	shower
	12:20	61	7.2/10.3	0%	clear	patchy	overcast	drizzle	shower
	14:00	61	9.9/17.3	0%	clear	patchy	overcast	drizzle	shower
	15:00	61.5	5.5/14.7	0%	clear	patchy	overcast	drizzle	shower
	16:20	60.5	14.2/21.3	0%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, ~~various~~ few nectar sources

	Butterfly Species	Tally	Total
Map 12	Painted Lady	III	3
	Sara Orange Tip	I	1
	Blue sp	I	1
	Cominbt or Spring wt	I	1
Map 13	Behr's Metal Mark	III	3
	Painted Lady	II	2
	Green Hairstreak	I	1
	Woolybear caterpillars	~~IIII~~	5

I saw many dark butterflies flying — probably green hairstreaks

Shirley Sat Ph 8816 514 78912

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Buckbrush flowering
Map 12		Ramona Lilac flowering
		Mexican Manzanita "
		Erodium "
		Arabis perennans (Nevada Rock Cress) pic
		~~Popcorn flower~~
		Baby blue eyes
		SCJA, ANHU, RTHA
		Ardubon CT, CAGS, Pocket Gopher / Woodrat Nest Packrat
		Miner's lettuce flower
		Grand lotus "
		Yellow flower unid (picture)
		Mustard - small
MHLI01	Sensitive sp	Mountain Lion Tracks (found 2 wks ago
		but I forgot to GPS at that time)
		Popcorn flower
		Map 13 - Many large cat
		tracks this area

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Eugene Pablo Date: 25 March 2010

Project: Campo Wind Energy Project Map #: 25/24 Survey Sxn: _____

GPS Unit : #7 QCB Protocol Survey # 1 of 5.

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	63°	7 W	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	60	9 W	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
C. perplexa		2
A. Sara		12
J. Cardui		2
N. Californica		1
C. harfordii		1
E. Lota		~~##~~ 3
C. Augustina		2
S. melinus		1
G. L. australis		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#25 (24)		Nectar Sources: Poppies
		Cryptantha
		Lotus
		Baby blue eyes
		Mustard (native)

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pablo Date: 25 March 2010

Project: Campo Wind Energy Project Map #: 24 Survey Sxn: _____

GPS Unit : #7 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1400	60°	9 mph W	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	59°	8 W	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), various, (nectar sources)

Butterfly Species	Tally	Total
N. California		2
C. perplexa		3
A. sara		8
A. virgulti		4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#24		Nectar: Lupines, Poppies, Cryptantha } Few annuals in flower yet

TOTAL NUMBER OF QCB DETECTED: 8 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Eugene Paiz Date: 25 MARCH 2010

Project: Campo Wind Energy Project Map #: 27 Survey Sxn: N/A

GPS Unit : #7 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	60	7 W	Ø	(clear)	patchy	overcast	drizzle	shower
	1200	61	6 W	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	63	7	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops (ridges) (rock outcrops) soil crusts, clay soils (old roads) various nectar sources

Butterfly Species	Tally	Total
C. perplexa		6
V. Cardui		3
A. SARA		15
N. Californica		2
P. ~~sp~~ sisyphi		2
C. Augustinus		3
Pieris sphinx		LOTS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Map #27		Few Annuals in flower : Cryptantha
		Mustard (native)
		Erodium sp.

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David Fletner Add'l Person: Shirley Innecken Date: 3/25/10

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: ~~#~~ N/A

GPS Unit : 6 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1130	63	4 - 8	0	clear	patchy	overcast	drizzle	shower
	12				clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1200	63	4 - 8	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue	5	6
Dusky wing	1	1
Bramble hairstreak	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Last cal
		Cam,s last
		coyote
		Add cottentail

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David Fletner Add'l Person: Shirley Innecken Date: 3/25/10

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: _____

GPS Unit : 6 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1220	70	0-3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1340	72	0-5	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Painted Lady	5	
Dusky Skipper	7	
Acmon blue	2	
Bramble hairstreak	1	
Behrs metalmark	2	
	2	

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	~~Last c~~	~~Last call~~
		~~Camis bist~~
		~~coyote~~
		~~Aud cotton~~
		Pectocarya sp.
		Cryptantha
		Esch ~~minute~~
		Lotus salsu?
		B. C AGN
		Ams menz
		annual lotus
		Ceanoth cuneatus

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David Fleetner Add'l Person: Shirley Innocken Date: 3/25/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: _____

GPS Unit : 6 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Slight haze Sky				
START	1410	72	~~2-4~~ 3-4	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1645	61	2-4	0	clear	patchy	overcast	~~drizzle~~	~~shower~~

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
white		2
Behrs metalmark		1
Bramble hair streak		4
~~4~~		

Page 1 of 2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
DFLV01	pt	Lathyrus vestitus
DFCS01	pt	Coulanthus simulans ~20
		Nemoph menz
		~~Plagiobolyps sp~~
		Cryptantha (small)
		deer sign
		Camissonia

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DANE FLIEGNER Add'l Person: SHIRLEY LOVELESS Date: 3/26/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1020	63°	0-2	0	clear	patchy	overcast	drizzle	shower
	1240	65°	0-2	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1450	72°	0-2	0	clear	patchy	overcast	~~drizzle~~	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara orangetip	𝍸 |||	13
Bramble Hairstreak	𝍸	5
Behrs metalmark	𝍸	6
Funereal duskywing		1
common white	𝍸	5
Painted lady		1
Acmon blue	𝍸	6

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha/ Plagio
		Camissonia bist
		annual Lotus
		Lisch minut
		Clastonia perfoliata
		Nemop menz
DFCH01	point - 002 0559967, 3616193	Collinsia seedlings (not a positive ID)
DFHL01	point	Horned lizard
		Strep Caudanthus heter
		granite spiny lizard
DFWRG1	point	1 Woodrat nest
		Amsinck menz
DFEP01	excluded poly	dense chaparral

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Heath Add'l Person: Lewis Connolly Date: 3/26/10

Project: Campo Wind Energy Project Map #: 13, 18 Survey Sxn: _____

GPS Unit : 4 QCB Protocol Survey # 1 of 5

Butterflies Flying

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	10:00	57	1.2 / 2.4	0%	clear	patchy	overcast	drizzle	shower
	11:30	64.7	0-2	0%	clear	patchy	overcast	drizzle	shower
	13:00	64.9	3.0 / 4.3	0%	clear	patchy	overcast	drizzle	shower
	14:30	67.6	2.1 / 4.1	0%	clear	patchy	overcast	drizzle	shower
	16:30	67.8	6.0 / 8.6	0%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources (few)

Butterfly Species	Tally	Total
Southern Blue	|	1
Green hairstreak	𝍸 𝍸 𝍸 |	21
Painted Lady	𝍸 ||	7
Acmon Blue	𝍸 |	6
Sara Orange Tip	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	35
Blue sp	||	2
Brown Elfin	|	1
Behr's Metalmark	𝍸	5
Dusky wing	𝍸	5
White sp	|||	3
Spring white 2 mating	𝍸 |||	13

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Popcorn flower
		Erodium "
		Mexican Manzanita "
		Baby blue eyes "
		Audubon COTTON TAIL / POCKET GOPHER / WOODRAT NEST SIGN
		SCJA AMCO BUSHTITS CAQU
		Miner's LETTUCE flowering
		MUSTARD-SMALL "
		BUCKBRUSH Flowering
		ANHU
		GOLDFIELDS
		CALIF POPPY
		DESERT WOOLY DAISY
		FIDDLENECK
		PEONY
		WHITE THORN CEANOTHUS
		YUCCA
		BTSP TUVU RTHA
		WESTERN FENCE LIZARD
		TREE FROGS TADPOLES NEARBY / SP??
MHEP220	Map13	Dense Chaparral

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pablo Date: 27 March 2010

Project: Campo Wind Energy Project Map #: 24 Survey Sxn: _____

GPS Unit : S QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	56	12	0	clear	patchy	overcast	drizzle	shower
	1000	56	10	0	clear	patchy	overcast	drizzle	shower
	1100	67	11	0	clear	patchy	overcast	drizzle	shower
	1200	63	7	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	61	13	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Erynnis funeralis		1
A. sara		5
Euchloe ausonides lotta		4
P. Acmon		1
E. phaeton - spring		9
E. c. chalcedona		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
A 24		Nectar = Poppies
		Eriodictyon
		Baby blue eyes
		Amsinkia
		Lupines

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Date: 29 Mar 2010

Project: Campo Wind Energy Project Map #: 4 Survey Sxn: 4

GPS Unit : #8 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1230	72°	0-2	20%	clear	patchy	overcast	drizzle	shower
	1345	73°	2/4	20-30%	clear	patchy	overcast	drizzle	shower
	1445	72°	2/4	10-20%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	70°	4/6	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue	III	3
Sara orangetip	~~IIII~~	5
Funereal Duskywing	~~IIII~~	5
Marble	~~IIII~~ ~~IIII~~ I	11
Perplexing Hairstreak	II	2
Behr's Metalmark	III	3
Painted lady	II	2
Brown elfin	III	3
Unidentified sulfur	III	3
		37

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha sp.
		Goldfields
NBCHJ2	point/host plant	Ceanothus (20+) in bushes (scrub oak & chamise)
NBHL01	point	horned lizard

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Date: 29 Mar 2010

Project: Campo Wind Energy Project Map #: 3 Survey Sxn: 3

GPS Unit : #8 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	64°	0-2	0	(clear)	patchy	overcast	drizzle	shower
	1040	65°	0-2	0	(clear)	patchy	overcast	drizzle	shower
	1130	70°	0-2	10%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1215	72°	0-2	20% high haze	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, ridges, rock outcrops, (soil crusts) clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
Sara orangetip	𝍸 𝍸 |	11
Acmon blue	𝍸 𝍸	10
Perplexing hairstreak	𝍸 |||	8
Brown elfin	||	2
Dain's Metalmark	𝍸	5
Funereal Duskywing	𝍸 |	6
Painted Lady	|	1
Unidentified sulfur	|	1
		44

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NBAR01	point / host plant	Antirrhinum rosettes. ~3 ground buckwheat
NBCH01	point/host plant	50+ Collinsia in shade of chamise
NBCD01	point/host plant	3 cordylanthus sprouts in crack in asphalt
NBCD02	point/host plant	5+ cordylantus sprouts along road, goldfields

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Heath Add'l Person: Josh Paipa Date: 3/29/10

Project: Campo Wind Energy Project Map #: 18/8 Survey Sxn: _____

GPS Unit : 4 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	09:00	69.2	0.8/1.6	0%	clear	patchy	overcast	drizzle	shower
	11:00	73.1	2.9/5.8	0%	clear	patchy	overcast	drizzle	shower
	12:00	72.2	3.0/5.6	0%	clear	patchy	overcast	drizzle	shower
	13:30	77	2.3/5.3	0%	clear	patchy	overcast	drizzle	shower
	16:00	72	5.7/14.9	0%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara Orange Tip	𝍸 𝍸 𝍸 𝍸 𝍸 ||	27
Spring wt	𝍸 ||||	9
Behr's metal mark	|	1
Green hairstreak	𝍸 𝍸 𝍸 𝍸 |||	23
Blue sp	|||	3
Duskywing sp	|	1
Sulphur sp	|	1
Acmon Blue	𝍸 𝍸 𝍸 |||	18
Painted Lady	𝍸 ||	7
Marble	|	1
Gabb CS potential! Orange butterfly		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium flower
		Mustard (small) "
		Fiddleneck "
	Map 18	Baby blue eyes "
		Popcorn "
		BTSP/SCJA/TUVU/WOODPECKER SP ?
		Gold fields "
		DYC's "
		Wild cucumber "
		Cream colored flower "
		White thorn ceanothus "
		Calif. Poppy "
MHPC01	Sensitive sp	Jewel flower yellow Paysons Cand
		" " purple/pink same location ← Shender Pod Jewel
		many plants area of NE map 18
		pocket gopher & coyote sign
MHHL02	Horned lizard	Large Map 8
		Mexican Mongarita flowering
		Scrub oak flowering
MHHL03	"	Small - Tuv Map 8
		Purple lupine - fuzzy leaves - Bajada lupine Small
		Spiny lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Omar Bately Date: 3/29/10

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9:30	68°	1/5 S	0	(clear)	patchy	overcast	drizzle	shower
	11:00	75°	5/7 SE	0	(clear)	patchy	overcast	drizzle	shower
	12:00	79°	4/8 SW	cirrus	clear	(patchy)	overcast	drizzle	shower
	13:00	77°	7/11 SW	"	clear	(patchy)	overcast	drizzle	shower
	14:00	80°	6/10 SW	"	clear	(patchy)	overcast	drizzle	shower
	15:00	76°	6/12 SW	"	clear	(patchy)	overcast	drizzle	shower
END	16:20	75°	5/10 SW	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orange Tip	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	41
Blue?	𝍸 𝍸	11
Perplexing Hairstreak	𝍸 𝍸	10
Behrs Metalmark	𝍸	8
Acmon Blue	1	1
Tiger Swallowtail	1	1
White?	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amsonkia
		Cryptantha
		Erodium
		Lasthenia
		Mustard ?
		Lupinus
		Viola
		Ceanothus
		Calif Poppy
		Baby Blue
		Monardella
		Eriogonum

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Andrew Pigniolo Add'l Person: Andrew Fisher Louis connily Date: 3/29/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: _____

GPS Unit : #7 QCB Protocol Survey # 1 of 5

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky				
START 0915	66	0	0	(clear)	patchy	overcast	drizzle	shower
1015	69	0	0	(clear)	patchy	overcast	drizzle	shower
1115	76	0-5	0	~~clear~~	patchy	overcast	drizzle	shower
1215	78	0-6	20	clear	(patchy)	overcast	drizzle	shower
1315	79	0-6	40	clear	(patchy)	overcast	drizzle	shower
1415	81	3-7	10	(clear)	patchy	overcast	drizzle	shower
END 1515	74	2-5	5	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

1615 75 2-6 2 clear

Butterfly Species	Tally	Total
Perplexing Hairstreak	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
APHL01	Sensitive sp Point	Horned Lizard - juvenile
APHL02	↓	" "
APHL03		" "
APHL04		" "
APBJ01		Blacktailed Jackrabbit
		Ceanothus cuneatus blooming
		Arabis sp "
		Erodium cicutarium "
		Nemophila menz "
		Cryptantha sp. "
		Lotthenia sp. Just starting
		Lathrys sp " "
		Bird: HOLA, COHA, WEKI, WEBL, BUSH, BTSP CALT, NOFL,
		Speckled Rattlesnake, Side-blotch Fence Lizard, Granite spiny lizard

TOTAL NUMBER OF QCB DETECTED: ϕ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K Faulkner Add'l Person: Eugene Pablo Date: 3-29-2010

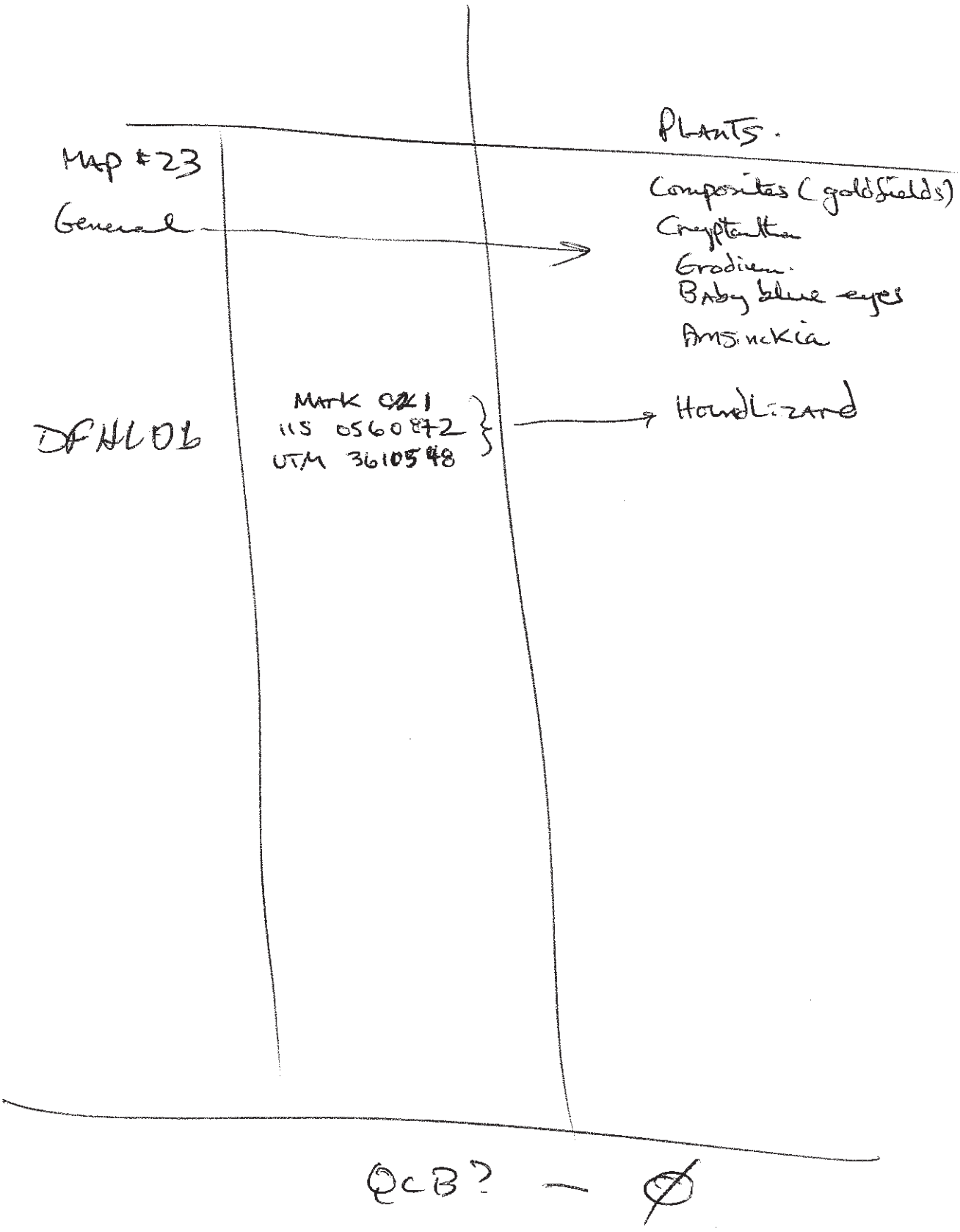
Project: Campo Wind Energy Project Map #: 23 Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	69°	1 mph	Ø	(clear)	patchy	overcast	drizzle	shower
	1000	73°	1	Ø	(clear)	patchy	overcast	drizzle	shower
	1100	78°	1	Ø	(clear)	patchy	overcast	drizzle	shower
	1200	81°	1	Ø	clear	patchy	overcast	drizzle	shower
	1300	83	5	50%	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
A. Sara		25+
A. Virgulti		3
C. perplexa		7
C. Augustinus (elfin)		7
Euchloe h. lotta		8
Erynnis brizo		6
P. Sisyphus		2
N. California		1



		Plants.
Map #23		Composites (goldfields)
General	→	Cryptantha
		Grodium.
		Baby blue eyes
		Amsinckia
DFHL06	Mark 021 115 0560872 UTM 3610548	→ Houndlizard

QCB? — Ø

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Eugene Pablo Date: 29 MAR 2010

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1400	81°	2 mph	50	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1500	81°	5 mph	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Euchloe A. lotta		2
A. sara.		3
A. virgulti		1
C. perplexa		1
Echo blue		1
C. Augustinus		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#20		Goldfields
		Poppies
		Cryptantha

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pubis Date: 29 MAR 2010

Project: Campo Wind Energy Project Map #: 21 Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1500	81	5	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	62	15	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
E. h. Lotta		3
A. Sara		2
Erynnis sp. (brizo?)		11

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
21		— Goldfields
		poppies
		Cryptantha

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MARGIE MULLIGAN Add'l Person: _____ Date: 3.30.10

Project: Campo Wind Energy Project Map #: 22 Survey Sxn: _____

GPS Unit : 8 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1040	64	3-6	5	(clear)	patchy	overcast	drizzle	shower
	1205	73	4-6	0	(clear)	patchy	overcast	drizzle	shower
	1335	78	4-7	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	TTH IIII	9
Perplexing Hairstreak	TTH III	8
Sara's Orange Tip	TTH I	6
Common White	I	1
California Tortoiseshell	I	1
Pearly Marble	TTH	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCS01	rare plant pt	Caulanthus simulans - scattered on top ~50
MMHL01	sensitive hop pt	Horn Lizard - 1
	Nectar Sources	Cryptantha sp
		Pectocarya linearis
		Amsinkia menziesii
		Cercocarpus ~~[illegible]~~ betuloides
		Erodium cicutarium
		Escholtzia spp.
		Nemophila menziesii
		(Lasthenia only in bud at site)
		gracilis
MMEP01	polygon	should be excluded. Too dense w/ too
		small of an opening. Did survey for QCB#1.
MMEP02	polygon	should be excluded b/c too dense
		with some open drainages that are very
		small and very steep of DG. Did not see
		any butterflies in habitat. Did survey for
		QCB#1.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Pavlo Date: 3/30/10

Project: Campo Wind Energy Project Map #: 1 Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	12:35	67°	9/14	0	(clear)	patchy	overcast	drizzle	shower
	13:30	72°	4/7	0	(clear)	patchy	overcast	drizzle	shower
	14:30	68°	7/11	0	(clear)	patchy	overcast	drizzle	shower
	15:30	70°	8/12	0	(clear)	patchy	overcast	drizzle	shower
	16:25	65°	5/9	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Perplexing	𝍸 𝍸 |	11
Sara	𝍸 ||||	9
Marble	|||	4
Dusky wing	||	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Baby Blues
		Erodium
		Mustard?
		Manzanita
		Calif Poppy
		Amsinckia
		Cryptantha
DPBJ015		
~~DPBJ01~~	point	Black-tailed Jack Rabbit
DPBJ02	point	" Black-tailed Jack Rabbit
~~DPB~~		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: M. Heath Add'l Person: Lewis Connolly Date: 3/30/10

Project: Campo Wind Energy Project Map #: 8, 7 Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:30	63.5	4.5 / 7.2	10%	(clear)	patchy	overcast	drizzle	shower
	12:30	66.0	8.7 / 12.4	20%	(clear)	patchy	overcast	drizzle	shower
	14:30	64.7	15.9 / 19.6	10%	(clear)	patchy	overcast	drizzle	shower
	16:00	60	15.0	10%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Orangetip – Sara	𝍸 𝍸 𝍸 I	16
Painted Lady	𝍸 II	7
Sara Wt	𝍸 𝍸 II	12
Green Hairstreak	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 II	37
Blue sp	II	2
Dusky Wing	III	3
Acmon Blue	𝍸 𝍸 𝍸 II	17
White sp	III	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Scrub oak flowering
		Baby blue eyes * — means flowering
		Modern *
		Buckbrush *
		Sun cup *
		Fiddleneck *
		Popcorn *
		SCJA/CAQU/AM CR
		Goldfields *
		Calif poppy *
MHHL04		Horned Lizard juvenile
05		" " "
06		" " "
		Blue Lupine small *
		Mountain Mahogany
MHEP260	Excluded Poly	Dense Chaparra
1	" "	" "
2	" "	" "
3	" "	" "

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Pablo Date: 3/3/2010

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:30	610	4/8	10	clear	patchy	overcast	drizzle	shower
	12:00	700	8/10	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Perplexing	𝍸 I	6
5 Marble	III	3
Sara	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Dainty Blue
		Cryptantha
		Melilotus?
		Erodium
		Pentstemon
		Mimulus
		Calif Poppy
		Amsinckia
DPBJ03 ~~DPBJ03~~		Black-Tailed Jackrabbit

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOHSTROH Add'l Person: Phillip (Escort) Date: 3/30/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: _____

GPS Unit : 7 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1040	61.4	5-8 mph	10	clear	patchy	overcast	drizzle	shower
	1140	65	6-10	0%	clear	patchy	overcast	drizzle	shower
	1240	67	4-7		clear	patchy	overcast	drizzle	shower
	1400	69	6-8		clear	patchy	overcast	drizzle	shower
	1500	70	3-5		clear	patchy	overcast	drizzle	shower
	1600	64	3-7		clear	patchy	overcast	drizzle	shower
END	1610	65	5-10		clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Perplexing Hairstreak	𝍸 𝍸 𝍸 |||	18
Common White	𝍸 𝍸 ||	12
Dusky-wing Skipper (sp.)	𝍸 𝍸 |	11
Brown Elfin	|||	3
Acmon Blue	𝍸 𝍸	10
Painted Lady	||	2
Behr's Metalmark	𝍸 𝍸 𝍸 ||	17
Funereal Duskywing	||	2
S. Orangetip	𝍸	5
Southern Blue	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
PP20		HOLA
		CORA
		SCja
		WeKi
		Oafi
		Hofi
		Saph
		RTita
		Lasp
		Anhu
		SPTO
		Wren
		NoWO
		BC SP
		Lego
		California toad larvae (likely)
		Side-blotch Lizard
		Granite spiny Lizard
		W. Fence lizard
		Striped racer
		CA ground squirrel
		Cottontail
BLHL01	Rare Species	Coast horned Lizard
BLHL02	"	Coast horned Lizard
BLPJ01	Rare plant	Payson's jewel flower 2 indiv.
BLPJ02	"	" 40 indiv
BLPJ03	"	" 10 indiv
		Nectar Sources: erodium, Senecio cal, Layfrenia cal, popcorn flower, Amsinkia Nemophila, Beachura, cercocarpus, desert dandelion ca poppy, camissonia, Manzanita

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAN.D.K.FAULKNER Add'l Person: DAN MASON | ERIN Date: 8 APR 2010

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: CAMPO L

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	68	5	∅	(clear)	patchy	overcast	drizzle	shower
	1100	69	6	∅	(clear)	patchy	overcast	drizzle	shower
	1200	72	7	∅	(clear)	patchy	overcast	drizzle	shower
	1300	77	0	∅	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	78	5	∅	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar sources)

Butterfly Species	Tally	Total
P. Acmon		6
A. Virgulti		25+
C. perplexa		15+
Erynnis sp.		6
Nymphalis californica		2
Euchloe h. lotta		20+
U. cardui		4
A. Sara		3
P. eurydice (Pale Swallow)		1
Southern blue		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
15	GPS: Mark 1	Collinsia
		goldfields
		Cryptantha
		Composites
		Sugar bush
		Amsinckias
		Erodium
		Mustard
		blue dicks

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Luis Conley Date: 13 APRIL 2010

Project: Campo Wind Energy Project Map #: 25 Survey Sxn: CAMPO R

GPS Unit: 9 QCB Protocol Survey # ?? of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	48°	3	Ø	clear	patchy	overcast	drizzle	shower
	1200	55°	2	Ø	clear	patchy	overcast	drizzle	shower
	1300	58°	2	>5%	clear	patchy	overcast	drizzle	shower
	1400	64	3	>5%	clear	patchy	overcast	drizzle	shower
	1500	55°	8	> 10	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	52	9	>10	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Euchloe h. lotta		15 +
C. perplexa		3
A. Virgulti		8
Arrowhead blue		1
P. Acmon		6
P. Sisymbrii		2
V. Virginensis (Am Lady)		1
C. gabbii		1
Erynnis funeralis		2
E. brizo		6

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#25	CAMPO-R	Cryptantha
		Goldfields
		Sugar Bush
		Baby Blue Eyes
		Wallflower
		Viola sp.
		[GPS Turned off @ ~1530 - battery]

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Swinney McMorrow Date: 4/3/10

Project: Campo Wind Energy Project Map #: 27 Survey Sxn:

GPS Unit : 3 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:50	59°	8/12	0	(clear)	patchy	overcast	drizzle	shower
	12:10	60°	10/17	0	(clear)	patchy	overcast	drizzle	shower
	12:45	62°	7/15	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	(shower)

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Dusky-wing	III	3
Sara	IIII	4
Purplish Copper	I	1
Lady	IIII	4
Marble	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Eriodictyon
		Avolus
		Cryptantha
		Ceanothus
		Menziesia
		Security Guard
		Chris Dines
		Bald Eagle Security Inc.
		Badge 120

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID FLETCHER Add'l Person: LEWIS Date: 4/24/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo - O

GPS Unit : 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1045	63	0-2	0	(clear)	patchy	overcast	drizzle	shower
	1420	75	0-2	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1635	66	2-5	10	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Bramble hairstreak	⊠⊠∴	24
Cabbage white	⊠⊏	17
Sara orange-tip	⊠∴	15
Funereal dusky wing	∴	3
W. Tailed blue	⁚	2
Lady sp.	∴	4
Acmon blue	•	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Nemoph menz
		Cryptantha int
		Amsinckia menz
		Camissonia sp.
		Plagiobothrys sp.
		Lasthenia cal
		annual lotus sp.
	point	Eschscholtzia minut
DFC402	Collinsia hetero	~ 20 plants, ~ 3 ft²
↑ (may have been entered as aachO2)		
Note: GPS batteries died for a few minutes ~ noon, so some of survey not tracked		

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Phillip Paipa Shirley Innecken Date: 4/2/10

Project: Campo Wind Energy Project Map #: 10,15,16 Survey Sxn:

GPS Unit: 3 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:40	63°	1/3	0	clear	patchy	overcast	drizzle	shower
	13:00	68°		0	clear	patchy	overcast	drizzle	shower
	14:00	69°	4/8	0	clear	patchy	overcast	drizzle	shower
	15:00	65°		0	clear	patchy	overcast	drizzle	shower
	16:00	61°		0	clear	patchy	overcast	drizzle	shower
	17:0	59°	5/8	0	clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara	𝍸 |	6
Common White	|||	3
Bolus 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	50
Marbles	𝍸 𝍸 𝍸 𝍸 |||	23
Lady ?	|	1
Checkerspot ?	|	1
Orange Butterfly	||	2
Tiger Swallow Tail	||	2
Perplexing	𝍸 𝍸 𝍸 𝍸 ||	22
Brown Elfin	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha - microtha
		Erodium
		Mustard ?
		Lotus
		Unknown composite
		Poppies
		Descurainia
		Caulanthus
		Plagiobothrys
		Amsinckia
		Ceanothus
		Dicktesstemma
		Arabis
SI CSO1		Caulanthus simulans Pace
SI CSO2		"
SI CSO3		"
Other Points Don't Count		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Gretchen Cummings Add'l Person: Josh Date: 4/2/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: P

GPS Unit : 1 QCB Protocol Survey # 2 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1040	66	3.3/4.9		(clear)	patchy	overcast	drizzle	shower
	1230	68	3.8/5.4		(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1245	68	3.8/5.4		(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Vanessa cardui (Painted Lady)	IIII II	7
Euchloe hyantis (Pearly Marble)	IIII	5
Apodemia mormo virgulti (Mormon's Metalmark)	IIII IIII II	12
Erynnis sp. (Duskywing)	III	3
Icaricia acmon (Acmon Blue)	I	1
Pontia cf. sisymbrii (Spring White)	II	2
Colias harfordii (Harford Sulphur)	I	1
Pholisora catullus (Common Sootywing)	III	3
Callophrys affinis (Green Hairstreak)	III	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
GC	Neotoma lepida nest	Desert Woodrat nest
GC	Neotoma lepida nest	Desert Woodrat nest
GC	Neotoma lepida nest	Desert Woodrat nest
		ANHU
		NOFL
		TUVU
		SPTO
		WEST
		RSHA
		CAQU
		BGGN
		BUSH
		CATH
		HOWR
		OATI
		ACWO
		CORA
		Sceloporus orcutti II
		Uta stansburiana IIII
		Plagiobothrys sp.
		Cryptantha sp.
		Lasthenia sp.
		Nemophila menzeisii
		Amsinckia menzeisii
		Pectocarya sp.
		Erodium cicutarium
		Lupinus bicolor

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Gretchen Cummings Add'l Person: Josh Date: 4/2/10

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: P

GPS Unit : 1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	1245	68	3.8/5.4		(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END	1545	62	3.6/8.2		(clear) patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, (ridges) (rock outcrops), soil crusts, clay soils, (old roads), various nectar sources

Butterfly Species	Tally	Total
Vanessa cardui (Painted Lady)	II	2
Callophrys affinis (Green Hairstreak)	IIII	4
Euchloe hyantis (Pearly Marble)	IIII II	7
Apodemia mormo virgulti (Mormon Metalmark)	IIII IIII IIII IIII IIII IIII	30
Erynnis sp. (Duskywing)	II	2
Pontia cf. Sisymbrii (Spring White)	I	1
Anthocharis sara (Sara Orangetip)	IIII IIII IIII	15
Erynnis funeralis	I	1
Callophrys augustinus (Brown Elfin)	I	1
Sphyngid moth	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Sceloporus orcutti I
		ANHU
		CORA
		BUSH
		OATI
		Uta stansburiana I
		Thomomys bottae holes
		Sylvilagus auduboni II
		Plagiobothrys sp.
		Cryptantha sp.
		Lasthenia sp.
		Nemophila menzeisi:
		Amsinckia menzeisii
		Tansy Mustard (Descurania sp.)
		Pectocarya sp.
		Erodium cicutarium
		Lupinus bicolor
		Eschscholzia californica (California Poppy)
		Cream Cups

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pablo Date: 2 APRIL 2010

Project: Campo Wind Energy Project Map #: 23 Survey Sxn: Q

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1600	67°	9 mph	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1700	65°	9 mph	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Anthocharis Sara		2
Euchloe h. Zoha		4
C. Perplexa (Bramble)		1
Vanessa Cardui		1

Page 1 of 1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
23		Cryptantha
		Baby Blue eyes
		Amsinckia

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Eugene Pablo Date: 2 APRIL 2010

Project: Campo Wind Energy Project Map #: 22 Survey Sxn: CAMPO 9

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	68°	5 W	Ø	clear	patchy	overcast	drizzle	shower
	1400	69°	4 W	Ø	clear	patchy	overcast	drizzle	shower
	1500	69°	4 W	Ø	clear	patchy	overcast	drizzle	shower
	1600	67°	9 W	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
P. Sisymbrii (Spring white)		11
Vanessa sp. (Lady)		1
V. Cardui (Painted lady)		2
A. Virgulti (B. Metal)		3
A. SARA (Sara orange)		8
E. hyantis (Pearly)		6
C. Augustina (B. Elfin)		3
E. funeralis (Fun Dusky)		2
E. brizo (Sleepy Dusky)		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
22		Amsinckia
		cryptantha
		Poppies
		Lupines

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pavlo Date: 2 APRIL 2010

Project: Campo Wind Energy Project Map #: 26 Survey Sxn: Campo ©

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1030	59°	3mph W	Ø	(clear)	patchy	overcast	drizzle	shower
	1100	66°	1 W	Ø	(clear)	patchy	overcast	drizzle	shower
	1200	72	Ø W	Ø	(clear)	patchy	overcast	drizzle	shower
	1300	68	5 W	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Euchloe hyantis		7
A. Sara		11
C. perplexa		7
A. Virgulti		4
Erynnis brizo		1
C. Dracotalia monstrosus (♂)		1
E. phaeton		20+
Nymphalis californica		1
V. cardui		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
26		Cryptantha
		Amsinckia
		Baby blue eyes
		Basket Bush.
		Wallflower

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 4·6·2010

Project: Campo Wind Energy Project Map #: 4 Survey Sxn: _____

GPS Unit : 9 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1250	65	3-6(9)	0	clear	patchy	overcast	drizzle	shower
	1340	63	5-8	8	clear	patchy	overcast	drizzle	shower
	1420	63	5-8	8	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	II	2
Pearly Marble	II	2
Painted Lady	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMAD01	sensitive plant pt	Astragalus douglasii var. perstrictus East side of Manzanita Rd. 23 vegetative plants in deep granitic soils. Edge of redshank mostly Artemisia tridentata ssp. tridentata Very disturbed and probably cleared to repair drainage pipe.
MMAD02	sensitive plant pt	Astragalus douglasii var perstrictus West side of Manzanita Rd. 9 vegetative plants in deep granitic soils. Associating w/ Eriogonum fasc, Quercus x acutidens, Ceanothus leucodermis. Edge of oak riparian. Disturbed area by road. & Artemisia tridentata
	Nectar Sources:	Pectocarya sp.
		Cryptantha sp
		Amsonkia menziesii
		Lasthenia (very little!) gracilis
		Nemophila menziesii

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 4.6.10

Project: Campo Wind Energy Project Map #: 3 Survey Sxn: _____

GPS Unit : 9 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	60	5-9	0	(clear)	patchy	overcast	drizzle	shower
0930	1107	62	1-4 (8)	0	(clear)	patchy	overcast	drizzle	shower
	1210	63	3-6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Perplexing Hairstreak	𝍸 I	6
Propertius Duskywing	II	2
Acmon Blue	𝍸	5
Pearly Marble	I	1
Painted Lady	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Source:	Lasthenia gracilis
	~~Eriogonum microanthum~~	Cryptantha micrantha
		Amsinckia menziesii
		Nemophila menziesii
		Coreopsis californica

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 4·6·2010

Project: Campo Wind Energy Project Map #: 8 Survey Sxn: _____

GPS Unit : 9 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1400	63	4-8	0	(clear)	patchy	overcast	drizzle	shower
	1522	63	4-8	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Perplexing Hairstreak	II	2
Propertius Duskywing	IIII	4
Brown Elfin	I	1
Pearly Marble	I	1
Sara's Orangetip	I	1
Acmon Blue	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Sources:	Ceanothus greggii perplexans
		Cryptantha sp.
		Cryptantha micrantha
		Amsinkia menziesii
		Lasthenia gracilis
MMGV01		Geraea viscida. East side of Manzanita Rd. 3 plants vegetative. Red Shank, Ceanothus greggii ssp. perplexans, Eriogonum fasciculatum, Chamise, Chamise Chaparral w/ deep granitic soils. No impact but side of road.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pablo Date: 6 APRIL 2010

Project: Campo Wind Energy Project Map #: 17 Survey Sxn: CAMPO N

GPS Unit : 8 QCB Protocol Survey # QCB 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1400	64	8 NE	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1500	65°	9 NE	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), various (nectar sources)

Butterfly Species	Tally	Total
Euchloe h. lotta		2
C. perplexa		3
So. Blue		1
P. Acmon		4
A. vinculata		4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#17		Cryptantha
		Erodium
		Mustard
		Amsinckia
		Sanger bush

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Eugene Pablo Date: 6 APRIL 2010

Project: Campo Wind Energy Project Map #: 23 Survey Sxn: CAMPO Q

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	57	7	Ø	clear	patchy	overcast	drizzle	shower
	1100	57	7	Ø	clear	patchy	overcast	drizzle	shower
	1200	63	7	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1330	61	13	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Euchloe h. lotta		2
C. Augustina		1
C. perplexa		5
A. SARA		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
23		Goldfields
		Composites
		Cryptantha
		Erodium
		Mustard

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David W. Faulkner Add'l Person: Eugene Pablo Date: 6 Apr 2018

Project: Campo Wind Energy Project Map #: 21 Survey Sxn: CAMPO N

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	63	7	Ø	(clear)	patchy	overcast	drizzle	shower
	1380	61	13	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	64	8	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar sources)

Butterfly Species	Tally	Total
Euchloe h. lotta		3
A. SARA		8
Erynnis sp.		4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
21		Compositae
		cryptantha

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K FAULKNER Add'l Person: Eugene Pablo Date: 6 APRIL 2010

Project: Campo Wind Energy Project Map #: 18 Survey Sxn: CAMPO N

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1500	65	9	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	63	8	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
A. Virgulti		8
A. Sara		2
E. h. Zotta		6
P. Acmon		3
E. brizo		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
18		Composites
		Goldfields
		Cryptantha
		baby blue eyes

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOHSTROH Add'l Person: David D. (Escort) Date: 4/6/10

Project: Campo Wind Energy Project Map #: 16 + 19 Survey Sxn: M

GPS Unit : 10 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max) MPH	% CC	Sky				
START	1000	60	5-8	Clear 0%	clear	patchy	overcast	drizzle	shower
	1100	60	10-14	Clear	clear	patchy	overcast	drizzle	shower
	1200	61	4-9	Clear	clear	patchy	overcast	drizzle	shower
	1300	61	4-7	Clear	clear	patchy	overcast	drizzle	shower
	1400	61	8-12	Clear	clear	patchy	overcast	drizzle	shower
	1445	62	7-12	Clear	clear	patchy	overcast	drizzle	shower
END	↑				clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady	II	2
Perplexing Hairstreak	IIII	7
pearly Marble	I	1
Dusky wing SP	IIII	4
Acmon Blue	III	3
Behr's Metalmark	III	3
Silvery Blue	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
~~CORA~~		CORA
		Scja
		SPTO
		WCSP
BLPF01	Rare bird	PrFa (prarie falcon)
		LaSP
		Oati
		HOLA
		RTHa
		Weki
		Bush
BLCP02	Rare plant	Campo Pea, (Lathyrus splendens) 5 individ.
BLCP03	"	Campo pea, 1 individual
BLCP04	"	Campo Pea, 2 individuals
BLCP01	"	Campo Pea, 2 ind (previously mapped?) confirmed.
BLCP05	"	Campo Pea, 4 individuals
		Jacumba milk vetch? Not mapped, will be
		confirmed by botanists. (S. inectans)

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Dan Hinson / ERIN Date: 8 APR 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: CAMPO-L

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1500	78	2	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	78	5	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, old roads, various (nectar sources)

Butterfly Species	Tally	Total
A. Sara		2
Philosoria catalina		1
Vanessa cardui		2
Euchloe h. Julia		8

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16.		Coyote Gold Fields

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Dan Hason | Erin Date: 8 APR 2010

Project: Campo Wind Energy Project Map #: 18 Survey Sxn: CAMPO N

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	60°	7 mph	Ø	clear	patchy	overcast	drizzle	shower
	1000	68°	5	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
A. Sara		6
P. Sisymbrii		1
E. brizo		3
A. Virgulti		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
18		Grid fields
		Composites

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Pablo Date: 4/8/10

Project: Campo Wind Energy Project Map #: 16 H. Partially Completed Survey Sxn:

GPS Unit : 10 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	13:30	72°	2/5	0	clear	patchy	overcast	drizzle	shower
	14:35	75°	0/0	0	clear	patchy	overcast	drizzle	shower
	16:25	72°	4/6	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ~~ridges~~, ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
White ?	𝍸	5
Southern Blue	𝍸 II	7
Dusky-wing	𝍸 I	6
Blue ?	IIII	4
Lady ?	III	3
Behrs Metalmark	II	2
~~DEPOT~~		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amsinckia
		Mustard?
		Erodium
		LesThenia
		Layia
		Nemophilia
		Caenothus
		Phacelia 2 species
		Arahis
		Eryptantha
		Salvia columbariae
		lupinus
		Eschscholzia
		Plagiobothrys
OPEP01	Excluded Polygon	Sage, Oak.
OPEP02	"	"
OPIP01	Included Polygon	Has native vegetation included

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Pablo Date: 4/8/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 15 K completed Survey Sxn: _____

GPS Unit : 10 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:45	63°	5/7	0	(clear)	patchy	overcast	drizzle	shower
	9:55	67°	10/13	0	(clear)	patchy	overcast	drizzle	shower
	11:30	71°	3/7	0	(clear)	patchy	overcast	drizzle	shower
	12:40	71°	6/9	0	(clear)	patchy	overcast	drizzle	shower
	13:10	74°	5/9	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, ~~hilltops~~, ~~ridges~~, rock outcrops, ~~soil crusts~~, clay soils, old roads, ~~various nectar sources~~

Butterfly Species	Tally	Total
Sara's Orange Tip	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 I	31
Chalcedon	III	3
Perplexing Hairstreak	𝍸 𝍸 𝍸 𝍸 𝍸	25
Marble	𝍸 III	9
White?	𝍸 𝍸 I	11
Behrs Metalmark	𝍸 𝍸 III	13
Southern Blue	𝍸 𝍸 𝍸 𝍸 𝍸 I	26
Blue?	𝍸 𝍸 IIII	14
Lady?	𝍸	5
Painted Lady	II	2
Dusky-Wing	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amsinckia
		Lupinus
		Erodium
		Eschscholzia
		Cryptantha
		Ceanothus
		Layia
		Mustard?
		Dichelostemma
		Phacelia 2 species
		Mimulus
		Salvia columbariae
		Castilleja
		Nemophila
QPC501		Caulanthus similans
		Arabis
		Penstemon
		Monardella
		Plagiobothrys

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVE FLIETNER Add'l Person: ~~Louis~~ Louis Date: 4/8/10

Project: Campo Wind Energy Project Map #: 4/12 (Campo 5) Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
~~START~~	0900	57	3-6	0	(clear)	patchy	overcast	drizzle	shower
START	0930	61	3-6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1620	70	0-2	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Funereal dusky wing	5	6
Cabbage white	30	30
~~Sara~~ Lady sp.	8	8
Echo blue	3	3
Ceraon blue	6	6
Sulphur	1	1
Brown elfin	3	3
Behrs metal mark	15	15
Sara orange tip	4	4
Properties (?) Dusky wing	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		crypt int
		Nemo menz
		Lupinus bicolor
		Lasth cal
		Amsinck menz
DFHL01	point	1 coast horned lizard
		Lomatium dasycarpum
		Esch calif
		annual lotus

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID FLIETNER Add'l Person: ERIN BERGMAN Date: 4/9/10

Project: Campo Wind Energy Project Map #: Campo R - 25 Survey Sxn: _____

GPS Unit : 8 QCB Protocol Survey # X2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1020	69	0	0	clear	patchy	overcast	drizzle	shower
END	1235	73	0	0	clear	patchy	overcast	drizzle	shower
START	1430	74	~~0~~ 5-8	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1550	73	3-6	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Pearly marble	☒	~~12~~ 15
Acmon blue		3
Propertius dusky wing		2
Sara orange tip	☒	~~2~~ 8
Painted lady		3
Behr's metal mark	☒	12
cloudless sulfur ~~bright yellow butterfly~~		1
Funeral dusky wing		2
Perplex ~~B~~ ~~rumble~~ hair streak		1
Anise swallowtail		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Last cal
		Erys cap
		Cgmis sp
		Nemo menz
		Esch cal
		Cryp ent
		Plagio botrys
DFHL02	point ~~DFCL02~~	DFCL02 coast horned lizard 1
		Gilia sp.
		Salvia columbarian

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Coulter Add'l Person: ~~0~~ Date: 9 April, 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Campo H

GPS Unit : 5 QCB Protocol Survey # 12 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1430	74	3->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	73	1->4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1600	72	1->6	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle) (open soils) hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Behr's Metalmark	Tally in Field Notebook	57
Desert Orangetip	"	4
California Marble	"	6
Perplexing Hairstreak	"	17

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 9 APRIL, 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: CAMPO-L

GPS Unit : 5 QCB Protocol Survey # 12 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	67	Ø→2	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	74	Ø→4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	72	Ø→5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	76	Ø→2	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	77	1→4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	73	3→7	CLEAR	(clear)	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
CALIFORNIA MARBLE	TALLY IN FIELD NOTEBOOK	52
PERPLEXING HAIRSTREAK	"	40
FUNEREAL DUSKYWING	"	38
BEHR'S METALMARK	"	97
SARA ORANGETIP	"	2
PAINTED LADY	"	5
BROWN ELFIN	"	11
CALIFORNIA TORTOISESHELL	"	1
DESERT ORANGETIP	"	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL01	POINT	JUVENILE HORNED LIZARD
MCHL02	POINT	ADULT HORNED LIZARD
MCC001	POINT	HOSTPLANT LOCATION

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOHSTROH Add'l Person: S. Innecken, Misty Date: 4/13/10

Project: Campo Wind Energy Project Map #: 16, 17, 19 Survey Sxn: N

GPS Unit : #1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1040	62	2-5	0	(clear)	patchy	overcast	drizzle	shower
	1200	67	2-3	0	(clear)	patchy	overcast	drizzle	shower
	1300	64	0-3	0	(clear)	patchy	overcast	drizzle	shower
	1430	66	0-6	0	(clear)	patchy	overcast	drizzle	shower
	1520	62	3-8	30	clear	(patchy)	overcast	drizzle	shower
	1640	59	3-8	30	clear	(patchy)	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Common white	II	2
west Coast Lady	II	2
perplexing Hair Streak	~~IIII~~ ~~IIII~~ ~~IIII~~ II	17
Acmon Blue	II	2
Dusky wing	~~IIII~~ ~~IIII~~ I	11
Behr's metal mark	~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ II	32
Spring white	I	1
Brown Elfin	III	3
Gabbs checkerspot	I	1
Painted Lady	III	III
pearly Marble	~~IIII~~ III	8
Southern Blue	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		BUSH
		WREN
		CAQU
		SPTO
		CORA
		AMCR
		ORJY
		BHGR
		ATFL
		CALT
		SCJA
		BGGN
		HOWR
		RTHA
		BEWR
		NOHA
BLGV01		Gerea viscida x 10 indiv.
BLCP01		Lathyrus splendens x 2
BLDB02		Linanthus bellus x 10
BLPJ01		Caulanthus simulans x 100
BLDB03		Linanthus bellus x 30
BLDB04		L. bellus x 100s
BLDB05		L. bellus x 10s
BLDB06		L. bellus x 100s
BLNH01		Northern harrier ♀
BLPJ02		Caulanthus simulans x 30

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Dorothy Mecit Date: 4/13/10

Project: Campo Wind Energy Project Map #: 9 Campo Survey Sxn: _____

GPS Unit : 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	13:30	62°	3/4	20	clear	patchy	overcast	drizzle	shower
	14:40	61°	4/7	25°	clear	patchy	overcast	drizzle	shower
	15:50	58°	1/3	20°	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	16:50				clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	~~drizzle~~	~~shower~~

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs Metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha
		Pectinocarya
		Manzanita
		Erodium
		Nemophila
		Eschescholzia
		Viola
		Lasthenia
		Layia
		Lupinus
		Arabis
		Ericameria

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Habitat Assessment
Field Data Sheet

Recorder: Dale Powell Add'l Person: Darlene Mack Date: 4/13/10

Project: Campo Wind Energy Project Map #: 1 GPS Unit : 8

START Time: 10:30 Temperature: 64° Wind Speed (mph)/Direction: 0 %Cloud Cover: 15%

END Time: 12:10 Temperature: 60° Wind Speed (mph)/Direction: 2/4 — %Cloud Cover: 30%

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS/GENERAL SPECIES LIST
		Acmon Blue III
		Blue IIII

Quino Checkerspot Butterfly Habitat Assessment
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS/GENERAL SPECIES LIST
		Manzanita
		Ceanothus
		Erodium
		Nemophila
		Cryptantha
		Lasthenia
		Layia
		Lupinus
		Viola

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Coulter Add'l Person: Ø Date: 13 April 2010

Project: Campo Wind Energy Project Map #: Tile 5 Survey Sxn: Campo "C"

GPS Unit : Garmin 2 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	58	Ø->3 mph	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	58	Ø->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	56	Ø->2	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	65	Ø->1	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	67	1->2	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	66	Ø->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1600	63	1->5	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Behrs Metalmark	IN FIELD NOTEBOOK	34
California Marble	"	13
Quino Checkerspot Butterfly	"	1
Funereal Dusky Wing	"	18
Brown Elfin	"	2
Acmon Blue	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB04	Point	Somewhat drab individual on the best-looking hilltop in Campo C.

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Park LaLoste Add'l Person: GEORGINA Date: 4/14/10

Project: ~~Manzanita~~ CAMPO Wind Energy Project Map #: 8 Survey Sxn: F

GPS Unit : 1 QCB Protocol Survey # _____ of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	65	3A-7m	5	(clear)	patchy	overcast	drizzle	shower
	130	70	3A-6m	75	clear	patchy	(overcast)	drizzle	shower
Left Ridge	230	67	4A 8m	90	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	300	66	4A 8m	80	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
* QCB - viewed through Binos - as I approached it, it flew off, effort to refind were negative after 45 mins - no Pics - I would not report it yet - should maybe try to refind later today + Tomorrow -		1
Acmon Blue	////	4
Perplexing Hairstreak	//// //// //// //// ///	23
California Marble	//// //// //// //// //// ////	30
Brown elfin	///	3
Painted Lady	///	3
Behrs Metalmark	//// //// //// //// //// //// 100+	100+
Fun Duskywing	////	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ELAQCB01	Point	QCB Spotting but no Pics - recommend revisit
		Soon For confirmation.
		Lastheria Californica
		Erodium sp.
		Plagiobothrys sp.
		Ceanothus sp.
		Lupinus sp.
		Mimulus Brevipes
		Layia Glandulosa
		Amsinkia menziesii
		Eschscholzia Californica
		Camissonia sp.
		Trogopogon polycholius
		Amsinckia acaulis
		Arabis sp.
		Baby Blue eyes.
		Solanum parryii
		Sanicula arguta
		Chia.

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Gretchen Cummings Add'l Person: Gene Date: 4/14/10

Project: Campo Wind Energy Project Map #: 12 Survey Sxn: G

GPS Unit : 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0945	60.3°F	1.0/2.2	20%	clear	(patchy)	overcast	drizzle	shower
1125		68.7°F	3.2/3.8	25%	clear	(patchy)	overcast	drizzle	shower
[illegible]		[illegible]	[illegible]	[illegible]	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1345	70.0°F	2.6/3.9	40%	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Callophrys dumosa	𝍸 𝍸	10
Apodemia mormo virgulti	𝍸 𝍸 𝍸 II	17
Erynnis sp. (no white)	𝍸 II	7
Vanessa cardui	IIII	4
Papilio eurymedon	I	1
Euchloe hyantis	IIII	4
Anthocharis sara	IIII	4
Pontia sisymbrii	II	2
Sphygid moth	II	2
Icaricia acmon	𝍸 I	6
Colias harfordii	I	1
Celastrina ladon echo	I	1

Map/GPS label	Point/Polygon Type	Comments / Species List
		Plagiobothrys sp.
		Spotted Towhee
		Cryptantha sp.
		California Thrasher
		Descurainia sp.
		Anna's Hummingbird
GCHL01	Sensitive species Horned Lizard	Horned Lizard
		Lupinus sp
		Lasthenia californica
		Arabis
		American Robin
		Red-tailed Hawk
		Black-chinned Sparrow
		Lupinus bicolor
		California Poppy
		Northern Flicker
		Amsinckia menzeisii
		Western Scrub Jay
		Nemophila menzeisii
		Bushtit
		Gilia sp.
		Black-throated Grey Warbler
		Oak Titmouse
		White-crowned Sparrow

Total # of QCB Detected 0 Individuals

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Gretchen Cummings Add'l Person: Gene Date: 4/14/10

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: 6

GPS Unit : 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1420	77°F	2.6/6.2	70%	clear	(patchy)	overcast	drizzle	shower
	1600	74°F	0.8/1.9	80%	clear	(patchy)	overcast	drizzle	shower
				[illegible]	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1645	69°F	1.3/2.1	70%	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, ridges, (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
Pontia sisymbrii	III	3
Vanessa cardui	I	1
Apodemia mormo virgulti	III	3
Sphygid moth	I	1
Anthocharis sara	I	1
Euchloe hyantis	IIII	6
Blue Undifferentiated	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amsinckia menziesii
		Spotted Towhee
		Cryptantha sp.
		Plagiobothrys
		Lupinus bicolor
		Lasthenia californica
		Descurainia sp.
GCLA01	Sensitive Species Horned Lark	heard Horned Lark
		California Thrasher
		Lark Sparrow
		Anna's Hummingbird
		cf. Ericameria pinifolia
		Arabis
		Phacelia sp.
		Trichostemma sp.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Margie Mulligan Luis Connelly Date: 4/14/10

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: _____

GPS Unit : 5 + Margie's Personal QCB Protocol Survey # 1 of ~~2~~ 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1015	63°	0/~~2~~	0	(clear)	patchy	overcast	drizzle	shower
	1205	64°	0/6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Acmon Blue	𝍸 𝍸 𝍸 I	~~16~~
Behr's Metalmark	~~𝍸~~ ~~𝍸~~ IIII	~~14~~
Lady?	I	1
Perplexing HairstreaK?	II	2
Southern Marble	II	2
Blue?	I	1
Funeral Dusky-wing	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar sources:	Ceanothus leucodermis
		C. greggi var. perplexans
		Amsinkia menziesii
		Eschscholtzia californica
		Lupinus concinnus
		Erodium cicutarium
		Cryptantha micrantha

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Margie Mulligan, Laura Connelly Date: 4/14/10

Project: Campo Wind Energy Project Map #: 9-J Survey Sxn: _____

GPS Unit : 5 + Margie's personal QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky
START 13:00	72°	1/3	0	clear patchy overcast drizzle shower
14:30	62°	7/10	75	clear patchy overcast drizzle shower
16:45	70°	3/5	50	clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
END				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs Metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Sources:	Lasthenia gracilis Caulanthus simulans
		Phacelia parryi
		Lupinus bicolor
		L. concinnus
		L. truncatus
		Cryptantha sp.
		Ceanothus leucodermis
		Layia glandulosa
		Eschscholtzia californica
MMCS01	sensitive plant pt	Caulanthus simulans →
MMCS02	"	
MMCS03	"	flowering along ridge 1000s of them
MMCS04	"	and some fruiting
MMCS05	"	
MMCS06	"	
MMCS07	"	
MMCS08	"	
MMGV01	"	Geraea viscida - 1 vegetative plant
		- in a drainage of ridge
DPEP01	Excluded Polygon	Not closed. Closed canopy chaparral

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Margie Mulligan, Luis Connolly Date: 4/14/10

Project: Campo Wind Energy Project Map #: 12 - S5 Survey Sxn: _____

GPS Unit: 5 + Margie's Personal QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	9:45	62°	0/~~2~~	0	(clear) patchy overcast drizzle shower
	10:05	65°	0/2	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END					clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
~~—~~		0

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Source:	Lupinus concinnus
		Cryptantha micrantha
		Lasthenia gracilis
		Cercocarpus betuloides
		Malacothrix californica
		Eschscholzia californica
		Amsinkia menziesii
		Erodium cicutarium

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Luis Connolly Date: 4/15/10

Project: Campo Wind Energy Project Map #: 16 - I and H Survey Sxn: 2

GPS Unit : 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	61°	8/11	0	(clear)	patchy	overcast	drizzle	shower
	1015	66°	11/14	0	(clear)	patchy	overcast	drizzle	shower
	1125	68°	7/11	0	(clear)	patchy	overcast	drizzle	shower
	1410	72°	4/7	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, rock outcrops, soil crusts, clay soils, ~~old roads~~, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	II	2
Behr's Metalmark	~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~	65
White ?	I	1
Marble	~~HHT~~	5
Sara's Orangetip	~~HHT~~ I	6
Blue ?	III	3
Dusky wings	~~HHT~~ I	6

Between 9-10 no butterflies were observed even though the weather conditions were adequate.

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Erodium
		Manzanita
		Eschscholzia
		Descurainia
		Cryptantha
		Caenothus
		Lupinus
		Penstemon
		Phacelia
		Arabis
		Salvia columbaria
		Dichloetemma
		Viola
		Amsinckia
		Mimulus
		Nemophilia
DPHL01	Point	San Diego Horned Lizard
DPCS01	Point	Caulanthus ~~[illegible]~~ simulans
DPEP01	Excluded Polygon	Closed Canopy Chaparral
DPEP02	"	"
~~DPEP03~~	~~"~~	~~"~~
DPIN01	Include Polygon	Resurveyed rough terrain
DPIN02	"	
DPIN03	"	
↑		
include		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: R. Connelly Date: 15 APRIL 2010

Project: Campo Wind Energy Project Map #: 27 Survey Sxn: CAMPO - R

GPS Unit : 3 QCB Protocol Survey # 2 ? of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	0900	64	6	Ø	(clear) patchy overcast drizzle shower
	1000	67	3	Ø	(clear) patchy overcast drizzle shower
	1100	64	9	Ø	(clear) patchy overcast drizzle shower
	↓				clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END					clear patchy overcast drizzle shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, old roads, various (nectar sources)

Butterfly Species	Tally	Total
Vanessa cardui		1
V. virginiensis		1
Erynnis species		5
Euchloe h. lotta		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
27		Goldfields
		Sugar bush
		Cryptantha
		Ceanothus

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 15 APRIL, 2010

Project: Campo Wind Energy Project Map #: TILE 14 Survey Sxn: CAMPO-K

GPS Unit : GARMIN GO QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67	1->5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	68	1->8 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	71	Ø->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	71	Ø->8 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	70	2->0 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	71	Ø->3 MPH	50% COVER	clear	(patchy)	overcast	drizzle	shower
~~END~~	1500	70	1->4 MPH	90% COVER	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

END 1530 HRS, 72°F, WIND = 1->4 MPH, 100% COVER

Butterfly Species	Tally	Total
PERPLEXING HAIRSTREAK	TALLY IN FIELD NOTEBOOK	41
PAINTED LADY	"	1
BEHR'S METALMARK	"	158
FUNEREAL DUSKYWING	"	20
ACMON BLUE	"	9
SOUTHERN BLUE	"	11
DESERT ORANGETIP	"	1
CALIFORNIA MARBLE	"	33
CALIFORNIA TORTOISESHELL	"	1
SPRING WHITE	"	5
PALE TIGER SWALLOWTAIL	"	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCJEWELFLOWER 01	POINT	SMALL BUT DENSE POPULATION

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: ~~0~~ Date: 16 APRIL, 2010

Project: Campo Wind Energy Project Map #: TILE 5 Survey Sxn: CAMPO - A + C

GPS Unit : GARMIN 7 QCB Protocol Survey # 2 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67	0->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	60	2->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	70	0->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	73	0->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	74	1->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	76	0->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1500	73	2->5	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

1530, 0->3 MPH, CLEAR, 73°F.

Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOK	120
PERPLEXING HAIRSTREAK	"	25
PAINTED LADY	"	2
BROWN ELFIN	"	8
CALIFORNIA MARBLE	"	19
SPRING AZURE	"	2
GABB'S CHECKERSPOT	"	1
ARROWHEAD BLUE	"	33
ACMON BLUE	"	35
FUNEREAL DUSKYWING	"	10
ALFALFA BUTTERFLY	"	2
GREAT PURPLE HAIRSTREAK	"	1
SPRING WHITE	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL05	POINT	ADULT HORNED LIZARD
MCHL06	POINT	JUVENILE HORNED LIZARDS
MCSH01	POINT	MATING SPADEFOOT TOADS

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Pablo Date: 4/16/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 16 Survey Sxn: Campo 6

GPS Unit : 1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1510	75	4/7	0	clear	patchy	overcast	drizzle	shower
	1700	70	3/6	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~ hilltops, ~~ridges, rock outcrops~~, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
White?	I	1
Behr's Metalmark	IIII II	7
Blue?	II	2
Dusky wing	IIII III	8
Southern Blue	I	1
Painted Lady	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
DPHL 01	POINT	San Diego Horned Lizard
		Manzanita
		Lasthenia
		Eriodictyon
		Layia
		Lupinus
		Cryptantha
		Ceanothus
		Amsinckia
		Mimulus
		Eschscholzia
		Phacelia
		Arabis
		Dudleya
		Hirschfeldia
		Nemophila
		Plagiobothrys
DPTP01	Polygon	Open area along ~~[illegible]~~ arroyo
DPEP01	"	Closed Canopy Chaparral

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Pablo, Raymond Connolly, Bonnie Hendricks Date: 4/16/10

Project: Manzanita Wind Energy Project Map #: 24 R Campo Survey Sxn: Camp R

GPS Unit : 1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9:45	60°	2/4	0	(clear)	patchy	overcast	drizzle	shower
	10:55	[illegible]	5/8	0	(clear)	patchy	overcast	drizzle	shower
	12:00	78°	10/13	3	(clear)	patchy	overcast	drizzle	shower
	14:00	72°	5/8	3	(clear)	patchy	overcast	drizzle	shower
	15:45	72°	3/5	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Dehe Metalmark	𝍸 𝍸 𝍸 𝍸 ||	22
Mardo	𝍸 𝍸 |||	14
Pale Swallowtail	|||	3
Checkerspot	𝍸 𝍸 𝍸 𝍸 𝍸	25
Sara Orangetip	𝍸 𝍸 ||||	14
Acmon Blue	𝍸 ||	7
Blue?	𝍸 |||	8
Gabbs	𝍸 ||	7
White?	𝍸 |	6
Dusky wing	𝍸 𝍸	10
Perplexing Hairstreak	|	1
Southern Blue	|||	3
Painted Lady	||	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Mazanita
		Lasthenia
		Layia
		Erodium
		Lupinus
		Cryptantha
		Ceanothus
		Amsinckia
		Mimulus
		Eschscholzia
		Phacelia
		Arabis
		Descurainia
		Nemophila
		Plagiobothrys
	Excluded	
DPEP01	Polygon	Closed Canopy Chaparral
DPEP02	"	"
DPEP03	"	"
DPEP04	"	"
DPIP01	Included Polygon	Open Chaparral
DPIP02	"	"

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Bonnie Hendrickson Add'l Person: Raymond escost Date: 4/16/10

Project: Campo Wind Energy Project Map #: 24 & 19 Survey Sxn: Campo R

GPS Unit: Garmin 3 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9:15	59.5°	2.2/4.4	0	clear	patchy	overcast	drizzle	shower
	10:20	71.5°	1.7/4.3	0	clear	patchy	overcast	drizzle	shower
	11:50	72.0°	1.2/2.5	0	clear	patchy	overcast	drizzle	shower
	12:30	73.0°	2.0/3.0	0	clear	patchy	overcast	drizzle	shower
	1:45	73.5°	6.2/10.3	0	clear	patchy	overcast	drizzle	shower
	3:15	73.7°	1.4/4.2	0	clear	patchy	overcast	drizzle	shower
END	5:00	67.2°	2.3/5.8	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

END 5:45 66.3° 4.5/6.7 0 clear

Butterfly Species	Tally	Total
Dusky wing (small black w/ white dots on fore wing dorsal)	I	1
Duskywing (Erynnis funeralis or tristis)	III	3
Chalcedon Checkerspot	IIII II	7
Quino!	I	1
Gabb's Checkerspot	IIII IIII II	12
Acmon Blue	IIII I	6
Marbled White	IIII III	8
Southern Blue	II	2
Pygmy Blue	I	1
Sara's Orangetip	IIII IIII II	12
Serpentine Hairstreak	III	3
Behr's Metalmark	IIII IIII IIII IIII IIII II	27
Lady sp.	III	3
Duskywing sp.	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Bonnie Hendricks 4-16-10

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BHEP01	Excluded Polygon	Closed Canopy Chaparral
BHIP01	Included Polygon	Open Chaparral
BHQB01	Quino!	Seen nectaring on Layia glandulosa
	10:10	1 photo from far away
	fresh	flew on other side of
	0557013	shrubs Mixed Chaparral
	3610034	lots of nectar, open soils
		within Chaparral
		+ Adfa, + Cerbo, Erfa
BHAR01	host plant	1 plant in bloom
	Nearby	Antirrhinum sp.
		photo
BHAR02-4	host plant	Antirrhinum 4 plant
BHNL01	Mammal	Desert Woodrat Nest
		built in cactus + surrounding nest.
		Nectaring plants:
		Layia glandulosa
		Lasthenia sp.
		Escholtzia sp.
		Cryptantha sp.
		Ceanothus spp.
		Amsinckia sp.

TOTAL NUMBER OF QCB DETECTED: 1 INDIVIDUALS

Over

557209
3610368

3610268
557059

The photo was taken at a distance, but the Quino is visible. You can find it near the center of the photo nectaring on white tidy tips (Layia glandulosa). The butterfly is completely covering the flower in the photo, but you can see another tidy tips just above and to the left. The Quino was fresh with bright color and no nicks or tears in the wings. The habitat was mixed chaparral dominated by chamise (Adenostemma fasciculata), mountain mahogony (Cercocarpus betuloides), and buckwheat (Eriogonum fasiculatum) with openings of bare soil and nectaring plants. One climbing snapdragon (Antirrhinum kellogii) plant in bloom was found nearby, see second photo attached.

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 4.17.10

Project: Campo Wind Energy Project Map #: 11-C & 12-C Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67°	0-3	80% Thin	clear	patchy	overcast	drizzle	shower
	1000	70°	0-4	100%	clear	patchy	overcast	drizzle	shower
	1245	79°	1-5	100%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

saw a perplexing night array

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Perplexing Hairstreak	𝍸 II	7
Dusky wing	𝍸 II	7
Pearly Marble	𝍸 𝍸 𝍸 𝍸 II	22
Pale Swallowtail	IIII	4
Behr's Metalmark	𝍸 I	6
Sara's Orangetip	III	3
Acmon Blue	II	2
Checkered White	I	1
Sulphur sp.	I	1
Lady sp.	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMGV01	Sensitive plant pt	Geraea viscida - 3 vegetative plants
~~AREA~~	Nectar Source	Ericameria linearifolia
		Erodium cicutarium
		Lasthenia gracilis
		Cryptantha micrantha
		Ceanothus greggii perplexans & C. leucodermis
		Marah macrocarpus macrocarpus
		Trichostema parishii
		Pectocarya linearis
		Amsinckia menziesii
		Cercocarpus betuloides
		Penstemon spectabilis
		Lupinus concinnus

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Coffee Add'l Person: Ø Date: 17 April, 2010

Project: Campo ~~Manzanita~~ Wind Energy Project Map #: Tile 1 Survey Sxn: Campo - A

GPS Unit : Garmin 3 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67	Ø -> 4 MPH	100	clear	patchy	overcast	drizzle	shower
	1000	67	Ø -> 2	100	clear	patchy	overcast	drizzle	shower
	1100	70	Ø -> 3	100	clear	patchy	overcast	drizzle	shower
	1200	73	Ø -> 4	100	clear	patchy	overcast	drizzle	shower
	1300	75	Ø -> 5	100	clear	patchy	overcast	drizzle	shower
	1320	75	Ø -> 5	100	clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	Tally in Field Notebook	85
California Marble	"	15
Perplexing Hairstreak	"	8
Acmon Blue	"	8
Funereal Duskywing	"	14
Arrowhead Blue	"	2
Spring White	"	3
Pale Tiger Swallowtail	"	1
Brown Elfin	"	3
Desert Orangetip	"	4
Juba Skipper	"	1
Sara Orangetip	"	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MC MORTARHOLE 1	POINT	SEVERAL MORTAR HOLES IN A ROCK
		(NAD 27 CON US) 11S 0560298, 3620234
MCHLO 7	POINT	ADULT HORNED LIZARD

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: — Date: 4/17/10

Project: Campo Manzanita Wind Energy Project Map #: 2 Survey Sxn: Campo D

GPS Unit : 1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	66°	9/11	90	clear	patchy	overcast	drizzle	shower
	1010	72°	6/8	80% clearing	clear	patchy	overcast	drizzle	shower
	1110	72°	7/9	50%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Dusky-wing	II	2
Blue?	I	1
Sara's Orangetip	III	3
White?	HH I	6
Behr's Metalmark	I	1

* Can see hazy shadows

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Ceanothus
		Cryptantha
		Amsinckia
		Descurainia
		Nemophila/ki
		Phacelia
		Manzanita
		Plagiobothrys
DPCS001	POINT	Ceanothus sanctus all along row
DPCS002	"	"
DPHL001	"	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: – Date: 4/17/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 7 Survey Sxn: Campo D

GPS Unit : 1 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:25	72°	7/9	50%	clear	patchy	overcast (Slight haze)	drizzle	shower
	13:00	70°	6/9	50%	clear	patchy	overcast (Slight Haze)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady	II	2
Juskywing	IIII	4
Blue?	III	3
Pale Swallowtail	I	1
Behr's Metalmark	~~IIII~~ IIII	9
Sara's Orange Tip	~~IIII~~ ~~IIII~~ ~~IIII~~ IIII	19
White?	~~IIII~~ ~~IIII~~ III	13
Marble	~~IIII~~ ~~IIII~~ IIII	14

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Ceanothus
		Cryptantha
		Descurainia
		Nemophilia
		Phacelia
		Monzanita
		Amsinckia
		Plagiobothrys

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 4-17-10

Project: Campo Wind Energy Project Map #: 11-H Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	79°	2-8	100	clear	patchy	(overcast)	drizzle	shower
	1600	80°	2-4	100	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Pearly Marble	~~HH~~ ~~HH~~ | |	12
Behr's Metalmark	~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ | | |	38
Funereal Duskywing	| |	2
Checkered White	|	1
Sulphur sp.	|	1
Painted Lady	|	1
Acmon Blue	~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ | |	22
Sara's Orange Tip	| | |	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
☆	Nectar Sources:	Cercocarpus betuloides
		Amsinkia menziesii
		Lianthus bellus
		Lupinus concinnus
		L. bicolor
		Caulanthus simulans
		Cryptantha micrantha
		Plagiobothrys sp.
		Lasthenia gracilis
		Senecio californica
		Anisocoma acaulis
		Lotus strigosus
		Phacelia distans
		Salvia columbariae
		Nemophila menziesii
		Layia glandulosa & platyglossa
		Ceanothus leucodermis & greggii perplexans
		Ericameria linearifolia
MMLB01-04	Sensitive plant pts	Linanthus bellus ≈1000 plants scattered throughout polygon
MMLB05	Sensitive plant pt	Linanthus bellus ≈30 plants
MMHL01	Sensitive lizard pt	Horn lizard - 1
MMHL02	"	"
MMCS01	Sensitive plant pt	Caulanthus simulans - 1 plant
MMAD01	☆ "	Astragalus douglasii var. perstrictus ≈35 plants vegetative
MMDS01	"	Delphinium parishii ssp. subglobosum 50 double check 4 sm budding plants

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: K H Osborne Add'l Person: Georgiana Date: 4/8/2010

Project: Campo Wind Energy Project Map #: B(4) / B(8) Survey Sxn: _____

GPS Unit : #5 QCB Protocol Survey # B-4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START →	9AM	59	2.5/5	0	clear	patchy	overcast	drizzle	shower
	1120	69	1.7/2.8	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	1240	72	calm	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	425	74	calm	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Euchloe hyantis	XXXX

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Abundant Cordylanthus on
		map 13-F on edge of
		oak woodlands & Chaparral
		marked on map.
		2 ♂ Quino hill topping
		off-site on walk
		back as indicated

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

2 maps on one data sheet

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: K H Osborne Add'l Person: Georgana Date: 4/15/2010

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 8 Survey Sxn: 8

GPS Unit : 9 QCB Protocol Survey # _____ of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START					clear	patchy	overcast	drizzle	shower
8B 900		63	2-4		clear	patchy	overcast	drizzle	shower
1030	1130	66	3.9/2-6		clear	patchy	overcast	drizzle	shower
13F 1135					clear	patchy	overcast	drizzle	shower
200		72	2.4/0-6	haze 10%	clear	patchy	overcast	drizzle	shower
400		73	calm	haze 10%	clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
P. acmon IIII		5
E. tristis II		2
B propertius IIII		4
Euchloe hayantis IIII		4
A mormo IIIXX		24
C echo III		3
C. perplexa II		2
Papilio polyxenes I (Blackswallow)		1
A. sara IIII		4
* N latitude W. longitude		
E editha ♂ 3:48 pm 32° 41.494 116° 19.728 hill top off project		
♂ #2 357 pm 32 41.487 116 19.752 on walk back		
Photographs of ♂♂ and habitat		
		4
V. atalanta I		1
V. carduii IIII		4
V. annabella I		1
Philosura Catalina I		1

2a

14, 13
Home 10
8/4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Antonette Gutierrez Add'l Person: Phillip Paipa Date: 4/18/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 8, 3, 4 Survey Sxn: Campo B

GPS Unit : 1 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	76	0	80	clear	patchy	overcast	drizzle	shower
	1000	78	0	40	clear	patchy	overcast	drizzle	shower
	1100	82	0	40	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	84	2mph	30	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Common butterfly	卌 |||	8
Behr's Metalmark	卌 卌 卌 卌 卌 卌 卌 卌 |||	48
Acmon Blue	卌 ||||	9
Dusky wing	卌 卌 |	11
Perplexing hairstreak	||	2
Sara's Orangetip	卌 |	6
Ca tortoise shell	|	1
Pale Swallowtail	|	1
Tiger Swallowtail	|	1
Southerblue	||	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
AGCH1	Chinese House	x 8 plants
		Erodium cicutarium
		Eucrypta chrysanthemifolia
		Coreopsis californiica
		Malacothrix californica
		Malacothrix clevelandii
		Plagiobothrys collinus
		Phacelia
		Nemophila menziesii
		Eriognum fasiculatum fasiculatum

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/18/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 26 Survey Sxn: Campo Q

GPS Unit : 3 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:30	66°	0/0	0	Cirrus clear	patchy	overcast	drizzle	shower
	10:00	77°	0/0	0	clear	patchy	overcast	drizzle	shower
	11:30	80°	2/4	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Pipeline Hairstreak	II	2
Bell's Metalmark ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~	~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~	70
Marbla	~~IIII~~ ~~IIII~~ II	12
White?	IIII	4
Funeral Duskwing	III	3
Duskywing ?	~~IIII~~ ~~IIII~~	10
Sara's Orangetip	~~IIII~~ ~~IIII~~ III	13
Orange?	I	1
Yellow?	I	1
Blue ?	IIII	4
Southern Blue	I	1
Acmon Blue	I	1
Pale Swallowtail	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Castilleja sp (Indian Paintbrush)
		Eriodictyon
		Cryptantha
		Camissonia
		Nemophila
		Arabis
		Dichelostemma
		Lathyrus
		Wall Flower (Erysimum)
		Penstemon
OP BJ01	Point	Black tailed Jack Rabbit

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connelly Date: 4/18/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 3 Survey Sxn: Campo 9

GPS Unit : 3 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:45	80°	3/6	0	(clear)	patchy	overcast	drizzle	shower
	1330	78	4/7	0	(clear)	patchy	overcast	drizzle	shower
	1430	74°	4/7	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Behr's Metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		DeSeavinia
		Lupinus
		Castilleja sp (Indian Paintbrush)
		Erodium
		Cryptantha
		Amsinkia
		Arabis
		Dichlostemma
		Lathyrus
		Penstemon
		Wall Flower (Erysimum?)
DPHLO1	POINT	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Coulter Add'l Person: Ø Date: 18 April, 2010

Project: Campo Wind Energy Project Map #: Tile 20 Survey Sxn: Campo "P"

GPS Unit: Garmin 5 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0844	70	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	71	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	75	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	77	Ø→2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	78	Ø→3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	82	Ø→3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1400	80	Ø→4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops); soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
1500 HRS, 76°F, 1→6 MPH, CLEAR		
1600 HRS, 75°F, 3→7 MPH, 40% COVER		
SOUTHERN BLUE	IN FIELD NOTEBOOK	5
ACMON BLUE	"	9
PAINTED LADY	"	3
BEHR'S METALMARK	"	450
CALIFORNIA MARBLE	"	45
ACMON BLUE WITHOUT ANY ORANGE ON WINGS	"	1
SARA ORANGETIP	"	5
PERPLEXING HAIRSTREAK	"	17
FUNEREAL DUSKY WING	"	48
CHALCEDON CHECKERSPOT	"	2
PALE TIGER SWALLOWTAIL	"	1
BROWN ELFIN	"	3
SPRING AZURE	"	6
GABB'S CHECKERSPOT	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCMORTARHOLES R	POINT	3 MORTAR HOLES IN A LONG ROCK
MC WW01	POINT	
MCHL08	POINT	TWO JUVENILE HORNED LIZARDS WITHIN 2 FT OF EACH OTHER.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Philip Paipa Date: 4/19/10

Project: ~~Manzanita~~ Wind Energy Project Map #: 25 Survey Sxn: Campo R

GPS Unit : 13 QCB Protocol Survey # 3 of ~~W~~ 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1550	76°	3/6	0	(clear)	patchy	overcast	drizzle	shower
	16:35	72°	6/9	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, rock outcrops, ~~soil crusts~~, clay soils, old ~~roads~~, ~~various~~ nectar sources

Butterfly Species	Tally	Total
Southern Blue	III	3
Sara's	II	2
Marble	II	2
Behr's Metalmark	~~IIII~~ I	6
White ?	III	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Layia
		Cryptantha
		Monzanita
		Lathyrus
		Plagiobothrys

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pablo Date: 19 APRIL 2010

Project: Campo Wind Energy Project Map #: 12 Survey Sxn: CAMPO - E.

GPS Unit : #7 QCB Protocol Survey # 3 of 5.

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1500	71°	4	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1630	69°	7-8	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue		7
A. Virgulti		4
Euchloe L. Zotta		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
12	(only Point)	goldfields
		cryptantha
		Composites.

TOTAL NUMBER OF QCB DETECTED: ___0___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: ERIK LaCoste Add'l Person: _____ Date: 4/19/10

Project: Campo Wind Energy Project Map #: 10 Survey Sxn: I

GPS Unit : 10 QCB Protocol Survey # _____ of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1040	64	2M/4max	30	clear	(patchy)	overcast	drizzle	shower
	1215	62	5A/10m	5	(clear)	patchy	overcast	drizzle	shower
	~~1215~~	76	5A/10m	~~0~~	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	330	70	5A/10m	~~0~~	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Southern Blue	II	2
Sara Orangetip	III	3
Behrs metalmark	200+	200+
Spring White	IIII	4
Painted lady	II	2
Pale swallowtail	III	3
Funereal Duskywing	~~HH~~	5
Afranius Duskywing	II	2
California marble	II	2
Acmon Blue	III	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ELCOLHET01	Point	Collinsia Heterophylla – 100–200
ELCOLHET02	Point	Collinsia Heterophylla - 50–100 but there
		are thousands in the same Drainage
		Further east.
		Erodium sp
		Cal Poppy
		Cream cups
		Plagiobothrys
		Lupine sp.
		Gilia capitatum
		Chia
		Dichelostemma capatatum
		Senecio Cal.
		Mimulus Fremontii
		Antirrhinum orcutti
		Lasthenia Cal.

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie/Evin Bergman Add'l Person: Mike Carriger Date: 19 Apr 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: _____

GPS Unit : #5 QCB Protocol Survey # 3 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1045	65°	4 / 7 mph	40 %	clear	patchy	overcast	drizzle	shower
	1145	72°	4 / 8 mph	10 %	clear	patchy	overcast	drizzle	shower
	1330	74°	2/5	0	clear	patchy	overcast	drizzle	shower
	1445	75°	2/5	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1540	73°	3/6	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's metalmark	𝍸 𝍸 𝍸 𝍸 | | |	23
unidentified white	|	1
unidentified blue	|	1
CA marble	𝍸 𝍸 𝍸 ||||	19
Southern blue	||||	4
Perplexing hairstreak	𝍸 |	6
Funereal Duskywing	𝍸	5
Pale swallowtail	|	1
Acmon blue	𝍸 𝍸 ||	12
Painted lady	|	1

Page 1 of 2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Fiddleneck, Goldfields, popcorn flower
AS EB0102		Astragalus
EB01		Campo pea
EB01		Campo pea 2-6
BJEB01		Black tailed jackrabbit
EBHL01		Horned lizard
EBHL02		Horned lizard (big one!)
		Antirrhinum
EB01		Campo pea 11
AS EB0103		Astragalus 3
AS EB0104		Astragalus 4
EB0105		Astragalus 5
EB0106		Astragalus 6
EB0107		Astragalus 7
EB0108		Astragalus 8
EB0109		Astragalus 9

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Bradic/Erin Bergman Add'l Person: Mike Carriger Date: 19 Apr 2010

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo - M

GPS Unit : #5 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	73°	3/6	Ø	(clear)	patchy	overcast	drizzle	shower
	1300	72°	3/10	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1330	74°	2/5	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
CA Marble	𝍸 𝍸 𝍸 ||	17
Sara orangetip	||||	4
Funereal Duskywing	𝍸 |	6
Southern blue	|	1
Acmon blue	𝍸 𝍸 𝍸 𝍸 ||||	24
Behrs Metalmark	𝍸 𝍸 𝍸 ||	17
Purplerim Hairstreak	𝍸 𝍸 ||	12
Unidentified sulfur	||	2
Gulf fritillary (?)	|	1
		84

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower, fiddleneck
EB01		Campo pea 7
EB0102		Campo pea 5
EB0103		Campo pea 9
EB0104		Campo pea 10

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Philip Paiva Date: 4/14/10

Project: Campo Wind Energy Project Map #: 23 Survey Sxn: Campo 9

GPS Unit : 13 QCB Protocol Survey # 3 of ~~6~~ 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:45	69°	2/4	20	~~clear~~	patchy	overcast	drizzle	shower
	12:15	75°	6/8	0	~~clear~~	patchy	overcast	drizzle	shower
	13:30	79°	5/7	0	~~clear~~	patchy	overcast	drizzle	shower
	15:00	81°	6/9	0	~~clear~~	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ~~ridges~~, ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Behrs Metal Mark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Layia
		Ceanothus
		Phacelia (2)
		Eschscholzia
		Malacothrix
		Plagiobothrys
		Cryptantha
		Nemophila
		Encelia

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 19 APRIL 2010

Project: Campo Wind Energy Project Map #: TILE 30 Survey Sxn: CAMPO - P (NORTH)

GPS Unit : GARMIN 2 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	69	0->6 MPH	45%	clear	(patchy)	overcast	drizzle	shower
	1200	70	1->6	5%	(clear)	patchy	overcast	drizzle	shower
	1300	75	0->5	5%	(clear)	patchy	overcast	drizzle	shower
	1400	75	0->4	5%	(clear)	patchy	overcast	drizzle	shower
	1500	76	0->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1600	75	2->6	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1630	75	0->3	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
BEHR'S METALMARK	TALLY IN FIELD NOTEBOOK	195
CALIFORNIA MARBLE	"	17
FUNEREAL DUSKYWING	"	25
PERPLEXING HAIRSTREAK	"	2
PAINTED LADY	"	1
CALIFORNIA DOGFACE (FEMALE)	"	1
QUINO CHECKERSPOT BUTTERFLY	"	2
SPRING WHITE	"	2
SOUTHERN BLUE	"	1
DESERT ORANGETIP	"	1
SARA ORANGETIP	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL10	POINT	
MCQB05	POINT	CHASING MCQB06. PHOTOS TAKEN
MCQB06	POINT	

TOTAL NUMBER OF QCB DETECTED: 2 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pablo Date: 19 April 2010

Project: Campo Wind Energy Project Map #: 15 & 16 Survey Sxn: CAMPO-L

GPS Unit : #7 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	70°	4	50	(clear)	patchy	overcast	drizzle	shower
	1130	71°	6	30	(clear)	(patchy)	overcast	drizzle	shower
	1200	73°	5	ø	(clear)	patchy	overcast	drizzle	shower
	1330	76°	3	ø	(clear)	patchy	overcast	drizzle	shower
	1400	76	4	ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1500				clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
Acmon blue		4
C. Augustina		1
E. fumenalis		4
E. species		5
C. perplexa		6
Euchloe h. Zotta		11
A. Sara		4
A. Virgulti		15+
Philosora sp.		2
[Hyles lineata]		1
Colias harfordii		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
15 & 16		Cryptantha
		Blue dicks
		baby blue eyes
		Arabis sp.
		Goldfields
		Ceanothus.

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 20 APRIL, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 18 Survey Sxn: CAMPO - N

GPS Unit : GARMIN Z QCB Protocol Survey # Z of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0945	65	1->5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	64	2->6MPH	0%	(clear)	patchy	overcast	drizzle	shower
	1100	68	2->8 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1200	68	2->5 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1300	70	0->4 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1400	72	0->4 MPH	10%	clear	(patchy)	overcast	drizzle	shower
END	1445	70	2->8 MPH	50%	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
BEHR'S METALMARK	TALLY IN FIELD NOTEBOOK	165
CALIFORNIA MARBLE	"	4
PERPLEXING HAIRSTREAK	"	3
ACMON BLUE	"	7
SOUTHERN BLUE	"	6
HENNE'S CHECKERSPOT	"	1
FUNEREAL DUSKYWING	"	23
SARA ORANGETIP	"	1
WESTERN TAILED BLUE	"	1
PAINTED LADY	"	1
WEST COAST LADY	"	1
DESERT ORANGETIP	"	1
SPRING AZURE	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCWW02	POINT	ADULT WHIPTAIL
MCWW03	POINT	ADULT WHIPTAIL

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Eugene Pavlo Date: 20 April 2010

Project: Campo Wind Energy Project Map #: 11 & 12 Survey Sxn: Campo E.

GPS Unit : #7 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	59°	3	highclds	(clear)	patchy	overcast	drizzle	shower
	1000	67	1	"	(clear)	patchy	overcast	drizzle	shower
	1100	63	9	"	clear	(patchy)	overcast	drizzle	shower
	1200	64	7	"	clear	(patchy)	overcast	drizzle	shower
	1300	65	9	30	clear	(patchy)	overcast	drizzle	shower
	1400	63	10	50	clear	(patchy)	overcast	drizzle	shower
END	1500	62	9	40	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
Erynnis species		7
A. Sara		2
P. Acmon		15+
A. virgulti		15+
V. cardui		1
C. perplexa		1
Philosora		1
[E. pheston]		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
11/12		Goldfields
		Amsonia
		Ceanothus
		Compositae
		Cryptantha
		Baby blue eyes
		[Collinsia - not in flower]

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: B. LOHSTROH Add'l Person: D. Faulkner / Eugene Date: 4/20/10
(Nearby) (Escort)

Project: Campo Wind Energy Project Map #: 5, 11, 12 Survey Sxn: C

GPS Unit : #10 QCB Protocol Survey # 3 (?) of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0945	65°F	2-6/12	40%	Hazy clear	patchy	overcast	drizzle	shower
	1045	65	4-10	40%	Hazy clear	patchy	overcast	drizzle	shower
	1200	67	4-8	20%	clear	patchy	overcast	drizzle	shower
	1300	69	6-9/12	40 %	clear	patchy	overcast	drizzle	shower
	1400	64	6-12	40 %	clear	patchy	overcast	drizzle	shower
	1440	67	6-12	50 %	clear	patchy	overcast	drizzle	shower
END	1545	62	8-15	50 %	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
perplexing Hairstreak		16
Behris Metalmark		26
Funereal Duskywing		3
Gabbs checkerspot		1
Pearly Marble		2
Acmon blue		1
Harford's Sulphur		3
Brown elfin		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lego
		BUSH
		SPTO
		WCSP
		WTSW
		BCSP
		BEWR
		SCJa
		sideblotched Lizard, W. whiptail
		cottontail
		Nectar sources
		Anisocoma acaulis, Beechura, Cammissonia
		popcorn flower, erodium, CA poppy,
		Lasthenia californica, cercocarpus, bet,
		Lotus strigosus, Amsinckia, Filia, Phacelia sp,
		Nemophila, mustards, Menzelia sp, Ceanothus,
		Layia glandulosa
BLPJ01	Rare plant	Caulanthus simulans 1 individuals
BLCP01	"	Lathyrus splendens 1 individual
BLGV01	"	Gerea viscidia 7 individuals
BLGV02	"	" 9 individuals
BLJR01	Rare wildlife	Black tailed jackrabbit

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: Shirley Innecken Date: 4.20.2010

Project: Campo Wind Energy Project Map #: 3 Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1030	65	2-6	20	clear	(patchy)	overcast	drizzle	shower
	1200	65	4-8(14)	30	clear	(patchy)	overcast	drizzle	shower
	1400	64	8-13(15)	50	clear	(patchy)	overcast	drizzle	shower
	1600	66	4-10	50	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), (soil crusts), clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	See Notebook	12
Behr's Metalmark		100+
Silvery Blue		2
Sara's orangetip		3
Funereal Duskwing		1
Sulphur (Cloudless?) ?		1
Pale Swallowtail		1
Pearly Marble		2
Duskywing		4
Painted Lady		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar	Phacelia parryi & distans
	Source:	Gilia capitata
		Cercocarpus betuloides
		Layia glandulosa
		Ceanothus leucodermis
		Streptanthus campestris
		Eschscholzia californica
		Coreopsis californica
		Descurainia pinnata
		Collinsia h
		Lotus strigosus
		Ericameria linearifolia
		Caulanthus simulans
		Lupinus bicolor & concinnus & truncatus
S16E01	bird pt	OWL?
MMSC01	sensitive plant pt	S treptanthus campestris - 5 plants
MMSC02	"	"
MMSC03	"	"
MMSC04	"	" - 1 plants
MMDS01	"	Delphinium parishii ssp. subglobosum
MMCS01	"	Caulanthus simulans end pt for ridge
		common on ridge

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/20/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 24 Survey Sxn: Campo R

GPS Unit : 13 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1230	66°	7/10	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, ~~hilltops~~, ridges, ~~rock outcrops~~, soil crusts, clay soils, old roads, various ~~nectar sources~~

Butterfly Species	Tally	Total
Funereal Duskywing	1	1
Sara's Orangetip	III	3
Blue?	11	2
White	11	2
Marble	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Salvia columbariae
		Monardella
		Erodium
		Plagiobothrys
		Cryptantha
		others

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/20/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 23 Survey Sxn: Campo Q

GPS Unit : 13 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9:50	64°	4/6	0	(clear)	patchy	overcast	drizzle	shower
	10:45	66°	4/6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Perplexing Hairstreak	I	1
Marble ?	II	2
White ?	II	2
Lady ?	I	1
Behr's Metalmark	IIII	4
Blue ?	I	1
Emeral Duskywing	II	2
Duskywing ?	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Plagiobothrys
		Cryptantha
		eTHers
DPHL01	Point	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/20/10

Project: Campo Manzanita Wind Energy Project Map #: 25 Survey Sxn: Campo R

GPS Unit : 13 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:00	66	4/6	0	(clear)	patchy	overcast	drizzle	shower
	1320	66	7/10	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ~~ridges~~, ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Funereal Duskywing	1111	4
Sara's Orangetip	1111 1111	9
Blue?	1111 111	8
White?	1111 11	7
Marble	1111 1	6
Pale Swallow Tail	1	1
Southern Blue	1	1
Painted Lady	1	1
Yellow?	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha
		Plagiobothrys
		Nemophilia
		Lasthenia
		aThrus
DPTP02 or	Point	San Diego Horned Lizard
DPEP01	Exclude Polygon	Not enough area (My own polygon)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Lorie Connelly Date: 4/20/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 27 Survey Sxn: Campo R

GPS Unit: 13 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1500	67°	8/11	10	clear	patchy	overcast	drizzle	shower
	1615	62°	9/14	10	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, ~~rock outcrops~~, soil crusts, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Painted Lady	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		LasThenia
		Erodium
		Cryptantha
		Plagiobothrys
		Manzanita
		others

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Mike Carriger Date: 4/23/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Campo G+H pasture

GPS Unit : 5 QCB Protocol Survey # 3 of 5.

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1250	58	7/10	10	clear	patchy	overcast	drizzle	shower
	1350	63	8/10	10	clear	patchy	overcast	drizzle	shower
	1505	65	7/10	15	clear	patchy	overcast	drizzle	shower
	1625	60	5/10	10	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	1	1
Blue?	11	2
Pale Swallowtail	1111	4
Behris Metalmark	1	1
2	1	1
Chalcedon?	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Plagiobothrys
		Cryptantha
		Lupinus
		Lasthenia
		Erodium.
		Eschscholzia
		Dichelostemma

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Josh Pa:pa Date: 23 APR 2010

Project: Campo Wind Energy Project Map #: 21, 17 Survey Sxn: CAMPO - N

GPS Unit : #2 QCB Protocol Survey # 3 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	59	4	Ø	(clear)	patchy	overcast	drizzle	shower
	1200	60	6	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	61	9	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops) ridges, (rock outcrops), soil crusts, clay soils, (old roads) various (nectar) sources

Butterfly Species	Tally	Total
Euchloe h. lotta		1
A. SARA		1
Erynnis sp.		2
Apodemia virgulti		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#21		Sugar Bush
		Cryptantha
		Amsinkia
		Gold fields
		Blue Dicks.

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Josh Paipa Date: 23 April 2010

Project: Campo Wind Energy Project Map #: 18 Survey Sxn: _____

GPS Unit : #2 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	61°	9	0	(clear)	patchy	overcast	drizzle	shower
	1400	62	5	10	clear	(patchy)	overcast	drizzle	shower
	1500	65	3	50	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	(patchy)	overcast	drizzle	shower
END	1600	64	4	40	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. Acmon		10+
A. Virginiensis		15+
Erynnis sp.		4
V. virginiensis		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
# 18		Cryptantha.
		Collensia (in flower)
		goldfields
		baby blue eyes
		Composites (white/yellow)
		Buttercups.
		Ceanothus

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 23 APRIL, 2010

Project: Campo Wind Energy Project Map #: TILES 1 + 5 Survey Sxn: CAMPO A

GPS Unit : GARMIN 7 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1045	60	2 -> 7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	61	2 -> 6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	63	3 -> 7	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	59	3 -> 7	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	61	4 -> 9	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1415	59	4 -> 9 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

B Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOK	2
ACMON BLUE	"	12
ARROWHEAD BLUE	"	37
PAINTED LADY	"	3
PERPLEXING HAIRSTREAK	"	1
CALIFORNIA MARBLE	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Bonnie Hendricks Add'l Person: Luis Connolly Date: 4/23/10

Project: Campo Wind Energy Project Map #: 13 Survey Sxn: Campo F

GPS Unit : Garmin 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:55	59.5°	4.3/8.2	0	clear	patchy	overcast	drizzle	shower
	1:30	62.1	4.3/12.1	0	clear	patchy	overcast	drizzle	shower
	2:15	65.3	2.6/4.9	0	clear	patchy	overcast	drizzle	shower
	3:10	61.5	8.0/15.1	10%	clear	patchy	overcast	drizzle	shower
END	4:15	57.2	4.2/8.1	1%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs Metalmark	~~IIII~~ III	8
Perslexing hairstreak	I	1
Marbled White	I	1
Painted Lady	I	1
Duskywing (E. funeralis or tristis)	II	2
Blue		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Nectarine spp.
		Cryptantha spp.
		Lasthenia sp.
		Ercocarpus bet., Ceanothus cun.
		Layia, Eschaltzia, Amsinckia
BHAR03-15	host plant	Antirrhinum kellogii 15 plants in bloom

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connelly Date: 4/24/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Compo H+I

GPS Unit : 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:35	63°	0/0	0	(clear)	patchy	overcast	drizzle	shower
	9:45	68°	1/3	0	(clear)	patchy	overcast	drizzle	shower
	11:30	77°	3/6	0	(clear)	patchy	overcast	drizzle	shower
	13:15	77°	4/6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), (soil crusts), clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Acmon Blue	𝍸 ||	7
Funeral Duskywing	𝍸 |	6
Blue?	𝍸 |||	9
Pale Swallowtail		
Behr's McTalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||||	65
Yellow?	|	1
Mavida	𝍸 𝍸 ||	13
Sara's Orangetip	𝍸 𝍸	10
Duskywing	𝍸 ||	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Lasthenia
		Layia
		Lupinus
		Eschscholzia
		Descurinia
		Manzanita
		Phacelia (2 types)
		Salvia columbarian
		Plagiobothyros
		Cryptantha
		Caenothus
		Dichlostemma
		Amsinckia
		Arabis
DPCS01	Point	Cuvlanthus stimulans
DPHL01	Point	San Diego Horned Lizard
DP HL 02	"	"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/24/10

Project: Campo Wind Energy Project Map #: 24 Survey Sxn: —

GPS Unit: 10 QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1340	79°	3/5	0	clear	patchy	overcast	drizzle	shower
	1540	75°	4/6	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Chalcedona	卌	5
Sara's Orangetip	卌 卌 |||	13
Dusky wing	||||	4
White?	|||	3
Blue?	卌 ||	7
Perplexing Hairstreak	|	1
Funeral Duskywing	||	2
Acmon Blue	卌 卌 ||	12
Marble	||	2
Orange? (Gabbs or Quino - Tootor	卌	5
~~Behr's~~ away to ID)		
Behr's Metalmark	卌 |||	8

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Lasthenia
		Layia
		Lupinus
		Eschscholzia
		Descurainia
		Mancanita
		Phacelia
		Salvia columbariae
		Plagiobothrys
		Cryptantha
		Caenothus
		Dichlostemma
		Amsinckia
		Arabis
DP CH01	Point	Chinese Houses

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 24 APRIL, 2010

Project: Campo Wind Energy Project Map #: TILE 12 Survey Sxn: CAMPO 5

GPS Unit : GARMIN 72 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START					clear patchy overcast drizzle shower
1518		73	2->6 MPH	CLEAR	(clear) patchy overcast drizzle shower
1600		73	1->5 MPH	CLEAR	(clear) patchy overcast drizzle shower
1623		73	1->3 MPH	CLEAR	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END					clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
CALIFORNIA MARBLE	TALLY IN FIELD NOTEBOOK	8
BEHR'S METALMARK	"	40
PAINTED LADY	"	3
SOUTHERN BLUE	"	2
PERPLEXING HAIRSTREAK	"	22
WEST COAST LADY	"	2
SPRING WHITE	"	2
PALE TIGER SWALLOWTAIL	"	3
BROWN ELFIN	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 24 APRIL, 2010

Project: Campo Wind Energy Project Map #: TILE 11 Survey Sxn: CAMPO C

GPS Unit : GARMIN 72 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1240	70	2->9 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	77	Ø->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1320	82	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	77	Ø->2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	73	1->9 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads*, various nectar sources

Butterfly Species	Tally	Total
CALIFORNIA MARBLE	TALLY IN FIELD NOTEBOOK	9
PALE TIGER SWALLOWTAIL	"	1
BEHR'S METALMARK	"	84
ORANGE SULPHUR	"	1
PERPLEXING HAIRSTREAK	"	60
FUNEREAL DUSKYWING	"	5
QUINO CHECKERSPOT BUTTERFLY	"	1
PAINTED LADY	"	4
BROWN ELFIN	"	1
SARA ORANGETIP	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB07	POINT	BADLY WORN INDIVIDUAL ON OLD ROAD.
		(NAD 83) 11S 0560710, 3617216
MCHL11	POINT	

TOTAL NUMBER OF QCB DETECTED: 1 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Couffer Add'l Person: ø Date: 24 April, 2010

Project: Campo Wind Energy Project Map #: Tile 19 Survey Sxn: Camp O

GPS Unit : Garmin 72 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	66	ø	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	70	ø	CLEAR	clear	patchy	overcast	drizzle	shower
	1100	73	ø→3MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1200	71	ø→3	CLEAR	clear	patchy	overcast	drizzle	shower
	1210	71	ø→3	CLEAR	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
California Marble	Tally in Field Notebook	6
Acmon Blue	"	7
Perplexing Hairstreak	"	9
Arrowhead Blue	"	2
Behr's Metalmark	"	100
Southern Blue	"	3
Funereal Duskywing	"	4
Painted Lady	"	1
Common Sootywing (Pholisora catullus)	"	2
Spring White	"	2
Harford's Sulphur	"	1
Orange Sulphur (Alfalfa Butterfly)	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCBJ01	POINT	
MCLA07	POINT	
MCWW01	POINT	

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 25 APRIL, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 11 Survey Sxn: CAMPO 6

GPS Unit: GARMIN 1 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1150	80	Ø->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	80	Ø->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	85	Ø->1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	78	Ø->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	75	3->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1515	75	3->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
BEHR'S METALMARK	TALLY IN FIELD NOTEBOOK	105
CALIFORNIA MARBLE	"	8
PERPLEXING HAIRSTREAK	"	29
PAINTED LADY	"	7
FUNEREAL DUSKYWING	"	5
PALE TIGER SWALLOWTAIL	"	3
SOUTHERN BLUE	"	4
SARA ORANGETIP	"	5
ORANGE SULPHUR	"	1
SPRING WHITE	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCLA NESTING	POINT	HORNED LARK CHASING OFF OTHER BIRDS IN THE AREA.
MCLA OB	POINT	NEST ASSUMED TO BE IN THE VICINITY OF THIS POINT.
MCLAOX	POINT	

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE GOUFFER Add'l Person: Ø Date: 25APRIL, 2010

Project: Campo Wind Energy Project Map #: TILE 12 Survey Sxn: CAMPO G

GPS Unit : GARMIN 1 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0830	76	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	74	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	77	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	78	Ø→3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1130	79	Ø→2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
CALIFORNIA MARBLE	IN FIELD NOTEBOOK	6
FUNEREAL DUSKYWING	"	5
SOUTHERN BLUE	"	2
PERPLEXING HAIRSTREAK	"	40
BEHR'S METALMARK	"	114
SPRING WHITE	"	12
PAINTED LADY	"	5
BROWN ELFIN	"	2
PALE TIGER SWALLOWTAIL	"	1
RED ADMIRAL	"	1
ACMON BLUE	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/25/10

Project: Campo Wind Energy Project Map #: 14 Survey Sxn: Comp K

GPS Unit : 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1215	79°	3/5	0	(clear)	patchy	overcast	drizzle	shower
	1410	77°	5/7	0	(clear)	patchy	overcast	drizzle	shower
	1615	77°	3/6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), (soil crusts), (clay soils), (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Sara's Orange Tip	𝍸 𝍸 𝍸 ||	17
Pale Swallowtail	𝍸 𝍸 ||	12
Acmon Blue	𝍸 ||	7
Blue ?	𝍸 |	6
Marble	𝍸 𝍸 |	11
Behrs Metalmark 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸	25
White ?	𝍸 𝍸 ||	12
Perplexing Hairstreak	𝍸	5
Painted Lady	𝍸 |	6
Orange ?	|||	3
Checkerspot ?	|	1
Common Hairstreak	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lotus scoparius
		Phacelia (2 Types)
		Eschscholzia
		Cryptantha
		Plagiobothyris
		Monzanita
		Ceanothus
		Dichlostemma
		Erodium
		Layia
		Penstemon
		Lupinus (3 types)
		Castilleja (Indian Paintbrush)
DPHL01	Point	San Diego Horned Lizard
DPCS01	Point	Coulterthus simulans
02	"	"
03	"	"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Louis Connelly Date: 4/25/10

Project: Campo Wind Energy Project Map #: 13 Survey Sxn: Campo F

GPS Unit : 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:40	69°	0	0	clear	patchy	overcast	drizzle	shower
	10:10	74°	3/5	0	clear	patchy	overcast	drizzle	shower
	11:05	76°	4/5	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady	𝍸	5
Marble	||	2
White?	𝍸 |	4
Blue?	𝍸 𝍸 |	6
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 |||	19
Yellow?	|	1
Funeral Duskywing	|	1
Sara's Orangetip	||	2

Page 1 of 2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Castilleja sp. (Indian Paint Brush)
		Plagiobothrys
		Lasthenia
		Cryptantha
		Eriodictyon
		Arabis
		Eschscholzia
		Amsinckia
		Ceanothus
		Manzanita
		Nemophila
		Lupine
		Phacelia
		Salvia columbariae
DPBS01	Point	Black-Tailed Jack Rabbit

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Paipa Date: 26 April 2010

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo - N

GPS Unit : SM 13 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	~~70~~ 69	calm	0	(clear)	patchy	overcast	drizzle	shower
	1030	72°	calm	0	(clear)	patchy	overcast	drizzle	shower
	1130	76°	2/4	0	(clear)	patchy	overcast	drizzle	shower
	1235	75°	calm	0	(clear)	patchy	overcast	drizzle	shower
	1340	76°	calm	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1520	74°	calm	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
CA Marble	𝍸 𝍸 𝍸 |||	18
Perplexing Hairstreak	𝍸 𝍸 ||||	17
Behrs Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	55
Southern blue	|	1
Acmon blue	|||	4
Brown elfin	|	1
Anise swallowtail	||	2
Sara orangetip	𝍸 ||||	9
Painted lady	𝍸	5
Funereal Duskywing	||||	4
Unidentified sulfur	||	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower, groundpink
NBHL01	point	Horned Lizard
NBHL02		Horned Lizard
NBCH01		Collinsia concolor, ~20 individuals 2x3 m area
NBCH02		Collinsia concolor, ~~100~~ individuals (100+)
NBCH03		Collinsia concolor, 100+ individuals 5x7m

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Fawell Add'l Person: Bo Willey Date: 4/26/10

Project: Campo Wind Energy Project Map #: 23 Survey Sxn: Campo 9

GPS Unit : 1 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:30	72°	0/0	0	(clear)	patchy	overcast	drizzle	shower
	10:25	78°	4/7	0	(clear)	patchy	overcast	drizzle	shower
	11:30	83°	2/4	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ridges, ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Sara's Orange Tip	𝍸 𝍸 𝍸 𝍸 𝍸 |||	28
Behr's Metalmark | 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	56
Acmon Blue	||||	4
Blue?	𝍸 ||||	9
Marble	𝍸 |||	8
Painted Lady	||||	4
?	|	1
Perplexing Hairstreak	||	2
Duskywing	||||	4
Funereal Duskywing	|	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Eriodictyon
		Layia
		Lasthenia
		Lupinus
		Manzanita
		Penstemon
		Cryptantha
		Plagiobothrys
		Lotus
		Nemophila
		Dichelostemma
		Caenothus
		Phacelia
		Castilleja

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David Faulkner Add'l Person: Josh Date: 26 April 2010

Project: Campo Wind Energy Project Map #: 8 Survey Sxn: F (no D)

GPS Unit : 9 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1400	87°	2 mph	5	clear	(patchy)	overcast	drizzle	shower
	1500	80°	6	5	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	75°	5	>5%	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
(GPS died for the)		
A. Vinqueti		11
Euchloe hyatta		4
E. harfordii		1
A. Sara		1
E. brizo		1
V. Cardui		1
P. Atmon		6

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
8		Collensia
		cryptantha
		Coreopsis
		gold fields

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Josh Date: 26 APRIL 2010

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: CAMPO - K

GPS Unit : #9 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	75°	Ø	Ø	(clear)	patchy	overcast	drizzle	shower
	1000	77°	2 mph	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1100	79°	4 mph		clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, old roads, various (nectar) sources

Butterfly Species	Tally	Total
V. Cardui		2
A. Sara		2
E. propertius		3
A. Virginiensis		4
So. blue		1
C. augustinus		2
*E. chalcedona (Checker sp.)		2
P. Acmon		7
C. perplexa		2
E. funeralis		3
Euchloe h. Lotta		1
Papilio eurymedon		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
15		Blue dicks
		cryptanth
		Ceanothus
		goldfields

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Josh A Date: 26 April 2010

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: CAMPO - 11

GPS Unit : #9 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	79°	4	Ø	(clear)	patchy	overcast	drizzle	shower
	1200	83°	Ø	Ø	clear	patchy	overcast	drizzle	shower
	1300	83°	Ø	5%	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	87°	2	5%	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), ridges, (rock outcrops), soil crusts, clay soils, (old roads), various (nectar sources)

Butterfly Species	Tally	Total
A. Sara		2
C. perplexa		2
E. funeralis		2
V. cardui		5
V. virginiensis		1
A. vigilata		25+
P. Acmon		3
C. harfordii		1
Euchloe h. Lotta		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
11		Collensia
		Goldfields
		Antirrhinum
		Ceanothus
		Baby blue eyes.

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 26 APRIL, 2010

Project: Campo Wind Energy Project Map #: TILE 23 Survey Sxn: CAMPO Ø

GPS Unit : GARMIN 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1335	83	Ø→2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	82	Ø→3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	80	2→4 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1600	79	2→6 MPH	5%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources)

Butterfly Species	Tally	Total
CALIFORNIA MARBLE	TALLY IN FIELD NOTEBOOK	7
PAINTED LADY	"	9
BEHR'S METALMARK	"	170
CALIFORNIA SOOTYWING	"	1
FUNEREAL DUSKYWING	"	14
QUINO CHECKERSPOT BUTTERFLY	"	1
POSSIBLE 2ND QUINO, BUT DID NOT POSITIVELY IDENTIFY.		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCWW0a	POINT	
MCQB08	POINT	"MIDDLE-AGED" QUINO AT (NAD83) 11S 0560671, 3611605

TOTAL NUMBER OF QCB DETECTED: 1 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 26 APRIL, 2010

Project: Campo Wind Energy Project Map #: 2 AND 7 Survey Sxn: CAMPO D

GPS Unit : GARMIN 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0845	72	1->5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	73	Ø->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	72	Ø->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	80	Ø->6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1130	82	Ø->2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), ridges, rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
CALIFORNIA MARBLE	TALLY IN FIELD NOTES	8
PAINTED LADY	"	12
BEHR'S METALMARK	"	116
DESERT ORANGETIP	"	1
FUNEREAL DUSKYWING	"	4
ACMON BLUE	"	1
PALE TIGER SWALLOWTAIL	"	1
WEST COAST LADY	"	1
BROWN ELFIN	"	1
CALIFORNIA SOOTYWING	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL11	Point	Juvenile

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: S. Rink ~~Add'l Person:~~ Escort: Bodo Stokes (Kenny) Date: 4/27/10

Project: ~~Manzanita Wind Energy Project~~ Campo Map #: 8F, 8B Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 4 of ~~3~~

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0912	~70	1-2/5	2-5	clear	patchy	overcast	drizzle	shower
	1030	70	2-3/5	3-5	clear	patchy	overcast	drizzle	shower
	1130	71	2-3/5	5-7	clear	patchy	overcast	drizzle	shower
	1230	73	3-4/5	10-12	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	~~Total~~
Acmon Blue	𝍸	5
Behr's metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||	32
Pontia sp.	𝍸 |||	8
W. C. Lady	𝍸 𝍸 |||	13
Sarah Orangetip	||	2
Duskywing ‖	||||	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
SRecc01	pt.	Cal. concolor (n=1)
	pt.	Cal. concolor (n=5)
	pt.	Cal. concolor (n=10)

TOTAL NUMBER OF QCB DETECTED: 2 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 27 APRIL, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 34 Survey Sxn: CAMPO - R2

GPS Unit: GARMIN 3 QCB Protocol Survey # ~~2~~ 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	81	Ø→3 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1300	80	7→13 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1400	75	3→7 MPH	10%	(clear)	patchy	overcast	drizzle	shower
	1500	76	Ø→2 MPH	10%	(clear)	patchy	overcast	drizzle	shower
	1600	76	Ø→4 MPH	10%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOKS	20
GABB'S CHECKERSPOT	"	7
ORANGE SULPHUR	"	1
ACMON BLUE	"	17
PAINTED LADY	"	4
CALIFORNIA MARBLE	"	1
HENNE'S CHECKERSPOT	"	40
FUNEREAL DUSKYWING	"	7
PALE TIGER SWALLOWTAIL	"	3
CALIFORNIA SOOTYWING	"	4
QUINO CHECKERSPOT BUTTERFLY	"	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB09	Point	UPPER LEFT WINGTIP MISSING (NAD83) 11S 0556986, 3609928
MCHL12	Point	
MCQB10	Point	BOTH WINGTIPS INTACT. (NAD83) 11S 0556995, 3609943
MCHL13	Point	
MCQB11	Point	(NAD83) 11S 0557077, 3610140
		59 NUMBERED POINTS ARE COLLINSIA LOCATIONS.

TOTAL NUMBER OF QCB DETECTED: 3 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: Ø Date: 27 APRIL 2010

Project: Campo Wind Energy Project Map #: # 24 Survey Sxn: CAMPO - R1

GPS Unit : GARMIN 3 QCB Protocol Survey # R4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0848	72	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	73	Ø→2	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	76	1→5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	77	Ø→3	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops (ridges) (rock outcrops) (soil crusts) clay soils (old roads) (various nectar sources)

Butterfly Species	Tally	Total
BEHRS METALMARK	IN FIELD NOTEBOOK	350
PAINTED LADY	"	7
CALIFORNIA MARBLE	"	5
SPRING WHITE	"	2
RED ADMIRAL	"	1
SARA ORANGETIP	"	2
PERPLEXING HAIRSTREAK	"	2
GABB'S CHECKERSPOT	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NONE		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Phillip Rapp Date: 4/27/10

Project: Campo Wind Energy Project Map #: 23 Survey Sxn: Campo 9

GPS Unit : 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:45	~~74°~~	2/4	0	(clear)	patchy	overcast	drizzle	shower
	11:15	77°	3/8	0	~~clear~~	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	~~shower~~
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) ~~hilltops~~, ridges, ~~rock outcrops~~, soil crusts, clay soils, ~~old roads~~, ~~various~~ nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	𝍸 𝍸 𝍸 𝍸	20
Yellow ?	I	1
Painted Lady	𝍸 I	4
Orange	I	1
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	160
Mourning Cloak	𝍸 𝍸 𝍸 𝍸	20
Orange ?	I	1
Yellow ?	I	1
Funeral Dusky wing	II	2
Duskywing	𝍸 𝍸 𝍸 𝍸	20
White ?	𝍸 𝍸 𝍸	15
Acmon Blue	𝍸 III	8

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Layia
		Plagiobothrys
		Lasthenia
		Erodium
		Manzanita
		Collinsia
		Penstemon
		Nemophilia
		Cryptantha
		Plagiobothrys

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Phillip Paipa Date: 4/27/10

Project: Campo Wind Energy Project Map #: 24 Survey Sxn: Camp R

GPS Unit : 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1140	74°	5/7	0	clear	patchy	overcast	drizzle	shower
	1345	72°	6/9	0	clear	patchy	overcast	drizzle	shower
	1500	74°	5/8	0	cirrus clear	patchy	overcast	drizzle	shower
	1555	73°	7/10	0	cirrus clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, ~~hilltops~~, ~~ridges~~, rock outcrops, soil crusts, clay soils, ~~old roads~~, ~~various~~ nectar sources

Butterfly Species	Tally	Total
Pale Swallowtail	1	1
Behrs Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	60
Sara's Orangetip	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Layia
		Phacelia
		Coreopsis
		Eriodictyon
		Manzanita
		Collinsia
		Penstemon
		Nemophilia
		Plagiobothrys
		Cryptantha

TOTAL NUMBER OF QCB DETECTED: 1 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: Erin Bergman Date: 4.27.2010

Project: Campo Wind Energy Project Map #: 9-J Survey Sxn:

GPS Unit : 13 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0920	67°	0-4	1%	(clear)	patchy	overcast	drizzle	shower
	1200	78	4-8	10%	(clear)	patchy	overcast	drizzle	shower
	1515	78	2-6	20%	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils,) (hilltops,) (ridges) (rock outcrops,) (soil crusts,) clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
GABB'S CHECKERSPOT (1 female & 2 males)	III	3
Sara's Orangetip	See Field	2
Behr's Metalmark	Notebook for	155
Pearly Marble	Tallies	8
Pale Swallowtail		9
Painted Lady	(all landed)	4
Spring Azure	photo	1
Funereal Duskywing		2
Duskywing unknowns		6
Acmon Blue		14
Sulphur sp.		1
Spring White		1
Gray Marble	photo	1
Sleepy Duskywing		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Plants	Emmenanthe pendulifera
		Anisocoma acaulis
		Phacelia parryi
		Lotus scoparius brevialatus
		Ceanothus leucodermis & greggii perplexans
		Salvia columbariae
		Lupinus concinnus & bicolor
		Caulanthus simulans & heterophyllus
		Streptanthus campestris
		Cryptantha spp.
		Gilia capitatum
		Lotus argophyllus var. argophyllus
		Layia glandulosa
		Phacelia distans &
MMDS01		Delphinium parishii subglobosum
MMDS02		"
MMSC01		Streptanthus campestris
MMSC02		"
MMSC03		"
MMSC04		"
MMSC05		"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: CARL Date: 27 April 2010

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: CAMPO - L

GPS Unit : #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	65°	1	Ø	(clear)	patchy	overcast	drizzle	shower
	1000	73°	2	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1100	73°	4	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads), various (nectar sources)

Butterfly Species	Tally	Total
A. Virginiensis		25+
A. Sara		4
P. Acmon		3
V. Cardui		1
Erynnis brizo		1
Euchloe hyantis lotta		2
C. Augustina		5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
15-L		Cryptantha
		Goldfields
		Cemottens
		Amsinckia
		Collensia
		Baby blue eyes

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: CARL Date: 27 APR 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Campo L

GPS Unit : #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	73°	2	∅	(clear)	patchy	overcast	drizzle	shower
	1200	77°	2	∅	(clear)	patchy	overcast	drizzle	shower
	1300	77°	8	10%	clear	(patchy)	overcast	drizzle	shower
	1400	75°	10	50%	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1500	73	11	∅	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
Apodemia virgulti		25+
P. Acmon		8
A. Sara		3
Vanessa sp.		1
Vanessa atlanta (R. Admiral)		1
Euchloe h. lotta		2
V. Cardui		3
[Hemiargus ammis]		1
Callophrys augustinus		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16		Collensia
		Cryptantha
		Blue dicks
		Baby Blue eyes
		Wall flower
		goldfields
		Ceanothus

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Couffer Add'l Person: Dale Powell Date: 30 April, 2010

Project: Campo Wind Energy Project Map #: Tile 24 Survey Sxn: Campo - RJ

GPS Unit : Garmin 13 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	62	2->4 mph	60%	clear	patchy	overcast	drizzle	shower
	1400	61	2->7 mph	50%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Gabbs Checkerspot	In Field Notebook	1
Sara Orangetip	"	1
Pale Tiger Swallowtail	"	1
Dale and I hiked South along the Campo RJ ridgetop in order to Determine the validity of the habitat assessment in this area. We also drove to the South end of this survey polygon to inspect habitat and access. We found that in this area, the large expanse of excluded habitat is valid, and need not be surveyed for the Butterfly. See also Dale Powells data sheet.		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL15	POINT	HORNED LIZARD ON ROAD
OTHER POINTS REPRESENT COLLINSIA SP. LOCATIONS ALONG ROOTE.		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Pownell Add'l Person: Mike Coulter, Kevin Lewis Connolly Date: 4/30/2010

Project: Campo Wind Energy Project Map #: 24 Survey Sxn: Campo R

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	63°	4/6	50	clear	patchy	overcast	drizzle	shower
	1405	61°	4/7	50	~~clear~~	patchy	overcast	drizzle	shower
	1550	55°	5/9	75	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Map 24 Campo R

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ~~ridges~~, ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Funereal Duskywing	1	1
Gabbs	1	1
Sara's Orangetip	1	1
White?	1	1
Pale Swallowtail	1	1
Painted Lady	1	1
Behr's Metalmark	11	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha
		Plagiobothyrs
		Collinsia (See Mike Coutter's) Notes)
		Cacnothus
		Layia
		Lasthenia
		etc.
		↑
		Abundant
	Habitat survey and possible protocol survey along north	
	south ridgeline on Map 24. (Western area),	
	~557009, ~3609668 to 3608868	
	Inspected same ridge south into Map 27	
	(See Mike Coutter's notes)	
	(Mike noted Collinsia - observed)	
DPIP01	Include Polygon	Open area
DPHL01	POINT	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Youngbird Date: 30 APRIL 2010

Project: Campo Wind Energy Project Map #: 14 Survey Sxn: Campo-K

GPS Unit : #5 QCB Protocol Survey # 4 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	63°	2	30	clear	(patchy)	overcast	drizzle	shower
	1200	65°	1	40	clear	(patchy)	overcast	drizzle	shower
	1300	67°	5	50	clear	patchy	(overcast)	(drizzle)	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	62	9	50	clear	patchy	(overcast)	(drizzle)	shower

Habitat On-site (circle): open soils, (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
A. Virgulti		6
P. eurymedon		2
P. Acmon		8
V. Cardui		2
P. Lupini		1
Southern Blue (L. Australis)		1
Erynnis Sp.		1
[Stopped @ 1400 - no legs, cool, rain, etc.]		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#14	CAMPO-K	Blue dicks
		cryptantha
		goldfields
		baby blue eyes
		yellow yArrow
		Collensia - only a few scattered plants.

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Bonnie Hendricks Add'l Person: Erin Bergman Date: 4/30/10

Project: Campo Wind Energy Project Map #: 1, 5 Survey Sxn: A (Campo)

GPS Unit: Garmin 3 QCB Protocol Survey # 4 of 5

	TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:30	64.7	3.7/7.0	60	clear	(patchy)	overcast	drizzle	shower
	12:15	57.0	4.4/8.8	80	clear	patchy	(overcast)	drizzle	shower
START	13:45	66.4	3.7/9.7	30	clear	(patchy)	overcast	drizzle	shower
	1:50	67.6	5.1/7.5	40	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	2:30	57.7	5.2/8.3	90	clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): open soils, hilltops/ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady	I	1
Pearly Marble White	II	2
Nectaring Plants:		
Cryptantha sp.	*	
Malacothrix calif.		
Lasthenia sp.		
Nemophila menziesii		
Layia glandulosa		
Eschscholzia greggii		
C. concordiana		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Handsicks 4-30-10

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
EBASD001	Population/ Rare Plant	(1 plant)
EBASD002	" "	1 plant
EBASD003	" "	4 plants
" 04	" "	6 "
" 05	" "	150 "
" 06	" "	75 "
" 07	" "	13 "
" 08	" "	25 "
" 09	" "	23 "
" 10	" "	4 "
" 11	" "	30 "
13	" "	3 "
14	" "	3 "
15	" "	5 "
16	" "	6 "

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Mike Connyer Date: 5/1/10

Project: Campo Wind Energy Project Map #: 27 Survey Sxn: Campo R

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1445	67°	7/9	5	(clear)	patchy	overcast	drizzle	shower
	1605	65°	6/7	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Orange?	\	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Phacelia
		Cryptantha

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Mike Corrigan Date: 5/2/10

Project: Campo Wind Energy Project Map #: 24 + 25 Survey Sxn: Campo R

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	62	62°	4/6	0	clear	patchy	overcast	drizzle	shower
	6	65°	5/7	0	clear	patchy	overcast	drizzle	shower
	1330	66°	6/9	0	clear	patchy	overcast	drizzle	shower
	1425	67°	6/8	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	𝍸 𝍸 𝍸 𝍸 𝍸	25
Southern Blue	𝍸 𝍸	5
Blue	𝍸 I	6
Lady?	𝍸	5
West Coast Lady	I	1
Behrs Metalmark	𝍸 𝍸	10
Marble ?	𝍸	5
White ?	𝍸 𝍸	10
Gabbs Checkerspot	𝍸	5
Chalcedon	𝍸 𝍸 𝍸	15
Acmon Blue	𝍸	3
Funeral Duskywing	II	2
Duskywing	I	1

I lost the small MAP TILE maps for 24-25

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Phycella 2 Types
		Loyid
		Manzanita
		Cryptantha
		Plagio bothrys
		Erodium
		Arabis
		Dichlostemma
		Mimulus
		Lotus
		Lupinus
		Ceanothus
		Amsinckia
		Eschaltzia
DP CH 01	Point	Collinsia
" 02	"	"
" 03	"	"
" 04	"	"
" 05	"	"
DP BJ 01	Point	Black-Tailed Jack Rabbit

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: ANDREW FISHER Date: 1 MAY, 2010

Project: Manzanita Wind Energy Project Map #: TILE 24 Survey Sxn: CAMPO R

GPS Unit: GARMIN 3 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	63	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	64	2->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	67	Ø->4	5%	(clear)	patchy	overcast	drizzle	shower
	1200	68	Ø->3	5%	(clear)	patchy	overcast	drizzle	shower
	1300	72	Ø->5	5%	(clear)	patchy	overcast	drizzle	shower
	1400	73	Ø->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1500	68	2->5	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, old roads, (various nectar sources)
1600 HRS, 68°F, 2->5 MPH, CLEAR

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	20
GABB'S CHECKERSPOT	"	27
BEHR'S METALMARK	"	6
SOUTHERN BLUE	"	9
FUNEREAL DUSKYWING	"	14
HENNE'S CHECKERSPOT	"	28
PALE TIGER SWALLOWTAIL	"	1
QUINO CHECKERSPOT BUTTERFLY	"	21

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB12	POINT	(NAD 83) 11S 0557061, 3610108 (3180 FT EL)
AFQB01	POINT	FIRST OBSERVED BY ANDREW FISHER (NAD83) 11S 0557076, 3610089 (3192 FT ELEV.)
AFTUVUNESTO1	POINT	NEED TO BE CHECKED BY RAPTOR BIOLOGIST
NUMBERED COORDINATES REPRESENT COLLINSIA LOCATIONS ALONG ROUTE.		
QUINO DETECTED BY ANDREW FISHER WAS IMMEDIATELY VERIFIED BY MIKE COUFFER. THIS QUINO WAS A FRESHER QUINO THAN THE INITIAL QUINO OF THE DAY.		

TOTAL NUMBER OF QCB DETECTED: 2 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOHSTROH Add'l Person: LOUIS Date: 5/1/10

Project: Campo Wind Energy Project Map #: 14, 15 Survey Sxn: K

GPS Unit : #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	64	0-3	0	(clear)	patchy	overcast	drizzle	shower
	1130	64	6-10	10	clear	(patchy)	overcast	drizzle	shower
	1300	65	5-13	5	clear	(patchy)	overcast	drizzle	shower
	1400	72	2-8	1	(clear)	patchy	overcast	drizzle	shower
	1520	69	0-10	1	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1550	67	0-10	3	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	(used field book)	8
Perplexing Hairstreak		7
Behr's Metal Mark		23
Painted Lady		9
West Coast Lady		2
Sara's Orangetip		5
Funereal Dusky Wing		5
Pearly Marble		2
Pale Swallowtail		9
Silvery Blue		3
Sleepy dusky Wing		2
Gabb's checkerspot		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLSC01	Rare plant point	Streptanthus campestris ~50 individuals
BLCH01	Host plant point	chinese houses ~30 individuals
BLCH02	"	" ~100s individuals
		Nectar sources: Mimulus aurantiacus, popcorn fl,
		erodium, Lotus hamatus, CA poppy,
		chaenactis glabruscula, phacelia parryi, distans
		Desert dandelion, Amsinkia, Keckiella parishii
		ceanothus, Gilia capitatum, Cirsium
		occidentalis, camomastemia, yucca whip,
		Emmenanthe penduliflora, Lotus scoparius
		Eriophyllum wallacei, Antirhinum nuttallianum
		Senecio californica
		Cath
		Scja
		SpTo
		BCSP
		BHGR
		La2b
		wren
		WTSW
		CaQu
		Bush
		COPH
		NoFL
		Oati
		Lego
		Granite night lizard (Xantusia) X2
		Side blotch Lizard
		W. Fence Lizard
		Granite Spiny Lizard
		CA kingsnake, Ringneck snake, Gopher snake

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5/18 2010

Project: Campo Wind Energy Project Map #: 1 Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	60°	2-6	0%	(clear)	patchy	overcast	drizzle	shower
	1200	66°	4-10	40%	clear	(patchy)	overcast	drizzle	shower
	1300	67°	8-12	25%	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), ridges, rock outcrops, (soil crusts), clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	See notebook	19
Acmon Blue		3
Sara's Orangetip		1
Silvery Blue		1
Funeral Duskwing		2
Perplexing Hairstreak		2
Pearly Marble		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		Ceanothus leucodermis & cuneatus
		Lasthenia gracilis
		Layia glandulosa
		Escholtzia californica
		Malacothrix californica
		Trichostemma lanatum
		Eriophyllum wallcei
		Uropappus lindleyi
		Phacelia distans
		Lupinus concinnus & L bicolor
		Leptosiphon lemmoni
		Aniscoma acaule
MMDS01	Sensitive plant pt	Dephinium parishii subglobosum 10 plants
MMLS01	"	Lathyrus splendens 1 on shrub
MMCH01	Host plant pt	Collinsia heterophylla ≈ 10 plants
MMCH02	"	" ≈ 15 plants
MMCH03	"	" ≈ 10 plants
MMGV01	~~[illegible]~~ Sensitive plant pt	Geraea viscida 6 plants
MMEP01		Houses
MMEP02		This is a tall grassland now w/ 20+ dogs.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5/1/2010

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: _____

GPS Unit : 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	67°F	8-12	25%	clear	(patchy)	overcast	drizzle	shower
	1530	67°F	6-8	25%	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) ridges, rock outcrops, soil crusts, clay soils, (old roads), various nectar sources

Butterfly Species	Tally	Total
Acmon Blue		6
Behr's Metalmark		9
Pearly Marble		1
Painted lady		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		Layia glandulosa
		Lasthenia gracilis
		Collinsia heterophylla
		Anisocoma acaule
		Lupinus bicolor & L. concinnus
		Lotus strigosus
		Ceanothus leucodermis
		Platystemon californicus
		Erysium capitatum capitatum
		Gilia capitatum capitatum
		Amsinkia menziesii
		Ceanothus leucodermis
		Phacelia distans
		Leptosiphon lemmonii
		Aniso coma acaule
MMDS02	sensitive plant pt	Delphinium parishii subglobosum
MMAD01	↓	Astragalus douglasii perstrictus
MMAD02		"
MMAD03		"
MMAD04		"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Kenny Stokes Date: 5/2/10

Project: Campo Wind Energy Project Map #: 1 Survey Sxn: Campo A

GPS Unit : _____ QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1230	67°	4/6	0	clear	patchy	overcast	drizzle	shower
	1330	70°	5/7	0	clear	patchy	overcast	drizzle	shower
	1615	72°	4/7	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Southern Blue	𝍸 𝍸 III	13
Marble ?	III	3
Behr's Metalmark	𝍸 III	8
Blue ?	𝍸	5
Pale Swallowtail	I	1
Sara's Orangetip	𝍸 II	7
Lady ?	II	2
West Coast Lady	I	1
White ?	𝍸 II	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Cacnothus
		Bradium
		Manzanita
		Collinsia
		Dichlostemma
		Lupinus
DPHL01	Point	San Diego Horned Lizard
DPCH01	Point	Collinsia
" 02	"	"
" 03	"	"
" 04	"	"
" 05	"	"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 2 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 17 Survey Sxn: CAMPO N

GPS Unit : GARMIN 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1020	60	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	66	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	64	Ø->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	8
PERPLEXING HAIRSTREAK	"	8
PAINTED LADY	"	5
BEHR'S METALMARK	"	10
FUNEREAL DUSKYWING	"	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 2 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 18 Survey Sxn: CAMPO-N

GPS Unit : GARMIN 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	64	0->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	73	0->3	CLEAR	clear	patchy	overcast	drizzle	shower
	1400	76	0->2	CLEAR	clear	patchy	overcast	drizzle	shower
	1500	74	0->6	CLEAR	clear	patchy	overcast	drizzle	shower
	1600	71	2->8	CLEAR	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
PAINTED LADY	IN FIELD NOTEBOOK	9
BEHR'S METALMARK	"	90
GABB'S CHECKERSPOT	"	2
SARA ORANGETIP	"	7
SOUTHERN BLUE	"	5
SPRING WHITE	"	2
FUNEREAL DUSKYWING	"	9
DESERT ORANGETIP	"	2
PALE TIGER SWALLOWTAIL	"	3
GRAY HAIRSTREAK	"	3
HENNE'S CHECKERSPOT	"	1
WEST COAST LADY	"	3
RED ADMIRALS	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCWW04	POINT	
MCHL16	POINT	
MCWW0X	POINT	

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: F. Dettmers Add'l Person: B. Willey Date: 5/3/10

Project: Campo Wind Energy Project Map #: Tik 5 Survey Sxn: _____

GPS Unit : SM 13 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	900	68.9	2-4 mph	0%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1332	77°	2-4	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, (ridges), rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Apodemia mormo	IIII I IIII IIII IIII IIII IIII	46
Callophrys Dumetorum	"	2
Icaricia Acmon	III	3
Vanessa Cardui	IIII/III	9
Glaucopsyche lygdamus	II	2
Pontia protodice (Checkered white)	IIII/	5
Erynnis funeralis	1	1
Colias harfordii	1	1
Anthocharis Sara	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
FDCOLTE 01	0560455 3620122	POD 6 NW Facing Slope. DG Soil. Buckwheat Scrub OAK.
" 02		
" 03		
" 04		
" 05	0560440 3620142	Pop 200+. Just South of Deep drainage on North Facing Bank
" 06	0560115 3619210	Pop 15 W. Facing Slope in Buckwheat + Ceanothus
		Buckwheat scrub. -
		Collinria - Mapped / GPS.
		Gold fields.
		Ceanothus.
		Chamise Chaparral -
		Manzanita, Mexican / Big Berry
		surveyed from I-8 North to just
		south of La Posta Casino. and East
		of Crestwood Rd.

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Andrew Pigniolo Add'l Person: _____ Date: 5/3/10

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: B

GPS Unit : 7 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	74	0-2	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	1400	76	0-2	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1530	77	0-2	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	46
Painted Lady	𝍸 I	6
Sara's Orange Tip	II	2
Marble	II	2
Perplexing Hairstreak	IIII	4
Common White	I	1
Gabb's Checkerspot	I	1
Acmon blue	IIII	4
Unident Skipper	I	1
		67

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
APCC08	Point	30+ Collinsia concolor
APCC09	Point	10+ " "

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Andrew Pigniolo Add'l Person: _____ Date: 5/3/10

Project: Campo Wind Energy Project Map #: 8 Survey Sxn: 6

GPS Unit : 7 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0915	60	2-6	0	(clear)	patchy	overcast	drizzle	shower
	1015	66	2-6	0	(clear)	patchy	overcast	drizzle	shower
	1115	69	2-6	0	(clear)	patchy	overcast	drizzle	shower
	1215	69	2-4	0	(clear)	patchy	overcast	drizzle	shower
	~~1315~~				clear	patchy	overcast	drizzle	shower
	~~1415~~				clear	patchy	overcast	drizzle	shower
END	~~1500~~ 1245	68	0-4	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	26
Painted Lady	𝍸 𝍸	11
Dusky wing Skipper	11	2
Perplexing hairstreak	11	2
Sarah Orangetip	111	3
Acmon blue	𝍸 𝍸	11
Common white	1	1
Unident Blue	1	1
		57

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
01 + APCC01	Point	1 Collinsia concolor
APCCCR02	Point	2 Collinsia concolor + 5+ Cordylanthus rigidus
APCC03	Point	2 " "
APBJ04	Point	1 Black tailed jackrabbit
APCC05	Point	15+ Collinsia concolor
APCC06	Point	20+ " "
APCC07	Point	20+ Collinsia concolor

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID FLIETNER Add'l Person: JOHN BOSTICK Date: 5-3-10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: O

GPS Unit : 12 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	0830	64	5-9	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END	1600	77	3-5	0	(clear) patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's metalmark	𝍸 𝍸 𝍸 𝍸 𝍸	60
Acmon blue	𝍸 11	17
Purplish hairstreak	7	7
Pearly marbled ~~white~~	5	5
lady	𝍸	15
Sara orange tip	8	8

Page 1 of 2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Last cal
		Caem bigt
		Crypt int
		Esch cali
		Lup cand
		Plagiobothrys
		Amsk menz
		Gilia
		Salvia colum
typo		Lotus scop
DFLA01	point	1 Coast live oak
~~APCH01~~	point	~30 Collinsia heter
		Phacelia distans
DFLA01	point	1 Lathyrus splendens growing in Q. agrifolia

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Lewis C. Date: 3 May 2018

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: Campo H

GPS Unit : #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67°	5	Ø	(clear)	patchy	overcast	drizzle	shower
	1000	71°	4	Ø	(clear)	patchy	overcast	drizzle	shower
	1100	75°	2	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1200	76°.	3	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. lupini		1
A. virguliti		25+
P. acmon		6
V. cardui		2
C. Augustinus		1
A. sara		3
Erynnis sp.		2
Euchloe hoffita		1
E. proportius		2
Leptotes marina		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#11, H	Marked as #1.	11S 0560117 Collensia. UTM 3616770 - 100's of Plants
		composites
		Cryptantha
		CHiA

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: L. Connelly Date: 3 May 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Campo H

GPS Unit : #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	76°	3	Ø	(clear)	patchy	overcast	drizzle	shower
	1300	78°	1	Ø	(clear)	patchy	overcast	drizzle	shower
	1400	78°	2	Ø	clear	patchy	overcast	drizzle	shower
	1500	83°	1	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	79	4	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. Acmon		25+
A. virgulti		25+
P. protodice		3
P. eurymedon		1
A. sara		12
Erynnis sp.		1
Colias harfordii		1
V. Cardui		5
V. annabella		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16	Marked as #3	Rare mustard - Southern Jewell flower — 11S 559957 UTM 3616131 — 20+ plants.
	Marked as #4	Collensia — 11S 559968 UTM 3616189 — 10+
		Cryptantha
		goldfields

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 3 MAY, 2010

Project: Campo Wind Energy Project Map #: TILES 18 AND 19 Survey Sxn: CAMPO - N

GPS Unit : GARMIN 3 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0835	67	3->6 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	70	3->8	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	72	3->10	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	74	4->8	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	77	Ø->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	80	Ø->4	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1400	81	Ø->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops (ridges) (rock outcrops) soil crusts, clay soils (old roads) (various nectar sources)

1500 HRS, 80°F, Ø->3 MPH, CLEAR

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	18
BEHR'S METALMARK	"	225
FUNEREAL DUSKYWING	"	10
PAINTED LADY	"	5
WEST COAST LADY	"	2
SOUTHERN BLUE	"	5
SARA ORANGETIP	"	4
GABB'S CHECKERSPOT	"	5
SPRING WHITE	"	3
PALE TIGER SWALLOWTAIL	"	2
ORANGE SULPHUR	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL18 050310	POINT	
MC GARMIN 06	POINT	FOUND GARMIN # 6 LOST BY > OTHER BIOLOGIST APPROX.
		ONE MONTH AGO. UNIT TURNS ON AND IS IN GOOD CONDITION
ALL NUMBERED	POINTS REPRESENT	COLLINSIA LOCATIONS ALONG TRACK ROUTE >.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Kevin Bryant Date: 5/3/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Campo I

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:30	65°	7/9	0	clear	patchy	overcast	drizzle	shower
	9:50	67°	7/10	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Lady?	I	1
Behr's Metalmark	~~IIII~~ III	8
White?	III	3
Blue?	IIII	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Castilleja
		Layia
		Lasthenia
		Erodium.
		Deseuveuxia
		Salvia columbariae
		Cryptantha
		Plagiobothrys
		Amsinckia
		Dichelostemma
		Ceanothus
		Lupinus
		Chaenactis
		~~Amsinckia~~ Melocothrix
		Astragalus
DPCH01	Point	Collinsia
V	"	"
10	"	"
DPJF01	Point	C. concolor is
DPJF02	"	C. "
DPJF03	"	C. "

TOTAL NUMBER OF QCB DETECTED: 2 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Kevin Date: 5/3/10

Project: Campo Wind Energy Project Map #: 10, 15 Survey Sxn: Campo I

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9:50	67°	2/10	0	clear	patchy	overcast	drizzle	shower
	11:15	75°	4/7	0	clear	patchy	overcast	drizzle	shower
	1430	78°	5/8	0	clear	patchy	overcast	drizzle	shower
	1600	81°	4/6	0	clear	patchy	overcast	drizzle	shower
	1640	79°	7/11	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Pale Swallowtail	𝍸 𝍸 𝍸 𝍸 I	26
Acmon Blue	𝍸 III	8
Blue?	𝍸 𝍸 𝍸 𝍸 I	26
Behrs Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	78
Sara's Orangetip	𝍸 𝍸 𝍸 𝍸 II	22
White?	IIII III	8
Marble	III	3
Orange? (Lady)	IIII	4
Funeral Dusky wing	II	2
Dusky wing	𝍸 III	8
Orange? (Checkerspot?)	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lotus
		Camissonia
		Astragalus
		Layia
		Lasthenia
		Erodium
		Descurainia
		Salvia columbariae
		Amsinckia
		Lupinus
		Caenothus
		Plantago erecta
		Cryptantha

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOHSTROH Add'l Person: BOE/Escort Date: 5/4/10

Project: Campo Wind Energy Project Map #: 11, 12, 16 Survey Sxn: G

GPS Unit : 7 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0840	68	0-1	0	(clear)	patchy	overcast	drizzle	shower
	1040	78	0-4	0	(clear)	patchy	overcast	drizzle	shower
	1300	80	3-8	0	clear	patchy	overcast	drizzle	shower
	1420	83	3-8	0	(clear)	patchy	overcast	drizzle	shower
	1515	79	4-8	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark		39
Common Sooty Wing		3
Sara Orangetip		5
Painted Lady		3
Acmon Blue		5
Spring Azure		2
Southern Blue		3
Chalcedon checkerspot		1
Common White		1
Hartfordi Sulphur		3
Dearly Marble		3
Perplexing hairstreak		2
Pale Swallowtail		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLHL01		Juv Horned Lizard
BLCH01		chinese houses ~10 ind.
BLLB01		Linanthus bellus 100s ind.
BLCH02		chinese houses ~5 ind.
BLCH03		" 5 ind.
BLLB02		Linanthus bellus 500 ind.
BLHL02		Juv Horned Lizard
BLLB03		Linanthus bellus 500 ind
BLCH04		chinese houses 100 ind.
BLCH05		chinese houses 100 ind.
BLLB06		Linanthus bellus 500 ind
BLLB07		Linanthus bellus 500 ind
BLCH06		chinese houses 50 ind
BLCH07		chinese houses 100 ind
BLHL03		Adult horned Lizard
BLLB08		Linanthus bellus 300 ind
BLCH09		chinese houses 30 ind
BLCH10		chinese houses 50 ind
BLHL 04		Juv horned Lizard
BLCH11		chinese houses 30 ind
BLCH12		" 20 ind
BLCH08		chines houses 300 ind.
		Calt, CAQU, Oati, Wind, ATFL, Eust, CORA
		Scja, Yewa, BCSP, coHu, LaSP SpTO
		Ceth, BHGR, BEWR, Lego, WEBB

Nectar Sources: CA poppy, erodium, Ceanothus, Cammissonia, Lastrenia, Penstemon chia, Linanthus bellus mustards Centranthifolia, spectabilis; Desert dandelion, phacelia distans, parryii; popcorn flower, Linanthus SP, Lemmonii; Lupinus spp, Layia glaberata Mimulus guttatus, Lotus heermanii, mimulus fremontii, Anisocoma acaulis, senecio californica, trichostemma, Gilia capitatum, Eriophyllum spp. Delphium parryii ssp subglobulosum

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: ~~Kevin~~ None Date: 5/4/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 7 Survey Sxn: Campo D

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0850	68°	4/3	0	(clear)	patchy	overcast	drizzle	shower
	1020	71°	6/7	0	(clear)	patchy	overcast	drizzle	shower
END	1115	78°	8/13	0	(clear)	patchy	overcast	drizzle	shower
START	1155	75°	7/12	0	(clear)	patchy	overcast	drizzle	shower
~~START~~	1325	78°	5/9	0	(clear)	patchy	overcast	drizzle	shower
	1520	76°	9/13	0	(clear)	patchy	overcast	drizzle	shower
END	1545	76°	8/11	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ~~ridges~~, ~~rock outcrops~~, soil crusts, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Behr's Metalmark	~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~ ~~𝍸~~	55
Sara's Orange Tip	~~𝍸~~ 𝍸 𝍸 𝍸 𝍸	9
White?	~~𝍸~~ 𝍸	5
Funeral Duskywing	𝍸 𝍸	3
Dusky wing	𝍸 𝍸	4
Blue?	𝍸	1
Orange?	𝍸	1
Lady?	𝍸	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Lasthenia
		Layia
		Ericameria
		Arabis
		Plagiobothrys
		Cryptantha
		Descurainia
		Phacelia
		Dichelostemma
		Nemophila
		Anisocoma
		Penstemon
DPCH11	Point	Collinsia
↓	〃	〃
030	〃	〃

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: None Date: 5/4/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 2 Survey Sxn: Campo D

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:20	78°	8/12	0	(clear)	patchy	overcast	drizzle	shower
	12:45	75°	7/12	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Duskywing	II	2
Funeral Duskywing	I	1
Pale Swallow Tail	I	1
Behrs Metalmark	~~IIII~~ III	8
Sulfur ?	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Cryptantha
		Plagiobothrys
		Caenothus
		Descurainia
		Phacelia

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Daniel Date: 4 May 2010

Project: Campo Wind Energy Project Map #: 11, 12 Survey Sxn: Campo E

GPS Unit : #2 QCB Protocol Survey # 4(?) of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	70°	0	0	(clear)	patchy	overcast	drizzle	shower
	1000	74°	5	0	(clear)	patchy	overcast	drizzle	shower
	1100	77°	4	0	(clear)	patchy	overcast	drizzle	shower
	1200	80°	6-7	0	(clear)	patchy	overcast	drizzle	shower
	1300	83°	8	0	(clear)	patchy	overcast	drizzle	shower
	1400	80°	7	0	(clear)	patchy	overcast	drizzle	shower
END	1500 1600	80° 78°	7 8	0 0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges), (rock outcrops) soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. lupini		2
V. cardui		4
P. acmon		25+
Erynnis propertius		2
C. perplexa		1
A. virgulti		25+
Phiclossa catulla		5
Erynnis funeralis		4
A. sara		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
12E.	Mark #2	Collinsia, ~50 plants.
		11S 0561218
		UTM 3618096
12E	No Mark.	Horned-lizard : 11S 0561238
		UTM 3617987
		Nectar: Cryptantha
		Goid fields
		Ceanothus

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID FLIETNER Add'l Person: JOHN ~~PICKLEY~~ BOSTICK Date: 5/4/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: P

GPS Unit : 10 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
~~START~~	8:20	58	0-2	0	(clear)	patchy	overcast	drizzle	shower
START	8:50	66	02-4	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
		75			clear	patchy	overcast	drizzle	shower
END	10:30	~~75~~	3-5	0	(clear)	patchy	overcast	~~drizzle~~	~~shower~~

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue	::	4
Behr's metalmark	::	4
Sara orange tip	II	~~7~~ 8

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Last cal
		Crypt Int
		Cedros
		Phacelia dist
		Malacothrix
		Lup conc.
		gilia
		Camis cal
		Linanthus
		Salv col
		Layia glandl
		Phacelia minor

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID FLIEVER Add'l Person: JOHN BUSTICK Date: 5/4/10

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: P

GPS Unit : 10 QCB Protocol Survey # 4 of 5.

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11 00	77	0-3	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	16 30	83	7+10	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs metalmark	⊠⊠⊠⊠⊠ ---	200
Perp hairstreak	⁘	33
Sara orangetip	⊠ ⊡	18
Painted lady	⊠ ⁘	12
Acmon blue	⊔	6
Gubb's checkerspot	·	1
Pearly marble	⁘	3
Funereal dusky wing	⁘	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lust cal
		Ecsch cal
		Crypt int
		Camis bist
		Salv colum
		Gilia cap.t
DFCH01	point	~ ~~50~~ 100 Collinsia
		Lotus stri
		Amsinck menz
		Lupinus conc
		Phacelia minor
		Linanthus lemmonii
DFCH02	point	~ 200 Collinsia
		Cream puffs
DFCH03	"	
		Caul hetero
DFHL01	"	horned lizard
		Chaenactis glab
		Mimulus (yellow)
		Emmenantho pend
		Linanthus dian
DFCS01	point	1 Caulanthus simulans
		Coreopsis calif
CH3 → CH12 points →		1 GPS ed representative Collinsia
	polygon	locations — these should just
		be made into a polygon

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 4 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 21 Survey Sxn: CAMPO-N

GPS Unit : GARMIN 9 QCB Protocol Survey # ?4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	78	3->5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	76	7->14	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	81	Ø->6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	81	3-8	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	81	Ø->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1530	80	Ø->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
SARA ORANGETIP	IN FIELD NOTEBOOK	5
HENNE'S CHECKERSPOT	"	14
PALE TIGER SWALLOWTAIL	"	5
FUNEREAL DUSKYWING	"	11
SOUTHERN BLUE	"	3
BEHR'S METALMARK	"	7
CHECKERED WHITE	"	2
CALIFORNIA MARBLE	"	2
ACMON BLUE	"	4
PERPLEXING HAIRSTREAK	"	4
PAINTED LADY	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL19 050410	POINT	MEDIUM-SIZED HORNED LIZARD
NUMBERED	POINTS REPRESENT	COLLINSIA LOCATIONS COLLECTED ALONG
ROUTE.		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 4 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 16, 19 Survey Sxn: CAMPO M

GPS Unit : GARMIN 9 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0840	70°	Ø->2	CLEAR	clear	patchy	overcast	drizzle	shower
	0900	69	Ø->2	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	73	Ø->3	CLEAR	clear	patchy	overcast	drizzle	shower
	1015	73°F	Ø->2 MPH	CLEAR	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~ hilltops, ridges, ~~rock outcrops~~, soil crusts, clay soils, old roads, ~~various nectar sources~~

Butterfly Species	Tally	Total
BEHRS METALMARK	IN FIELD NOTEBOOK	95
ACMON BLUE	"	1
BROWN ELFIN	"	1
SPRING WHITE	"	1
CHECKERED (COMMON WHITE)	"	2
PAINTED LADY	"	5
FUNEREAL DUSKYWING	"	7
SARA ORANGETIP	"	1
CALIFORNIA MARBLE	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Dede Date: 4 May 2010

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: Campo - C

GPS Unit : Garmin 3 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	64°	calm	0	(clear)	patchy	overcast	drizzle	shower
	1005	68°	2/5	0	(clear)	patchy	overcast	drizzle	shower
	1110	70°	6/11	0	(clear)	patchy	overcast	drizzle	shower
	1200	75°	5/10	0	(clear)	patchy	overcast	drizzle	shower
	1305	73°	4/9	0	(clear)	patchy	overcast	drizzle	shower
	1415	73°	4/12	0	(clear)	patchy	overcast	drizzle	shower
END	1515	69°	6/13	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara orangetip	𝍸 𝍸	10
Behrs metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower, groundpink
~~[illegible]~~ NPCP01		~~[illegible]~~ Please disregard - not campo pea
NBCH01		Collinsia sp., 10+ individuals
NBCH02		Collinsia sp., 5+ plants
NBAR01		Antirrhinum, 10+ individuals
NBCH03		Collinsia sp 5 individuals on road margin
NBCH04		Collinsia sp. 25+
NBCD01		Cordylanthus 5+
NBCD02		Cordylanthus 15+
NBHL01		Horned lizard
NBCD03		Cordylanthus 45+
NBCH05		Collinsia sp. 1+
NBCD04		Cordylanthus 25+

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Antonette Gutierrez Add'l Person: Lawrence Date: 5/4/2010

Project: Manzanita Wind Energy Project Map #: Campo 8 Survey Sxn: F

GPS Unit : 1 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1115	76	1.5/3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	78	25/10	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Acmon blue	𝍸 II	7
Behr's Metalmark	𝍸 𝍸 𝍸 I	16
Common White	I	1
Painted Lady	III	3
Sara's Orangetip	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Camp F 8/AGCH3	Chinese Houses	plant pop 50-100 hilltop
F 8/AGBJ1	Bikeland Jackrabbit	Chamise
F8/AGCH5	Chinese Houses	plant pop 10-50 road side
F8/AGCH6	" "	" " 50-100 roadside
F8/AGCH7	Chinese Houses	" " 10-50 road side
		Lasthenia Californica
		Cryptantha
		Ground pink
		Buckwheat
		Plagiobothrys
		Tidytips
		Calistigia lemmonii
		Salvia columbie

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5.4.10

Project: Campo Wind Energy Project Map #: 4 Survey Sxn: _____

GPS Unit : 13 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1345	80	2-5	0	clear	patchy	overcast	drizzle	shower
	1530	80	3-6	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle) open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady		1
Sara's Orangetip		4
Pale Swallowtail		2
Pearly Marble		1
Behr's Metalmark		12
Dusky wing		2
Acmon Blue		1
Buckeye		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMLB03	Sensitive plant pt	Linanthus bellus 50 plants
MMDP06	"	Delphinium parishii subglobosum 10 plants
MMDP07	"	" 5
MMDP08	"	" 25
MMDP09	"	" 10
MMDP10	"	" 5
MMDP11	"	" 20
MMAD05	"	Astragalus douglasii parishii 1 plant
Nectar Source:		Dendromecon rigida
		Leptosiphon lemmonii
		Lasthenia gracilis
		Salvia columbariae
		Eschscholtzia californica
		Coreopsis californicus
		Layia glandulosa
		Phacelia distans
		Lotus strigosus
		Delphinium parishii subglobosum
		Linanthus bellus
		Mimulus guttatus
		Lupinus bicolor
		Minuartia douglasii

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Kenny Stokes Date: 5/2/10

Project: Campo Wind Energy Project Map #: 25 Survey Sxn: Campo R

GPS Unit : 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1055	59°	4/6	80	(clear)	patchy	overcast	drizzle	shower
	1200	62°	5/7	80	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils,~~ hilltops, ridges, rock outcrops, soil crusts, clay soils, ~~old roads, various nectar sources~~

Butterfly Species	Tally	Total
White?	II	2
Lady ?	II	2
Behr's Metalmark	IIII IIII IIII	15
Blue?	II	2
Dark ?	I	1
Sara's Metalmark	I	1
Yellow?	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Cacnothrus
		Bradium
		Menzanita

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5.4.10

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: _____

GPS Unit : 13 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	75°F	0-2	0	(clear)	patchy	overcast	drizzle	shower
	1200	80°F	3-6	0	(clear)	patchy	overcast	drizzle	shower
	1330	80°F	4-6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), (soil crusts), clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Spring White		1
Perplexing Hairstreak		2
Behr's Metalmark		23
Pale Swallowtail		3
Funeral Duskywing		1
Duskywing		2
Sleepy Duskywing		1
Pearly Marble		2
Checkered White		2
Sara's Orangetip		2
Buckeye		2
Painted Lady		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCH01	Nectar pt	Collinsia heterophylla
MMCH02	Nectar pt	"
MMCH03	Nectar pt	"
MMCH04	"	"
MMCH05	"	"
MMAD01	Sensitive plant pt	Astragalus douglassii parishii 1 plant
MMAD02	"	" 1 plant
MMAD03	Sensitive plant pt	" 2 plants
MMAD04	"	" 30 plants
MMDS01	"	Delphinium parishii subglobosum 3 plants
MMDS02	"	" 50 plants
MMGV01	"	Gorazia viscida 30 plants
MMGV02	"	" 3 plants
MMLB01	"	Linanthus bellus 50 plants
MMLB02	"	" 30 plants
→		Delphinium & Linanthus common along entire ridge.
Nectar Source:		Anisocoma acaule
		Ericameria linearifolia
		Lasthenia gracilis
		Platystemon californicus
		Layia glandulosa
		Phacelia distans
		Leptosiphon lemmonii
		Lupinus concinnus & L. bicolor
		Delphinium parishii subglobosum
		Linanthus bellus
		~~Mimulus guttatus~~
		Collinsia heterophylla
		Malacothrix californica
		Salvia columbariae

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Aubrey Helgoth Add'l Person: Lawrence Date: 4-5-10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: Campo 1 Survey Sxn: ~~5~~ 13

GPS Unit : 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	900	72	0	0	clear	patchy	overcast	drizzle	shower
	1000	76	0/2	0	clear	patchy	overcast	drizzle	shower
stop	1100	78	2/5	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
start	1310	78	2.5/10	0	clear	patchy	overcast	drizzle	shower
END	~~3~~ 400	78	2.5/10	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	35
Mournful Duskywing	1	1
Umid blue	1	1
Umid Sulphur	1	1
~~Pyr~~ Funereal Dusky Wing	1	1
Painted Lady	11	2
Sara's Orange ~~tip~~	11	2
Acmon blue	𝍸 1	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		SPTO, CATH, PSFL, COBU, NOFL, WREN, CAQU,
		Cryptomeria WESJ
		gilia
		Eugrypta
		False Dandelion
campo F AGNL 1	Woodratnest	In oak
AGNL 2	woodratnest	in dead chamise
AGCATH 1	California Thrasher	In chamise
AGHL 1	Horned Lard	in chamise chap
AGCH 1	Chinese Houses	plant pop ~~10-50~~ 1000's on hilltop
AGNL 4	~~[illegible]~~ woodratnest	Rock outcrop
AGCH 2	Chinese Houses	10-50

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Bo Willey Date: 5/5/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 22-23 ~85% complete 23 23 Survey Sxn: Campo 4

GPS Unit : 6 complete QCB Protocol Survey # 4 Varies of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1145	76°	4/7	8	(clear)	patchy	overcast	drizzle	shower
	1400	78°	3/5	6	(clear)	patchy	overcast	drizzle	shower
	1515	78°	3/6	6	(clear)	patchy	overcast	drizzle	shower
	1625	78°	5/8	6	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	1	6
Behr's Metalmark	45	45
Pale Swallowtail	5	5
White?	4	4
Blue?	2	2
Orange? (Checkerspot)	1	1
Brown Elfin	2	2
West Coast Lady?	1	1
Checkered White	1	1
Yellow?	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Collinsia
		Penstemon
		Astragalus
		Penstemon
		Lasthenia
		Layia
		Cryptantha
		Sisyrn
		Phacelia
		Delphinium
		Lotus
		Plagiobothrys
		Mimulus
QPHL01	Point	San Diego Horned Lizard
" 02		
" 03		
" 04		
" 06		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 5 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 21 Survey Sxn: CAMPO N

GPS Unit : GARMIN 12 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900 HRS	68	1-4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	73	2→6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	76	1→4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1130	73	5→13 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	7
CHECKERED WHITE	"	1
BEHR'S METALMARK	"	3
PERPLEXING HAIRSTREAK	"	2
SARA ORANGETIP	"	5
PALE TIGER SWALLOWTAIL	"	2
FUNEREAL DUSKYWING	"	1
JUBA SKIPPER	"	1
GABB'S CHECKERSPOT	"	1
SPRING AZURE	"	1
SOUTHERN BLUE	"	1
PAINTED LADY	"	3
HENNE'S CHECKERSPOT	"	2
CALIFORNIA MARBLE	"	2
HARFORDS SULPHUR	"	1
CALIFORNIA SOOTYWING	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NUMBERED	POINTS REPRESENT	COLLINSIA SP. LOCATIONS. NUMBERS
1 -> 385	FOLLOW ALL LOGGED	TRACKS ON THIS MAP AND CAMPO Q, MAP
FILE 23.		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Daniel Date: 5 May 2010

Project: Campo Wind Energy Project Map #: 7 Survey Sxn: F

GPS Unit : 2 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1130	75°	7/11	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1230	76°	6/11	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs metalmark	𝍸 𝍸 |	11
Sara orangetip	||	2
Acmon blue	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower,
NBCH10		Collinsia sp. 30+
NBCH11		Collinsia sp. 25+ on rock outcrop

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Daniel Date: 5 May 2010

Project: Campo Wind Energy Project Map #: 13 Survey Sxn: F

GPS Unit : 2 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	1330	72°	4/9	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END	1435	75°	5/10	6	(clear) patchy overcast drizzle shower

Habitat On-site (circle): (open soils), (hilltops), ridges, (rock outcrops), soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Behrs Metalmark	𝍸	2
Sulfur	1	1
Painted lady	1	1
Pale Swallowtail	𝍸	5
Sara orangetip	𝍸	4
Propertius Duskywing	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, fiddleneck, phacelia, popcorn flower
NBHL01		horned lizard
NBHL02		horned lizard.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Viviane Marquez-Waller Add'l Person: Phillip Date: 5/5/10

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: 5 Campo A

GPS Unit : # 5 C/M Garmin QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9:15	70.7	2.6/4.3	0	(clear)	patchy	overcast	drizzle	shower
	10:15	69.0	2.1/4.4	0	(clear)	patchy	overcast	drizzle	shower
	11:40	72.0°	3.8/5.4	0	(clear)	patchy	overcast	drizzle	shower
	12:55	75.5°	5.3/6.8	0	(clear)	patchy	overcast	drizzle	shower
	1:55	75.1°	6.2/8.5	0	(clear)	patchy	overcast	drizzle	shower
	~~2:55~~				clear	patchy	overcast	drizzle	shower
END	2:55	74.9°	7.6/9.8	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils (old roads) (various nectar sources)

Butterfly Species	Tally	Total
Behr's Metalmark	𝍸 𝍸	24
Painted Lady	𝍸 𝍸 𝍸 𝍸	4
Southern Blue	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	9
Funereal Duskywing	𝍸 𝍸	2
Cabbage White	𝍸	1
Common White	𝍸 𝍸	2
Acmon Blue	𝍸 𝍸	2
Grey Hairstreak	𝍸	1
Sulfur sp.	𝍸 𝍸	2
Buckeye, Common	𝍸	1
Gabb's Checkerspot	𝍸	1
Perplexing Hairstreak	𝍸	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
VMCH01		3 plants in chamise chaparral opening
VMCH02		7 plants near hilltop
VMCH03		about 10 plants
VMMD01		scat Mule Deer
		Collinsia heterophylla
		Cryptantha sp.
		erodium cicutarium
		Scrub jay
		Crow
		amsinckia intermedia
		Black-chinned Sparrow
		Spotted Towhee
		Goldfields ++++
		Chia
		Lupine sp.
		Annual lotus
		Peppergrass sp.
		Nemophila
		(#5)
		Note: GPS + trackup may have
		been turned off in morning -

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Daniel Date: 5 May 2010

Project: Campo Wind Energy Project Map #: 1 Survey Sxn: A

GPS Unit : Garmin 2 QCB Protocol Survey # 45 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	68°	3/7	0	(clear)	patchy	overcast	drizzle	shower
	1015	69°	3/9	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1100	72°	4/10	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue	III	3
Behrs Metalmark	IIII IIII IIII II	17
Sara orangetip	II	2
Funereal Duskywing	I	1
Propertius Duskywing	I	1
Painted lady	I	1
Perplexing Hairstreak	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower,
NBCH01		Collinsia sp., 5+
NBCH02		Collinsia sp. 6+
NBCH03		Collinsia sp. 60+, scattered throughout
NBCH04		Collinsia sp. 100+
NBCH05		Collinsia sp. 200+ interspersed w/ goldfields
NBCH06		Collinsia sp. 150+
NBCH07		Collinsia sp. 50+
NBCH08		Collinsia sp. 50+ scattered
NBAR01		Antirrhinum sp. 5+ individuals
NBCH09		Collinsia sp ~~5~~ 100+ scattered

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: Shirley Ivnkeken Date: 5.5.10

Project: Campo Wind Energy Project Map #: J-9 Survey Sxn:

GPS Unit : 1 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	76°	4	0%	(clear)	patchy	overcast	drizzle	shower
	1200	80°	6-10	3%	(clear)	patchy	overcast	drizzle	shower
	1500	81°	5-9	5%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle) (open soils, hilltops, ridges, rock outcrops, soil crusts,) clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Pearly Marble		1
Behr's Metalmark		50+
Spring Azure		2
Acmon Blue		16
Pale Swallowtail		8
Spring ~~Anara~~ White		2
Sara's Orangetip		5
Painted Lady		2
Gabb's Checkerspot		3
Funereal Duskywing		3
Duskywing		7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		Malacothrix clevelandii
		M. californica
		Escholtzia californica
		Anisocoma acaule
		Mimulus aurantiacus
		Ericameria linearifolia
		Salvia columbariae
		Gilia capitatum c.
		Eriophyllum confertiflorum
		E. wallecei
		Phacelia distans
		Collinsia heterophylla
		Penstemon clevelandii
		Layia glandulosa
		Chaenactis glabriscula & C. artemisiifolia
		Lupinus truncatus, concinnus, bicolor, hirsutissimus
MMCH01-06	Nectar plant pt	Collinsia heterophylla
MMHL01	Sensitive Lizard pt	Horn Lizard 1
MMDS01	Sensitive plant pt	Delphinium parishii subglobosum 100 plants
MMDS02	"	" 10 plants
MMDS03		" 30 plants
MMDS04		" 50 plants
MMSC01		Streptanthus campestris 15 plants
MMSC02		" 10 plants
MMSC03		" 5 plants

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: KH Osborne Add'l Person: Lewis Connolly Date: 5/5/2010

Project: Campo Wind Energy Project Map #: Campo-L Survey Sxn: L

GPS Unit: #10 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	906	70	calm	°	clear	patchy	overcast	drizzle	shower
906.					clear	patchy	overcast	drizzle	shower
1015		77	1.5/5.8	°	clear	patchy	overcast	drizzle	shower
140		72	8.5/14	°	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	357	71	9.9/14.7	-	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Plebejus acmon	//	2
I. augustinus (Brown Elfin	//	2
A. mormo	////XXX	34
A. cara	////	5
V cardui	//	2
Hesperia juba	/	1
Glaucopsyche lygdamus	/	1
Erynnis brizo	/	1
Philosora catalus	////	4
Plebejus lupini 1	////	4
Erynnis funeralis	/	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Cordylanthus	0559605/3614716 general area 30x30 m
	"	of subunderstand Cordylanthus rigidum.
	"	0559468/3615121 = hundreds C. rigidum.
	"	0559853/3615103 = ~50 Collinsia
#5	QCB Hosts (thousands)	0559496/3615156 to = ~ten thousand C. rigidus 0559345/3615126
#6	~3 of thousand	0559265/3615122 to = ~ one thousand C. rigidum 0559319/3615123
7	Cordylanthus	0558997/3614961 to = ~200 C. rigidus 0558995/3614903
	Collinsia	0560010/3614974 ~ 100 Collinsia in 2 M²
	"	0560002/3614963 ~ " " 1 M²
	"	0559800/3614717 ~ " " 1 M²
	"	0559850/3614653 ~ 200 " " in 110 M²
	"	0559538/3614573 ~ 500 " " in 100 M²

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 5 MAY, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 23 Survey Sxn: CAMPO Q

GPS Unit : GARMIN 12 QCB Protocol Survey # ~~4~~ 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	82	1->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	77	2->10	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	78	3->10	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	78	3->10	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1548	77	3->13	5% COVER	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
SPRING WHITE	IN FIELD NOTEBOOK	2
HARFORD SULPHUR	"	1
BEHR'S METALMARK	"	107
FUNEREAL DUSKYWING	"	8
CALIFORNIA MARBLE	"	2
ACMON BLUE	"	2
SARA ORANGETIP	"	3
PAINTED LADY	"	1
SPRING AZURE	"	2
WEST COAST LADY	"	1
SOUTHERN BLUE	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL20	POINT	
MCHL21	POINT	
NUMBERED POINTS REPRESENT		COLLINSIA SP. LOCATIONS. NUMBERS 1→385
FOLLOW ALL LOGGED TRACKS ON		THIS MAP AND CAMPO N, MAP TILE 21
MC CORIZANTSP. POINT		A SPINEFLOWER NOT CURRENTLY FLOWERING,
		BUT IF A SPECIAL STATUS SPINEFLOWER
		IS IN THE AREA, THIS LOCATION SHOULD BE
		CHECKED.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Fawell Add'l Person: Bo Willy Date: 5/5/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 21 Survey Sxn: Campo 9

GPS Unit : 6 QCB Protocol Survey # 5 of 5

	TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky				
START	845	72°	3/5	0	(clear)	patchy	overcast	drizzle	shower
	1015	72°	5/6	0	(clear)	patchy	overcast	drizzle	shower
	1120	73	9/13	0	(clear)	patchy	overcast	drizzle	shower
	1135				clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara Orangetip	11	2
Acmon Blue	1	1
Dusky wing	11	2
Funereal Duskywing	M	3
Behrs Metalmark	1	1
White?	11	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Dichelostemma
		Erodium
		Collinsia
		Penstemon
		Astragalus
		Lasthenia
		Layia
		Cryptantha
		Cirsium
		Phacelia
		Delphinium
		Lotus
		Plagiobothrys
		Eschscholzia
		Ericameria
		Mimulus
DPSF01	Point	C. campestris
001	~ Point	Collinsia
↓		"
		"
011		"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Erik LaCostz Add'l Person: — Date: 5/5/10

Project: Campo Wind Energy Project Map #: ~~14~~, 15 Survey Sxn: K

GPS Unit : 7 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0845	64	3-6	0	(clear)	patchy	overcast	drizzle	shower
	1100	71	4-8	0	(clear)	patchy	overcast	drizzle	shower
	1130	72	8-12	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	2 30	76	6-10	10	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Chalcedon checkerspot	1111 1	6
Acmon Blue	1111	5
Persp Hairstreak	11	2
Behrs Metalmark	1111 1111 1111 1111 1111 100+	100+
Southern Blue	1111	5
Sara orangetip	1111	5
Pale Swallowtail	1111 1111	10
Dark Duskywing	1	1
Funereal Duskywing	1111 111	8
Cal Marble	1	1
Brown Elfin	1	1
Painted lady	111	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ELCOHE01	P.	Collinsia 10-20 individuals.
ELCOHE02	P	Collinsia 300-400 individuals.
		erodium sp
		Plagiobothrys sp
		Mustard sp.
		Lupine sp.
		AMSMEN
		Cammisonia sp.
		LASCAL
		KETANT
		YUCWHI
		ERICON
		Phacelia sp
		SALCOL
		Chanactis
		PHATAN
		ESCCAL
		DICCAP
		MIMAUR
		UROLIN
		LAYGIA
		LOTARG
		PENCLE
		CASFOL
		DELHES
		Lupinus excubitas
		CAU HET
		LINDIA
		ERILAN.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: KH Osborne Add'l Person: Lawrence Date: 5/6/2010

Project: Campo Wind Energy Project Map #: 17, 19, 18 Survey Sxn: N

GPS Unit : 61 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	905	67	1.8/4.4	0	(clear)	patchy	overcast	drizzle	shower
~~1030~~	1030	71	1.5/4.4	0	(clear)	patchy	overcast	drizzle	shower
~~102~~	102	73	3.7/13.5	0	(clear)	patchy	overcast	drizzle	shower
Railroad	300	75	4.3/9.3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	355	74	4/9.2	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
P. acmon	III	3
A. mormo	VIIIXXXXXXX	68
P. catalus	I	1
A. sara	IIII IIII	9
I.E. agustina	IIII	5
C. perplexa	II	2
C. sabbus	III (2 ♀) photographed	3
E. bvizzo	III	3
P. eurymedon	IIII	5
V. cardui	II	2
P. lupini	II	2
E. Lunaris	II	2
E. tristis	I	1
P. protodice	I	1
C.Z. cesonia	I	1
E. hayantis (pearly)	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
KOCol01	QCB Host Collinsia track around	@ 0559807/3613966 walked around ~500 M² w/ 1000 plants
KOCol02	Collinsia	2 plants
KOCol03	"	~ 1000 Collinsia ~ 400M²
KOCol04	"	~ 100 in 1 M²
KOCol05	"	~ 200 in 50 M²
KOCol06	"	~ 500 in 50 M²
KOCol07	"	~ 5000 in 50 M² N facing slope

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Toby Bostick Date: 5/6/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 23 Survey Sxn: Campo 9

GPS Unit : 6 QCB Protocol Survey # Varies of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:30	60°	2/4	0	(clear)	patchy	overcast	drizzle	shower
	9:45	730	1/3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open~~ soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Behr's Metalmark	~~HH~~ ~~HH~~ |||	13
Southern Blue	||	2
Acmon Blue	||	2
Checkered White	|	1
White	||	2
Pale Swallowtail	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Lasthenia
		Layia
		Lupinus
		Cryptantha
001	~Point	Collinsia
↓		
005		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell (Campo) Add'l Person: John Bostick Date: 5/6/10

Project: ~~Manzanita~~ Wind Energy Project Map #: 25 Survey Sxn: Campo R

GPS Unit : 6 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	1010	~~74~~ °	3/5	0	(clear) patchy overcast drizzle shower
	1215	78 °	6/9	0	(clear) patchy overcast drizzle shower
	1430	76 °	4/6	0	(clear) patchy overcast drizzle shower
	1515	77°	7/9	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END					clear patchy overcast drizzle shower

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ~~ridges~~, ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Gabb's Checkerspot	II	2
Sara's Orange Tip	𝍸 𝍸	10
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸	20
Pale Swallowtail	II	2
Brown Elfin	I	1
Lady?	𝍸	5
Southern Blue	II	2
White?	III	3
Blue?	𝍸 𝍸 II	12
Acmon Blue	𝍸 I	6
Perplexing Hairstreak	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Lupinus
		Camothus
		Erodium
		Phacelia
		Cryptantha
		Dichelostemma
		Mimulus
		Salvia columbariae
		Cynoum
		Chaenactis
DPBJ01	Point	Black-Tailed Jack Rabbit
7	Point-	Collinsia
↓		
10		

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Date: 6 May 2010

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo - P

GPS Unit : Garmin 12 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1345	75°	3/5	0	(clear)	patchy	overcast	drizzle	shower
	1500	74°	3/6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1540	73°	3/7	6	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Funereal Duskywing	𝍸 I	6
Acmon blue	𝍸	5
checkered white	I	1
unidentified skipper (common?)	I	1
Behrs metalmark	II	2
Painted lady	I	1
Spring azure	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		gold fields, popcorn flower, gilia

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 6 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 24 Survey Sxn: CAMPO RD

GPS Unit : GARMIN 13 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0830	69	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	70	1->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	71	1->3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	73	1->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	76	Ø->5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	81	Ø->4	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1400	83	Ø->3	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, (hilltops), (ridges), rock outcrops, soil crusts, clay soils, old roads, various nectar sources

1500 HRS, 77°F, 1->5 MPH, CLEAR

Butterfly Species	Tally	Total
GABBS CHECKERSPOT	IN FIELD NOTEBOOK	14
HENNE'S CHECKERSPOT	"	61
ACMON BLUE	"	65
PAINTED LADY	"	7
BEHR'S METALMARK	"	11
SARA ORANGETIP	"	21
SOUTHERN BLUE	"	6
PALE TIGER SWALLOWTAIL	"	6
SPRING AZURE	"	8
CALIFORNIA SOOTYWING	"	2
WEST COAST LADY	"	1
SPRING WHITE	"	6

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB13	Point	
MCQB14	Point	THIS WAS A VERY SMALL, FRESH QUINO POSSIBLY OBSERVED
MCHL22	Point	BY ANTONETTE GUTIERREZ EARLIER IN THE MORNING.
MCHL23		
MCQB15	Point	

TOTAL NUMBER OF QCB DETECTED: 3 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Date: 6 May 2010

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: P

GPS Unit : Garmin 12 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	69°	2/5	Ø	(clear)	patchy	overcast	drizzle	shower
	1100	73	4/7	Ø	(clear)	patchy	overcast	drizzle	shower
	1230	75°	3/5	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1315	75°	4/7	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NBCH01		Collinsia sp. 35+
		goldfields, popcorn flower, gilia cap.,
NBCH02		Collinsia sp. 5+
NBCH03		Collinsia sp. 15+, scattered
NBCH04		Collinsia sp. 30+, scattered w/in patches of goldfields
NBHL01		~~Horned~~ Lizard
NBHL02		Horned lizard
NBCH05		Collinsia sp. 40+, Antirrhinum sp. scattered (15+)
NBAR01		Antirrhinum sp. 20+
NBAR02		Antirrhinum sp. 5+

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5.6.2010

Project: Campo Wind Energy Project Map #: 19-0 Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	62°	4-7	0%	(clear)	patchy	overcast	drizzle	shower
	1200	72°	3-6	0%	(clear)	patchy	overcast	drizzle	shower
	1430	75°	4-8	0%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), various nectar sources

Butterfly Species	Tally	Total
Pale Swallowtail		1
Painted Lady		1
Acmon Blue		21
Sara's Orangetip		6
Funereal Duskywing		2
Behr's Metalmark		32
Checkered White		4
Sulphur sp.		2
Duskywing		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar		Cryptantha spp.
Source:		Eschscholtzia californica
		Amsinkia menziesii
		Lasthenia gracilis
		Trichostemma lanatum
		Lupinus bicolor
		L. concinnus
		Astragalus douglasii perstrictus
		Marah macrocarpus m.
MMCH01	~~Host~~plant pt	Collinsia concolor
MMGV01	Sensitiveplant pt	Geraea viscida 30 plants
MMGV02	"	" 1 plant
MMAD01	"	Astragalus douglasii perstrictus 50 plants
MMADP02	"	" 40 plants
MMADP03	"	" 2 plants
MMADP04	"	" 1 plant
MMADP05	"	" 25 plants
MMADP06	"	" 1 plant

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5.7.2010

Project: Campo Wind Energy Project Map #: 11-H Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	65°F	6-10	0%	(clear)	patchy	overcast	drizzle	shower
	1200	74°F	0-4	0%	(clear)	patchy	overcast	drizzle	shower
	1245	76°F	2-4	0%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), ridges, (rock outcrops), (soil crusts), clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Behr's Metalmark		37
Funeral Duskywing		2
Acmon Blue		11
Pearly Marble		1
Checkered White		3
Painted Lady		3
Sara's Orange Tip		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar plants:		Cryptantha spp.
		Plagiobothrys spp.
		Salvia columbariae
		Mimulus aurantiacus
		Ceanothus leucodermis
		Uropappus lindleyi
		Leptosiphon lemmonii
		Lupinus concinnus
		Collinsia concolor
		Amsinkia menziesii
		Layia glandulosa
MMCH01	~~Host plant pt~~	Collinsia
MMCH02		"
MMCH03		"
MMCH04		"
MMCH05		"
MMDS01 ~~MMDS02~~		Delphinium parishii subglobosum ~~15~~ 20 plants
MMDS03		" 25 plants
MMDS04		35 plants
MMDS05		25 plants
MMDS06		20 plants
MMDS07		10 plants
MMDS08		~~25~~ plants
MMDS09		25 plants
MMDS10		10 plants
MMSC01		~~Chlorogalum~~ Streptanthus campestris 25 plants
MMSC02		10 plants

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5.7.2010

Project: Campo Wind Energy Project Map #: 16-H Survey Sxn: _____

GPS Unit : 5 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	79°	2-4	0	(clear)	patchy	overcast	drizzle	shower
	1530	82°	2-5	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark		17
Pale Swallowtail		3
Acmon Blue		12
~~Checkerspot~~ Chalcedon Checkerspot		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCH06	Host plant pt	Collinsia
MMCH07		
MMCH08		
~~MMCH09~~		
MMCH10		
MMCH11		
MMCH12		
MMADO1	Sensitive plant pt	Astragalus douglasii porstictus 5 plants
MMADO2	↓	" 10 plants
MMDP01		15 plants
MMDP02		10 plants
MMDP03		10 plants
Nectar		Phacelia parryi
Source:		Salvia columbariae
		Chaenactis glabriscula
		C. artemisiifolia
		Cryptantha spp.
		Gilia capitatum c.
		Lupinus truncatus
		L. bicolor
		L. concinnus
		Lasthenia gracilis
		Collinsia concolor
		Layia glandulosa

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID S. FAULKNER Add'l Person: Thomas Date: 7 May 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: CAMPO 6

GPS Unit : #2 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	80	3	0	(clear)	patchy	overcast	drizzle	shower
	1400	80	4	0	(clear)	patchy	overcast	drizzle	shower
	1500	80	3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	78	6		(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
A. Virgulti		3
A. Sara		3
P. Acmon		1
V. Cardui		2
E. Propertius		1
E. H. Lotta		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16 "G"	11S 0560572 UTM 3616257	Collinsia ~100+ plants
	11S0560562 UTM 3615515	Collinsia ~ 100+ plants
		Blue Dicks
		Cryptantha

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Thornes Date: 7 May 2010

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: CAMPO G

GPS Unit : #2 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	76	6	Ø	clear	patchy	overcast	drizzle	shower
	1200	80	3	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	80	3	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
A. virgulti		25+
P. Acmon		7
A. Sara		2
P. protodice		1
E. funeralis		2
E. hyantis Zotta		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
11 "G"	11S 0560359 UTM 3616924	Collinsia ~50 plants Potential host Larval
	11S 0560647 UTM 3616926	Horned Lizard. Juvenile
	11S 056774 UTM 3616771	Collinsia ~25 plants
	11S 0560718 UTM 3616418	Collinsia ~100 plants.

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: Thomas Date: 7 May 2010

Project: Campo Wind Energy Project Map #: 12 Survey Sxn: CAMPO G

GPS Unit : #2 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	69	3	ø	(clear)	patchy	overcast	drizzle	shower
	1000	72	7	ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1100	76	6	ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. Acmon		6
A. Vialis		5
E. funeralis		6
A. Sara		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
12	11S 0561129 UTM 3617395	Collensia ~50 plants potential larval HOST
12	11S 0561368 UTM 3617481	Collensia ~30 plants
		Cryptantha
		Goldfields
		Collensia

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 7 MAY, 2010

Project: Manzanita Wind Energy Project Map #: MAP TILE 24 Survey Sxn: CAMPO - R)

GPS Unit : GARMIN 10 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0838	72	Ø->7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	73	Ø->8	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	75	Ø->8	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	76	Ø->6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	83	Ø->4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	88	Ø->2	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1400	80	1->6	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)
1500HRS, 84°F, 1->4 MPH, CLEAR

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK)	64
SARA ORANGETIP	"	25
HENNE'S CHECKERSPOT	"	54
PALE TIGER SWALLOWTAIL	"	3
CALIFORNIA MARBLE	"	1
PAINTED LADY)	"	6
CALIFORNIA SOOTYWING	"	3
FUNEREAL DUSKYWING	"	8
GABB'S CHECKERSPOT	"	13
WEST COAST LADY)	"	1
BEHR'S METALMARK	"	2
HARFORDS SULPHUR)	"	4
QUINO CHECKERSPOT BUTTERFLY)	"	1
SPRING WHITE	"	2
SPRING AZURE	"	8
PERPLEXING HAIRSTREAK	"	2
GORGON COPPER) (LYCAENA GORGON)	"	2
SOUTHERN BLUE	"	1
BUCKEYE	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB16	POINT	DRAB, OLDER INDIVIDUAL, IN A DIFFERENT AREA FROM PREVIOUS INDIVIDUALS

TOTAL NUMBER OF QCB DETECTED: 1 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/7/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 15-16 Survey Sxn: Camp

GPS Unit : 6 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1345	79°	5/7	0	~~clear~~	patchy	overcast	drizzle	shower
	1455	78°	6/9	0	~~clear~~	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	~~drizzle~~	~~shower~~

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, ~~rock outcrops~~, soil crusts, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Behr's Metalmark	HH	5
Acmon Blue	M	3
Blue ?	HH	4
Southern Blue	1	1
Dusky wing	1	1
Sonora Checkerspot	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Eschscholzia
		Eriodictyon
		Plagiobothrys
		Cryptantha
		Phacelia
		Descurainia

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/7/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 18 Survey Sxn: Campo N

GPS Unit : 6 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:45	71°	5/6	0	clear	patchy	overcast	drizzle	shower
	10:00	75°	6/8	0	clear	patchy	overcast	drizzle	shower
	12:45	78°	5/8	0	clear	patchy	overcast	drizzle	shower
	13:35	78	4/6	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Bahr's Metal Mark	卌 卌 卌 卌 II	22
Lady?	III	3
West Coast Lady	I	1
Blue?	卌 IIII	9
Duskywing	IIII	4
Acmon Blue	卌 卌 I	11
White?	III	3
Sara's Orangetip	卌 I	6

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Erodium*
		Physcalia (2)
		Descurainia
		Collinsia
		Dichlostemma
		Eschscholzia
		Delphinium
		Cryptantha
		Plagiobothrys
001	Points	Collinsia
↓		
023		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: JIMMY McMORRAN Date: 8 MAY, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 11 Survey Sxn: CAMPO - C

GPS Unit : GARMIN 2 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1215 HRS	79	4→11	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	77	2→6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	78	4→14	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	79	4→9	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1520	78	2→7	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	(overcast)	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	10
BEHR'S METALMARK	"	25
FUNEREAL DUSKYWING	"	2
PERPLEXING HAIRSTREAK	"	60
SPRING AZURE	"	1
SARA ORANGETIP	"	1
PALE TIGER SWALLOWTAIL	"	1
GABB'S CHECKERSPOT	"	1
GRAY HAIRSTREAK	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL26	POINT	
MCHL27	POINT	
MCHL28	POINT	
MCHL29	POINT	
MCHL30	POINT	
NUMBERED POINTS REPRESENT		POINTS WHERE COLLINSIA SP. WAS MARKED.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: JIMMY MCMORRAN Date: 8 MAY, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 5 Survey Sxn: CAMPO - C

GPS Unit : GARMIN 2 QCB Protocol Survey # _____ of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0845 HRS	66	0→3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	71	0→3	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	72	1→4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	72	1→4	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	74	4→9 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	25
WEST COAST LADY	"	1
BEHR'S METALMARK	"	210
FUNEREAL DUSKYWING	"	7
PERPLEXING HAIRSTREAK	"	15
SPRING AZURE	"	3
CALIFORNIA MARBLE	"	1
SARA ORANGETIP	"	2
SPRING WHITE	"	2
PALE TIGER SWALLOWTAIL	"	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL24	POINT	
MCHL25	POINT	
NUMBERED POINTS REPRESENT LOCATIONS WHERE COLLINSIA SP. WAS MARKED.		

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/8/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 10, 15, 16 Survey Sxn: Campo H+I

GPS Unit : 6 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:30	63°	4/6	0	clear	patchy	overcast	drizzle	shower
	1025	71°	7/8	0	clear	patchy	overcast	drizzle	shower
	1210	71°	8/12	0	clear	patchy	overcast	drizzle	shower
	1430	76°	8/11	0	clear	patchy	overcast	drizzle	shower
	1515	77°	11/14	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	卌 卌 卌	15
Blue?	卌 卌卌	15
Pale Swallowtail	卌 卌 II	12
Behr's Metalmark 卌 卌 卌 卌 卌 卌	卌 卌 卌 卌 卌 卌 卌	65
Sara's Orangetip	卌	3
Perplexing Hairstreak	I	1
Duskywing	卌 I	6
Calif Sister	I	1
Funeral Duskywing	IIII	4
Gorgon Copper	III	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		layia -
		Lasthenia
		Cryptantha
		etc
QC1	Point	Collinsia
↓	"	"
QC5	"	"
DP5F01	Point	Coreopsis californica
DP5F02	"	" "

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/8/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 16 Survey Sxn: Campo H

GPS Unit : 6 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	15:20	78	5/7	0	(clear)	patchy	overcast	drizzle	shower
	16:20	75	6/9	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	III	3
Behr's Metalmark	IIII	5
Blue?	IIII I	6
Acmon Blue	II	2
Yellow?	I	1
Purplish Copper	I	1

Page 1 of 2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Elodium
		Layia
		Lasthenia
		Cirsium
		etc
016	Point	Collinsia
017	"	"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5/11/2010

Project: Campo Wind Energy Project Map #: 13-F Survey Sxn: _____

GPS Unit : 13 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1330	74°	2-4	5	(clear)	patchy	overcast	drizzle	shower
	1545	74°	3-6	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark		32
Funereal Duskywing		1
Duskywing		2
Acmon Blue		4
Checkered White		3
Pearly Marble		2
Pale Swallowtail		2
Sara's Orangetip		2
Common Sootywing		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMLB01	Sensitive plant pt	100 plants Linanthus bellus
MMMVCA01	"	20 plants Mucronea californica
~~MMASDP01~~	"	~~Astragalus douglasii parishii 2 plants~~
MMHL01	Sensitive Lizard pt	Horn Lizard
MMHL02	"	Horn Lizard
~~MMASDP02~~	~~Sensitive plant pt~~	~~1 plant Astragalus douglasii parishii~~
Nectar Source:		Erysimum capitatum c.
		Mimulus fremontii
		Cryptantha spp.
		Lotus strigosus
		Layia glandulosa
		Lasthenia gracilis

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5/11/2010

Project: Campo Wind Energy Project Map #: 7 & 8 Survey Sxn: _____

GPS Unit : 13 QCB Protocol Survey # 6 (Map 8-F) 5 (Map 7-F) of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	65°	0-2	0	(clear)	patchy	overcast	drizzle	shower
	1110	75°	0-5	0	(clear)	patchy	overcast	drizzle	shower
	1300	76°	2-5	3	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Behr's Metalmark		35
Checkered White		5
Dusky wing		3
Acmon Blue		16
Sara's Orangetip		4
Funeral Duskywing		1
Becker's White		1
Orange Sulfur		1
Pale Swallowtail		1
Common Sootywing		3
Nectar plants: Phacelia brachyloba		
Cryptantha spp.		
Leastrenia gracilis		
Eriophyllum confertiflorum		
Sysimbrium altissimum		
Salvia columbariae		
Rendromecon rigida		
Escholtzia californica		
Emmenanthe pendulifora		
Lotus strigosus		
Phacelia distans		
Ansiocoma acaule		
Layia glandulosa		
Chaenactis glabriuscula		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCHO1	HOST PLANT PT	50 plants Collinsia
02	"	40 plants "
03	"	50 plants "
04	"	50 plants "
05	"	1 plant "
MMDEPS01	Sensitive plant pt	Delphinium parishii subglobosum 10 plants
02	"	" 20 plants
03	"	25
04	"	15
05	"	15
06	"	20
07	"	100
08	"	50
09	"	25
10	"	50
11	"	50
12	"	25
MMGEVI01	"	Geraea viscida 10 plants
02	"	" 3
03	"	" 10
MMLASP01	"	Lathyrus splendens 1 vine
MMLIBE01	"	Linanthus bellus 50 plants
~~MMDEP~~		
MMASDP01	"	Astragalus douglasii parstrictus 2 plants
MMASP02	"	" 1 plant

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: — Date: 5/12/10

Project: Campo Wind Energy Project Map #: 2, 7 Survey Sxn: Campo D

GPS Unit : 6 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	9 15	67°	4/6	0	clear	patchy	overcast	drizzle	shower
	11 10	71°	5/8	0	clear	patchy	overcast	drizzle	shower
	1340	75°	4/5	0	clear	patchy	overcast	drizzle	shower
	16 00	72°	6/8	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	𝍸 II	7
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸	25
White ?	𝍸 II	7
Blue ?	𝍸 𝍸 I	11
Pale Swallowtail	IIII	4
Lady ?	III	3
Painted Lady ?	𝍸 IIII	9
Acmon Blue	𝍸 III	8
Great White Skipper	I	1
Checkered White	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Eriodictyon
		Layia
		Lasthenia
		Ceanothus
		Acanthis
		Ericameria
		Dichostema
		Eryptantha
		Plagiobothrys
		Descurainia
		Phacelia (2)
		Salvia columbariae
B01	Point	Collinsia
↓	"	"
024	"	"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Josh Date: 12 May 2010

Project: Campo Wind Energy Project Map #: 4 Survey Sxn: B

GPS Unit : Garmin 9 QCB Protocol Survey # 6 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	1100	67°	calm	Ø	(clear) patchy overcast drizzle shower
	1220	70°	calm	Ø	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END	1415	70°	calm/2	Ø	(clear) patchy overcast drizzle shower

Habitat On-site (circle): (open soils, hilltops,) ridges, (rock outcrops, soil crusts, clay soils, old roads, various nectar sources)

Butterfly Species	Tally	Total
Funereal Duskywing	IIII	4
Sara orangetip	I	1
Behrs metalmark	IIII IIII IIII IIII III	23
Acmon blue	IIII	4
Spring White	IIII IIII	10
Propertius duskywing	I	1
CA Marble	I	1
Painted lady	II	2
Pale swallowtail	II	2
Tortoiseshell (?)	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		groundpink, gold fields, popcorn flower
NBCH05		Collinsia sp. 15+
NBCO01		Cordylanthus 35+, scattered along trail
NBAR01		Antirrhinum cou., 10+ individuals
NBCH06		Collinsia sp. < 10, scattered

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Bratie Add'l Person: Josh Date: 12 May 2010

Project: Campo Wind Energy Project Map #: 3 Survey Sxn: B

GPS Unit : Garmin 9 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	61°	calm	ø	(clear)	patchy	overcast	drizzle	shower
	1010	65°	calm	ø	(clear)	patchy	overcast	drizzle	shower
stop	1100	67°	calm	ø	clear	patchy	overcast	drizzle	shower
start	1415	70°	calm	ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1435	71°	calm / 2	ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Bellis metalmark	𝍸 𝍸 𝍸 I	16
Pale swallowtail	II	2
Brown elfin	I	1
Funereal Duskywing	I	1
Sara orangetip	II	2
Spring white	𝍸	5
Acmon blue	𝍸 I	6
Painted lady	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields popcorn flower
NBCH01		collinsia sp., 20+, sparse scatter
NBCH02		Collinsia sp., 6 individuals
NBCH03		Collinsia sp. 5+
NBCH04		Collinsia sp. 10+ scattered
NBC002		Cordylanthus, 20+ on road edge
NBCH07		Collinsia sp. 35+

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brudic Add'l Person: Josh Date: 12 May 2010

Project: Campo Wind Energy Project Map #: 8 Survey Sxn: B

GPS Unit : Garmin 9 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1445	71°	2/5	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	69°	2/6	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue	𝍸 I	6
Spring white	𝍸	5
Behr's metalmark	III	4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		gold fields. popcorn flower. groundpink

TOTAL NUMBER OF QCB DETECTED: ____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Viviane Marquez-Walker Add'l Person: John Date: 5/12/16

Project: Campo Wind Energy Project Map #: 16 and 19 Survey Sxn: Campo - M

GPS Unit : Garmin 12 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky
START	10:45	71.4	1.2/1.7	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
	12:40	76.3	1.6/4.6	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
	14:00	75.8	2.1/5.4	0	(clear) patchy overcast drizzle shower
					clear patchy overcast drizzle shower
END	15:20	70.5	2.8/4.6	0	(clear) patchy overcast drizzle shower

Habitat On-site (circle): (open soils) (hilltops) ridges, (rock outcrops) soil crusts, clay soils (old roads) (various nectar sources)

Butterfly Species	Tally	Total
Funeral Dusky Wing	//	2
Sara's Orangetip	~~////~~	5
Acmon Blue	~~////~~ ~~////~~ ////	15
Southern Blue	////	4
Behr's Metalmark	//// ////	9
Marbled White	/	1
Lady sp	/	1
Marine Blue	/	1
Blue Species	///	3
Common White	/	1
reference (large scale)		
note: lost 16 Map in field of '16		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
VMCH01	Collinsia heterophylla	5 plants
VMCH02	" "	≅ 15 plants
VMCH03	" "	≅ 100 plants
VMBJ01	Blacktailed Jackrabbit	one seen here
VMBJ02	"	two seen here
		Cryptantha sp.
		Gold fields
		wooly blue curls
		chia
		ground pink
		brassica sp.
		penstemon sp.
		Spotted towhee
		California towhee
		Blackchinned sparrow
		Raven
		California Thrasher
		Scrub jay
		hummingbird sp.
		red-tailed hawk
		Lazuli Bunting
		Lark Sparrow
		Horned larks
		Turkey vulture

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

area surveyed is marked on map 19M

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Viviane Marquez Add'l Person: John Date: 5/12/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: O + P (partial) (did in error during survey for M)

GPS Unit : Garmin 12 QCB Protocol Survey # _____ of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:35	65.3	0.5/1.2	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	9:45	69.0°	2.2/2.8	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	10:45	76.3°	2.3/5.4	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue	𝍸 𝍸 ||	7
Marine Blue	|	1
Behrs Metalmark	𝍸 ||	7
Sara's Orangetip	|	1
Pale Swallowtail	|	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		American Crow
		Cryptantha sp.
		erodium sp
		Calif Quail
		Scrub Jay
		Coyote Scat
		Chia
		~~Yucca~~ Goldfields
		California Towhee
		Lesser Goldfinch
		Mourning Dove
		Lupine sp.
		Annual Lotus
		House finch

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN Lohstroh Add'l Person: Philip Date: 5/12/10

Project: Campo Wind Energy Project Map #: 21 Survey Sxn: N

GPS Unit : Garmin 1 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1330	76	3-7	0	(clear)	patchy	overcast	drizzle	shower
	1430	74	3-8	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1530	75	3-12	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady		1
Southern blue		1
Dusky wing SP		1
Acmon blue		5
Hartfordi Sulphur		1
Orange tip (Sara)		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLCH08	host plant patch	300+ ind
BLCH09	"	300+ ind
		Lego
		BCSP
		BEWR
		BCSP
		Webb
		Bush
		WBNH
		Lago
		2 bee swarms
		Nectar sources: cryptantha, Dichlostemma
		lotus scoparius, strigosus Phacelia distans,
		Parryi, cheanactis spp ericameria
		Emmenanthe, Eriophyllum wallacei
		Gilia spp, chia Paintbrush mimulus Aur
		penstemon, Mimulus [illegible] Scroph cal

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Brian Lohstroh Add'l Person: Philip Date: 5/12/10

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: P

GPS Unit : Garmin 1 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0845	63	0-1	0	(clear)	patchy	overcast	drizzle	shower
	1210	74	0-3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	79	0-4	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	~~58~~	58
Painted Lady		2
Acmon		3
Dusky wing		3
Gray hairstreak		1
Pale Swallowtail		1
Sara Orangetip		6
Hartford's Sulpher		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLCH01	host plant patch	100+ individuals
BLCH02		30+ "
BLCH03		40+ "
BLCH04		500+ "
BLCH05		500+ "
BLCH06		100+ "
BLCH07		100+ "
~~BLCH08~~		~~200+~~
~~BLCH09~~		~~100+~~
BLHL01	horned Lizard	♀
BLHL02	"	♀
		BCSP ACWO Bush
		CALT SCJA BEWR
		CORA SPTO Wren
		RTHA BHGR
		Coyote + pup + den
		cottontail CA ground squirrel
		Nectar sources: Cheanactis spp cryptantha
		Delphinium Lotus strigosa, Gilia spp
		Lasthenia Linanthus bellus, gracilis
		Lupinus spp, Layia, Senecio Cal Lotus
		agrophyllus

TOTAL NUMBER OF QCB DETECTED: ∅ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 12 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 12 Survey Sxn: CAMPO - C

GPS Unit : GARMIN 3 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0845	65	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0857	67	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	—				clear	patchy	overcast	drizzle	shower
	1400	72	3→5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	73	3→11 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOK	26
CALIFORNIA MARBLE	"	1
SOUTHERN BLUE	"	1
ACMON BLUE	"	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL31	Point	Juvenile

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 12 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 11, 12 Survey Sxn: CAMPO - E

GPS Unit : GARMIN 3 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67	Ø->1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	71	Ø->2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	72	1->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	74	1->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	73	1->4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1345	72	3->5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOK	60
SARA ORANGETIP	"	2
ACMON BLUE	"	28
FUNEREAL DUSKYWING	"	3
CALIFORNIA MARBLE	"	1
SPRING WHITE	"	6
CALIFORNIA SOOTYWING	"	4
PALE TIGER SWALLOWTAIL	"	1
WEST COAST LADY	"	1
SPRING AZURE	"	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NUMBERED	POINTS REPRESENT COLLINSIA SP. LOCATIONS	

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: D.R. Faulkner Add'l Person: BO Date: 13 May 2010

Project: Campo Wind Energy Project Map #: 14 Survey Sxn: CAMPO K

GPS Unit : #6 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1200	79	4	Ø	(clear)	patchy	overcast	drizzle	shower
	1300	79	4	10	(clear)	patchy	overcast	drizzle	shower
	1400	77	4	10	(clear)	patchy	overcast	drizzle	shower
	1500	76	7	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	76	5	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. eurymedon		5
A. Virgulti		9
P. Acmon		16
A. Sara		1
V. Cardui		2
E. funalis		2
C. Augustino		2
P. a. clara		1
C. gabbii		1
S. melinus		1
Echo blue		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
414	8	horned lizard
	9-10	Antirrhinum.
		Nectar: Blue dicks.
		cryptantha
		Goldfields
		Collinsia
		yellow yarrow
		deer weed

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DR. FAULKNER Add'l Person: BO Date: 13 MAY 2010

Project: Campo Wind Energy Project Map #: 15 Survey Sxn: CAMPO K

GPS Unit : #6 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	68	1	Ø	(clear)	patchy	overcast	drizzle	shower
	1000	75	1	Ø	(clear)	patchy	overcast	drizzle	shower
	1100	76	Ø	Ø	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1200	79	4	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
Euphydryas fonscalis		3
P. Acmon		15+
A. Virgulti		15+
L. Xanthoides		1
P. eurymedon		2
A. SABA		1
P. protodice		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
15K	Mark 1-3	Antirrhinum → Potential QCB larval hosts
	Mark 4-7	Collensia → Potential QCB larval hosts
		nectar: Deerweed
		Cryptantha
		Blue dicks.
		Collensia

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5-13-2010

Project: ~~Campo~~ Wind Energy Project Map #: 9-J Survey Sxn: _____

GPS Unit : 2 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67	2-5	1%	clear	patchy	overcast	drizzle	shower
	1115	78	0-4	10%	clear	patchy	overcast	drizzle	shower
	1515	79	3-6 (8)	15%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue		55
Sara's Orangetip		5
Western tailed-Blue		1
Pale Swallowtail		12
Behr's Metalmark		72
Gabb's Checkerspot		3
Painted Lady		3
Brown Elfin		1
Sleepy Duskywing		1
Dusky wing		3
Checkered White		3
Gray Hairstreak		1
Gorgon Copper		1
Sulfur (Hartford's ?)		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMSTCA01	Sensitive plant pt	Streptanthus campestris
MMSTCA02		" 2 plants
03		" 10 plant
04		" 5 plant
05		" 10 plant
06		" 1 plant
07		" 10 plants
MMHL01	sensitive lizard pt	Horn Lizard
MMAC01	Host plant pt	Antirrhinum coulterianum 10 plants

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Date: 13 May 2010

Project: Campo Wind Energy Project Map #: 1 Survey Sxn: A

GPS Unit : Garmin 9 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1230	72°	4/8	10-20%	(clear)	patchy	overcast	drizzle	shower
	1330	74°	2/8	10-20%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	70°	3/6	10-20%	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower
NBAR01		Antirrhinum 10+
NBAR02		Antirrhinum 5+
NBAR03		Antirrhinum 25+
NBAR04		Antirrhinum 20+

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: B. Lohstroh Add'l Person: John (Escort) Date: 5/13/10

Project: Campo Wind Energy Project Map #: 17, 18, 19 Survey Sxn: N

GPS Unit : 1 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0940	74°F	0-1	0		clear	patchy	overcast	drizzle	shower
	1200	78	3-5	20	thin	clear	patchy	overcast	drizzle	shower
	1300	80	0-3	20	thin	clear	patchy	overcast	drizzle	shower
	1400	81	0-3	30	thin	clear	patchy	overcast	drizzle	shower
						clear	patchy	overcast	drizzle	shower
						clear	patchy	overcast	drizzle	shower
END	1530	82	0-9	10	thin	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue		13
Behr's metal mark		23
perplexing hairstreak		2
Pale swallowtail		4
Sara Orangetip		3
Gorgon's copper		2
Common sootywing		1
Southern blue		1
Hartford's sulpher		1
Painted Lady		1
West Coast Lady		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLHL01	point	Horned Lizard adult Sunning on Branch
BLHL02	"	Adult Horned Lizard
BLCH01	~~Host~~ Host plant patch	Colinsia patch 100 + individuals
BLCH02	"	" 300 + "
BLCH03	"	" 1000 + "
BLCH04	"	" 100 + "
BLCH05	"	" 100 + "
		SCja BHGR WREN BeWR Webk BGGN
		SPTO BTSP CALT RTHa CoHa Welci
		HOFI CAQU
		W. Whiptail, Coast horned lizard, W. Fence Lizard
		S. Pacific Rattlesnake, CA Toad (dead)
		Cottontail, CA ground squirrel
		Nectar Sources:
		Erodium, Lupinus, penstemons, cryptantha,
		Camissonia, trichostema, Blue dicks,
		Eriophyllum conveniflorum, chia Gilia spp,
		Lotus spp, mimulus bar wiper, Pincushion spp,
		Senecio CAlifornia Lepto siphon sp.

TOTAL NUMBER OF QCB DETECTED: ϕ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: B. Lohstroh Add'l Person: John (Escort) Date: 5/13/10

Project: Campo Wind Energy Project Map #: 21 Survey Sxn: N

GPS Unit : 1 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0850	69	0-1	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	0930	72°F	0-1	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Painted Lady		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		BCWR
		Scja
		BCSP
		WAVi
		cotton tail, Coyote track
		side-blotched Lizard
		W. Fence Lizard
		Nectar Sources: Eriophyllum wallacei, Cryptantha, Erodium, Lupinus concinus Camissonia

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Natalie Brodie Add'l Person: Phillip Date: 13 May 2010

Project: Campo Wind Energy Project Map #: 13 Survey Sxn: F

GPS Unit: Garmin 9 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0850	60°	calm	0	(clear)	patchy	overcast	drizzle	shower
	1015	65°	calm	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1145	69°	2/6	10%	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs metalmark	𝍸 𝍸 𝍸

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower Gilia sp., tidy tips,
		groundpink
NBGH01		Collinsia sp. <50
NBCH02		Collinsia sp. ~30 individuals
NBCH03		Collinsia sp. ~30
NBCØ1		Cordylanthus, 35-40
NBCH04		Collinsia sp. ~30
NBHL01		Horned lizard

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/14/10

Project: Campo Wind Energy Project Map #: 26 Survey Sxn: Campo [redacted]9

GPS Unit : 11 QCB Protocol Survey # 5 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1325	85°	4/6	0	clear	patchy	overcast	drizzle	shower
	1535	80°	5/7	5%	clear	patchy	overcast	drizzle	shower
	1530	75	6/9	10%	clear	patchy	overcast	drizzle	shower
	1600	80°	4/5	5%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Jaras Dotted Skipper	IIII III	8
Behr's Metalmark	IIII IIII IIII IIII IIII IIII IIII III	38
Acmon Blue	IIII IIII I	11
Blue?	IIII IIII III	13
White?	III	3
Dusky-wing	IIII II	13
Funereal Dusky-wing	IIII	4
Gabb's	II	2
Orange?	I	1
Hoffman's Sulfur	II	2
Southern Blue	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Plagio borthys
		Cryptantha
		Pterostemon
		Delphinium
		Eschscholzia
		Salvia columbariae
		Chaenactis
		Cirsium.
		Phacelia
006	Point	Collinsia
↓	"	"
0025	"	"
PH602	Point	San Diego Horned Lizard
03	"	
05	"	

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 14 MAY, 2010

Project: Campo Wind Energy Project Map #: MAP TILE 19 Survey Sxn: CAMPO-N

GPS Unit : GARMIN 3 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1030	77	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	78	Ø->5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	80	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1230	79	Ø->3 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops (ridges) (rock outcrops), soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	3
BEHRS METALMARK	"	50
FUNEREAL DUSKYWING	"	4
RED ADMIRAL	"	1
PERPLEXING HAIRSTREAK	"	3
SARA ORANGETIP	"	4
PALE TIGER SWALLOWTAIL	"	20
SPRING AZURE	"	20
SPRING WHITE	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCWW06	POINT	
MCLA09	POINT	
COLLINSIA SP.	MARKED AS NUMBERED POINTS IN GARMIN MEMORY. WHERE POINTS	
CREATE CIRCULAR POLYGONS THAT END AT THE SAME START POINT, THIS REPRESENTS		
A PATCH OF COLLINSIA WITHIN THE CIRCLE.		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE GOUFFER Add'l Person: NONE Date: 14 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 5 Survey Sxn: CAMPO - A

GPS Unit : GARMIN 3 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1330	74	Ø→5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	73	Ø→3 MPH	5%	(clear)	patchy	overcast	drizzle	shower
	1500	75	Ø→3 MPH	20%	(clear)	patchy	overcast	drizzle	shower
	1600	75	Ø→1 MPH	20%	(clear)	patchy	overcast	drizzle	shower
	1621	77	Ø→2 MPH	20%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle) (open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources)

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	11
FUNEREAL DUSKYWING	"	6
SARA ORANGETIP	"	4
BEHR'S METALMARK	"	49
ARROWHEAD BLUE	"	16
PAINTED LADY	"	4
WEST COAST LADY	"	1
GRAY HAIRSTREAK	"	1
HARFORD SULPHUR	"	2
SPRING WHITE	"	1
SOUTHERN BLUE	"	9

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL33	POINT	JUVENILE
MCHL34	POINT	ADULT
COLLINSIA SP. PLANTS MARKED AS NUMBERED POINTS IN GARMIN MEMORY. WHERE POINTS CREATE A ROUGH CIRCLE, THIS REPRESENTS A PATCH OF COLLINSIA WITHIN THE CIRCLE.		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Couffer Add'l Person: None Date: 14 May, 2010

Project: Campo Wind Energy Project Map #: Tile 19 Survey Sxn: Campo - P

GPS Unit : Garmin 3 QCB Protocol Survey # 60 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0851	75	Ø->2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	75	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	81	Ø->2MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)

Butterfly Species	Tally	Total
Acmon Blue	In Field Notebook	7
Behrs Metalmark	"	5
Funereal Duskywing	"	2
Painted Lady	"	1
Sara Orangetip	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCWW01	POINT	
MCWW02	POINT	
MCWW03	POINT	
MCWW04	POINT	
MCWW05	POINT	
NO COLLINSIA PLANTS WERE OBSERVED OR RECORDED IN THIS SURVEY SECTION		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Margie Mulligan Add'l Person: _____ Date: 5.14.2010

Project: Campo Wind Energy Project Map #: 10, 15, 16-I Survey Sxn: _____

GPS Unit : 12 QCB Protocol Survey # 6 of 5

	TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	70°	2-7	0%	(clear)	patchy	overcast	drizzle	shower
	1215	75°	4-6	10%	(clear)	patchy	overcast	drizzle	shower
	1515	79°	4-6	20%	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) rock outcrops, (soil crusts) clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Acmon Blue		42
Pale Swallowtail		7
Sara's Orangetip		4
Spring Azure		7
Brown Elfin		1
Behr's Metalmark		28
Common White		2
Duskywing		4
Sulphur sp.		1
Nectar Plants:		
Chaenactis artemsiifolia & C. glabruscula		
salvia clevelandii		
Emmenanthe pendulifera		
Camissonia californica		
Eschscholtzia californica		
Cryptantha spp.		
Gilia capitata ssp. c.		
Lupinus concinnus, L. truncatus & L. bicolor		
Stylomecon		
Platystemon californicus		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMAC01	Host plant pt	Antirrhinum coultenianum 8 plants
02	"	10 plants
03	"	3 plants
MMCH01	Sensitive plant pt	Collinsia concolor 25 plants
02	"	" 10 plants
03	"	" 40 plants
04	"	" 100 plants
05	"	" 30 plants
06	"	" 20 plants
~~MMDP01~~ MMDPS01	"	Delphinium parishii subglobosum
MMDPS02		20 plants
03		25 plants
04		30 plants
05		50 plants
06		100 plants
07		10 plants
08		15 plants
09		20
10		30
11		15
12		10
13		50
14		20
15		10
MMLB01		1500 plants
MMSC01		3 plants
MMSC02		25 plants
MMSC03		5 plants
04		5 plants
05		15 plants
06		10 plants
07		15 plants
08		20 plants
09		5 plants

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: B. Lohstroh Add'l Person: Raymond (Escort) Date: 5/14/10

Project: Campo Wind Energy Project Map #: 11, 12, 16 Survey Sxn: G

GPS Unit : 2 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0850	70	0-4	0	(clear)	patchy	overcast	drizzle	shower
	1015	75	0-4	0	(clear)	patchy	overcast	drizzle	shower
	1140	79	0-7	0	(clear)	patchy	overcast	drizzle	shower
	1320	76	3-6	20 thin	clear	(patchy)	overcast	drizzle	shower
	1430	79	3-5	20 thin	clear	(patchy)	overcast	drizzle	shower
	[illegible]				clear	patchy	overcast	drizzle	shower
END	1500	78	0-2	30	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behr's metal mark		15
Acmon Blue		18
Pale swallowtail		3
Southern blue		1
Sara orangetip		7
Hartfords sulfer		5
Painted lady		3
Beckers white		2
Dusky wing sp		2
Square spotted blue		$2
Melissa blue		5
checkered skipper		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLBB01	host plant patch	cordylanthus 300+ individuals
BLCH01	"	Collinsia concolor 50+ "
BLCH02	"	100+ "
BLCH03	"	200+ "
BLCH04	"	100+ "
	Birds:	BGGN CATH BCSP SPTO NOFL BEWR COLT GRPO LASP TUVU HOFI SCJA RSHA CORA BHGR CAQU Oati
	Herps:	UTST SCOC BUBO-larvae CNTI
	Mammals:	cottontail, Jackrabbit
	Nectars:	Erodium, Malacothrix spp, Lasthenia Leptosiphon spp, Layia, collinsia, Cryptantha Delphinium, Lotus argophyllus, Amsinkia Linanthus, Lupinus spp, Phacelia parryi, distans, Gilia spp, Mustards, hypocaris glab. Camissonia spp, chia, trichostemma, Senecio CAL; Eriophyllum convert, wallacei. Circium occidentalis, cheanactis spp, Anisocoma acaulis, Dichlostemma capitatum CA poppy

TOTAL NUMBER OF QCB DETECTED: ϕ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: NONE Date: 14 MAY 2010

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: CAMPO H

GPS Unit : #9 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1300	74	Ø	Ø	clear	patchy	overcast	drizzle	shower
	1400	75	4	Ø	clear	patchy	overcast	drizzle	shower
	1500	77	2	30%	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	74	2	50%	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
P. Acmon		25+
A. Vinquetti		12
H. ericetorum		1
P. protodice		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (~~NECTAR~~ SOURCES, GENERAL WILDLIFE LIST)
16 H	Mark: 19	Collensia
	20	" 100's
	21	Antirrhynum 15+
	22	Collensia
	23	" + Jewel flower (S. bicolor)
	24	"
	25	Antirrhynum
	26	Collensia 100+

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: NONE Date: 14 MAY 2010

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: CAMPO H

GPS Unit : #9 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	69	5	Ø	(clear)	patchy	overcast	drizzle	shower
	1000	74	3	Ø	(clear)	patchy	overcast	drizzle	shower
	1100	78	2	Ø	(clear)	patchy	overcast	drizzle	shower
	1200	80	5	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	74	Ø	Ø	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), ~~hilltops~~, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
A. Vigulti		25+
P. eurydamon		1
P. Acmon		25+
E. funeralis		1
V. Cardui		1
Echo BLUE		1
A. SARA		5
E. Propertius		1
P. protodice		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#11 H	MARK #1	Horn Lizard (ADULT)
	2	Horn Lizard (ADULT)
	3	Collonsia 100+
	4	"
	5	"
	6	"
	7,8,9,10	" 1000's
	11	" 100's
	12	"
	13	"
	14	"
	15	Cordylanthus
	16	Collonsia
	17	" 100+
	18	"
		Compositos
		Cryptantha
		Blue dicks
		yellow yarrow

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Mike Coulter, John Bostick Date: 5/14/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo NOP

GPS Unit : 11 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	845	74°	4/6	0	clear	patchy	overcast	drizzle	shower
	1100	80°	3/5	0	clear	patchy	overcast	drizzle	shower
	1230	81°	7/9	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, ~~hilltops~~, ~~ridges~~, rock outcrops, ~~soil crusts~~, clay soils, ~~old roads~~, ~~various nectar sources~~

Butterfly Species	Tally	Total
Hartford's Sulfur	I	1
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 II	32
Acmon Blue	𝍸 𝍸	10
Pale Swallowtail	I	1
Blue?	𝍸 𝍸	15
Sara's Orangetip	𝍸 II	7
White?	III	3
Duskywing	𝍸	5
Funeral Duskywing	III	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia,
		Lasthenia
		Plagio bothrys
		Cryptantha
		Penstemon
		Pelphinium
		Eschscholzia
		Salvia columbariae
		Chaenactis
		Cirsium
		Phacelia
001	Point	Callisto
↓	"	"
004	"	"
DPHL01	"	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dave Fletcher Add'l Person: John Bostick Date: 5-15-10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: M

GPS Unit : 11 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	~~12:10~~	80	5-8	0	(clear)	patchy	overcast	drizzle	shower
	12:10				clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	15:10	80	4-6	5	(clear)	patchy	overcast	drizzle	~~shower~~

Habitat On-site (circle) (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
Behrs metalmark	1	
white	1	1
Lupine blue	1	1
Southern (?) blue	2	2
Acmon blue	1	1
(dotted) blue	2	2
Sara orangetip	2	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Esch calif
		Lup cone
		Crypt int
		Malocothrix
		Plagiobothrys
		-Phacelia imbricata ssp patula (not flowering, but of note)
		Lupinus succ
		Linanthus lemmonii
		Delphinium sp.
		Layia glandulosa
		Lasthenia calif
DFOC01	point	1 Castilleja exserta
DFCH01	point	10 Collinsia
		Gilia sp.
DFCH03	point	~~30~~ 50 Collinsia
DFHL03	point	, horned horned lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: ~~Dave F, J~~ Dave Fletner Add'l Person: John Bostick Date: 5-15-10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: M

GPS Unit : 11 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:40	74	6-10	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	12:10				clear	patchy	overcast	drizzle	shower
END	~~12:10~~	80	5-8	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Harford's sulfur	:	2
White	::	4
Sara orange tip	·	1
Behrs metalmark	⊠⊠	20
Southern (?) or boisd blue	::	4
Fun dusky wing	⊡	8
Acmon blue	⊠::	14
Painted lady	-	1
Propertius dusky wing	::	3
~~Ottoa~~ Pale swallowtail	·	1
Common scotywing	-	1
Lupine blue	:	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryp int
		Malo cothrix
		Cam bist
		Dich cap
		Lup trunc
		Lotus str
		Penstemon (purple)
		Salv colum
		Laothenia cali
DF CP01	point	1 Lathyrus splendens ~~cal~~ in Quac
DF CP02	point	~~3~~ 9 " " " "
DF CP03	"	~18 " " " "
DF CP04	"	~3 " " " "
DF CH01	"	~9 Collinsia
		Linanthus
		Gilia capitatum
DF CP05	"	4 ~~3~~ Lathyrus in Quac
DF CP06	"	3 " " " "
		Mimulus brev
		Amsinckia menz
		Caulanthus heterophylla

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Bo Wiley Date: 5/15/10

Project: Campo Wind Energy Project Map #: 5 Survey Sxn: Campo C

GPS Unit : 9 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1452	74°	5/10	0	clear	patchy	overcast	drizzle	shower
	1515	81°	5/7	0	clear	patchy	overcast	drizzle	shower
	1415	78°	7/9	8	clear	patchy	overcast	drizzle	shower
	1510	81°	3/4	8	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Harford's Sulfur	I	1
Yellow ?	III	3
Behr's Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸	30
Acmon Blue	III	3
Blue ?	𝍸 𝍸	15
Lady ?	II	2
Sara's Orangetip	II	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Cryptantha
		Penstemon
		Plagiobothrys
		Erodium
012	Point	Collinsia
↓	"	"
020	"	"

TOTAL NUMBER OF QCB DETECTED: 3 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Bo Wilkey Date: 5/15/10

Project: Campo Wind Energy Project Map #: 11 Survey Sxn: Campo C

GPS Unit : 9 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:40	72°	6/8	0	clear	patchy	overcast	drizzle	shower
	10:10	730	7/12	0	clear	patchy	overcast	drizzle	shower
	11:35	76°	7/9	0	clear	patchy	overcast	drizzle	shower
	11:45				clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Harford's Sulfur	I	1
Yellow?	I	1
Sara's Orangetip	III	3
White?	I	1
Checked White	II	2
Behrs Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	35
Lady?	I	1
Acmon Blue ♀	II	2
Blue?	𝍸 I	6
Southern Blue	I	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenia
		Cryptantha
		Penstemon
		Plagiobothrys
		Erodium
001	Point	Collinsia
↓	"	"
011	"	"
DPBT01	Point	Black Tailed Jack Rabbit

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: NONE Date: 15 MAY, 2010

Project: Campo Wind Energy Project Map #: TILES 15+16 Survey Sxn: CAMPO-L

GPS Unit : GARMIN 12 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0830	74	4→9 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	74	3→9 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	78	Ø→4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	80	Ø→5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	76	Ø→6 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	80	Ø→7 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1400	84	Ø→4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, (old roads), (various nectar sources)
1415HRS, 84°F, WIND=Ø→4 MPH, CLEAR

Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOK	93
ACMON BLUE	"	39
PAINTED LADY	"	1
MARINE BLUE	"	3
CERAUNUS BLUE	"	1
SPRING AZURE	"	6
CALIFORNIA SOOTYWING	"	3
SARA ORANGETIP	"	4
FUNEREAL DUSKYWING	"	6
SPRING WHITE	"	4
HARFORD SULPHUR	"	2
PALE TIGER SWALLOWTAIL	"	2
GORGON COPPER	"	1
PERPLEXING HAIRSTREAK	"	1
SOUTHERN BLUE	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL35	Juvenile (Point)	
All numbered Points Represent		Collinsia sp. Locations

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/16/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 6 Survey Sxn: Campo B

GPS Unit : 6 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	15:15	80°	7/9	0	(clear)	patchy	overcast	drizzle	shower
	16:40	81°	5/7	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils,) hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, (various nectar sources)

Butterfly Species	Tally	Total
White 3	M	3
Southern Blue	1	1
Acmon Blue	1	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/16/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 2, 7 Survey Sxn: Campo D

GPS Unit : 6 QCB Protocol Survey # 6 of 5

	TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky				
START	8:45	71°	8/11	0	clear	patchy	overcast	drizzle	shower
	9:50	76°	6/10	0	clear	patchy	overcast	drizzle	shower
	11:30	78°	6/9	0	clear	patchy	overcast	drizzle	shower
	12:55	81°	5/6	0	clear	patchy	overcast	drizzle	shower
	14:50	79°	4/7	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ~~ridges~~, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Behrs Metalmark	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	30
Lady?	𝍸	2
Pale Swallowtail	𝍸	1
Blue?	𝍸 𝍸	7
Sulfur?	𝍸	2
Sara's Orangetip	𝍸	2
White	𝍸	3
Acmon Blue	𝍸	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
DPHL01	Point	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Lewis C. Date: 16 May 2010

Project: Campo Wind Energy Project Map #: 11/12 E Survey Sxn: CAMPO E

GPS Unit : #5 QCB Protocol Survey # 6 of 5 .

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	70	4	∅	(clear)	patchy	overcast	drizzle	shower
	1000	75	5	∅	(clear)	patchy	overcast	drizzle	shower
	1100	77	5	∅	(clear)	patchy	overcast	drizzle	shower
	1200	75	7	∅	(clear)	patchy	overcast	drizzle	shower
	1300	73	6	∅	(clear)	patchy	overcast	drizzle	shower
	1400	81	3	∅	(clear)	patchy	overcast	drizzle	shower
END	1500	80	4	∅	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils,) (hilltops,) (ridges,) (rock outcrops,) soil crusts, clay soils, (old roads,) various (nectar) sources

	1600	77	8	∅	○				

Butterfly Species	Tally	Total
Plebejus Acmon		25+
Apodemia virgulti		25+
Anthocharis SARA		4
Celastrina echo		2
Erynnis funeralis		2
Colias harfordii		2
Pontia protodice		6
Leptotes marina		1
Euphilotes bernardino		1
Papilio eurymedon		1
Plebejus melissa		1
* Eurema nicippe		1
Vanessa cardui		2
Brephidium exilis		1
Euptoieta claudia *		1
*UNUSUAL		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#11,12 E	MARK: 1.	Collensia (100+)
	2.	" (100+)
	3.	" (~50)
	4	" (100's)
	5.	HORNED LIZARD
		NECTAR: CRYPTANTHA
		BLUE DICKS
		GOLDFIELDS
		MISC. COMPOSITES
		COLLENSIA

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID FLETCHER Add'l Person: JOSH PAPA Date: 5-17-10

Project: Campo Wind Energy Project Map #: 20 Survey Sxn: P

GPS Unit : 6 (2) QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
~~START~~	10:40	69	3-5	100	clear	patchy	(overcast)	drizzle	shower
START	11:20	73	2-4	100	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	16:00	68	3-6	10	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue	::	2
Funereal dusky wing	:::	3
Behrs metalmark	⊠⊠	20
Marine blue	::	4
Melissa blue	⊠	10
Sara orange-tip	·	
~~Western tailed blue~~	←	
Dainty Sulfur	·	1
Checkered White	·	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Last col
		Cryt int
		Salv col
		Camis bist
		Mimulus brevipes
		Esch calif
		Filago calif
CH → CH X		popns of Collinsia – probably can unite many to form polygon
DFHL01	point	Horned lizard
		Chaenactis glab
		Erysisimum cap
		Eriophyllum wallacei
		Linanthus diand
		Delphinium
		Eriastrum sap
		Lotus strig
		Camissonia campestris
		Phacelia minor
		Layia gland
		Cereopsis calif? (10-12 rays)

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: _____ Date: 17 May 2010

Project: Campo Wind Energy Project Map #: 7 Survey Sxn: F

GPS Unit : SM #13 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1500	68	8	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1600	66	11	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops, ridges, ~~rock outcrops~~, soil crusts, clay soils, ~~old roads~~, various (nectar) sources

Butterfly Species	Tally	Total
A. m. Uhleyulti		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST ~~(NECTAR~~ SOURCES, GENERAL WILDLIFE LIST)
7 F		Cryptantha
		Gold fields

TOTAL NUMBER OF QCB DETECTED: Ø INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: _____ Date: 17 MAY 2010

Project: Campo Wind Energy Project Map #: 8 Survey Sxn: CAMPO - B

GPS Unit : SM # 13 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1400	75	8	50	clear	(patchy)	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1500	68	8	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, ridges, (rock outcrops), soil crusts, clay soils, (old roads), various (nectar sources)

Butterfly Species	Tally	Total
A. Morma Virgulti		8
P. Acmon		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
8-B		Cryptanth
		Blue Dicks
		Goldfields

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: DAVID K. FAULKNER Add'l Person: _____ Date: 17 MAY 2010

Project: Campo Wind Energy Project Map #: 13 Survey Sxn: CAMPO F

GPS Unit : SM #13 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	68	5	100	clear	patchy	(overcast)	drizzle	shower
	1200	69	5	100	clear	patchy	(overcast)	drizzle	shower
	1300	72	4	100	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	75	8	50	clear	(patchy)	overcast	drizzle	shower

Habitat On-site (circle): (open soils), hilltops, (ridges), (rock outcrops), soil crusts, clay soils, (old roads), various (nectar) sources

Butterfly Species	Tally	Total
P. Acmon		3
A. Virgulti		4
L. Marina		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
13 F	MARKS # 255	Collensia
	256	"
	257	" 100's
	258	
	259	Horned Lizard (juvenile)
	260 - 264	Collensia
		Cryptantha
		Blue Dicks
		Goldfields

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: _____ Date: 17 May 2010

Project: Campo Wind Energy Project Map #: 12 Survey Sxn: C

GPS Unit : SM # 13 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	69	5	100	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils), (hilltops), (ridges), (rock outcrops), soil crusts, clay soils, old roads, various (nectar sources)

Butterfly Species	Tally	Total
P. Acmon		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
12C		Cryptantha
		Goldfields

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: ERIN BERGMAN Date: 17 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 24 Survey Sxn: CAMPO - R

GPS Unit: GARMIN 12 QCB Protocol Survey # 6 of 6

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1000	69	Ø->5 MPH	100	clear	patchy	overcast	drizzle	shower
	1100	69	Ø->3 MPH	100	clear	patchy	overcast	drizzle	shower
	1200	74	Ø->3 MPH	100	clear	patchy	overcast	drizzle	shower
	1300	70	Ø->2 MPH	100	clear	patchy	overcast	drizzle	shower
	1400	73	Ø->3 MPH	80	clear	patchy	overcast	drizzle	shower
	1500	70	2->8 MPH	20	clear	patchy	overcast	drizzle	shower
END	1545	69	2->5 MPH	20	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	140
BEHR'S METALMARK	"	7
HENNE'S CHECKERSPOT	"	48
SARA ORANGETIP	"	32
GABB'S CHECKERSPOT	"	6
CALIFORNIA SOOTYWING	"	2
BROWN ELFIN	"	10
MARINE BLUE	"	6
FUNEREAL DUSKYWING	"	9
PALE TIGER SWALLOWTAIL	"	3
SPRING AZURE	"	9
RED ADMIRAL	"	1
PERPLEXING HAIRSTREAK	"	2
PAINTED LADY	"	1
DAINTY SULPHUR	"	1
GORGON COPPER	"	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NUMBERED	POINTS REPRESENT	COLLINSIA AND COULTER'S SNAPDRAGON LOCATIONS.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Lawrence Moore Date: 5/17/10

Project: Campo Wind Energy Project Map #: 26 Survey Sxn: Camp 9

GPS Unit : 11 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	10:50	60°	3/5	100	clear	patchy	(overcast)	drizzle	shower
	12:10	65°	6/8	100	clear	patchy	(overcast)	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, rock outcrops, soil crusts, clay soils, ~~old roads~~, various nectar sources

Butterfly Species	Tally	Total
Hoffman's Sulphur	1	1
Common Blue		1
Too Cold		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 7 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Lawrence Moore Date: 5/17/10

Project: Campo Wind Energy Project Map #: 22 Survey Sxn: Campo 9

GPS Unit : ij QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	11:25	67°	6/8	100	Slight shadows clear	patchy	overcast	drizzle	shower
	13:00	67°	5/10	100	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): ~~open soils~~, hilltops, ridges, rock outcrops, soil crusts, clay soils, ~~old roads~~, various nectar sources

Butterfly Species	Tally	Total
Behr's Metalmark	1	1
Too Cold		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Mike Coulter Add'l Person: None Date: 19 May, 2010

Project: Campo Wind Energy Project Map #: Tile 24, 25 Survey Sxn: Campo-R2

GPS Unit: Garmin II QCB Protocol Survey # Co of 6

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0840	68	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	69	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	71	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	85	Ø→2 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	84	Ø	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	82	Ø→1 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) hilltops ridges (rock outcrops) soil crusts, clay soils (old roads) (various nectar sources)

Butterfly Species	Tally	Total
Acmon Blue	In Field Notebook	140
Henne's Checkerspot	"	43
Sara Orangetip	"	24
Pale Tiger Swallowtail	"	4
Gabb's Checkerspot	"	13
Gorgon Copper	"	13
California Sister	"	1
Harford's Sulphur	"	3
Painted Lady	"	1
Behr's Metalmark	"	6
Marine Blue	"	2
Spring Azure	"	8
Funereal Duskywing	"	5
Spring White	"	2
California Marble	"	1
Cloudless Sulphur	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NUMBERED POINTS REPRESENT COLLINSIA POINTS.		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/19/10

Project: Campo Wind Energy Project Map #: 23 Survey Sxn: 6

GPS Unit : 6 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0930	67°	0/0	0	~~clear~~	patchy	overcast	drizzle	shower
	1045	82°	4/6	0	~~clear~~	patchy	overcast	drizzle	shower
	1230	84°	5/8	0	~~clear~~	patchy	overcast	drizzle	shower
	1240 end				clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	~~shower~~

Habitat On-site (circle): ~~open soils~~, hilltops, ~~ridges~~ ~~rock outcrops~~, ~~soil crusts~~, clay soils, ~~old roads~~, various nectar sources

Butterfly Species	Tally	Total
Sara's Orangetip	~~HH~~ |	6
Gorgon Copper	||	2
Behr's Metalmark	|||| ~~HH~~ ~~HH~~ ~~HH~~	20
Checkered White	||	2
White ?	|||	3
Acmon Blue	||||	4
Marina Blue	|||	3
Sulfur ?	||||	4
Blue ?	~~HH~~ |||	9
Duskywing	~~HH~~ ~~HH~~	10
Funeral Duskywing	~~HH~~	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
001	Point	Antirrhinum coulterianum (100's)
DPH101	Point	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Brian Lohstroh Add'l Person: Daniel Date: 5/19/10

Project: ~~Manzanita~~ Campo Wind Energy Project Map #: 21 Survey Sxn: N

GPS Unit : 6 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1230	74	0-5	0	(clear)	patchy	overcast	drizzle	shower
	1300	78	3-10	1	(clear)	patchy	overcast	drizzle	shower
	1400	81	0-5	1	(clear)	patchy	overcast	drizzle	shower
	1500	83	0-6	1	(clear)	patchy	overcast	drizzle	shower
	1530	86	0-5	1	(clear)	patchy	overcast	drizzle	shower
	↓			1	clear	patchy	overcast	drizzle	shower
END	↓				clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Orangetip (sara)		3
Dusky wing sp		4
Marine Blue		3
Painted Lady		1
White sp.		1
Chalcedon checkerspot		1
Acmon Blue		2
Sulphur sp.		1
Funereal Duskywing		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLSC01	Rare Plant	Streptanthus campestris
	Birds:	BCSP LEGO BEWR WTSW
		WREN SPTO CISW ASFL
		LEGO SCJA COMA CALT
		MODO WBNH HOFI NUWO
		RSHa
	Herps:	side blotched Lizard, W. Whiptail
		W. Fence Lizard
	Nectar Sources	Lupines cryptantha
		erodium ~~xx~~ eriophyllum wallacei
		Gilia SP Lotus scoparius,
		Lotus argophyllus, cheanactis,
		Mimulus SPP, phacelia SPP
		Lasthenia pentstemon, yucca

TOTAL NUMBER OF QCB DETECTED: ___Ø___ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Brian Lohstroh Add'l Person: Daniel Date: 5/19/10

Project: Manzanita Wind Energy Project (camp) Map #: 20 Survey Sxn: P

GPS Unit : 6 QCB Protocol Survey # 6 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	845	66	0-1	0	(clear)	patchy	overcast	drizzle	shower
	1000	70	0-3	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1230	74	0-5	0	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon blue		9
Orange tip		7
Behr's metalmark		18
Square spotted blue		2
Pale swallowtail		2
Marine blue		9
Dusky wing sp.		1
Gabb's checkerspot		2
Funereal Duskywing		1
Gorgon's copper		1
Western Tailed blue		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLCH01	Host plant	500 individuals Collinsia concolor
	Birds:	BCSP ATFL HOFI CALT
		BEWR CORA SCJA BUSH
		OATI CAQU BTHGR BHCO
		RSHA SPTO THVU MODO
		CATH BGGN WREN
	Herps:	side blotched Lizard, W. Whiptail
		W. Fence Lizard, Granite spiny Lizard
	Mammals:	Co Hontail
	Nectar Sources:	Lupines, wallflower, cheanactis
		Lasthenia, Delphinium, Gilia sp.,
		Layia erodium, Amsonia spp,
		cryptantha, Penstemon, collinsia,
		Camissonia spp, Eriophyllum wallacei
		Linanthus bellus, chia

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE GOUFFER Add'l Person: NONE Date: 20 MAY, 2010

Project: Campo Wind Energy Project Map #: TILE 13 Survey Sxn: CAMPO - F

GPS Unit : GARMIN II QCB Protocol Survey # 6 of 6

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0848	71°	3→14 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	0900	73°	2→4 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1000	78°	2→6 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1100	77°	2→6 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1200	75°	1→5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1300	80°	3→6 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
END	1315	80°	3→5 MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower

Habitat On-site (circle): (open soils) (hilltops) (ridges) (rock outcrops) soil crusts, clay soils, (old roads) (various nectar sources)

Butterfly Species	Tally	Total
BEHR'S METALMARK	IN FIELD NOTEBOOK	33
CLOUDLESS SULPHUR	"	2
SPRING WHITE	"	4
ACMON BLUE	"	10
MARINE BLUE	"	23
GRAY HAIRSTREAK	"	1
PAINTED LADY	"	2
FUNEREAL DUSKYWING	"	3
PALE TIGER SWALLOWTAIL	"	5
SPRING AZURE	"	9
BROWN ELFIN	"	3
ANISE SWALLOWTAIL	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGOS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ALL NUMBERED	POINTS REPRESENT	COLLINSIA LOCATIONS.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

APPENDIX C

SUMMARY OF BUTTERFLY SPECIES OBSERVED DURING FOCUSED QUINO CHECKERSPOT BUTTERFLY SURVEYS FOR THE CAMPO WIND ENERGY PROJECT

APPENDIX C
SUMMARY OF BUTTERFLY AND MOTH SPECIES OBSERVED DURING FOCUSED QUINO CHECKERSPOT BUTTERFLY SURVEYS FOR THE CAMPO WIND ENERGY PROJECT

Common Name	Species Name	Survey Week						
		1	2	3	4	5	6	Total
Papilionidae								
Anise swallowtail	*Papilio zelicaon*	0	2	2	0	0	1	**5**
Western tiger swallowtail	*Papilio rutulus*	1	2	1	0	0	0	**4**
Pale swallowtail	*Papilio eurymedon*	8	18	36	85	50	68	**265**
Black swallowtail	*Papilio polyxenes*	0	1	0	0	0	0	**1**
Pieridae								
Cabbage white	*Pieris rapae*	0	47	0	0	1	0	**48**
Spring (California) white	*Pontia sisymbrii*	73	29	24	10	14	41	**191**
Checkered (common) white	*Pontia protodice*	39	7	9	20	21	22	**118**
Becker's white	*Pontia beckerii*	0	0	0	0	1	2	**3**
California (pearly) marble	*Euchloe hyantis*	47	411	201	49	13	4	**725**
Gray marble	*Euchlo lanceloata*	0	4	0	1	0	0	**5**
Desert (Felder's) orangetip	*Anthocharis cethura*	0	10	3	2	0	0	**15**
Sara orangetip	*Anthocharis sara sara*	364	214	170	243	130	168	**1289**
White species	Species unknown	12	43	57	63	11	29	**215**
Marble species	Species unknown	7	87	83	40	0	1	**218**
Orange sulphur	*Colias eurytheme*	0	2	3	3	1	0	**9**
Harford's sulphur	*Colias harfordii*	1	0	7	6	5	27	**46**
California dogface	*Zerene eurydice*	0	0	1	0	1	0	**2**
Cloudless (senna) sulphur	*Phoebus sennae marcellina*	0	0	0	0	0	3	**3**
Sleepy orange	*Eurema nicippe*	0	0	0	0	0	1	**1**
Dainty sulphur	*Nathalis iole*	0	0	0	0	0	2	**2**
Sulphur species	Species unknown	6	3	11	16	5	12	**53**
Orange species	Species unknown	0	14	10	9	0	1	**34**
Daniadae								
Queen	*Danaus gilippus*	0	0	0	1	0	0	**1**
Nymphalidae								
Quino checkerspot	*Euphydryas editha quino*	0	2	4	6	1	0	**13**
Henne's checkerspot	*Euphydryas chalcedona hennei*	1	10	12	136	122	92	**373**
Gabb's checkerspot	*Chlosyne gabbii*	3	23	4	98	39	27	**194**
Checkerspot species	Species unknown	0	1	2	0	0	0	**3**
Red admiral	*Vanessa atalanta*	0	0	1	3	0	2	**6**
Painted lady	*Vanessa cardui*	124	65	90	132	37	34	**482**
West coast lady	*Vanessa annabella*	0	2	4	24	5	2	**37**
American lady	*Vanessa virginiensis*	0	2	2	0	0	0	**4**
Lady species	*Vanessa* species	11	28	1	27	8	9	**84**
Common buckeye	*Junonia coenia*	0	0	0	3	2	0	**5**
California sister	*Adelpha bredowii californica*	0	0	0	0	0	1	**1**
California patch	*Chlosyne californica*	0	0	0	0	0	1	**1**
California tortoiseshell	*Nymphalis californica*	22	1	1	0	0	1	**25**
Gulf fritillary	*Agraulis vanillae*	0	0	1	0	0	0	**1**
Variegated fritillary	*Euptoieta claudia*	0	0	0	0	0	1	**1**
Lycaenidae								
Behr's/Mormon metalmark	*Apodemia mormo virgulti*	89	1226	2404	2206	1009	1074	**8008**
Great copper	*Lycaena xanthoides*	0	0	0	0	0	1	**1**

Common Name	Species Name	Survey Week						
		1	2	3	4	5	6	Total
Gorgon copper	*Lycaena gorgon*	0	0	0	0	5	16	**21**
Brown elfin	*Callophrys augustinus*	37	40	15	11	9	20	**132**
Perplexing (bramble) hairstreak	*Callophrys dumetorum*	297	351	205	47	34	8	**942**
Gray hairstreak	*Strymon melinus*	1	0	0	3	2	5	**11**
Great purple hairstreak	*Atlides halesus*	0	1	0	3	0	0	**4**
Hairstreak sp.	Species unknown	0	0	1	0	0	0	**1**
Southern (silvery) blue	*Glaucopsyche lygdamus australis*	9	55	41	51	29	28	**213**
Arrowhead blue	*Glaucopsyche piasus*	0	36	39	0	0	16	**91**
Melissa blue	*Lycaeides melissa*	0	0	0	0	0	16	**16**
Lupine blue	*Plebejus lupines*	0	0	0	3	6	3	**12**
Acmon blue	*Icaricia acmon acmon*	94	167	192	281	322	760	**1816**
Bernardino blue	*Euphilotes Bernardino*	0	0	0	0	0	7	**7**
Echo blue/Spring azure	*Celastrina ladon echo*	5	12	7	3	26	33	**89**
Western tailed blue	*Everes amyntula*	0	1	1	0	0	2	**4**
Marine blue	*Leptotes marina*	0	0	0	1	0	55	**56**
Ceraunus blue	*Hemiargus ceraunus*	0	0	0	0	0	1	**1**
Pygmy blue	*Brephidium exilis*	0	1	0	0	0	1	**2**
Blue species	Species unknown	22	49	64	48	46	79	**308**
Hesperiidae								
Funereal duskywing	*Erynnis funeralis*	31	127	199	103	72	109	**641**
Mournful duskywing	*Erynnis tristis*	0	3	0	1	1	0	**5**
Pacuvius duskywing	*Erynnis pacuvius*	1	0	0	0	0	0	**1**
Sleepy duskywing	*Erynnis brizo*	23	27	1	5	4	1	**61**
Propertius duskywing	*Erynnis propertius*	0	10	3	5	2	6	**26**
Afranius duskywing	*Erynnis afranius*	0	0	2	0	0	0	**2**
Duskywing species	*Erynnis* species	30	120	79	70	28	56	**383**
Small-checkered skipper	*Pyrgus scriptura*	0	0	0	0	0	1	**1**
Northern white skipper	*Heliopetes ericetorum*	0	0	0	0	0	1	**1**
Common sootywing	*Philosora catalus*	0	0	5	13	16	11	**45**
Skipper species	Species unknown	2	2	0	1	1	0	**6**
Juba skipper	*Hesperia juba*	0	1	0	1	1	0	**3**
Sachem	*Atalopedes campestris*	0	0	0	0	0	1	**1**
Moth Species								
Sphyngid moth	Species unknown	4	4	0	0	0	0	**8**
	Euproserpinus phaeton	1	37	1	0	0	0	**39**
	Litocola sexigueta	1	0	0	0	0	0	**1**
	Leptarctia	1	0	0	0	0	0	**1**
	Alypia ridingsa	1	0	0	0	0	0	**1**
	E. Phaeton sphinx	9	0	0	0	0	0	**9**
	Heliothis belladona	0	3	0	0	0	0	**3**
	Drasteria tejonica	0	3	0	0	0	0	**3**
	Drasteria edwardsi	0	1	0	0	0	0	**1**
	Drasteria biformata	0	1	0	0	0	0	**1**
	Hyles lunesta	0	0	1	0	0	0	**1**
	Hemoris affinis	0	0	1	0	0	0	**1**
Moth species	*Adela* species	0	0	0	0	1	0	**1**
Moth species unknown	Species unknown	17	49	3	0	0	0	**69**

APPENDIX D

WEEKLY FLOWERING PLANT OBSERVATIONS FOR CAMPO WIND ENERGY PROJECT

APPENDIX D
WEEKLY FLOWERING PLANT OBSERVATIONS FOR CAMPO WIND ENERGY PROJECT

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
Achillea millefolium	common yarrow						x
Adenostoma fasciculatum	chamise	x	x	x	x	x	x
Amsinckia menzesii var. *intermedia*	rancher fiddleneck	x	x		x	x	
Anisocoma acaulis	scale-bud		x	x	x	x	x
Antirrhinum coulterianum	Coulter's snapdragon	x	x		x	x	x
Antirrhinum nutallianum ssp. *nutallianum*	snapdragon			x			
Arabis pulchra var. *pulchra*	beautiful rock-cress	x	x	x	x		
Arctostaphylos spp.	manzanita	x	x	x	x		
Artemesia tridentata ssp. *tridentata*	big sagebrush	x	x	x	x	x	x
Astragalus douglasii* var. *perstrictus	**Jacumba milkvetch**		x		x	x	x
Baccharis salicifolia	mulefat		x				
Camissonia spp.	sun-cup	x		x	x	x	x
Caulanthus heterophyllus var. *heterophyllus*	San Diego jewelflower		x				x
Caulanthus simulans	**Payson's jewelflower**	x	x	x	x		
Castilleja ssp.	Indian paintbrush			x	x	x	
Ceanothus cuneatus var. *cuneatus*	buck brush	x		x	x		
Ceanothus greggii var. *perplexans*	cup-leaf-lilac		x		x		
Ceanothus leucodermis	chaparral whitethorn		x	x	x		
Cercocarpus betuloides var. *betuloides*	birch-leaf mountain mahogany	x	x	x			
Chaenactis artemisiifolia	white pincushion					x	x
Chaenactis glabriuscula var. *glabriuscula*	yellow pincushion					x	x
Cirsium occidentale var. *californicum*	California thistle				x	x	x
Claytonia parviflora spp.	miner’s-lettuce	x		x			
Collinsia concolor	Chinese houses	x	x	x	x	x	x
Cordylanthus rigidus ssp. *setigerus*	dark-tip bird’s beak	x	x		x	x	x
Coreopsis californica var. *californica*	California coreopsis		x	x	x	x	x
Cryptantha spp.	cryptantha	x	x	x	x	x	x
Delphinium parishii* ssp. *subglobosum	**oceanblue larkspur**		x	x	x	x	x

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
Dendromecon rigida	bush poppy		x			x	x
Descurainia pinnata ssp. *glabra*	tansey mustard	x	x	x	x	x	
Dichelostemma capitatum	blue dicks		x	x	x	x	x
Emmenanthe penduliflora var. *penduliflora*	whispering bells				x	x	x
Eriastrum sp.	woolly star						x
Ericameria linearifolia	interior goldenbush		x	x		x	
Ericameria sp.	goldenbush		x	x	x	x	x
Eriogonum fasciculatum	buckwheat		x	x		x	
Eriophyllum confertiflorum var. *confertiflorum*	long-stem golden yarrow						x
Eriophyllum wallacei	Wallace's woolly daisy	x			x	x	x
Erodium cicutarium	filaree	x	x	x	x	x	x
Erysimum capitatum ssp. *capitatum*	western wallflower		x	x	x	x	x
Eschscholzia californica	California poppy	x	x	x	x	x	x
Eucrypta chrysanthemifolia var. *bipinnatifida*	spotted hideseed			x			
Filago californica	California filago						x
Geraea viscid	**stickey geraea**		x	x		x	x
Gilia capitata	ball gilia				x	x	x
Gilia spp.	gilia	x		x	x	x	x
Hesperoyucca whipplei	chaparral candle				x	x	
Hirschfeldia incana	short-pod mustard		x				
Lasthenia gracilis	common goldfields	x	x	x	x	x	x
Lathyrus splendens	**Campo pea**		x	x	x		x
Layia glandulosa	white layia		x	x	x	x	x
Lepidium spp.	pepperweed					x	
Leptosiphon lemmonii	Lemmon's linanthus				x	x	x
Linanthus bellus	**desert beauty**	x	x	x	x	x	x
Lomatium dasycarpum ssp. *dasycarpum*	woolly fruit lomatium		x				
Lotus agrophyllus var. *agrophyllus*	silver-leaf lotus				x	x	x
Lotus scoparius	deer weed			x	x	x	x
Lotus strigosus	bishop's lotus		x	x	x	x	x
Lotus sp.	lotus	x	x		x	x	x
Lupinus bicolor	miniature lupine		x	x	x	x	x
Lupinus concinnus	bajada lupine		x	x	x	x	x
Lupinus hirsutissimus	stinging lupine					x	
Lupinus truncatus	collar lupine					x	x
Lupinus spp.	lupine	x	x	x	x	x	x

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
Malacothrix clevelandii	Cleveland's malacothrix			x		x	
Malacothrix californica	California dandelion	x	x	x	x	x	
Malacothrix spp.	dandelion			x	x		x
Marah macrocarpus var. *macrocarpus*	wild cucumber	x	x	x		x	
Minuartia douglasii	Douglas's sandwort					x	x
Nemophila menziesii var. *integrifolia*	baby blue eyes	x	x	x	x	x	
Paeonia californica	California peony	x	x				
Pectocarya spp.	combseed	x	x				
Phacelia brachyloba	short-lobe phacelia						x
Phacelia distans	white-heliotrope		x	x	x	x	x
Phacelia parryi	Parry's phacelia			x	x	x	x
Phacelia spp.	phacelia		x	x	x	x	x
Plagiobothrys spp.	popcornflower	x	x	x	x	x	x
Platystemon californicus	cream cups		x	x	x	x	x
Rhus ovata	sugar bush		x	x			
Rhus trilobata	basket bush		x				
Quercus x *acutidens*	hybrid Engelmann's scrub oak	x	x				
Salvia apiana	white sage						x
Salvia columbariae	chia	x	x	x	x	x	x
Senecio californicus	California butterweed	x	x	x	x	x	x
Sisymbrium altissimum	tumble mustard						x
Sisyrinchium bellum	blue-eyed grass	x					
Streptanthus campestris	**southern jewelflower**			x	x	x	x
Trichostemma parishii	mountain blue curls		x		x	x	x
Uropappas lindleyi	silver puffs				x	x	
Viola purpurea ssp. *quercetorum*	oak yellow violet	x	x				
Yucca schidigera	Mohave yucca	x		x			x

boldface = a sensitive species

APPENDIX E

VERTEBRATE SPECIES OBSERVED DURING QUINO SURVEYS FOR CAMPO WIND ENERGY PROJECT

APPENDIX E
VERTEBRATE SPECIES DETECTED DURING FOCUSED QUINO SURVEYS FOR CAMPO WIND ENERGY PROJECT

Scientific Name	Common Name
REPTILES	
Order Anura	Frogs and Toads
Family Bufonidae	
Bufo boreas halophilus	western toad
Family Hylidae	
Pseudactis cadaverina	California chorus frog
Family Pelobatidae	
Spea hammondii	western spade-foot toad
Bufo boreas	California toad
Order Squamata	Lizards and Snakes
Family Colubridae	
Diadophis punctatus similis	ring-necked snake
Lampropeltis getula californiae	California king snake
Masticophis taeniatus	striped whipsnake
Pituophis catenifer	gopher snake
Family Phrynosomatidae	
Aspidoscelis tigris	western whiptail lizard
Phrynosoma coronatum blainvillii	**coast horned lizard**
Scleloporus occidentalis	western fence lizard
Scleloporus orcutti	granite spiny lizard
Uta stansburiana	side blotched lizard
Family Viperidae	
Crotalus mitchellii	speckled rattlesnake
Crotalus helleri	southern Pacific rattlesnake
Family Xantusidae	
Xantusia henshawi	granite night lizard
BIRDS	
Order Apodiformes	Hummingbirds and Swifts
Family Apodidae	
Aeronautes saxatalis	white-throated swift
Family Trochilidae	
Calypte anna	Anna's hummingbird
Order Ciconiiformes	Eagles, Hawks, and Kites
Family Accipitridae	
Accipiter cooperii	Cooper's hawk
Buteo lineatus	red-shouldered hawk
Buteo jamaicensis	red-tailed hawk
Circus cyaneus	northern harrier
Family Cathartidae	
Cathartes aura	**turkey vulture**
Family Falconidae	
Falco mexicanus	prairie falcon
Order Columbiformes	Pigeons and Doves

Scientific Name	Common Name
Family Columbidae	
Columba livia	rock pigeon
Zenaida macroura	mourning dove
Order Gruiformes	
Family Rallidae	
Fulica americana	American coot
Order Passeriformes	Song Birds
Family Alaudidae	
Eremophila alpestris actia	**California horned lark**
Family Aegithalidae	
Psaltriparis minimus	bushtit
Family Cardinalidae	
Melanocephalus pheucticus	black-headed grosbeak
Passerrina amoena	lazuli bunting
Family Corvidae	
Aphelocoma californica	western scrub jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Family Cuculidae	
Geococcyx californianus	roadrunner
Family Emberizidae	
Aimophila ruficeps	**rufous-crowned sparrow**
Amphispiza bilineata	black-throated sparrow
Chondestes grammacus	lark sparrow
Junco hyemalis	dark-eyed junco
Passerculus sandwichensis	savannah sparrow
Pipilo crissalis	California towhee
Pipilo maculates	spotted towhee
Spizella atrogularis	black-chinned sparrow
Zonotrichia leucophrys	white crowned sparrow
Family Fringillidae	
Carpodacus mexicanus	house finch
Carduelis lawrencei	Lawrence's goldfinch
Carduelis psaltria	lesser goldfinch
Family Hirundinidae	
Petrochelidon pyrrhonota	cliff swallow
Family Icteridae	
Molothrus ater	brown-headed cowbird
Sturnella neglecta	western meadowlark
Family Mimidae	
Toxostoma redivivum	California thrasher
Family Odontophoridae	
Callipepla californica	California quail
Family Paridae	
Baeolophis inomatus	oak titmouse
Family Parulidae	
Dendroica coronata	yellow-rumped warbler

Scientific Name	Common Name
Wilsonia pusilla	Wilson's warbler
Family Picidae	
Colaptes auratus	northern flicker
Picoides nuttallii	Nuttall's woodpecker
Melanerpes formicivores	acorn woodpecker
Family Sittidae	
Sitta carolinensis	white-breasted nuthatch
Family Stumidae	
Stumas vulgaris	European starling
Family Sylviidae	
Chamaea fasciata	wrentit
Polioptila caerulea	blue-gray gnatcatcher
Family Turidae	
Sialia mexicana	western bluebird
Family Trochilidae	
Calypte anna	Anna's hummingbird
Family Troglodytidae	
Thryomanes bewickii	Bewick’s wren
Troglodytes aedon	house wren
Family Tyrannidae	
Empidonax difficilis	Pacific slope flycatcher
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Tyrannus verticulis	western kingbird
Family Vireoniidae	
Vireo gilvus	warbling vireo
Vireo huttoni	Hutton's vireo
MAMMALS	
Order Carnivora	Carnivores
Family Canidae	
Canis latrans	coyote
Family Felidae	
Puma concolor	mountain lion
Lynx rufus	bobcat
Family Cervidae	
Odocoileus hemionus	mule deer
Order Lagomorpha	Rabbits, Hares, and Pikas
Family Leporidae	
Lepus californicus bennettii	**San Diego black-tailed jackrabbit**
Sylvilagus audubonii	cottontail
Family Sciuridae	Squirrels, Rats, Mice, and Relatives
Spermorphilus beecheyi	California ground squirrel
Family Geomyidae	
Thomomys bottae	Botta’s pocket gopher
Family Muridae	
Neotoma fuscipes	woodrat

boldface = a sensitive species

APPENDIX F

24-HOUR NOTIFICATION LETTERS TO USFWS

APPENDIX F.1
04/08/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 09, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the First Quino Checkerspot Butterfly Observation for the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that three Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) individuals were observed at the proposed Campo Wind Energy project site in southeastern San Diego County, California (Figures 1 and 2). On April 08, 2010, AECOM biologists Andrew Fisher and Jimmy McMorran (both supervised under permit number TE-820658) made the observation during a reconnaissance level survey for avian point count locations. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Fisher and Mr. McMorran did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on March 12, 2010. Additionally, both Mr. Fisher and Mr. McMorran are not individually permitted. The sightings are detailed below.

A total of three distinctly unique Quino individuals were detected and observed during the period of 12:40 to 13:15. All three were observed within 100 feet of each other, in open/red-shank chaparral habitat largely dominated by ceanothus (*Ceanothus* sp.), chamise (*Adenostoma fasciculatum*), with sparsely scattered coast live oak trees (*Quercus agrifolia*) (Photos 1 and 2). Weather consisted of clear skies, winds of 1-3 mph blowing from the east/southeast, and a temperature of 68 degrees Fahrenheit.

One female Quino was observed by Mr. Fisher and Mr. McMorran resting on buckwheat (*Eriogonum fasciculatum*) at 12:40 (Photos 3 and 4). This first Quino had a small nick in its right forewing, but otherwise appeared in a fresh condition. Mr. Fisher and Mr. McMorran observed it resting on the same buckwheat shrub for approximately 10 minutes. The second Quino was observed within 50 feet of the first Quino, basking on the trail. This Quino appeared to be somewhat worn and more faded than the first Quino, and quickly took flight after a few photos were taken from a distance (Photos 5 and 6). A third Quino was detected in close proximity to the second Quino, nectaring on baby blue eyes (*Nemophila menziesii*). It was also a fresh individual, and was noticeably smaller than the first fresh Quino detected. This individual also took quickly took flight after Mr. Fisher was able to take photographs from a distance (Photo 7).

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

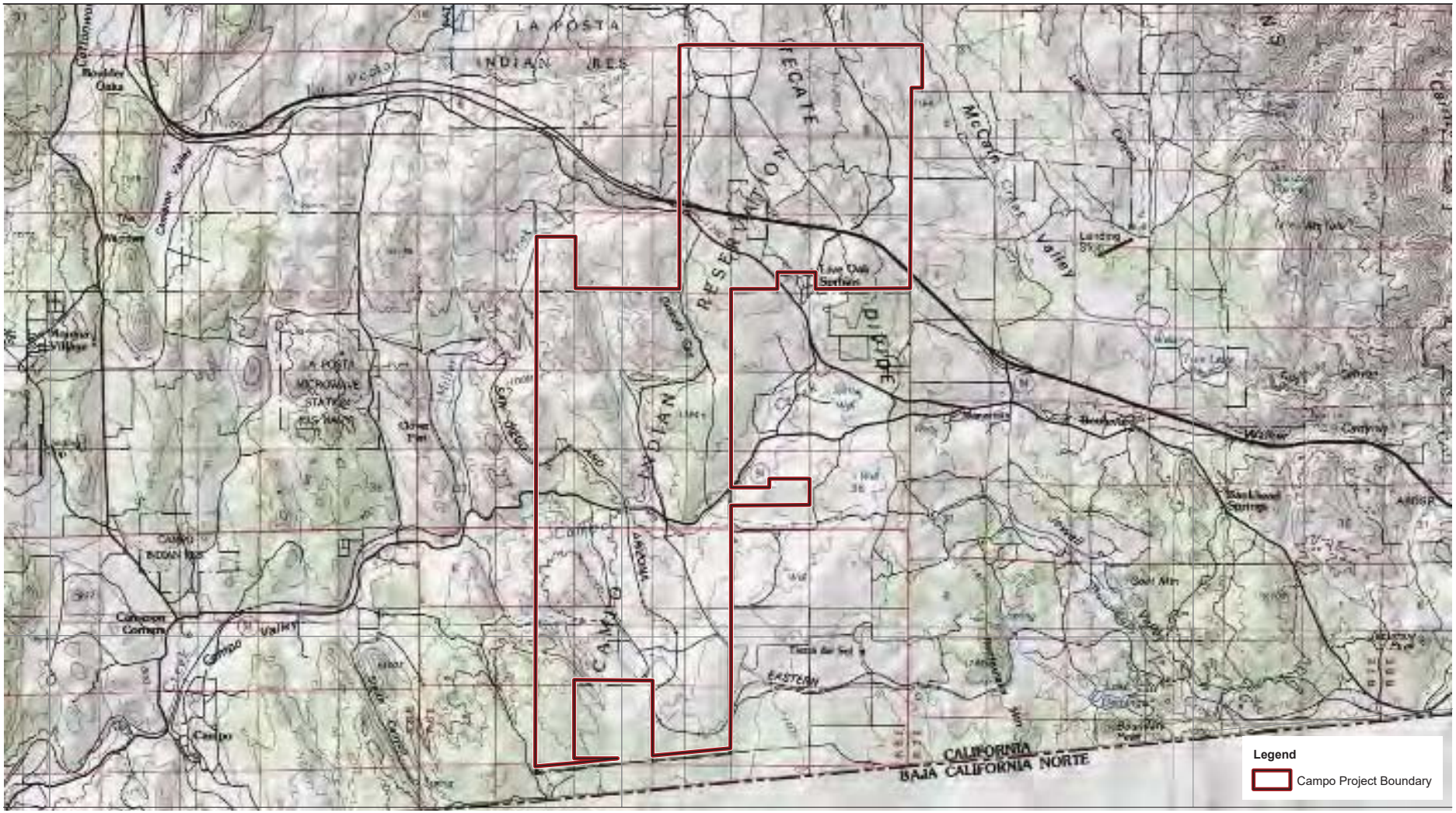
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotificationFig1Regional_map.mxd, 04/08/10, ShahS2



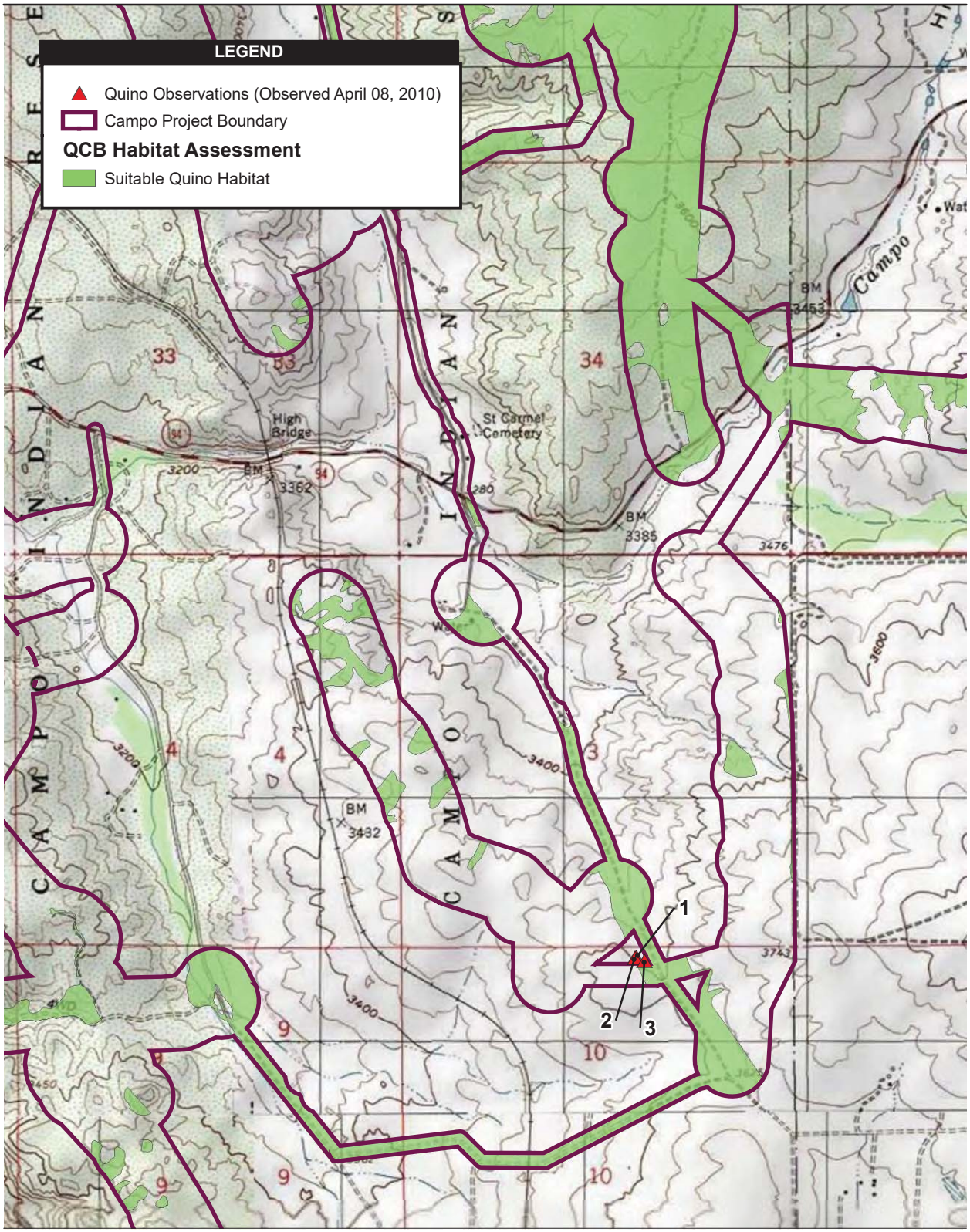
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/08/10, ShahS2



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation_20100408.mxd, 04/08/10, ShahS2

APPENDIX F.2
04/09/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 12, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Second Quino Checkerspot Butterfly Observation for the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that two Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) individuals were observed at the proposed Campo Wind Energy project site in southeastern San Diego County, California (Figures 1 and 2). On April 09, 2010, David Flietner (TE-008031), a sub-contractor to AECOM and AECOM biologist Erin Bergman (supervised under permit number TE-820658) made the observation during a protocol Quino survey. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Flietner and Ms. Bergman did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on March 12, 2010. The sighting is detailed below.

Two Quino were observed approximately 500 feet southwest of BIA Road 15 on the Campo Reservation (UTM 11S easting:0559472 northing:3612756) (Figure 3) by Mr. Flietner and Ms. Bergman from 13:00 – 13.15. The Quino were detected on an unused or little-used dirt road, an adjacent embankment, and in adjacent open chaparral. The Quino were basking (separately) on open sandy soil within the roadway; as Flietner and Bergman approached to take pictures, the butterflies would fly short distances and alight in other open areas, returning periodically to the same general locations where they were originally observed. Both Quino were in excellent condition, and both observers clearly detected diagnostic markings (abdominal and wing markings; wing shape) on both butterflies. Photos 1 and 2 provide the best images of the butterflies; Photo 3 shows the habitat within the roadway where the Quino alighted.

The surrounding vegetation contains less than 10% shrub cover, consisting of *Adenostoma fasciculata, Rhus ovata, Ceanothus greggii* (in flower*),* and *Cercocarpus betuloides*; a denser stand dominated by *Adenostoma sparsifolium* begins about 50 feet west of the observation point. *Lotus scoparius*, young *Eriogonum fasiculatum* and *Corethrogyne filaginifolia* provide about 20% low (1 – 2 feet tall) cover. Less than 10% herbaceous cover is provided by seedlings of *Erodium cicutarium, Brassica* sp., as well as nectar sources *Plagiobotrys* sp.,

Lasthenia californica, and *Dichelostema capitatum*, which were non-blooming or in early bloom (with most flowers unopened).

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,



Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



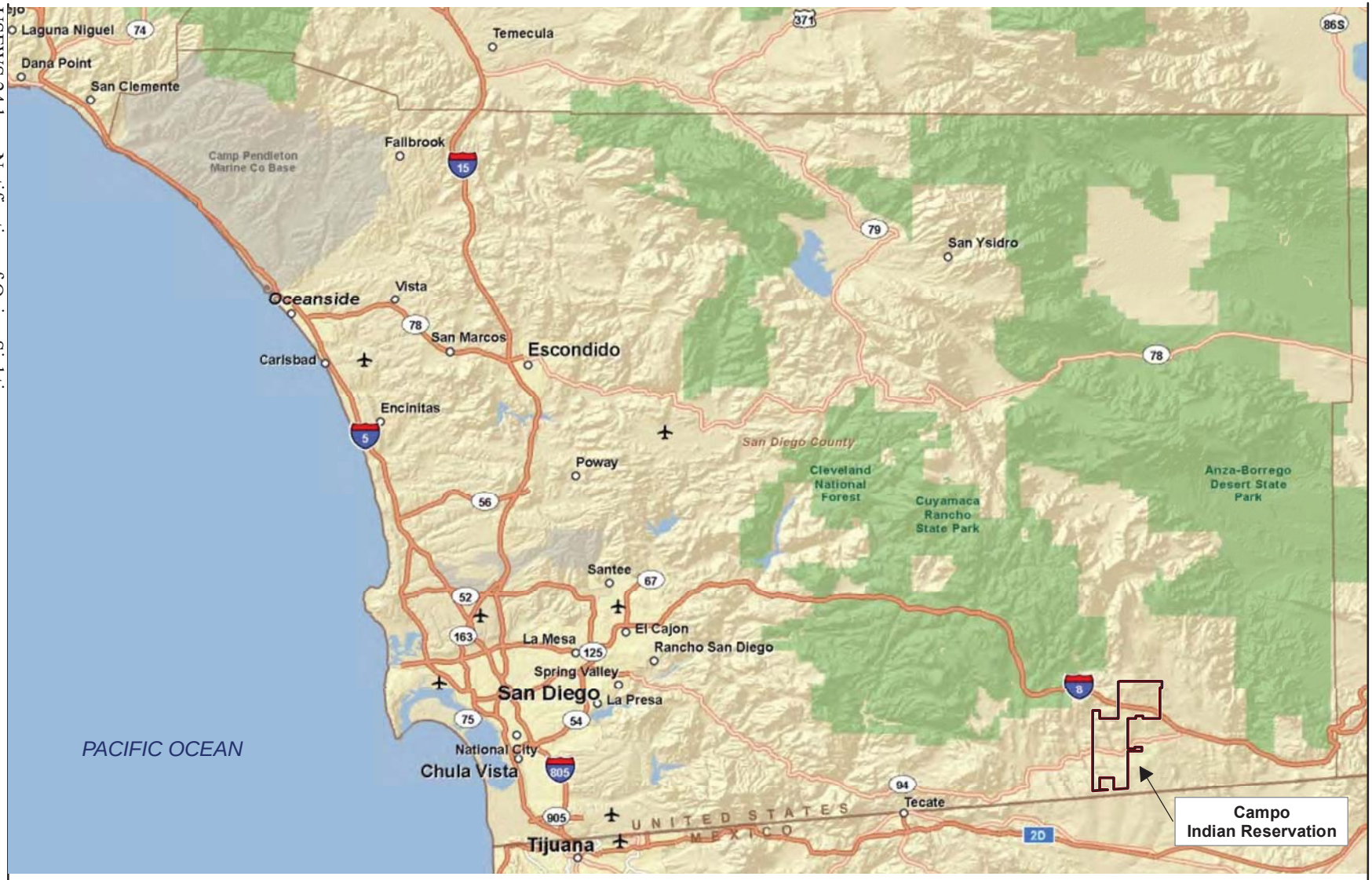
Photo 2



Photo 3



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

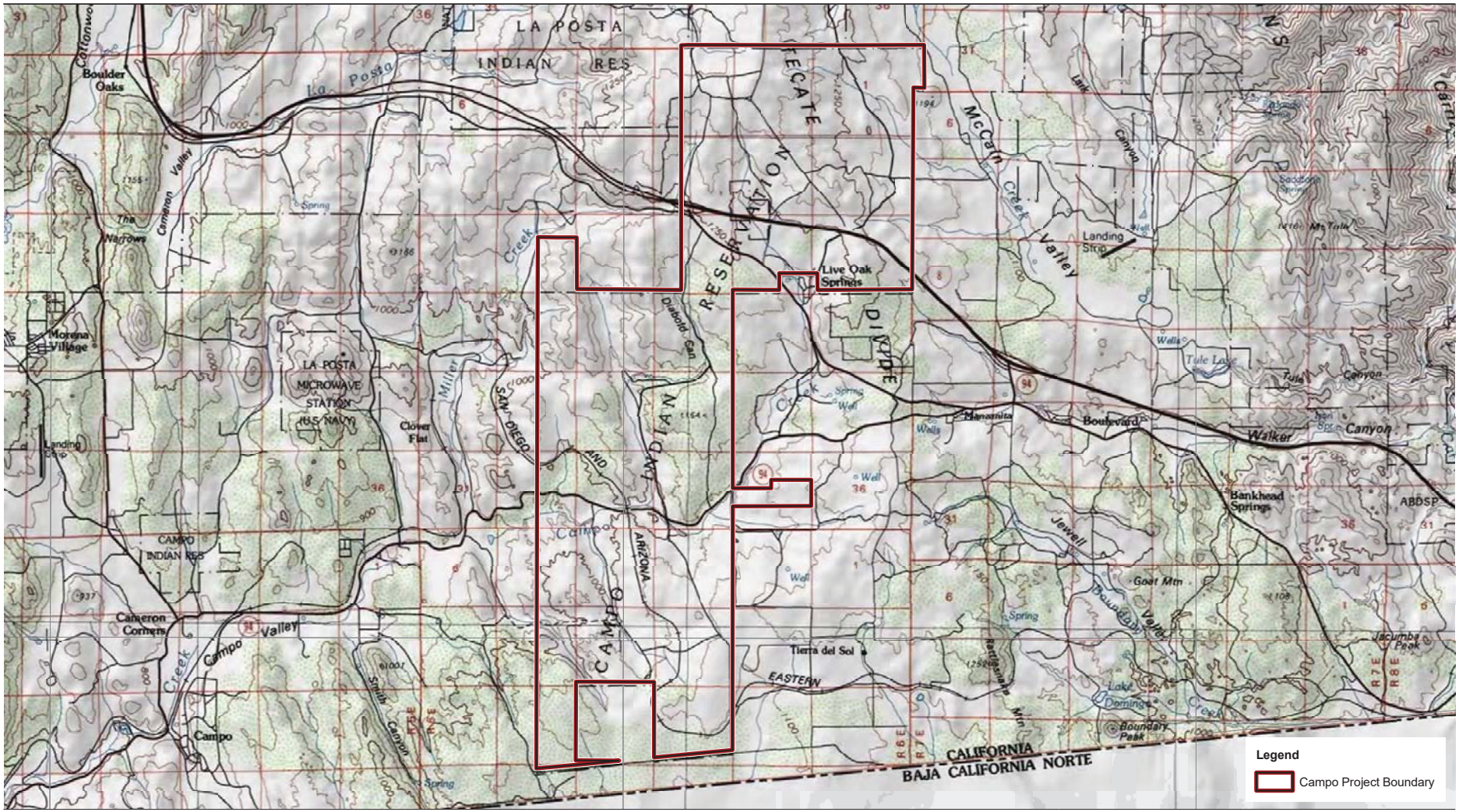
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



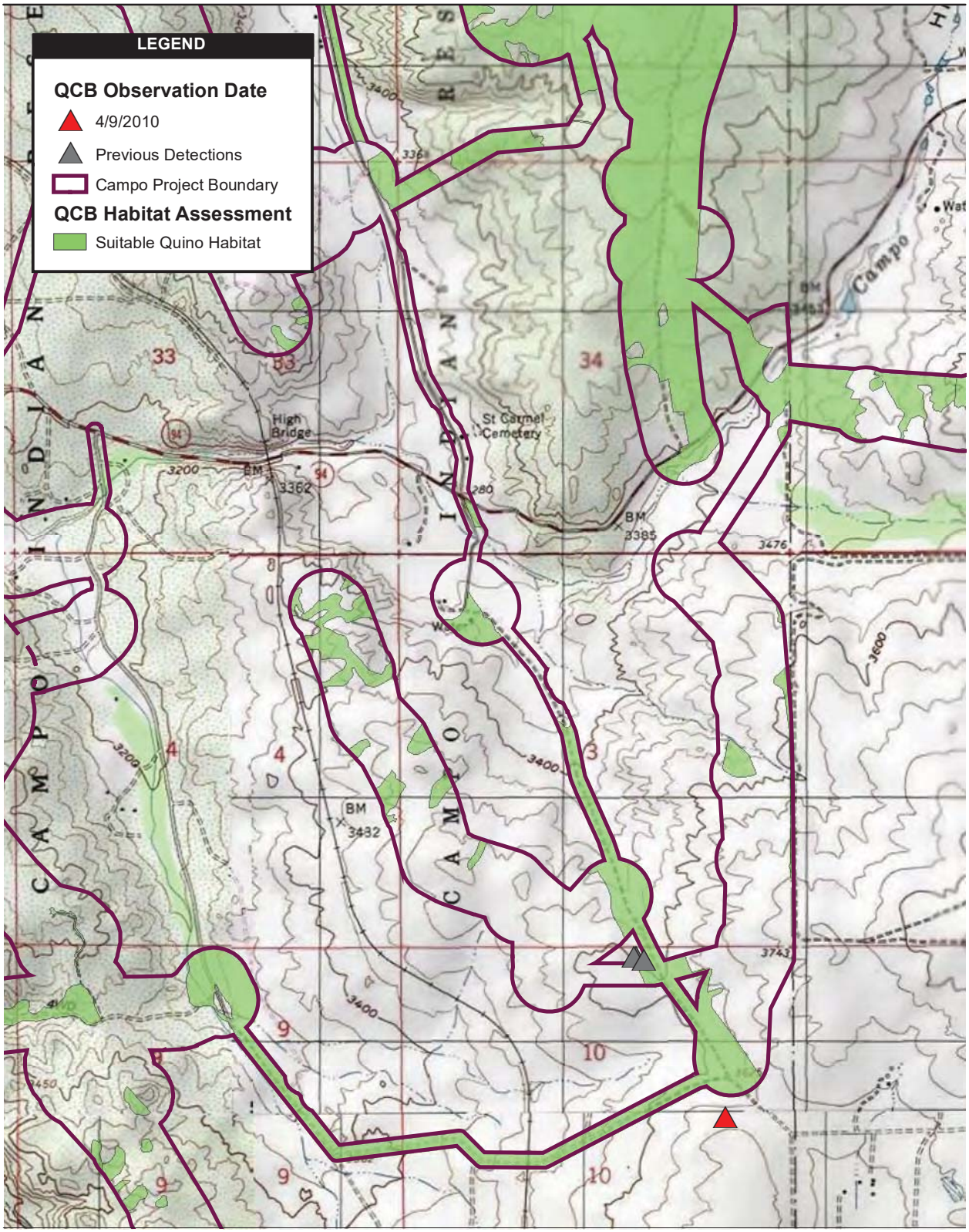
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation2_20100408.mxd, 04/12/10, johnsonaa

APPENDIX F.3
04/13/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 14, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Third Quino Checkerspot Butterfly Observation for the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that another Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) individual was observed at the proposed Campo Wind Energy project site in southeastern San Diego County, California (Figures 1 and 2). On April 13, 2010, Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed a Quino within the project's boundaries during protocol surveys for the species. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sighting is detailed below.

At 10:30, Mr. Couffer observed a Quino warming itself on bare ground on a hilltop immediately north of Interstate 8, and east of Crestwood Road, at (NAD 83) 11S 0560363, 3619015, at approximately 4295 feet in elevation. Weather at the time was approximately 58 degrees Fahrenheit, with wind speeds around 3 mph and sunny, clear skies. The Quino detected was somewhat drab, with limited fraying of wing edges (Photo 1 and Photo 2). At 12:36 hours, a return visit to the hilltop revealed that this Quino had moved only 8 feet from its initial location. No other Quinos were observed by Mr. Couffer on this date.

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

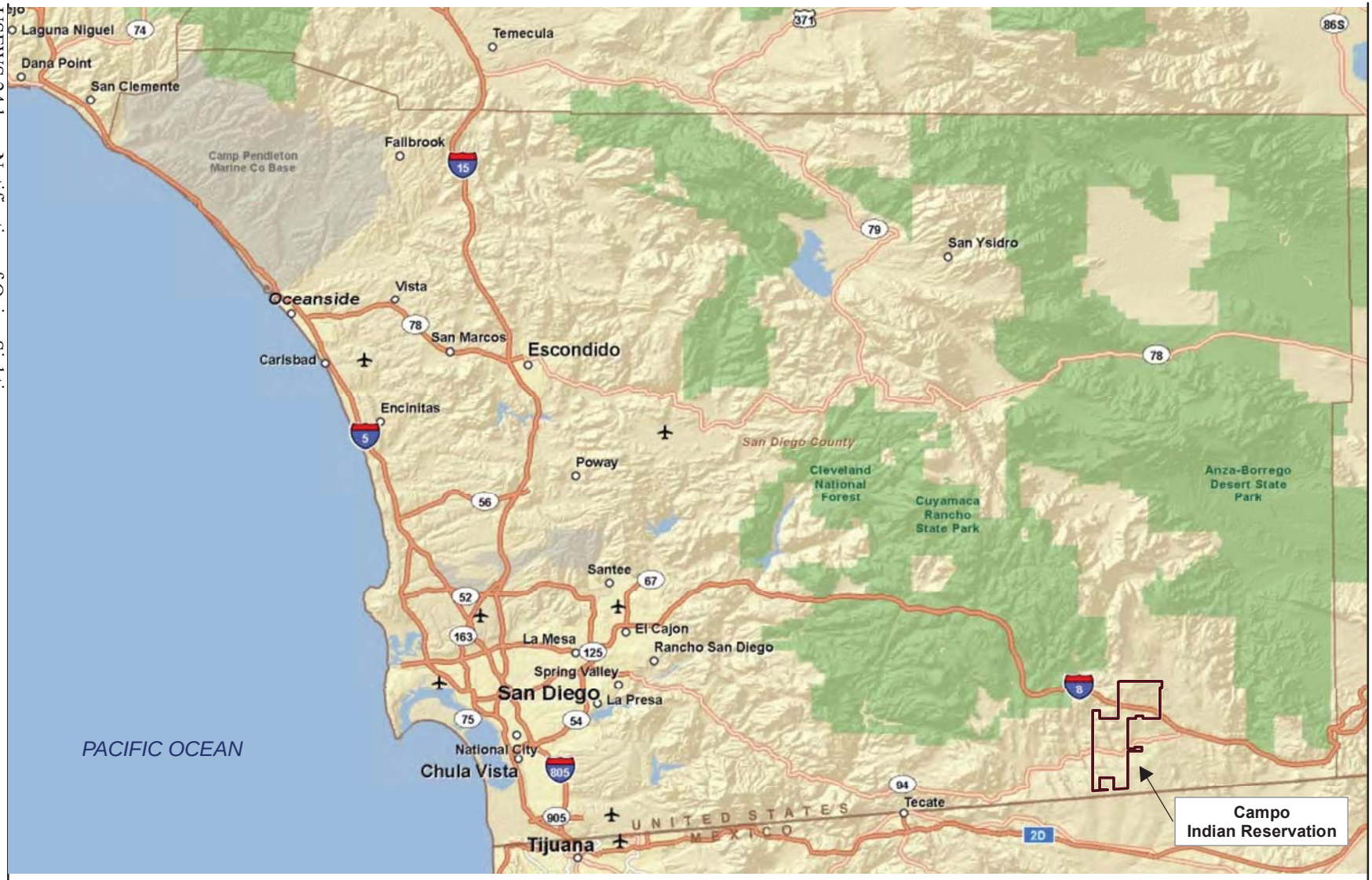
Photo 1



Photo 2



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

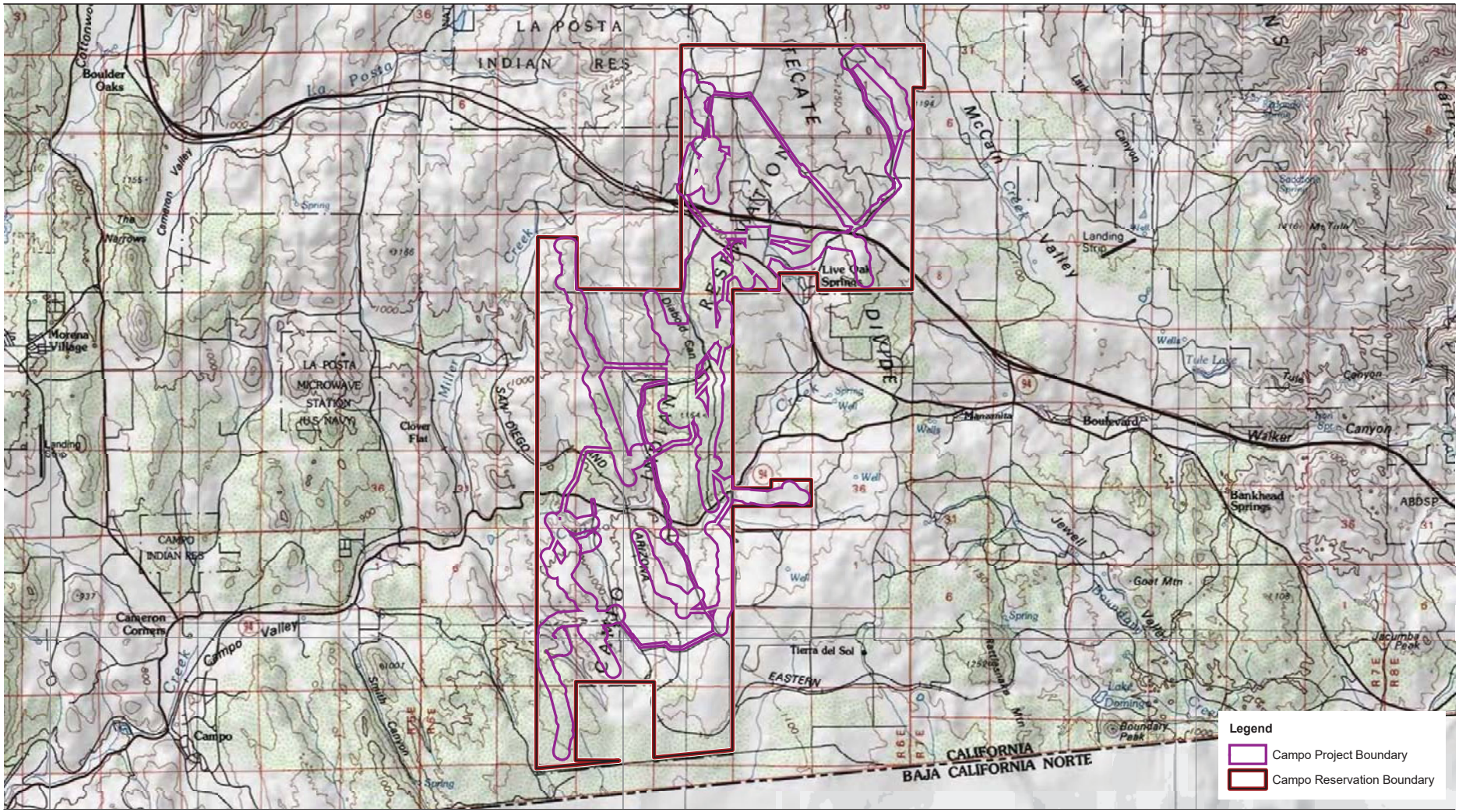
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



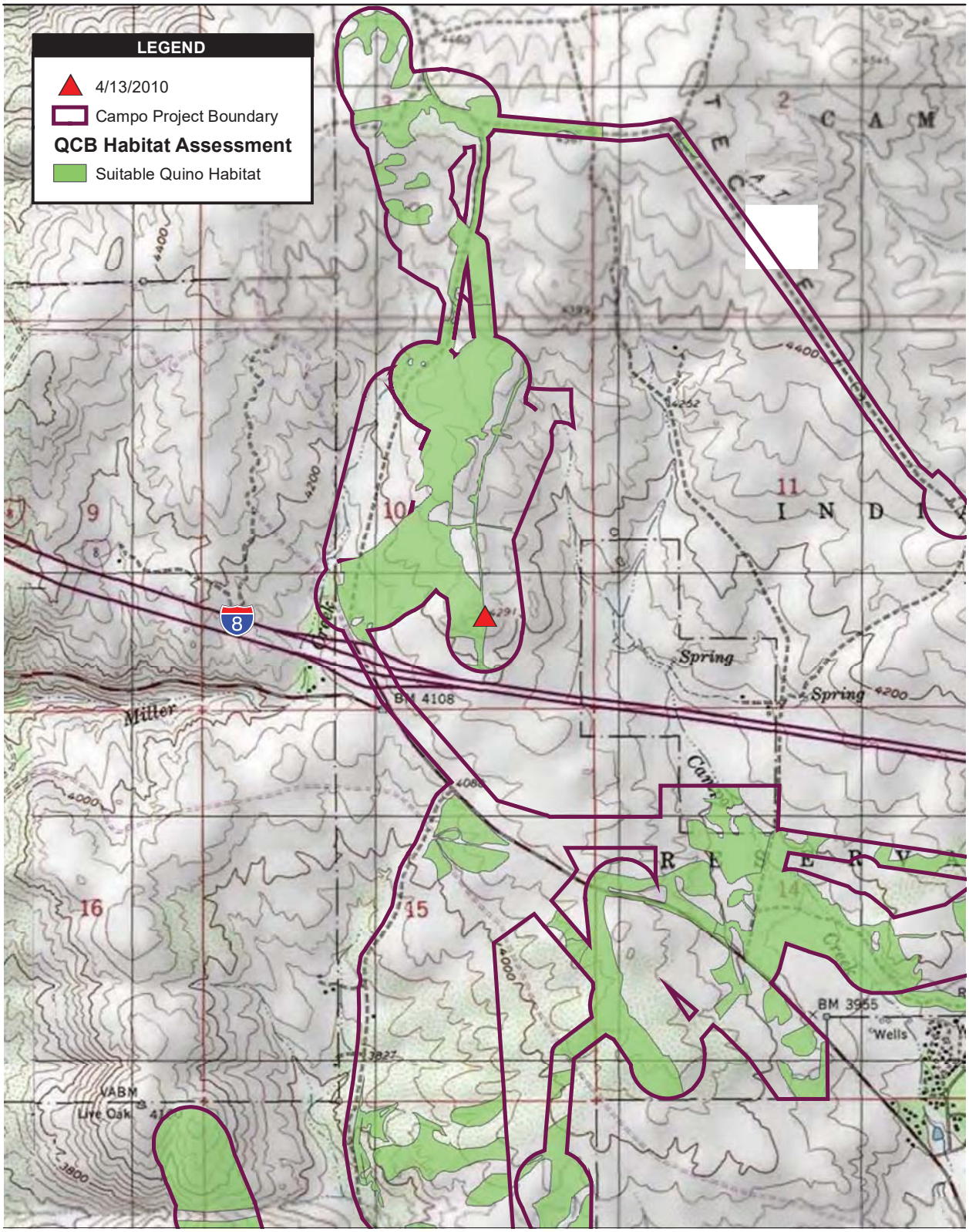
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation3_20100413.mxd, 04/13/10, johnsonaa

APPENDIX F.4
04/15/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 16, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Fourth and Fifth Quino Checkerspot Butterfly Observations for the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that additional Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) individuals were observed at the proposed Campo Wind Energy project site in southeastern San Diego County, California (Figures 1 and 2). The fourth Quino observation for this project consisted of two observations on April 15, 2010 and the fifth Quino observation took place on April 16, 2010. On April 15, 2010, AECOM biologists Andrew Fisher and Jimmy McMorran (both supervised under permit number TE-820658-4) incidentally observed two Quino individuals during avian surveys. On the same day, Ken Osborne (permit number TE-837760-6), sub-contractor to AECOM, observed two Quino individuals adjacent to the project's boundaries en route to the project survey area, during protocol surveys for the species. On April 16, 2010, AECOM biologist Bonnie Hendricks (TE-820658-4) observed one Quino within project boundaries. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, these biologists did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on March 12, 2010. The sightings are detailed below.

On April 15, Mr. Fisher observed a Quino individual at 10:15, at UTM coordinates 11S 0559952, 3609757 (Figure 3a, Quino 1). Weather consisted of clear skies with temperatures of 64.4 degrees Fahrenheit with wind speeds of 3.3 mph blowing from the northeast. The Quino had was identified by its characteristic black abdomen with orange bands, and had worn wings. Prior to Mr. Fisher taking a photograph, the wind blew the Quino away. The habitat in the vicinity of the area consisted of semi-open buckwheat scrub intermixed with scrub oak and chamise (Photo 1). The main nectar source in the area was popcorn flower (*Plagiobotrys* sp.) with few other nectar species present. At 13:15, Mr. Fisher and Mr. McMorran observed another Quino in an area where they both previously detected Quino on April 8, 2010 at UTM coordinates 11S 0560211, 3610530 (Figure 3a, Quino 2). This individual was in a worn condition with slight fraying of wing edges (Photo 2). It was observed nectaring on baby blue eyes (*Nemophila menziesii*). Weather was about 72 degrees Fahrenheit, wind was 3.5 mph on average, and gusted up to 8 mph, with overcast skies.

On April 15, another observation was made by Mr. Osborne. From 15:48 to 15:57, Mr. Osborne was walking towards his vehicle after completing surveys for the day and observed two Quino males adjacent to the project area boundaries (Figure 3b, Quino 3 and 4). These Quino were found at UTM coordinates 11S 0562198, 3617293 and 11S 0562881, 3617289. Following a cleared firebreak along a ridgeline east of the community of Live Oak Springs, Mr. Osborne encountered these two males hilltopping. These butterflies were alternately basking on the ground and very actively chasing or being chased by other butterflies such as *Vanessa carduii* and *Euchloe hyantis*. This prominent, rounded hilltop they were detected is also cleared by the firebreak. Both Quino were in a worn condition, faded in color, but with no nicks or tears in the wings. Photographs were taken, but will be provided at a later date.

The fifth Quino observation for the project was made by Ms. Hendricks on April 16. Ms. Hendricks observed one Quino at 10:10 within the project area at UTM coordinates 11S 0557013, 3610034 (Figure 3c, Quino 5). Weather consisted of clear, sunny skies, with a temperature of 71.5 degrees Fahrenheit and wind speeds of 1.7 mph. This Quino was fresh and crisp. It was detected within mixed chaparral habitat dominated by chamise (*Adenostoma fasciculatum*) and mountain mahogany (*Cercocarpus* sp.). Ms. Hendricks attempted to take a photo of the Quino but was not able to prior to it taking flight.

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,



Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figures 3a, 3b, 3c Quino Observation Location Maps

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

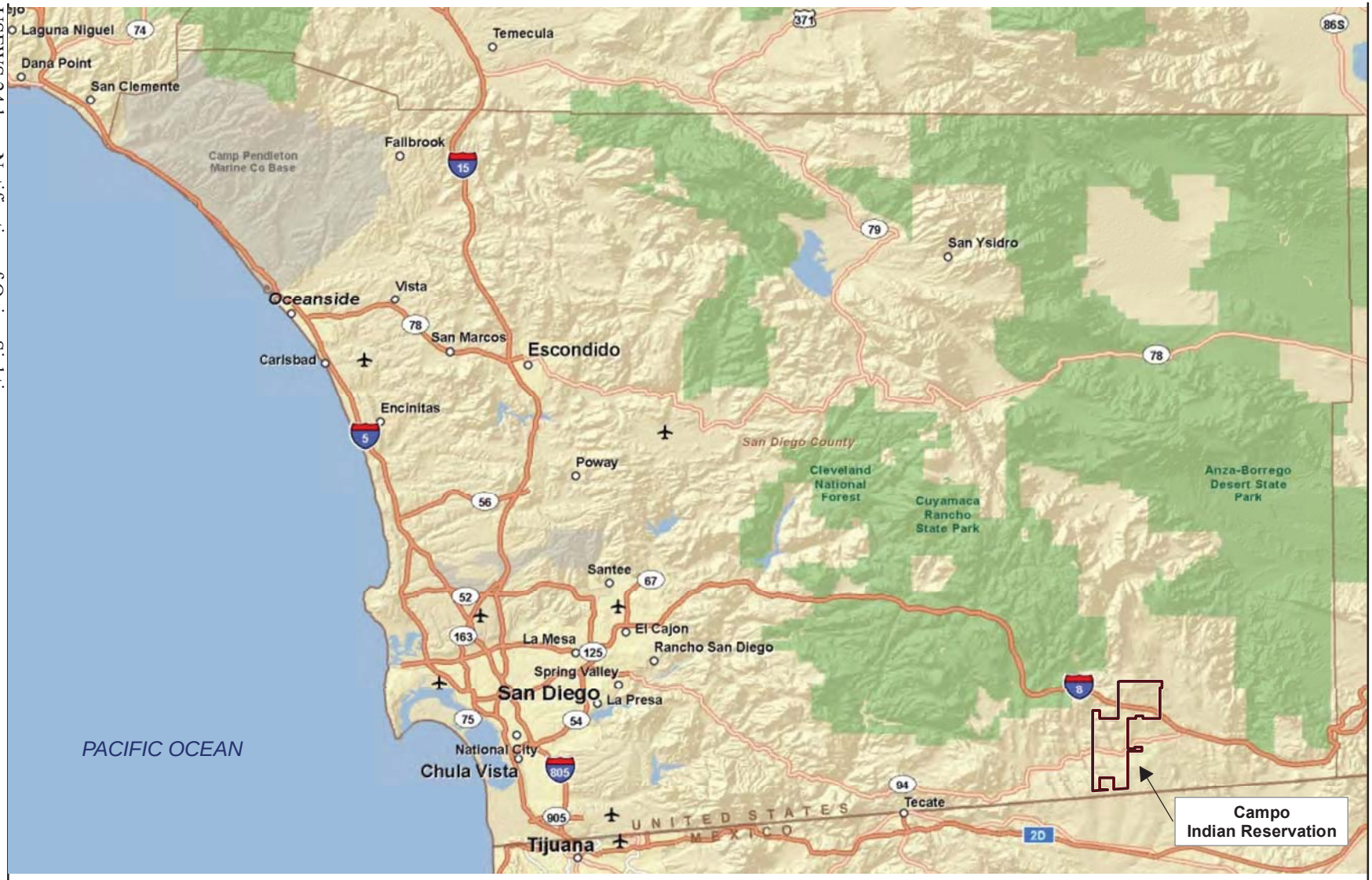
Photo 1



Photo 2



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

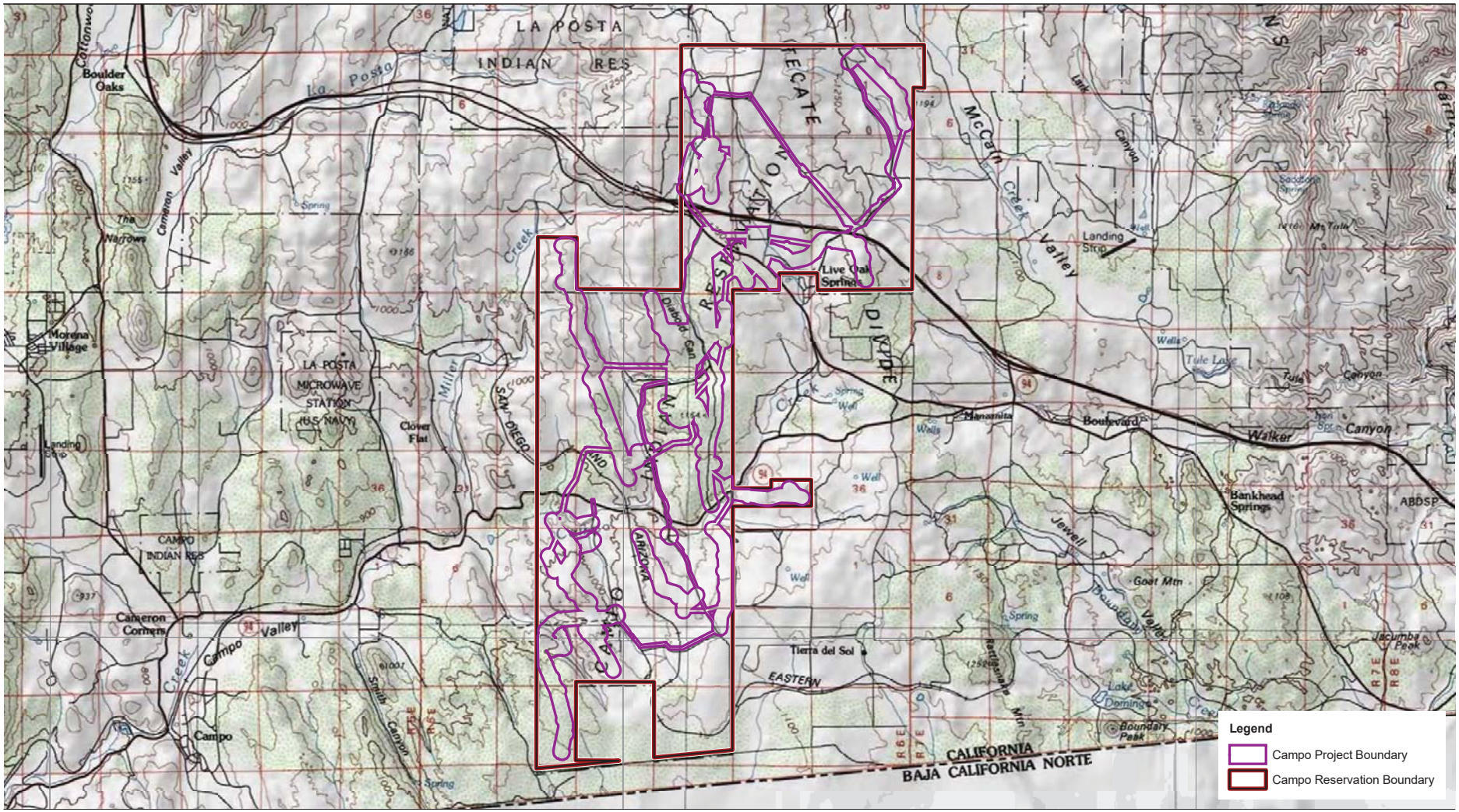
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



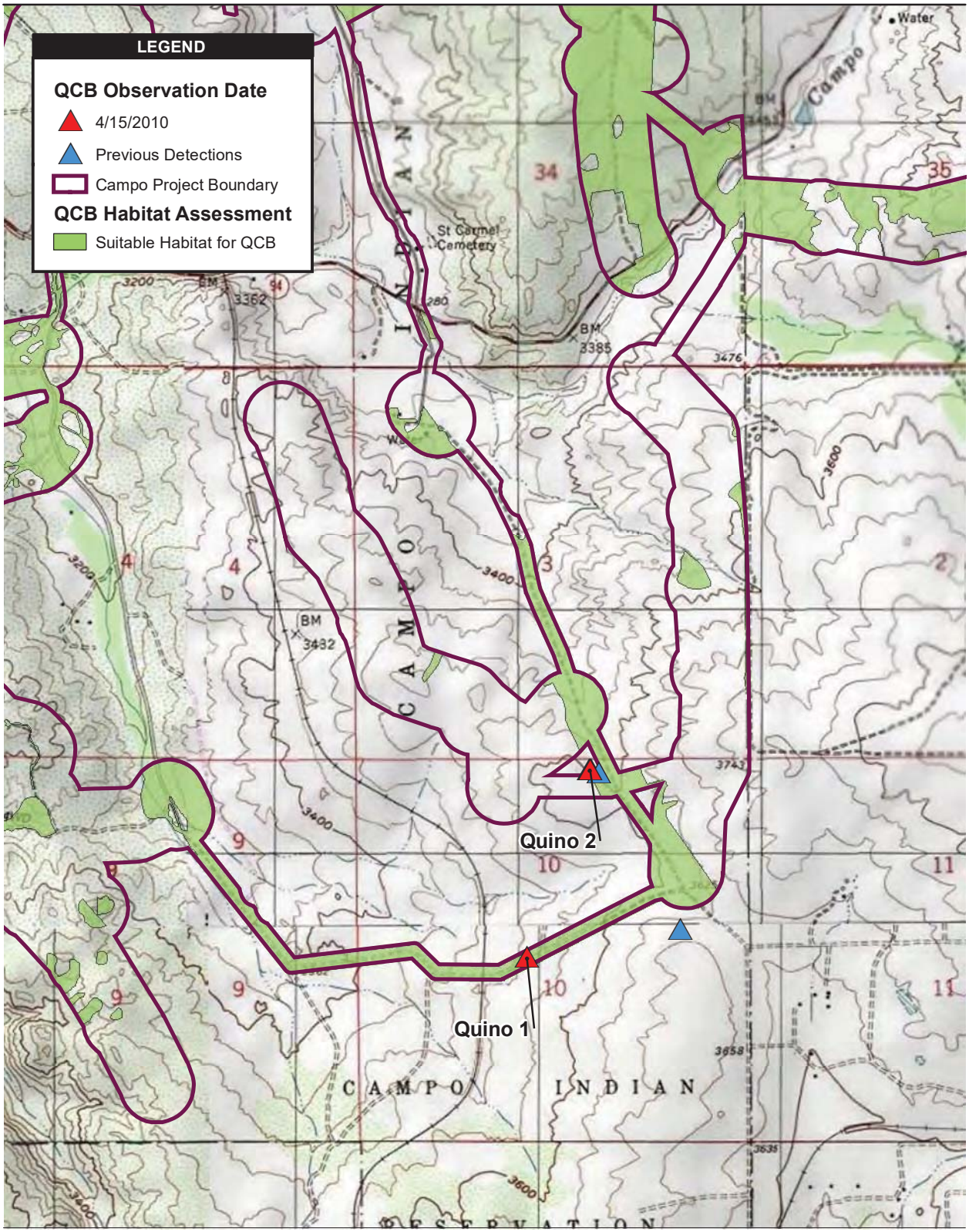
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



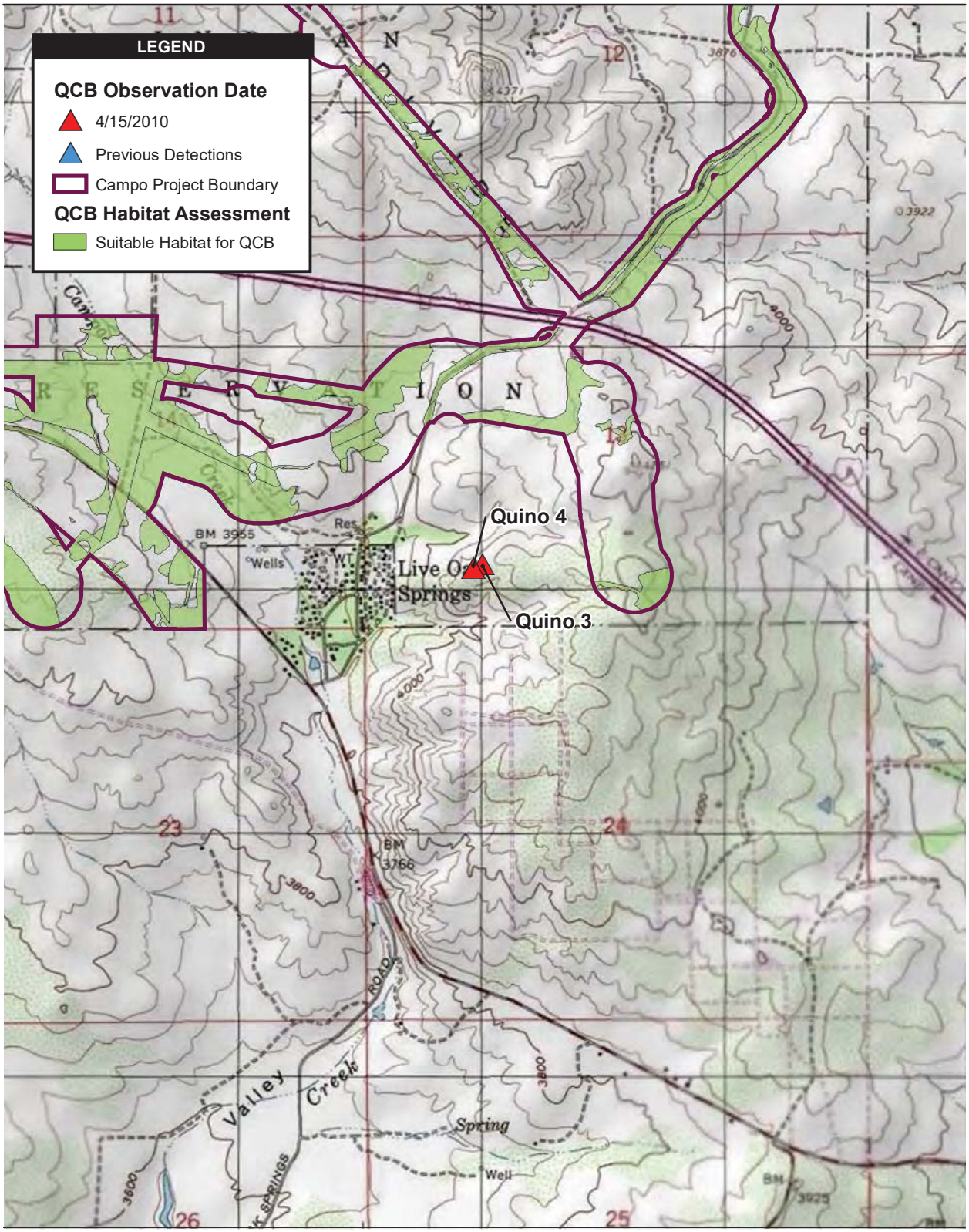
Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3a
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation4-1_20100415.mxd, 04/16/10, johnsonaa



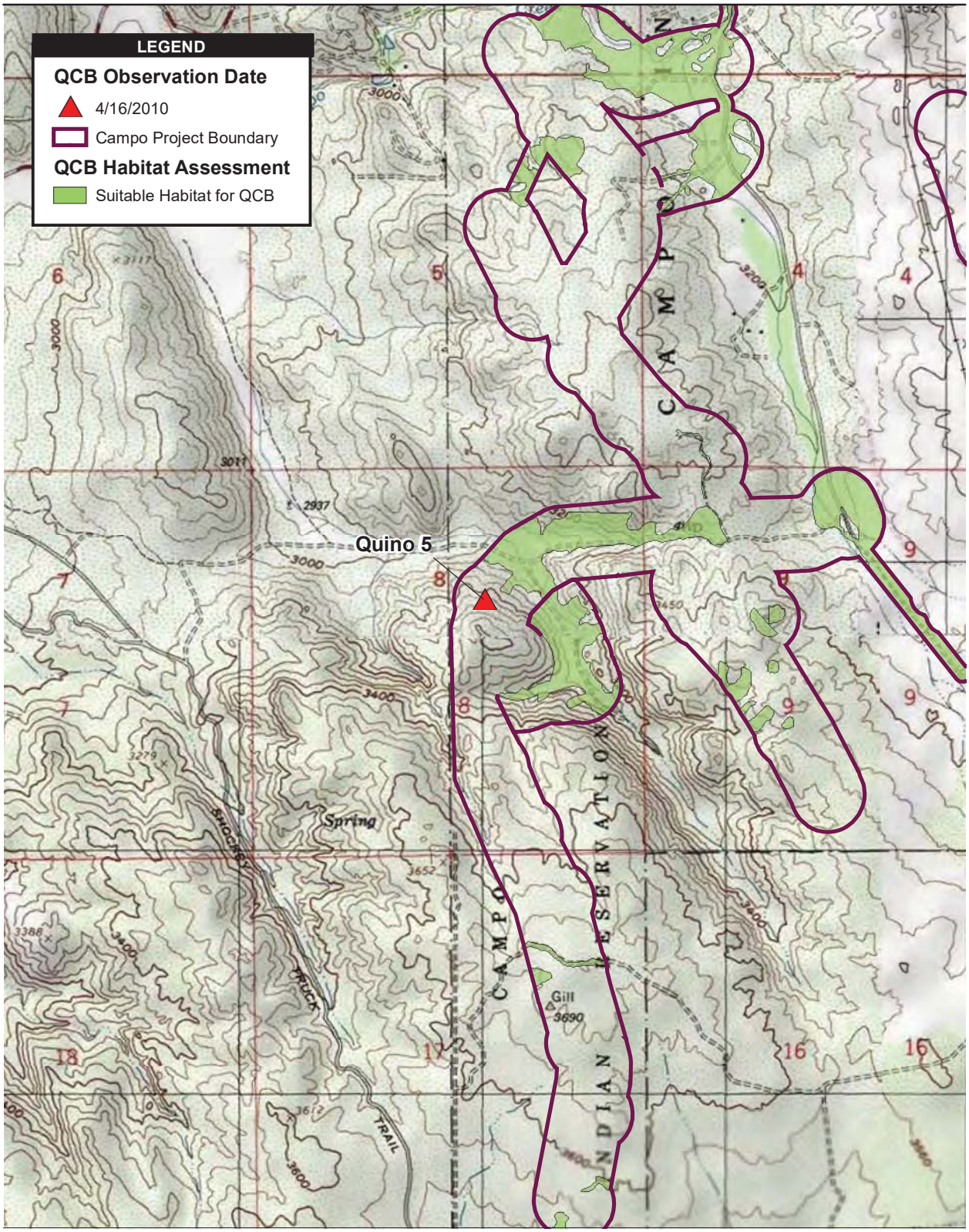
Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3b
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation4-2_20100415.mxd, 04/16/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3c
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation5_20100416.mxd, 04/16/10, johnsonaa

APPENDIX F.5
04/19/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 19, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Sixth Quino Checkerspot Butterfly Observation at the Manzanita Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that two additional Quino checkerspot butterflies (*Euphydryas editha quino*; Quino) were observed immediately adjacent to the proposed Campo Wind Energy project site in southeastern San Diego County, California. On April 19, 2010, Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed two Quino within the Campo Reservation boundaries during protocol surveys for the species. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sighting is detailed below.

At 13:45 hours, Mr. Couffer observed two Quinos interacting along the eastern fenced border for the Campo Indian Reservation, adjacent to the Campo Wind Energy project's study area. One Quino was observed chasing another Quino across the reservation border fence and entering reservation land at (NAD 83) 11 South 0562494, 3612598, and 0562502, 3612603 (Figure 3). The elevation was approximately 3,730 feet above lower mean sea level. This location was south of SR 94 (Campo Road), east of the north to south-running portion of Shasta Way, north of the east to west-running portion of Shasta Way, and immediately west of Camino del Monte.

One active male Quino chased a second Quino up and down the reservation border road twice, and then onto reservation land at the above coordinates. The Quino being chased appeared to be in good condition, but was not photographed. The active male Quino kept to a patch of bare ground and scattered popcornflower (*Plagiobothrys* sp.), where it chased all other butterflies and bee flies passing overhead. The two attached photos are of the same individual, which was somewhat drab and had tears in the wings (Photos 1 and 2).

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a fax and a hard copy of this letter including maps will

be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

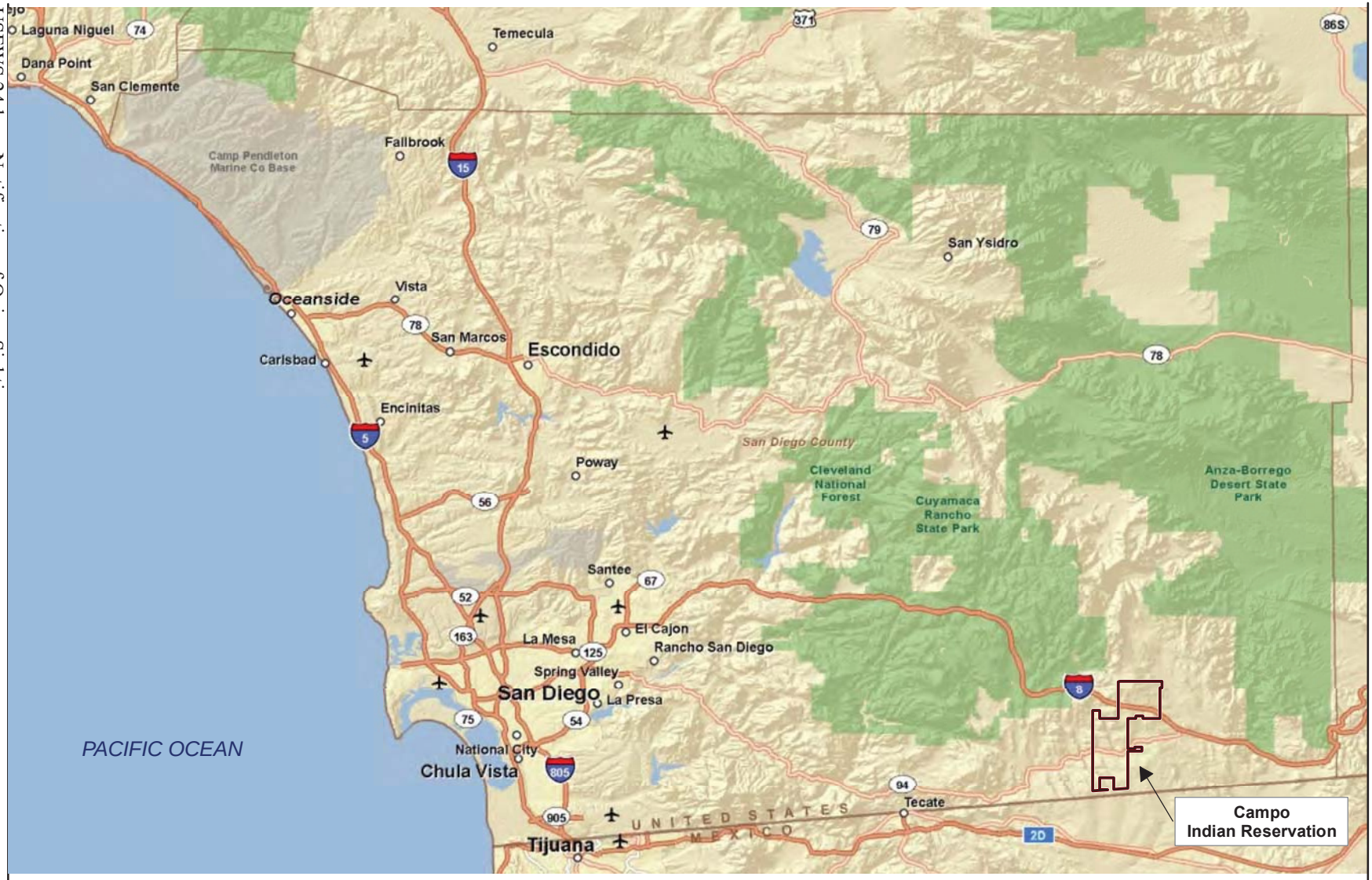
Photo 1



Photo 2



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

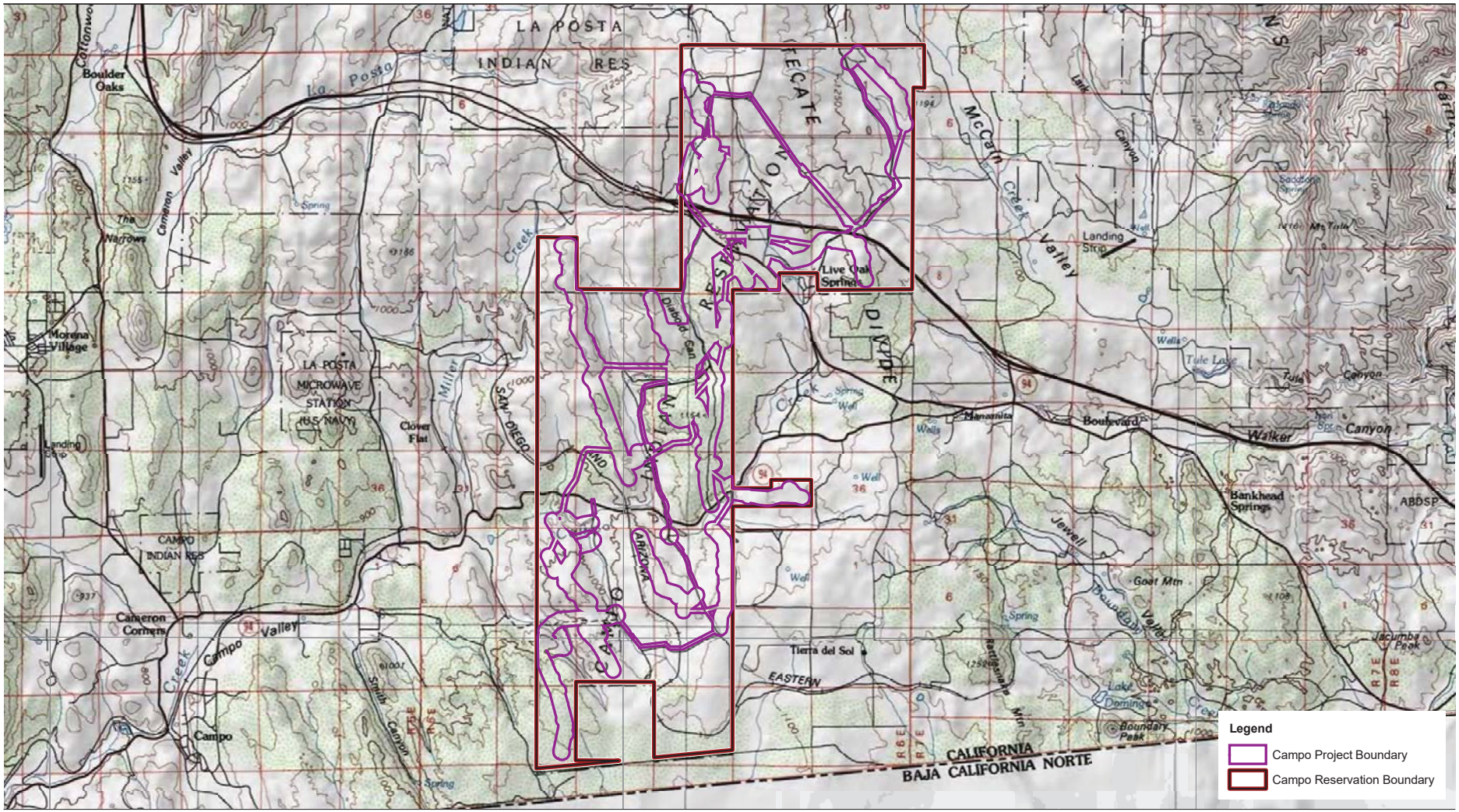
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



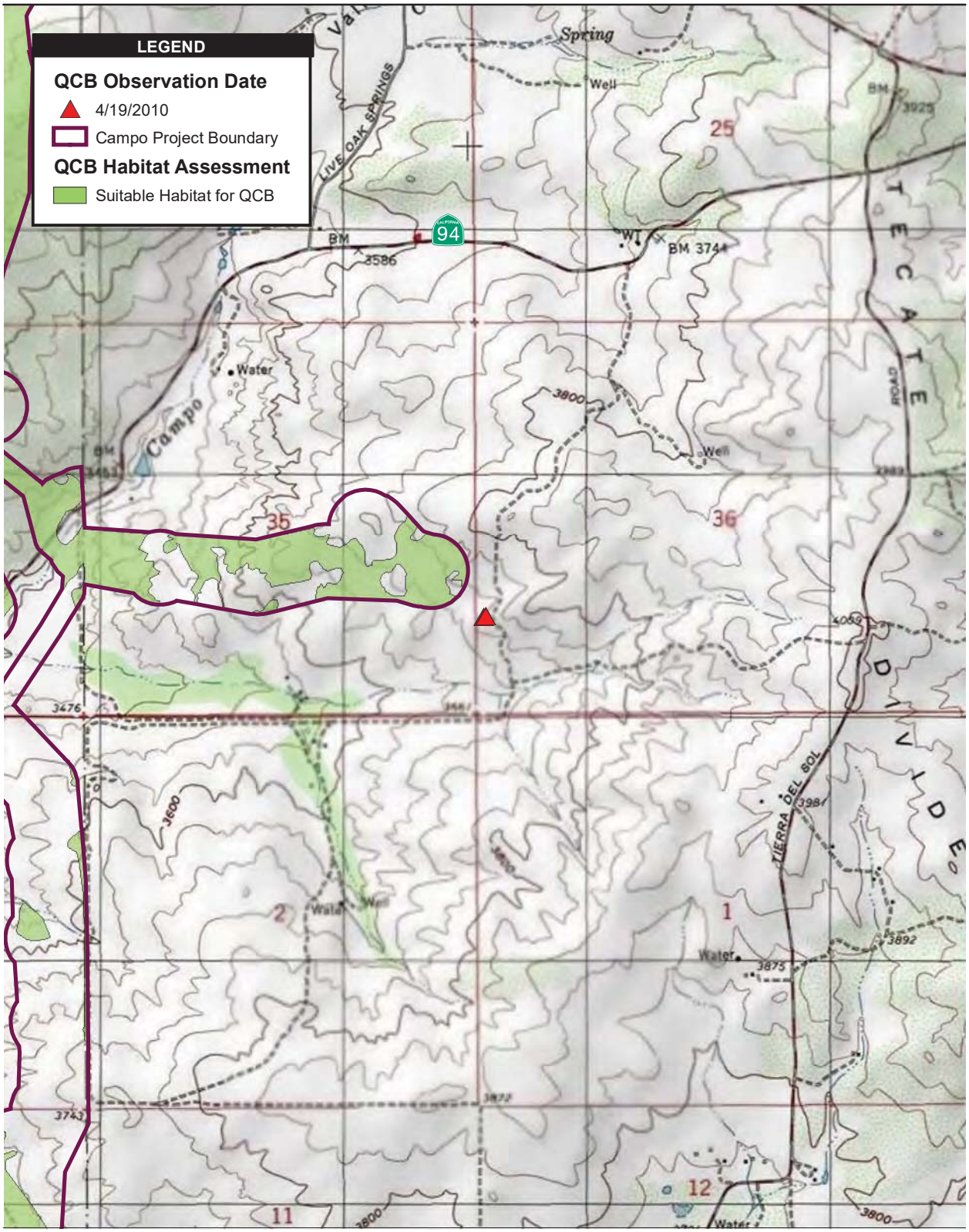
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation7_20100419.mxd, 04/20/10, johnsonaa

APPENDIX F.6
04/24/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 26, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Seventh Quino Checkerspot Butterfly Observation at the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that an additional Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) was observed within the proposed Campo Wind Energy project site in southeastern San Diego County, California. On April 24, 2010, Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed a Quino during protocol surveys for the species. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sighting is detailed below.

At 13:20 hours, Mr. Couffer observed one Quino approximately 1,312 feet south of Old Highway 80, south of the Golden Acorn Casino, at (NAD 83) 11S 0560710, 3617216 (Figure 3). This location is east of Church Road. The Quino was observed at approximately 4030 feet above lower mean sea level. The species was verified with binoculars, but was not photographed. After the Quino was flushed off bare ground, it landed on a 3-inch-tall popcornflower (*Plagiobothrys* sp.). While approaching closer to photograph the butterfly, it flushed and flew into moderate density chamise chaparral, and was not found again. This was a well-worn, drab individual, that had worn wing edges and faded abdomen stripes.

The butterfly was found on an old, unused dirt road that ran north to south. Because the prevailing winds in the area blow either from the east or from the west, shrubs deflect the wind over the road, causing a long dead air space with abundant bare ground and scattered popcornflowers (Photos 1 and 2). If the road had been oriented east to west, the prevailing winds would blow right down the road much of the time. Photos 1 and 2 are provided in order to attempt to illustrate the quality of this old dirt road as high quality Quino habitat.

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a fax and a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

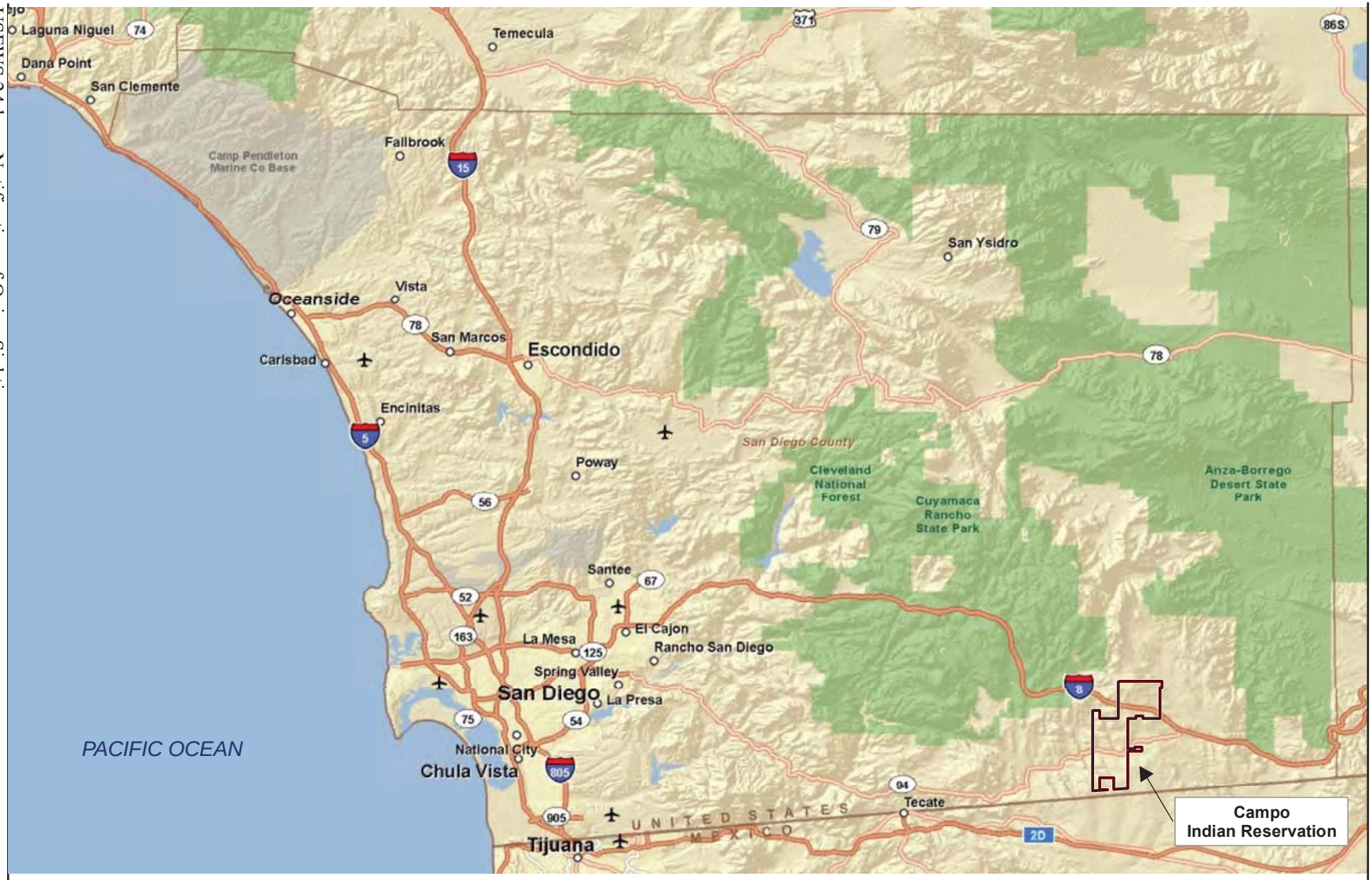
Photo 1



Photo 2



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

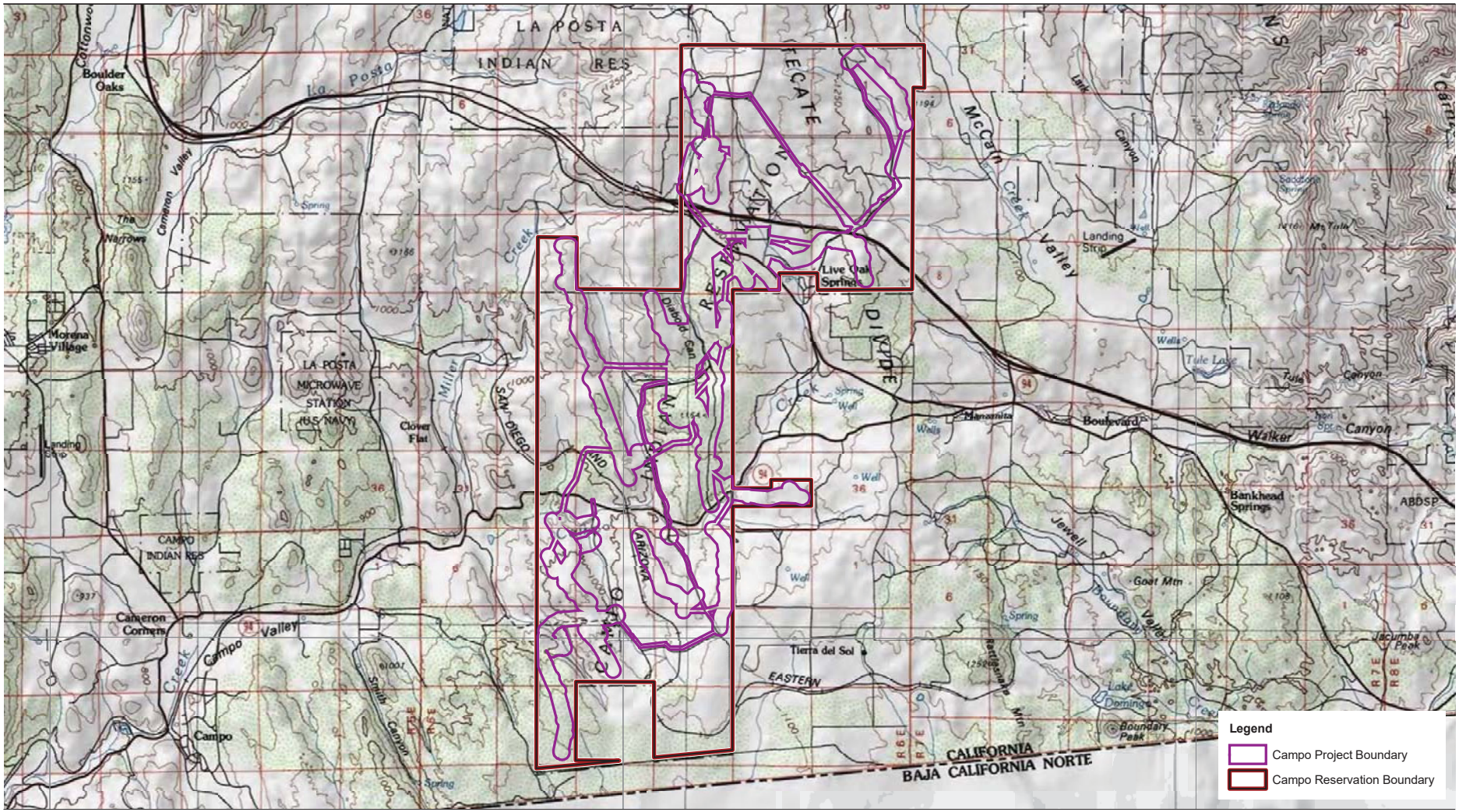
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



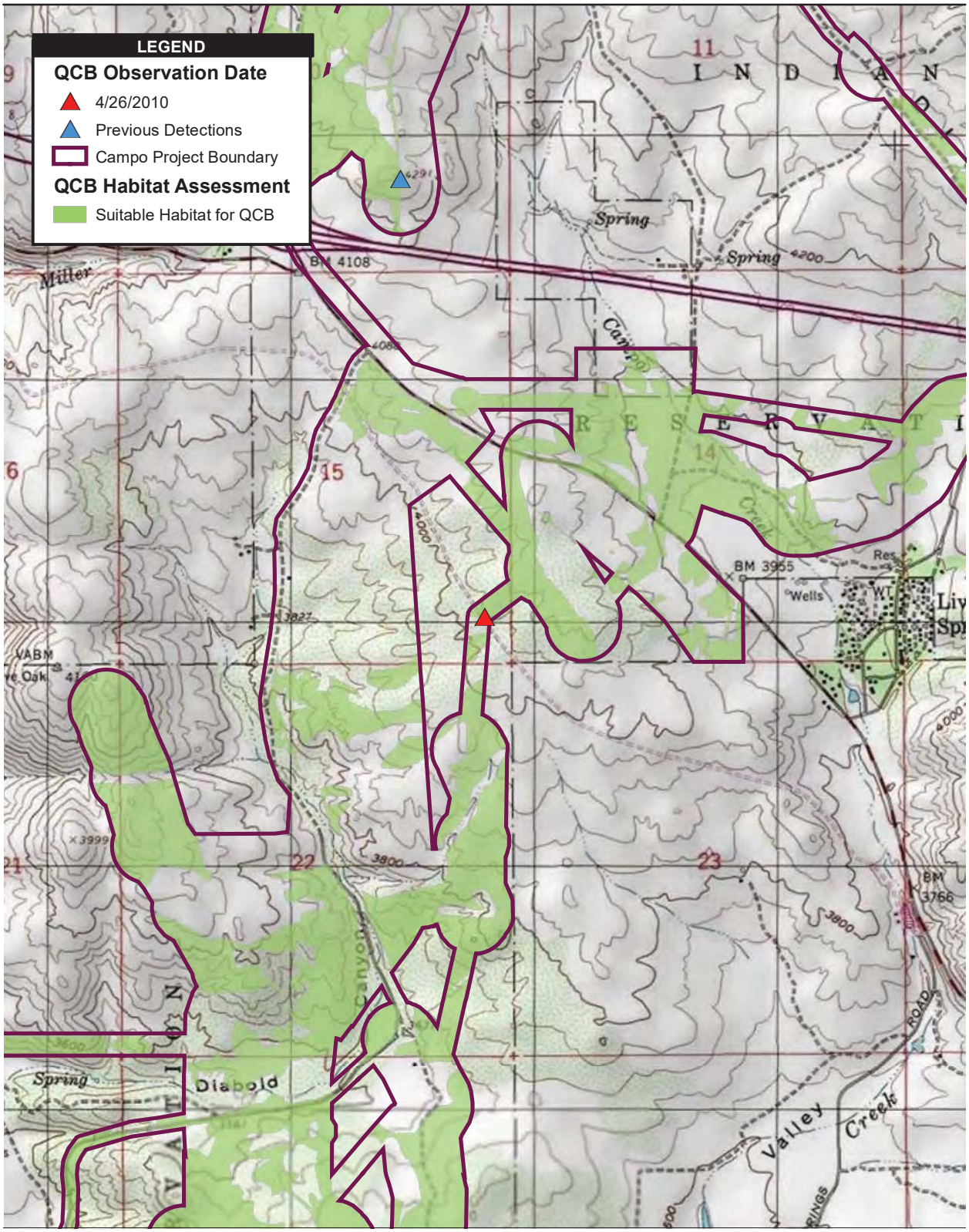
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation7_20100426.mxd, 04/26/10, johnsonaa

APPENDIX F.7
04/26/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 27, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Eighth Quino Checkerspot Butterfly Observation at the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that an additional Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) was observed on the proposed Campo Wind Energy project site in southeastern San Diego County, California. On April 26, 2010, Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed one Quino within the Campo Reservation boundaries during protocol surveys for the species. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sighting is detailed below.

At 14:13 hours, Mr. Couffer observed one Quino at (NAD 83) 11 South 0560671, 3611605 (Figure 3). The elevation was approximately 3,564 feet above lower mean sea level. This location was south of SR 94 (Campo Road), east of Church Road, northwest of Vista del Cielo, and southwest of Shasta Way. The Quino was not brightly colored but was also not worn, it looked to be in an “in-between” condition. The Quino took flight during an attempt to photograph it.

The Quino was within an extensive sandy inclusion of low density southern mixed chaparral, surrounded on 3 sides by high density chaparral (Photo 1). Nectar sources such as popcornflower were abundant. Large fields of Lasthenia sp. were also present. Collinsia concolor was found to be widely scattered in the area, often growing within buckwheat shrubs (Photo 2).

This letter is official notification of this sighting and capture as required by the USFWS protocol

for this species. Following this transmittal, a fax and a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

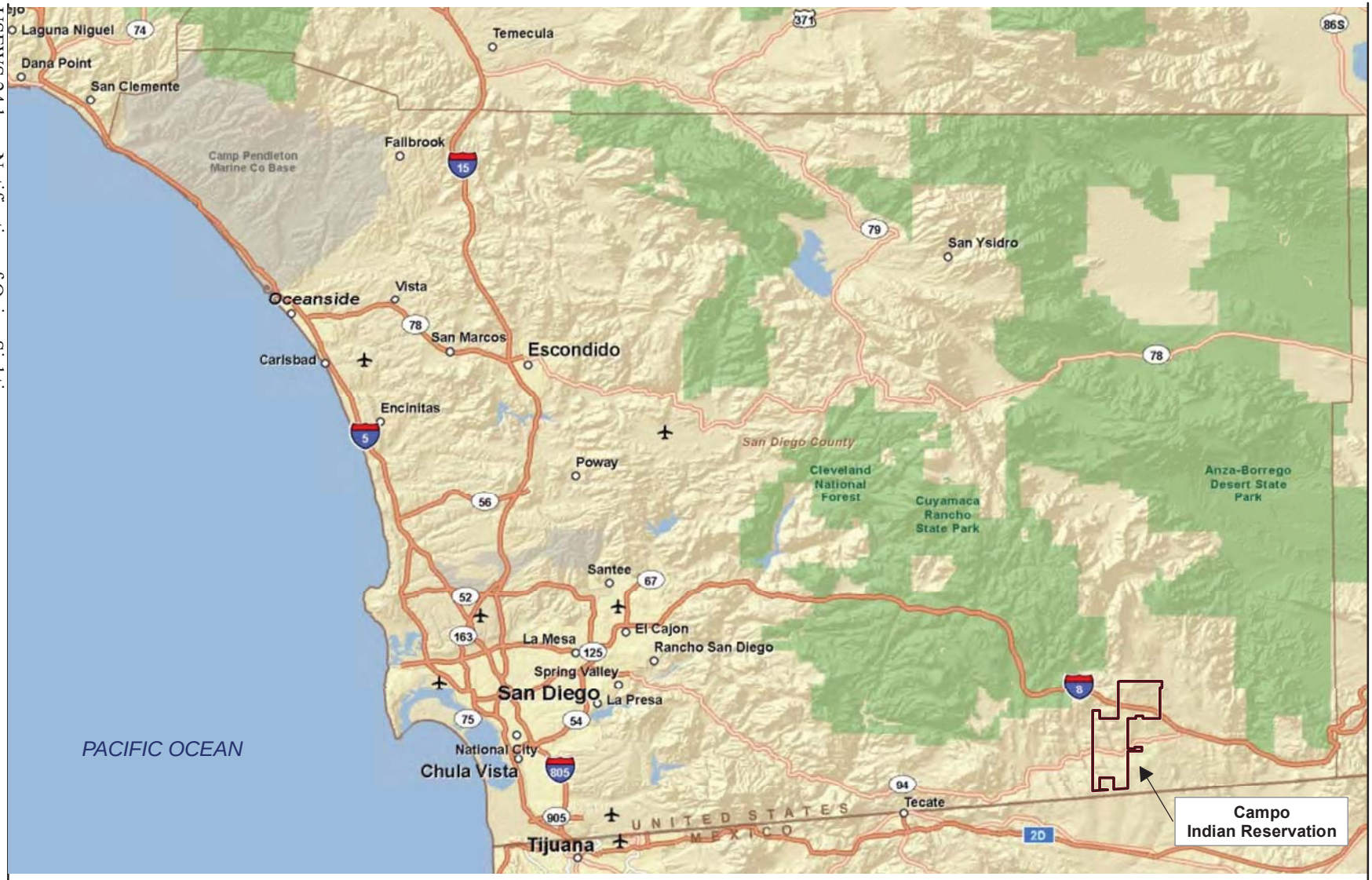
Photo 1



Photo 2



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

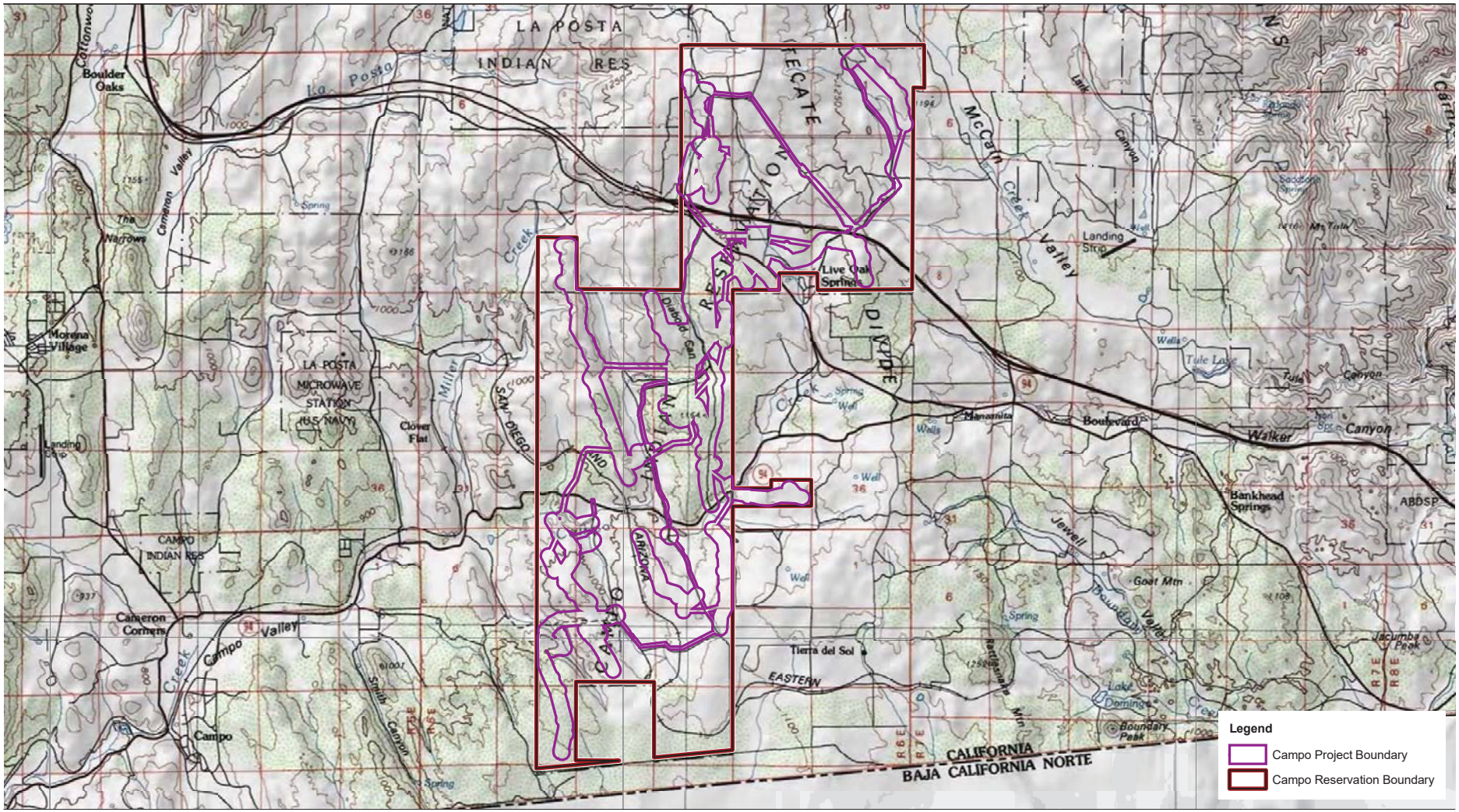
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



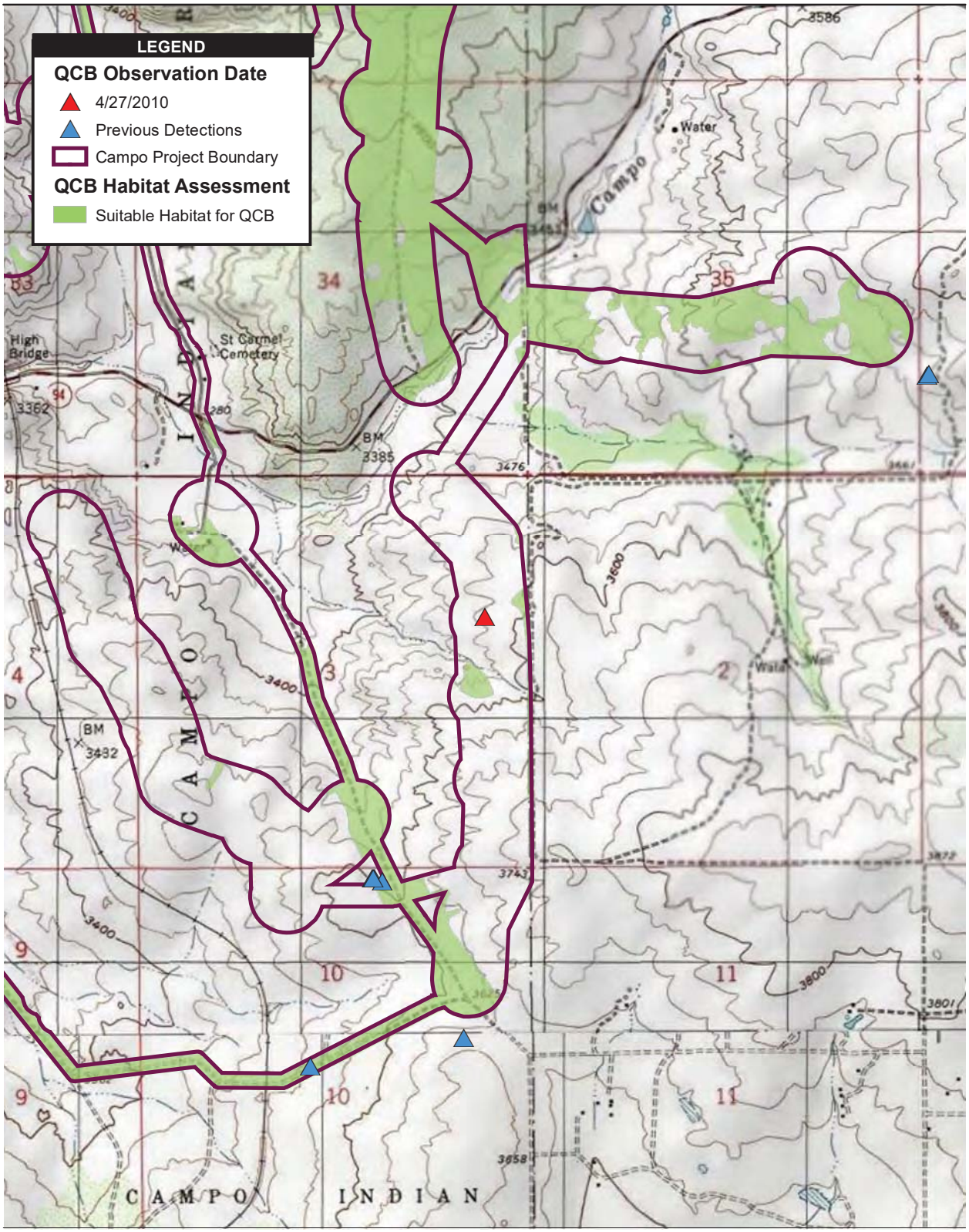
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation8_20100427.mxd, 04/27/10, johnsonaa

APPENDIX F.8
04/27/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

April 29, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Ninth Quino Checkerspot Butterfly Observation at the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that additional Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) individuals were observed on the proposed Campo Wind Energy project site in southeastern San Diego County, California. On April 27, 2010, consulting biologists Michael Couffer (permit number TE-782703-8), and Dale Powell (permit number TE-006559-4), sub-contractors to AECOM, observed four Quino individuals within the Campo Reservation boundaries during protocol surveys for the species. Also, AECOM biologist Andrew Fisher (supervised under TE-820658-4) observed one of Mr. Couffer's Quino at a separate time, independent of Mr. Couffer. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer, Mr. Powell, and Mr. Fisher did not collect the specimens for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. Addtionally, Mr. Fisher is not currently independently authorized for Quino. The sightings are detailed below.

At 12:40 hours, Mr. Couffer observed one Quino nectaring on white layia (*Layia glandulosa*) at (NAD 83) 11 South 0556986, 3609928 (Figure 3; Quino 1), at approximately 3,382 feet above lower mean sea level. The tip of the upper right forewing tip was gone, and this butterfly was drab, but still a strong flyer, and flew off before a photo could be taken. However, earlier that morning at 11:45, Mr. Fisher observed what is highly likely the same Quino 1 that Mr. Couffer while he was conducing an avian survey. Mr. Fisher's Quino was in the same exact location and fit the same physical description as Mr. Couffer's Quino (Photo 1).

At 14:45 hours, Mr. Couffer observed a second Quino was observed nectaring on white layia adjacent to this location at (NAD 83) 11 South 0556995, 3609943 (Figure 3, Quino 2), at approximately 3,372 feet above lower mean sea level. This Quino was a bit drab, and the tip of the upper right wing was intact (Photo 2). The intact wingtip proved that this was a different individual from the Quino previously observed.

From 15:40 to 15:47 hours, Mr. Couffer observed a third Quino. He followed and photographed

it as it nectared on white layia at (NAD 83) 11 South 0557077, 3610140 (Figure 3, Quino 3), at approximately 3,127 feet above lower mean sea level. This Quino lacked the sharp contrast of a newly-emerged individual, but its wing edges were nearly perfect, and it appeared to be in good condition (Photo 3).

At 12:27 hours, Mr. Powell observed a Quino while conducting protocol level surveys when he coincidentally ran into Mr. Fisher in the field. This Quino was found in similar habitat with the same nectar sources abundant, at location (NAD 83) 11 South 0557051, 3610098 (Figure 3, Quino 4). This Quino was in a worn condition, and looked different than the other three Quino previously detected by Mr. Couffer (Photo 4).

The first two Quinos found by Mr. Couffer were found immediately below the crown of a hilltop that rises from approximately 3,000 feet to 3,400 feet in elevation in open chaparral habitat (Photos 5 and 6). The third Quino Mr. Couffer detected was found near the toe of slope of this hill in similar habitat. Purple Chinese houses (*Collinsia concolor*) were observed from the toe of slope to the highest point of the hilltop within both open areas and dense chaparral. Collinsia was found at very low densities as well as at very high densities. The highest densities observed seemed to be near the top of the hill. White layia was found at high densities as well.

The general location was south of SR 94 (Campo Road), north of Tierra del Sol Road, east of Shockey Truck Trail, and west of BIA Road 15.

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a fax and a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2



Photo 3



Photo 4

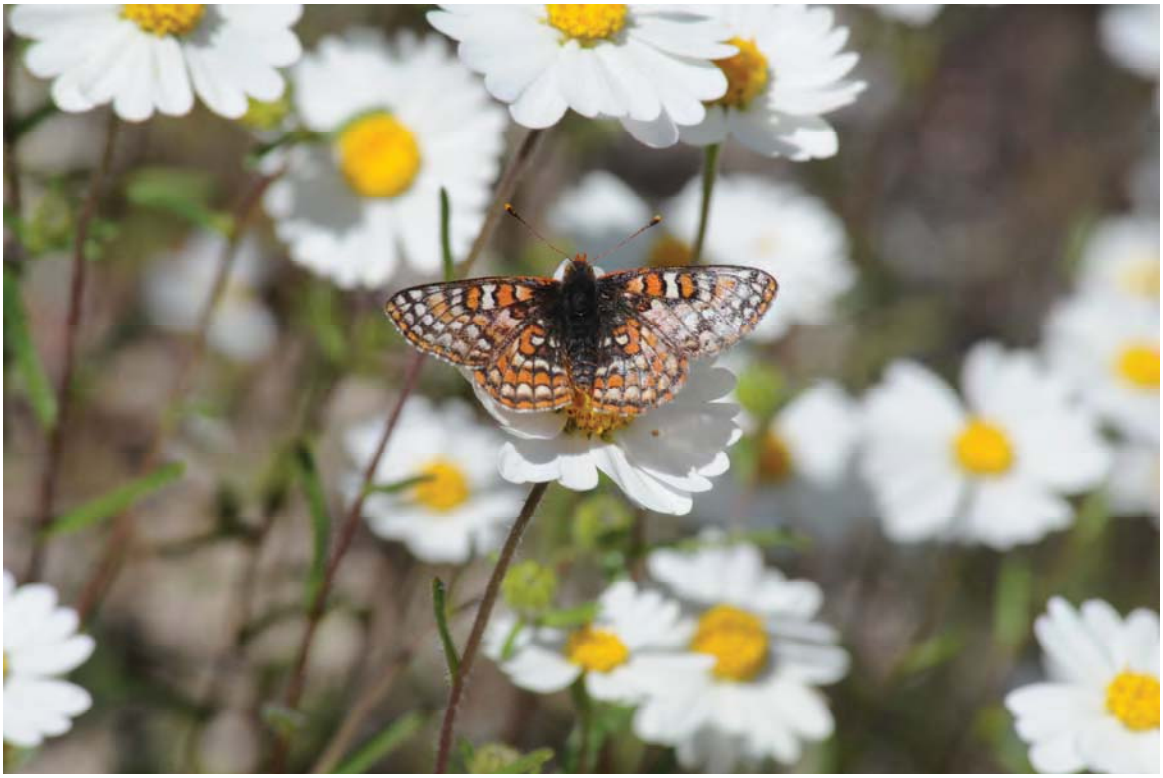


Photo 5



Photo 6



APPENDIX F.9
05/01/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

May 2, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Tenth Quino Checkerspot Butterfly Observation at the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that two additional Quino checkerspot butterflies (*Euphydryas editha quino*; Quino) were observed on the proposed Campo Wind Energy project site in southeastern San Diego County, California. On May 1, 2010, Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed two Quino within the Campo Reservation boundaries during protocol surveys for the species. AECOM biologist Andrew Fisher was in the company of Mr. Couffer, and also observed and photographed the Quino. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sighting is detailed below.

At 09:58 hours, Mr. Couffer observed one Quino nectaring on white layia (*Layia glandulosa*) at (NAD 83) 11 South 0557061, 3610108, at approximately 3,180 feet above lower mean sea level (Figure 3, Quino 1). This butterfly was drab, but otherwise appeared to be in good condition.

At 10:08 hours, a second Quino was discovered and independently identified by Mr. Fisher as it nectared on white layia at (NAD 83) 11 South 0557076, 3610089, at approximately 3,192 feet above lower mean sea level (Figure 3, Quino 2). Mr. Fisher is not currently permitted to identify Quino; however, within 15 seconds of Mr, Fisher's discovery and identification, Mr. Couffer confirmed Mr. Fisher's identification. Mr. Couffer wishes to add that Mr. Fisher located and correctly identified Quino at a location where both Henne's and Gabb's checkerspots were abundant at the time. This second Quino was a younger individual that had much more defined markings than the first butterfly observed (Photo 1). A representative photograph of the habitat where both Quinos were observed is provided (Photo 2).

These Quinos were found approximately half way up the slopes of a hilltop that rises from approximately 3,000 feet to 3,400 feet in elevation. Purple Chinese houses (*Collinsia concolor*) were observed from the toe of slope to the highest point of the hilltop within both open areas

and dense chaparral. Collinsia was found at very low densities as well as at very high densities. White layia was found at high densities as well. The general location was south of SR 94 (Campo Road), north of Tierra del Sol Road, east of Shockey Truck Trail, and west of BIA Road 15.

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a fax and a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

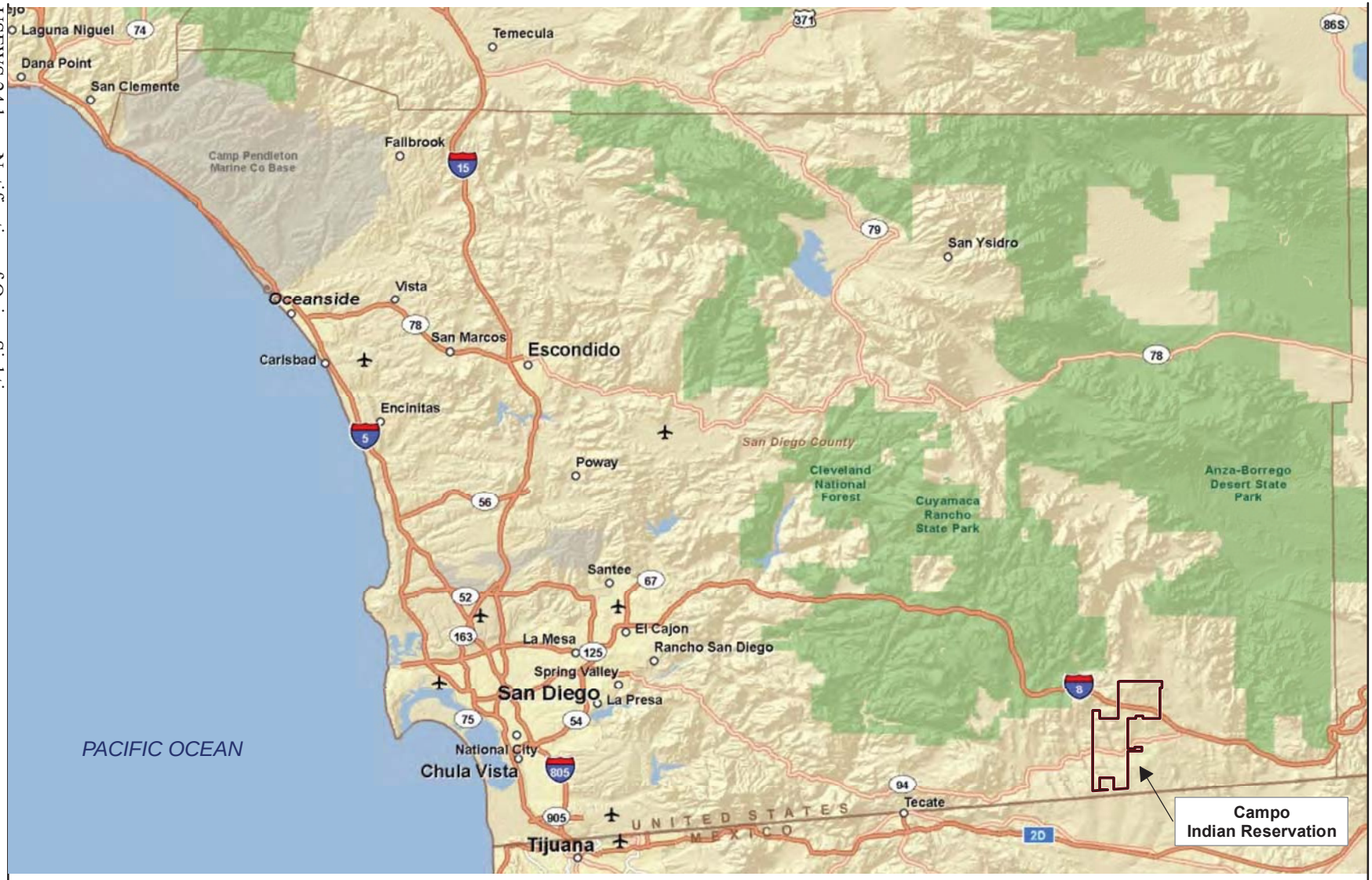
Photo 1



Photo 2



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

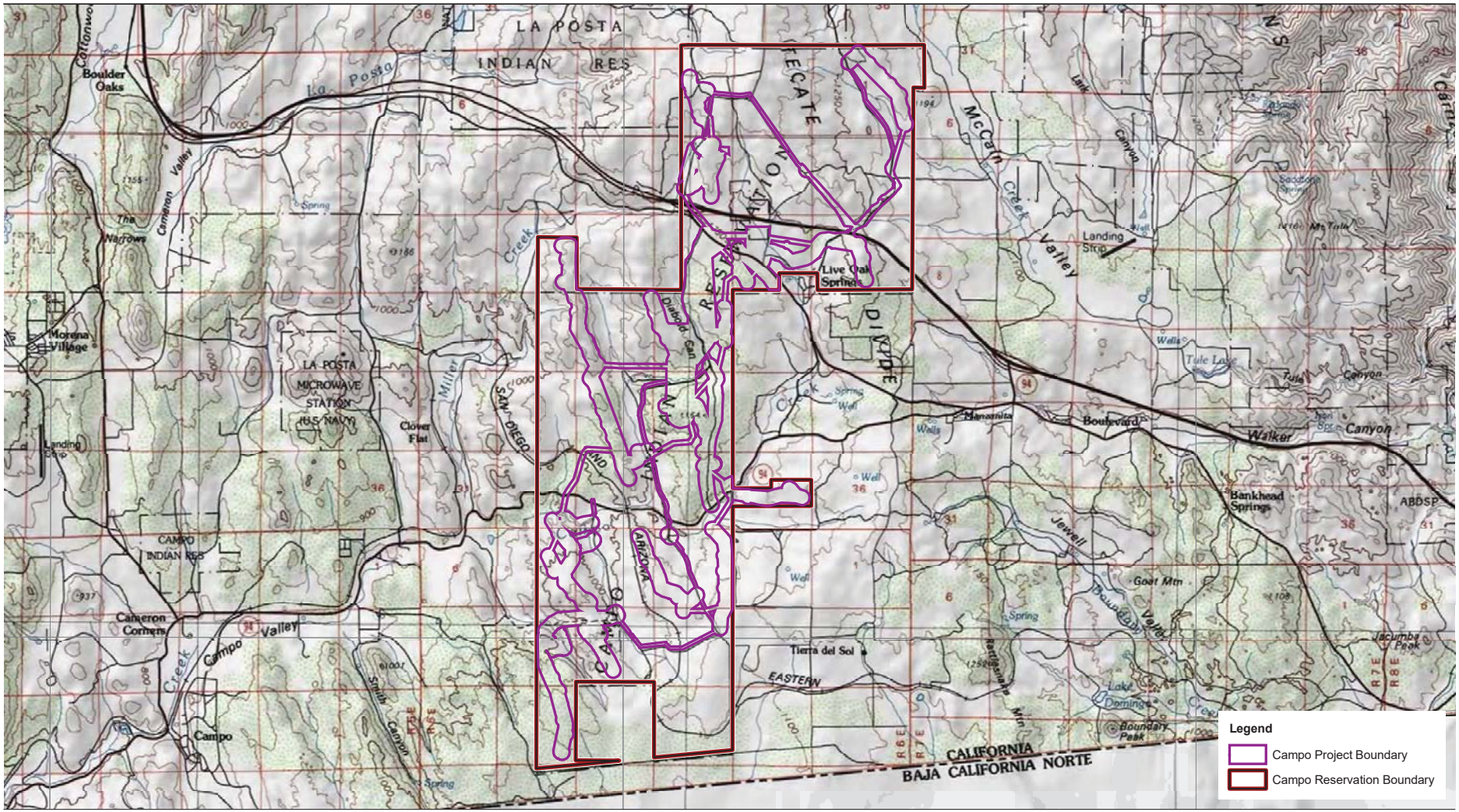
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



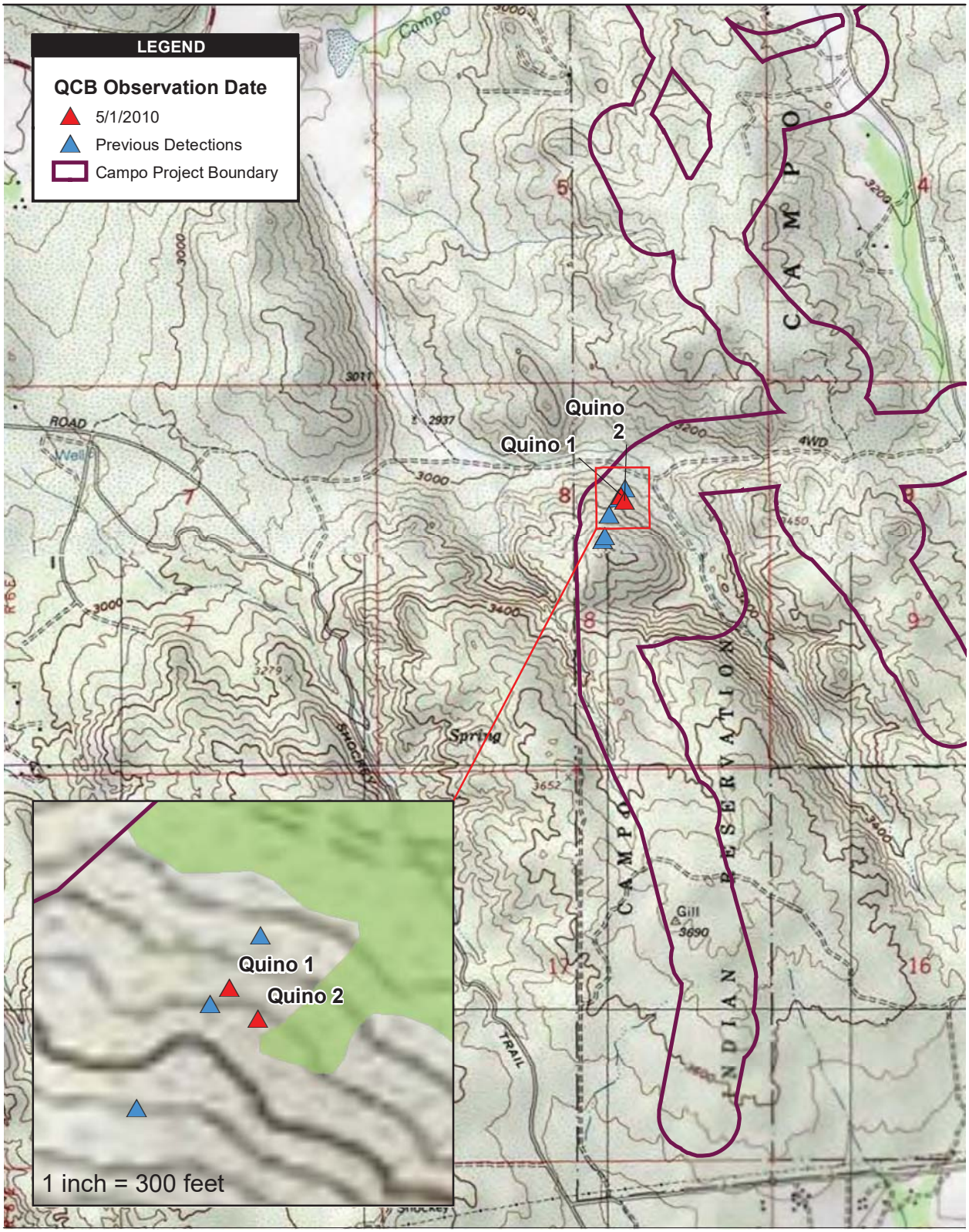
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 3,600; 1 inch = 300 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation10_20100503.mxd, 05/03/10, johnsonaa

APPENDIX F.10
05/06/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

May 7, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Eleventh Quino Checkerspot Butterfly Observation at the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that three additional Quino checkerspot butterflies (Euphydryas editha quino; Quino) were observed on the proposed Campo Wind Energy project site in southeastern San Diego County, California. On May 6, 1010, Antonette Gutierrez (permit number TE-797999-6), senior biologist at Merkel and Associates, Inc. and Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed and photographed three Quino within the Campo Reservation boundaries during protocol surveys for the species. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, neither Ms. Gutierrez nor Mr. Couffer collected specimens for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sightings are detailed below.

At 8:45 hours, Ms. Gutierrez observed and photographed a very small Quino nectaring on white layia (Layia glandulosa) at (NAD 83) 11 South 0557058, 3610103 (Figure 3; Quino 1a). The butterfly appeared to be fresh, and in good condition (Photo 1). Mr. Couffer was surveying a different portion of this hill, and did not observe this butterfly at the time.

At 10:28 hours, Mr. Couffer observed an average-sized Quino nectaring on white layia at (NAD 83) 11 South 0557082, 3610091, at approximately 3,180 feet above lower mean sea level (Figure 3, Quino 2). This butterfly was drab, but otherwise appeared to be in good condition. It chased two passing Henne's checkerspots. No photos were taken of this butterfly.

At 10:44 hours, Mr. Couffer observed a very small Quino nectaring on white layia at (NAD 83) 11 South 0557060, 3610100, at approximately 3,173 feet above lower mean sea level (Figure 3, Quino 1b). This butterfly appeared to be quite fresh, and in good condition. From the small size and overall good condition of the butterfly, Mr. Couffer surmised that this was the same Quino observed by Ms. Gutierrez two hours earlier. Please compare the shape and position of the two black spots in the third cell of the upper left wings of the butterflies shown in Photo 1 (Ms. Gutierrez), and Photo 2 (Mr. Couffer). It is highly likely that this is the same Quino, seen independently by two biologists, two hours apart.

At 12:04 hours, Mr. Couffer observed an average-sized Quino again nectaring on white layia at (NAD 83) 11 South 0557193, 3609859 at approximately 3,343 feet above lower mean sea level (Figure 3; Quino 3). This butterfly was somewhat drab, but otherwise appeared to be in good condition. No photos were taken of this butterfly.

Photographs of the habitat where both Quinos were observed are provided (Photos 3 and 4). These Quinos were found approximately on the slopes of a hilltop that rises from approximately 3,000 feet to 3,400 feet in elevation. Chinese houses (Collinsia sp.) were abundant from the toe of slope to the highest point of the hilltop within both open areas and dense chaparral. Collinsia was found at very low densities as well as at very high densities. White layia was found at high densities as well. The general location was south of SR 94 (Campo Road), north of Tierra del Sol Road, east of Shockey Truck Trail, and west of BIA Road 15.

This letter is official notification of this sighting and capture as required by the USFWS protocol for this species. Following this transmittal, a fax and a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2



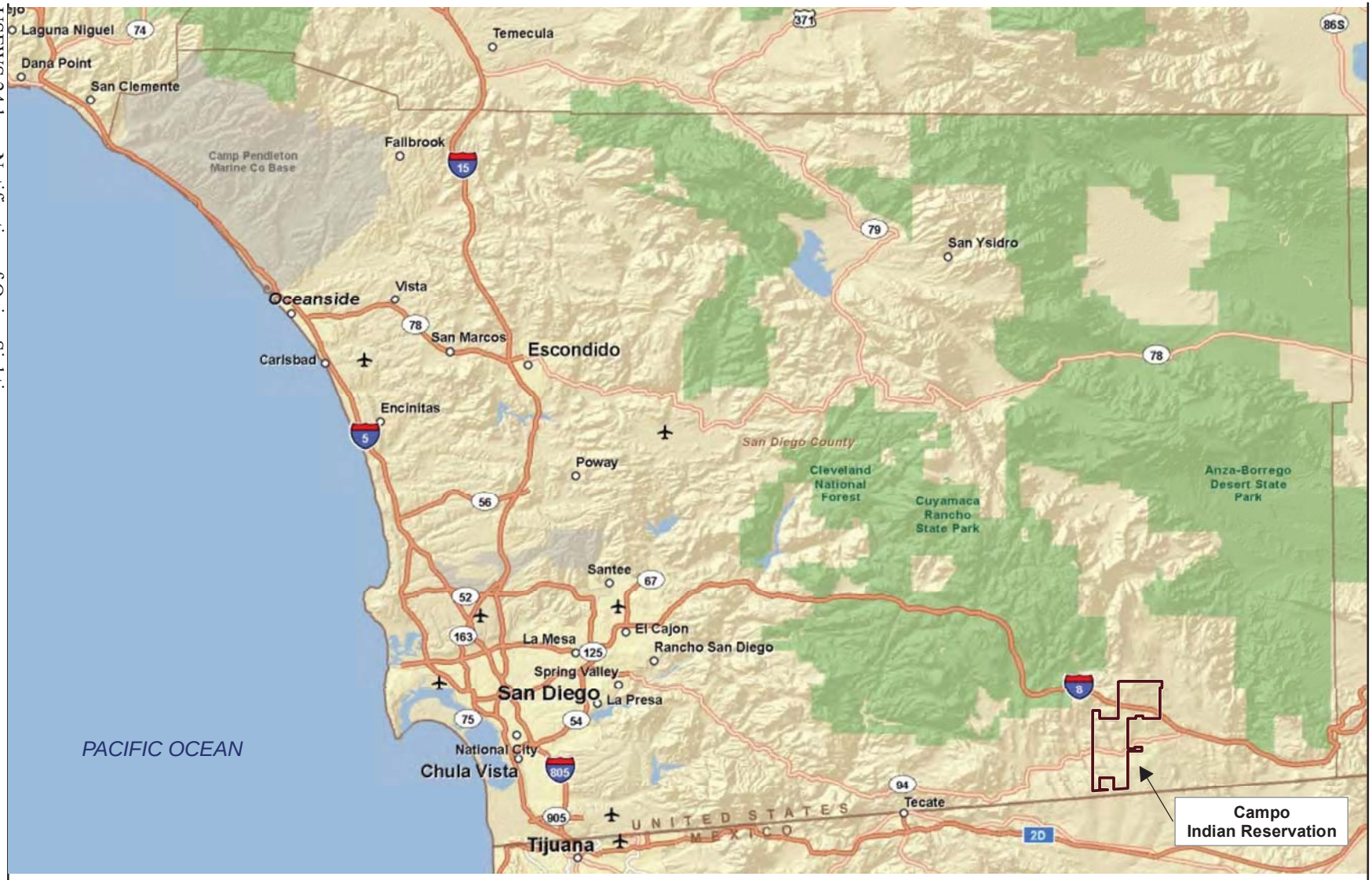
Photo 3



Photo 4



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

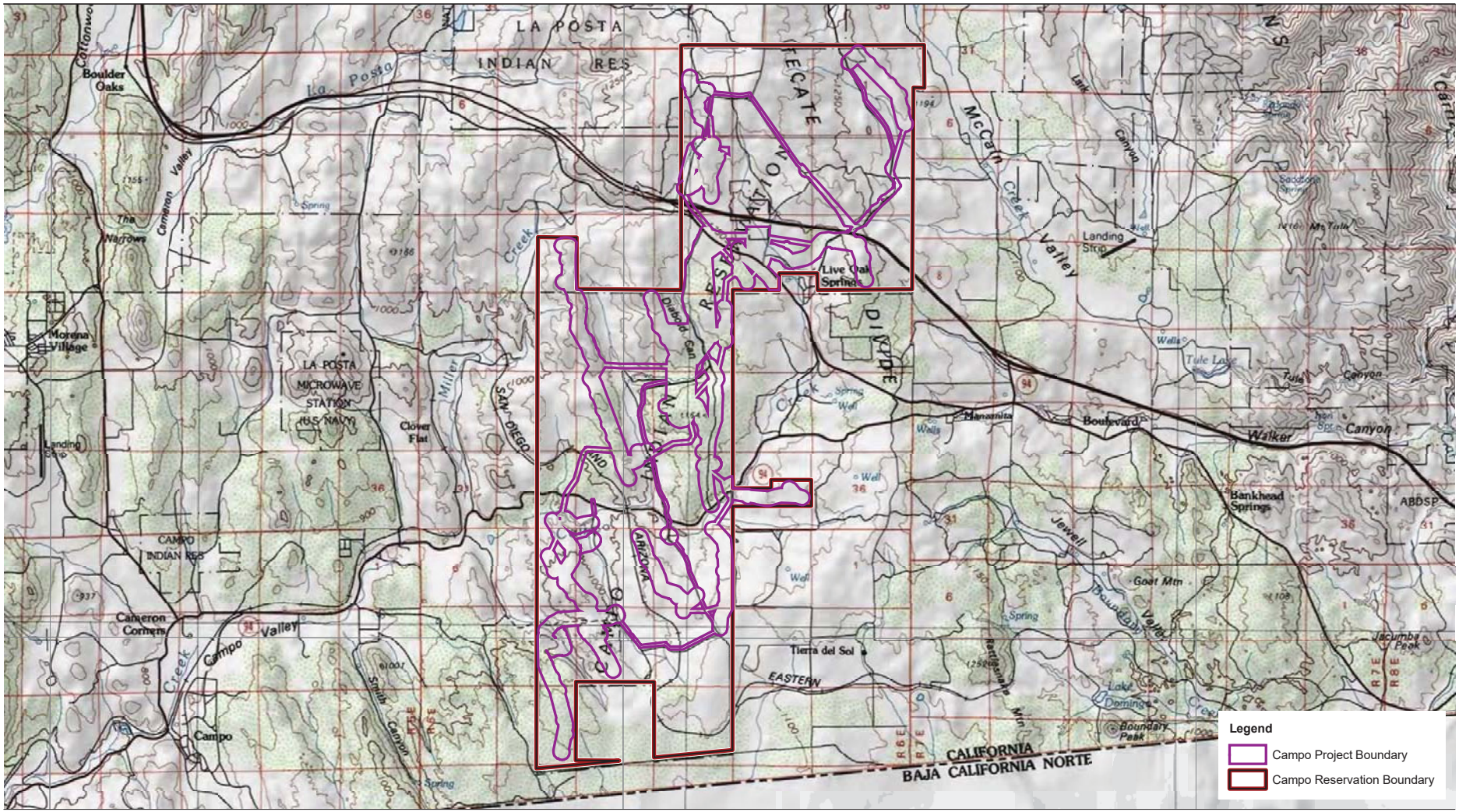
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



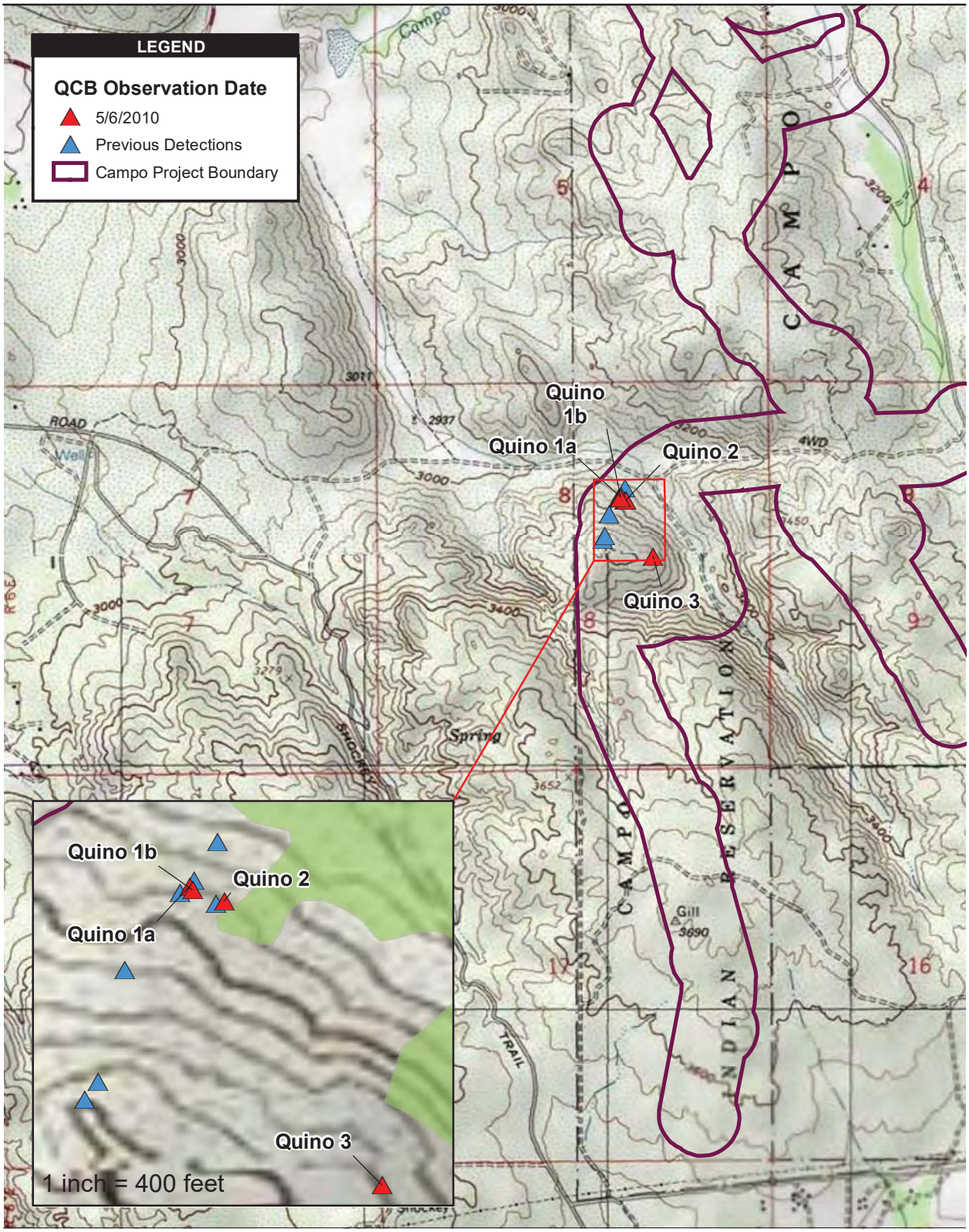
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010; AECOM 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation11_20100506.mxd, 05/10/10, johnsonaa

APPENDIX F.11
05/07/2010 24-HOUR NOTIFICATION LETTER TO USFWS

AECOM
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
www.aecom.com

619.233.1454 tel
619.233.0952 fax

May 7, 2010

Ms. Sandra Marquez
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

RE: Notification of the Twelfth Quino Checkerspot Butterfly Observation at the Campo Wind Energy Project, San Diego County, California

Dear Ms. Marquez:

AECOM is submitting this notification letter to inform you that an additional Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) was observed on the proposed Campo Wind Energy project site in southeastern San Diego County, California. On May 7, 2010, Consulting Biologist Michael Couffer (permit number TE-782703-8), sub-contractor to AECOM observed one Quino within the Campo Reservation boundaries during protocol surveys for the species. Although the project site exists within U.S. Fish and Wildlife (USFWS) Quino Survey Area 2, Mr. Couffer did not collect the specimen for identification according to the USFWS protocol (2002), per the pre-activity notification letter submitted for the proposed project on April 2, 2010. The sighting is detailed below.

At 11:25 hours, Mr. Couffer observed one Quino nectaring on white pincushion (*Chaenactis artemisiifolia)*) at (NAD 83) 11 South 0557563, 3610337, at approximately 3,228 feet above lower mean sea level (Figure 3). This butterfly was quite drab, with smooth wing edges. Mr. Couffer was attacked by a bee while stalking the Quino for a photo, and was not able to photograph the buttefly. A photograph of the sighting location is provided (Photo 1).

This Quino was north of a hill and across a drainage ffom the location where several other Quinos have been documented during surveys for this project. This south-facing slope is much dryer, and supports far fewer Chinese houses (*Collinsia* sp.) than the north-facing slope across the drainage where Quino has been more prevalent. The general location was south of SR 94 (Campo Road), north of Tierra del Sol Road, east of Shockey Truck Trail, and west of BIA Road 15.

This letter is official notification of this sighting and capture as required by the USFWS protocol

for this species. Following this transmittal, a fax and a hard copy of this letter including maps will be sent as well. If you have any questions or comments, please contact me at (619) 233-1454.

Sincerely,

Barbra Calantas
Wildlife Biologist

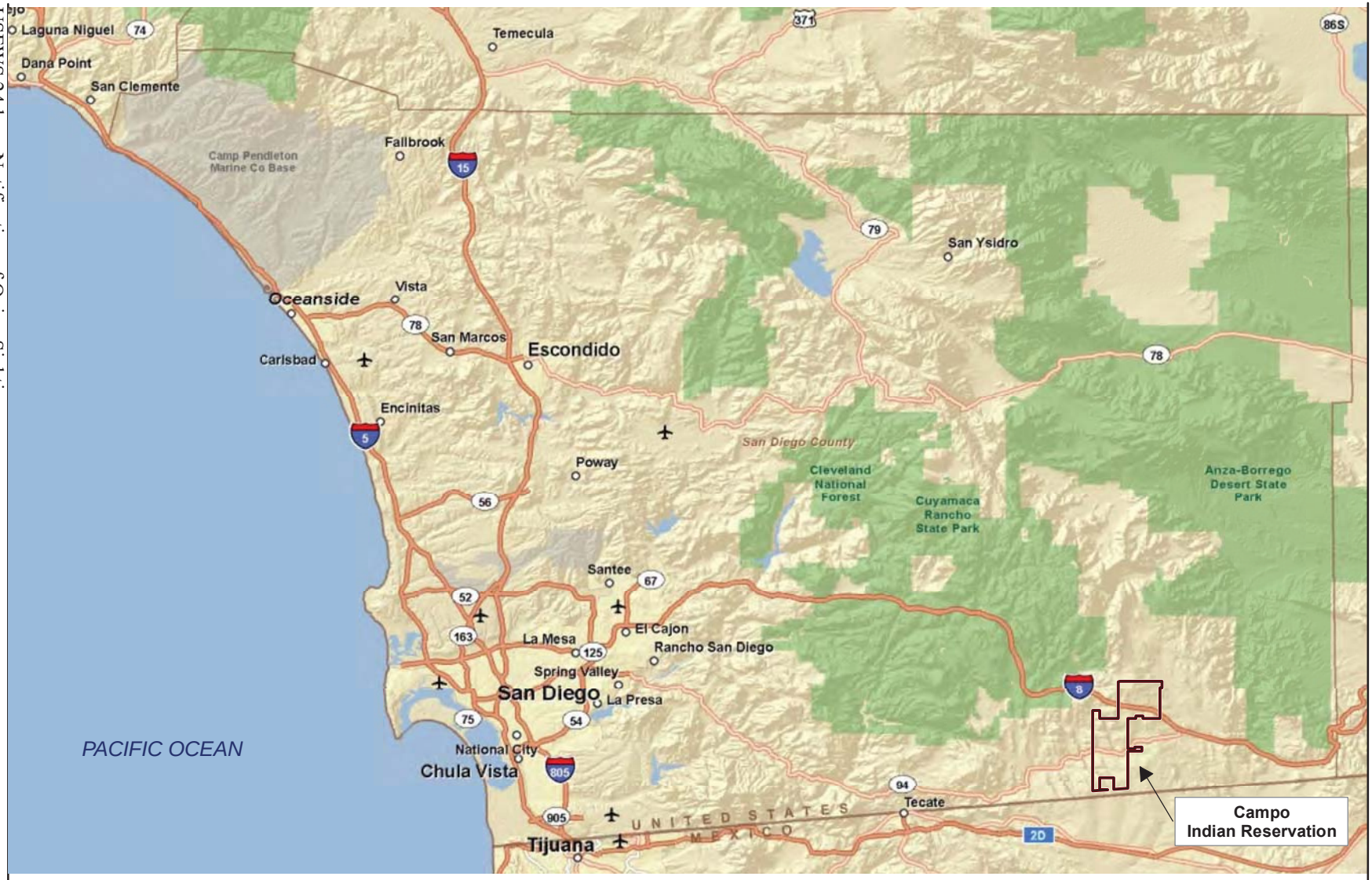
Enclosures: Figure 1 Regional Map
Figure 2 Vicinity Map
Figure 3 Quino Observation Location Map (to be provided on 05/13/2010)

cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



USFWS 24-hour Notification of Quino Sighting



Source: ESRI 2009

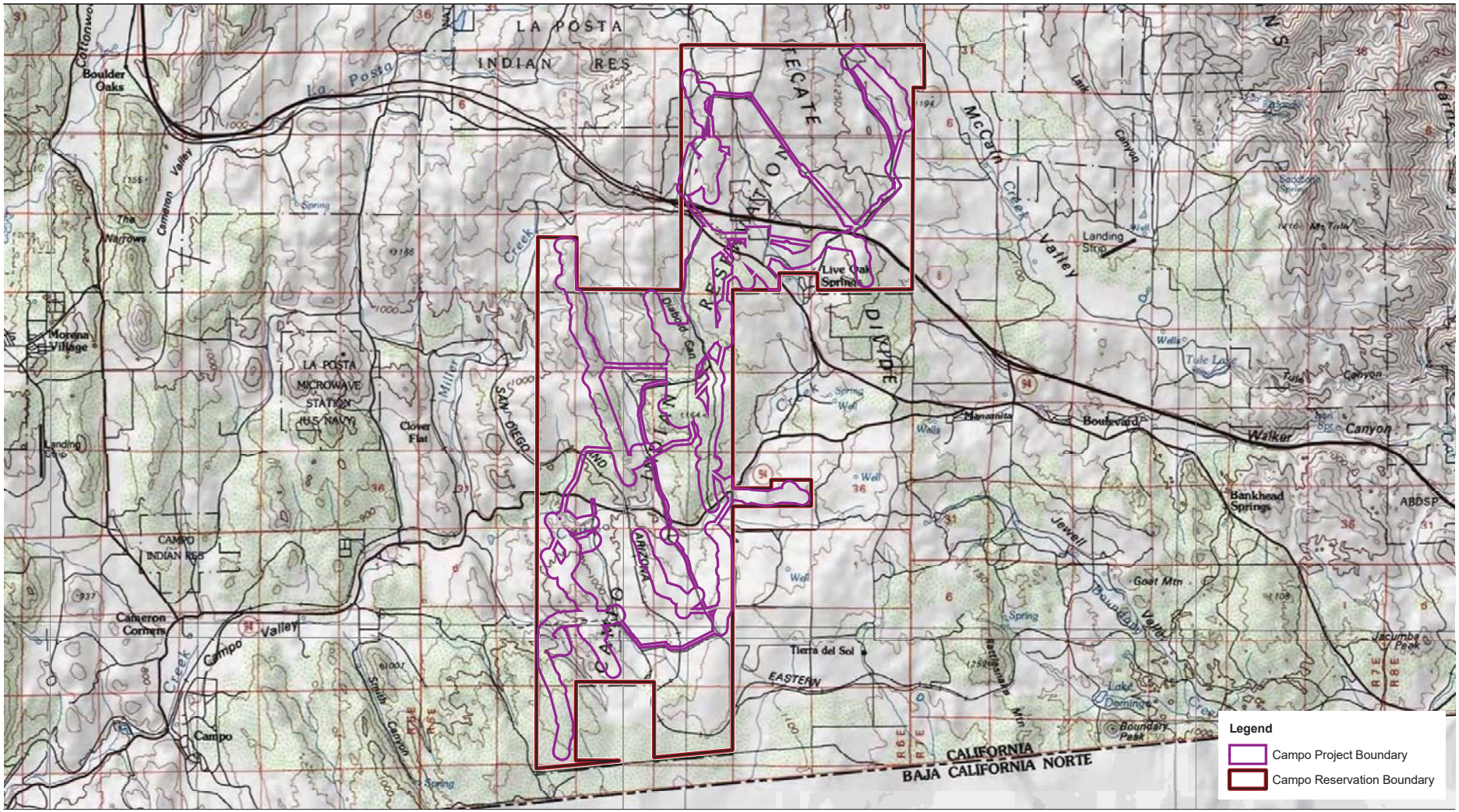
12.8 0 12.8 Miles

Scale: 1 = 805,493.1; 1 inch = 12.7 mile(s)

Figure 1

Regional Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hr-QCBNotification\Fig1Regional_map.mxd, 04/12/10, johnsonaa



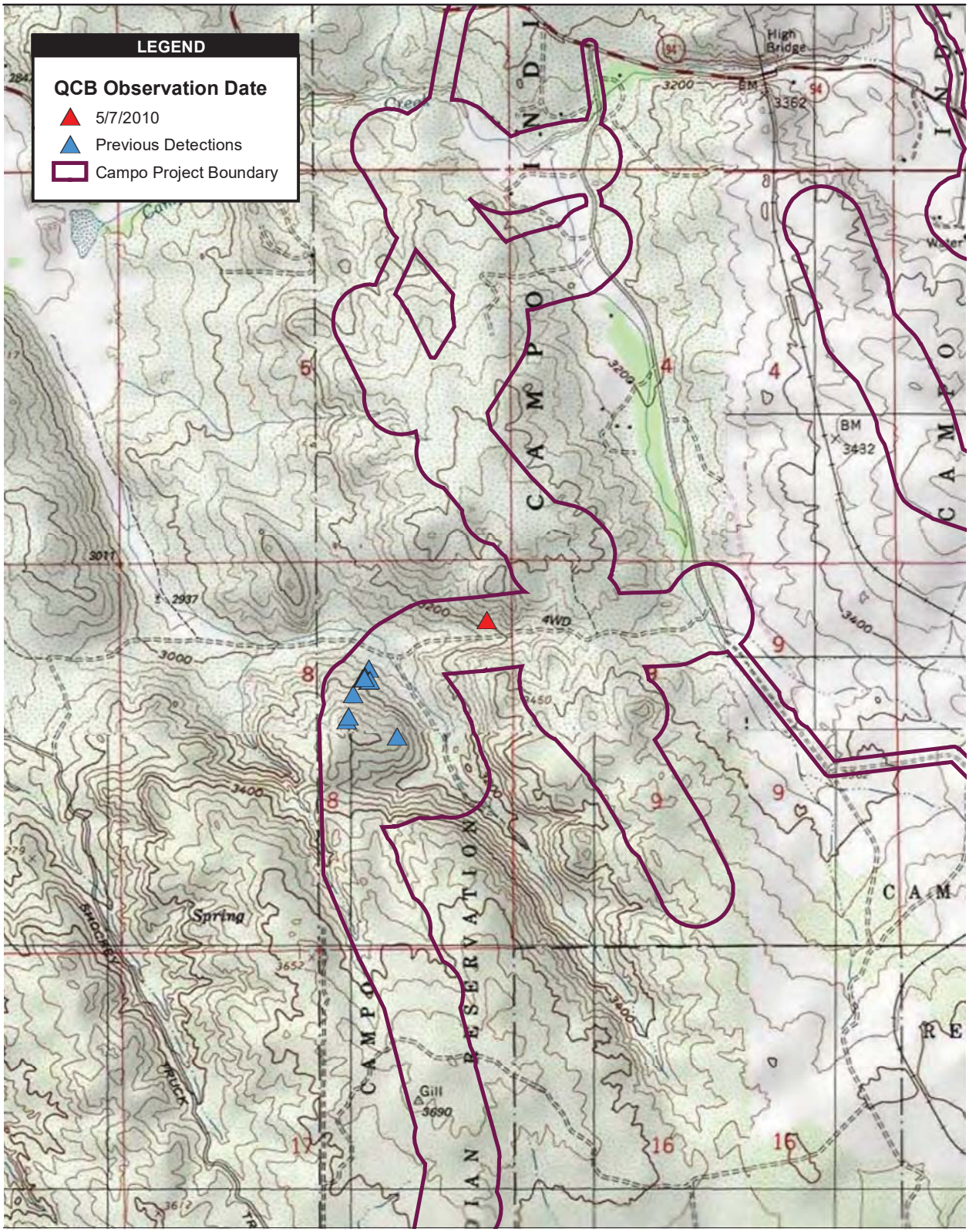
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet

Scale: 1 = 78,000; 1 inch = 6,500 feet

Figure 2
Vicinity Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsonaa



Source: DigitalGlobe 2008; SDG&E 2010; AECOM 2010

2,000 1,000 0 2,000 Feet

Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 3
Quino Detection Location Map

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_ 24hrQCBNotification\QCB_observation12_20100507.mxd, 05/10/10, johnsonaa

DUDEK

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

July 18, 2011 6759-4.7

U.S. Fish and Wildlife Service
Attention: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92011

Subject: ***2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California***

Dear Recovery Permit Coordinator:

This letter report documents the Spring 2011 results of a focused survey conducted by Dudek for the federally-listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) for the Jewell Valley Wind Project, a proposed wind energy development project in the southeastern portion of the County of San Diego, California.

PROJECT LOCATION AND EXISTING CONDITIONS

The proposed Jewell Valley Wind Project site is approximately 6,660 acres in southeastern San Diego County, approximately 60 miles east of the City of San Diego near the town of Boulevard, CA (Figure 1). The project site includes two components consisting of the Northern Ranch located to the north of Interstate 8 (I-8) and the Southern Ranch located to the south of I-8. The site lies between two major drainage divides: the Tecate Divide to the west, and the In-Ko-Pah Mountains to the east. This area occurs within the Live Oak Springs U.S. Geographic Survey (USGS) topographic quadrangle (Figure 2).

The terrain in the area ranges from valley bottoms to house-sized boulder-covered ridgelines. The elevation ranges across the study area from approximately 3,280 feet above mean sea level (AMSL) to approximately 4,120 feet AMSL.

Soils on site include acid igneous rock land, Calpine coarse sandy loam, Kitchen Creek loamy coarse sand, La Posta loamy coarse sand, La Posta rocky loamy coarse sand, Las Flores loamy fine sand, Loamy alluvial land, Mottsville loamy coarse sand, Riverwash, and Rositas loamy coarse sand.

VEGETATION COMMUNITIES

Nine plant communities and land cover types were mapped within the focused QCB survey area, including: red shank chaparral, semi-desert chaparral, granitic northern mixed chaparral, valley and foothill grassland, field/pasture, open coast live oak woodland, dense coast live oak woodland, upper sonoran subshrub scrub, and freshwater marsh. The acreages of each community type within the project site are shown in Table 1. Descriptions of each vegetation community (with Holland numeric codes) are provided following Table 1. Holland (1986) and Oberbauer (1996) were used to describe vegetation communities on site.

Table 1
Vegetation Communities within the Focused Quino Checkerspot Butterfly Survey Area for the Jewell Valley Wind Project

Vegetation Community	Acreage On Site
Red shank chaparral	427.1
Semi-desert chaparral	264.1
Granitic northern mixed chaparral	263.8
Valley and Foothill Grassland	22.2
Field/pasture	13.8
Open coast live oak woodland	5.8
Upper Sonoran subshrub scrub	3.2
Freshwater marsh	2.6
Dense coast live oak woodland	0.2
Total	1002.8

Red Shank Chaparral (37300)

Red shank chaparral is made up of nearly pure stands of red shank (*Adenostoma sparsifolium*) (Holland 1986). This community is similar to chamise chaparral but is typically taller and somewhat more open (Holland 1986). In the study area, red shank chaparral intergrades with chamise chaparral and scrub oak chaparral. Like chamise chaparral, the understory in red shank chaparral is sparse and composed of flat-topped buckwheat, annual forbs, and brome grasses.

Semi-Desert Chaparral (37400)

Semi-desert chaparral is relatively open, with widely spaced shrubs and openings supporting annuals. This community is similar to mixed chaparral but occurs in areas with hotter, drier summers and colder winters. In the study area, this community is characterized by abundant rock outcrops. Semi-desert chaparral intergrades with flat-topped buckwheat and the other chaparral

communities. Perennial species common to this community include flat-topped buckwheat, silver cholla (*Cylindropuntia echinocarpus*), Mojave yucca, and Mormon-tea (*Ephedra californica*). Scattered occasionally throughout this community are other common chaparral shrubs, including sugarbush, mountain mahogany, and scrub oak. Annual species observed in the openings of this community include goldfields, red-stemmed filaree, golden yarrow (*Eriophyllum confertiflorum*) thread-leafed eriastrum (*Eriastrum filifolium*), chia, desert beauty, Lemmon's linanthus, San Diego gilia, popcorn flower, and red brome.

Granitic Northern Mixed Chaparral (37131)

Granitic northern mixed chaparral is similar to northern mixed chaparral (37130), but with granitic soils. This community consists of broad-leaved sclerophyll shrubs, 2–4 m tall, forming dense, often nearly impenetrable vegetation dominated by Nuttall's scrub oak (*Quercus dumosa*), chamise (*Adenostoma fasciculatum*), and any one of several taxa in *Arctostaphylos* and *Ceanothus*. Plants in this community are typically deep-rooted, with usually little or no understory vegetation, and often considerable accumulation of leaf litter. Granitic northern mixed chaparral is well adapted to repeated fires, to which many species respond by stump sprouting. A dense cover of annual herbs may appear during the first growing season after a fire, followed in subsequent years by perennial herbs, short-lived shrubs and re-establishment of dominance by the original shrub species in this community.

Valley and Foothill Grassland (42000)

Valley and foothill grassland is a native community dominated by large tussocks of perennial native needlegrass (*Nasella* spp.). The habitat is open and typically supports a variety of native and introduced grasses and forbs, often actually exceeding the bunchgrasses in cover. In San Diego County, native perennial herbs such as *Sanicula*, *Sidalcea*, *Sisirynchium*, *Eschscholzia* or *Lasthenia* are present. The percentage cover of native species at any one time may be quite low, but is considered native grassland if 20% aerial cover of native species is present. Other species commonly associated with valley and foothills grassland include wild oat (*Avena fatua*), common goldenstar (*Bloomeria crocea*), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madriatensis* ssp. *rubens*), California poppy (*Eschscholzia* spp.), and goldfields (*Lasthenia* spp.).

Open and Dense Coast Live Oak Woodland (71161 and 71162, respectively)

Both open coast live oak woodland and dense coast live oak woodland are generally similar to the coast live oak woodland (71160). Open coast live oak woodland has a canopy with less than 50% cover, while dense coast live oak woodland has a canopy with between 50% and 75% cover. Coast

live oak woodland is an evergreen woodland dominated by coast live oak (*Quercus agrifolia*). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), currant or gooseberry (*Ribes* spp.), laurel sumac (*Malosma laurina*), or dominated by Mexican elderberry (*Sambucus Mexicana*). The herb component is continuous and dominated by ripgut grass and several other introduced taxa. Open coast live oak woodland typically occurs along drainages at desert margin on north-facing slopes or mixed with Engelmann oak (*Quercus engelmannii*). Dense coast live oak woodland mostly occurs at the narrowing of valley flood plains, or valleys with deep alluvium and high perennial groundwater, mostly in riparian habitats.

Field/Pasture (18310)

Field/pasture includes areas of low-intensity agriculture typically involving dry farming or livestock grazing. In the study area, a small area of field/pasture occurs along McCain Valley Road near Interstate 8, where livestock grazing occurs in a floodplain area. In general, this area is characterized by non-native grasses, including *Bromus* and *Hordeum* species, and non-native herbaceous species, including tumble mustard (*Sisymbrium altissimum*) and red-stemmed filaree (*Erodium cicutarium*).

Upper Sonoran Subshrub Scrub (39000)

Upper sonoran subshrub scrub is a low, fairly penetrable scrub of soft-wooded, summer-dormant, drought- tolerant shrubs. Dominance varies among sites, but usually includes interior goldenbush (*Ericameria linearifolia*), interior California buckwheat (*Eriogonum fasciculatum polifolium*), bladderpod (*Isomeris arborea arborea*), or desert tea (*Ephedra californica*), with many annuals derived from nearby grasslands filling the spaces between the shrubs. Upper sonoran subshrub scrub typically occurs in fairly well drained soils derived from sandstone, shale, or even sterile white diatomaceous deposits. In San Diego County this community occurs at high elevations.

Freshwater Marsh (52400)

Freshwater marsh is a wetland habitat type that develops where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. It typically is dominated by tall, emergent monocots, such as cattail (*Typha* sp.) and bulrush (*Scirpus* sp.). With elevations on the Jewell Valley study area ranging from 2932–3534 feet AMSL, the freshwater marsh on site could most accurately be described as transmontane freshwater marsh (52420), which occurs from 3500–7500 feet AMSL. Transmontane freshwater marsh differs from coastal and valley freshwater marsh (52410) in having a shorter growing season, confined more strictly to the summer and subject to much lower temperatures in winter, often well below freezing.

Freshwater marsh is considered a wetland community and the marsh on site is under the jurisdiction of the CDFG, pursuant to Section 1601-1603 of the California Fish and Game Code, the ACOE, pursuant to Section 404 of the Clean Water Act, and the RWQCB, pursuant to Section 401 of the Clean Water Act. In addition, this wetland habitat is under the jurisdiction of the County of San Diego.

QUINO CHECKERSPOT BUTTERFLY SURVEY

Methods

The project developer is in the process of developing a site plan that will be based on meteorological data collected from MET facilities to be constructed onsite. Since a site plan was not available at the time Focused QCB surveys were completed, a survey program was developed by Dudek that included surveying specific areas located throughout the project site (Figures 3 and 4). The survey areas were developed by Dudek based on discussions with the project developer that identified potential areas onsite that would likely be most suitable for development and habitat onsite that would likely support QCB.

Focused QCB surveys were conducted over five visits within a 5-week period between March 9 and April 15, 2011. Surveys were conducted by QCB permitted biologists Anita M. Hayworth, Ph.D. (TE781084), Brock A. Ortega (TE813545-5), Jeff D. Priest (TE840619-2), Kam J. Muri (TE051250-0), Tricia Wotipka (TE840619-2), Paul M. Lemons (TE051248-2), Vipul R. Joshi (TE019949-0), Viviane Marquez (TE800930-9) and David Waller (TE025394-2) in accordance with current USFWS protocol (USFWS 2002a, 2002b).

The site was divided into 11 survey polygons, each representing a single day survey effort (i.e., in accordance with USFWS protocol) (Table 2). These survey areas were numbered and assigned to Dudek's permitted biologists. The biologists were provided with 200-scale (1 inch = 200 feet) aerial photographs of each survey polygon. These photographs were used for mapping host plant populations. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species. GPS units also were available for recording locations of host plant populations.

Table 2
2011 Quino Checkerspot Butterfly (QCB) Survey Polygons

Survey Area	Acreage of Survey Area
1	96
2	95
3	93

Table 2
2011 Quino Checkerspot Butterfly (QCB) Survey Polygons

Survey Area	Acreage of Survey Area
4	99
5	84
6	85
7	88
8	93
9	89
10	88
11	93

The survey methods consisted of slowly walking roughly parallel transects throughout all potential habitat within the survey area (i.e., all areas that are not excluded per the survey protocol, generally including sage scrub, open chaparral, grasslands, open or sparsely vegetated areas, hilltops, ridgelines, rocky outcrops, trails and dirt roads). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10–15 acres per hour.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; sustained winds greater than 15 miles per hour measured 4–6 feet above ground level; temperature in the shade at ground level less than 60° Fahrenheit (F) on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the QCB survey are shown in Table 3. Photocopies of the surveyor's field notes are included as Appendix A.

Table 3
Schedule of Focused Quino Checkerspot Butterfly Surveys and Environmental Conditions

Survey Area	Date	Time	Range of Conditions			Personnel*
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
Week 1						
1	3/11/11	0805–1400	64–81	0–0	3–5 to 6–10	AMH
2	3/9/11	0946–1530	60–60	0–0	0–10, gusts to 30	BAO
3	3/11/11	1000–1600	63–70	0–0	3–5 to 5–10, gusts to 15	BAO
4	3/11/11	0830–1505	61–80	0–20	3–6 to 4–8, gusts to 15	JDP
5	3/15/11	0850–1500	63–70	0–10	0–4 to 6–10, gusts 10–15	PML
6	3/15/11	1000–1600	68–72	5–15	2–3 to 2–5, gusts 8–15	VRJ
7	3/10/11	0910–1500	64–78	0–0	0–3 to 3–6, gusts 12–20	PML

Table 3
Schedule of Focused Quino Checkerspot Butterfly Surveys and Environmental Conditions

Survey Area	Date	Time	Range of Conditions			Personnel*
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
8 (north half)	3/11/11	0840–1400	60–69	0–5	0–5 to 4–10, gusts 10–15	PML
8 (south half)	3/11/11	0915–1530	68–86	0–0	4–7	TLW
9	3/10/11	0930–1530	64–67	0–0	0–1 to 0–5	VRJ
10	3/14/11	0915–1515	66–80	10–35	3–6 to 6–9	TLW
11	3/11/11	0945–1545	62–64	0–40	7–8 to 5–10	KJM
Week 2						
1	3/18/11	0930–1530	62–65	20–0	5–10, gusts to 15	BAO
2	3/18/11	0945–1515	64–64	20–0	1–3 to 5–10, gusts 10–15	AMH
3	3/15/11	1000–1610	65–70	0–20	5–10, gusts to 15	BAO
4	3/18/11	0930–1600	60–73	60–5	0–3 to 8–12, gusts to 15	JDP
5	3/29/11	1100–1630	66–70	10–10	5–10 to 3–5	BAO
6	3/17/11	0845–1525	64–69	10–40	0–5 to 2–9, gusts 10–14	PML
7	3/17/11	0905–1515	61–72	0–0 hazy	2–3 to 5–8	TLW
8	3/23/11	0945–1600	64–62	0–0	0–2 to 4–6	TLW
9	3/28/11	1100–1700	64–66	0–0	3–8, gusts to 15	VRJ
10	3/18/11	0905–1505	70–68	0–0 hazy	4–6 to 6–9	TLW
11	3/18/11	1000–1600	60–60	50–0	4–8 to 6–10, gusts to 12	KJM
Week 3						
1	3/29/11	0930–1615	64–72	0–80	3–5 to 5–8	AMH
2	3/23/11	1000–1630	60–64	0–15	2–4 to 8–12, gusts 15–25	JDP
2	4/1/11	1420–1720*	81–88	0–0	0–7	VM & DW
3	3/30/11	1015–1630	73–74	2–60	1–5 to 2–6, gusts to 8	JDP
4	4/5/11	1015–1700	67–72	40–80	3–7 to 2–8, gusts 10–14	PML
5	3/31/11	0920–1535	68–77	5–5	0–4 to 4–8, gusts 9–12	PML
6	3/30/11	0900–1500	64–74	10–20	0–4 to 4–8, gusts 9–15	PML
7	3/29/11	0900–1505	64–76	0–20	5–8 to 2–4, morning gusts to 12	TLW
8	4/1/11	0900–1515	74–86	0–0	2–3	TLW
9	3/30/11	1030–1350*	69–77	5–20	0–8	VM & DW
10	3/30/11	1350–1525*	75–76	25–35	0–8	VM & DW
10	4/1/11	1035–1305*	78–89	0–0	0–7	VM & DW
11	3/28/11	1015–1630	60–62	0–0	4–6 to 3–7	KJM
Week 4						
1	4/1/11	0830–1550	64–64	0–0	3–5	AMH
2	4/13/11	1030–1305*	60–67	0–5	0–7, gusts 7–9	VM & DW
3	4/2/11	0915–1530	68–74	50–60	0–5 to 4–9, gusts to 15	JDP

Table 3
Schedule of Focused Quino Checkerspot Butterfly Surveys and Environmental Conditions

Survey Area	Date	Time	Range of Conditions			Personnel*
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
4	4/1/11	0930–1600	74–88	0–0	0–2 to 0–4	JDP
5	4/4/11	0920–1545	64–72	0–0	3–8 to 4–8, gusts 9–15	PML
6	4/11/11	1000–1600	62–65	50–0	2–6 to 1–4, gusts 5–8	PML
7	4/4/11	0930–1545	70–74	0–0	5–8, gusts to 16	TLW
8	4/5/11	1030–1630	70–70	40–60	4–7 to 4–12, gusts to 20	KJM
9	4/1/11	1000–1500	63–66	0–0	3–5, gusts to 10	BAO
10 north	4/10/11	1405–1545*	62–64	0–0	0–7, gusts 7–9.5	VM & DW
11	4/4/11	1030–1630	62–67	0–0	2–4 to 0–2, gusts 6–10	KJM
Week 5						
1	4/12/11	1005–1605	64–68	0–0	4–8 to 5–10	AMH
1	4/15/11	1030–1400	67–69	0–0	5–9	AMH
2	4/15/11	1030–1630	66–69	0–0	5–7 to 4–7, gusts 10–12	KJM
3	4/14/11	1030–1640	61–64	0–0	3–7 to 2–5	KJM
4	4/11/11	0950–1415	62–65	50–0	3–5	AMH
5	4/12/11	0940–1600	60–65	0–0	2–4 to 2–6, gusts 7–10	PML
6	4/13/11	1040–1630	60–62	0–10	3–8 to 4–8, gusts 10–17	PML
7	4/12/11	1020–1625	62–64	0–0	2–6 to 4–7	KJM
8	4/13/11	1405–1630*	56–62	0–20	0–5, gusts 6–11	VM & DW
9	4/11/11	1015–1450*	60–67	15–70	0–7	VM & DW
10	4/14/11	1100–1700	63–65	0–0	3–5 to 2–10	BAO
11	4/10/11	1000–1405*	58–65	0–0	0–6 gusts 9–13	VM & DW

* Survey areas were split up and surveyed simultaneously by Viviane Marquez and David Waller. Survey times shown should be doubled to determine time spent in each survey area.
AMH = Anita M. Hayworth, PhD (TE-781084-6)
BAO = Brock A. Ortega (TE-813545-5)
JDP = Jeffrey D. Priest (TE-840619-2)
KJM = Kam J. Muri (TE-051250-0)
PML = Paul M. Lemons (TE-051248-4)
TLW = Tricia L. Wotipka (TE-840619-2)
VRJ = Vipul R. Joshi (TE-019949-0)
VM = Viviane Marquez (TE-800930-9)
DW = David Waller (TE-025394-2)

RESULTS

No QCB were observed during the 2011 focused survey. Thirty-three (33) butterfly species were observed during the surveys. The weeks in which these butterflies were observed are shown in Table 4.

Table 4
Butterflies Observed on Site

Scientific Name	Common Name	Week				
		1	*2*	*3*	*4*	*5*
Hesperiidae – Skippers						
Erynnis funeralis	Funeral duskywing	X	X	X	X	X
Erynnis propertius	Propertius duskywing	—	—	—	X	—
Erynnis sp.	Duskywing	X	X	X	X	X
Thorybes pylades	Northern Cloudywing	X	—	—	—	—
Nymphalidae – Brush-footed Butterflies						
Agraulis sp.	Fritillary	—	—	X	—	—
Coenonympha californica californica	California ringlet	X	X	—	X	—
Junonia coenia	Buckeye	—	—	—	X	X
Vanessa annabella	West coast lady	X	X	—	—	X
Vanessa cardui	Painted lady	X	X	X	X	X
Vanessa sp.	Lady	X	X	X	X	X
Lycaenidae – Blues and Hairstreaks						
Brephidium exile	Western pygmy blue	—	—	X	—	—
Callophrys perplexa	Perplexing (green) hairstreak	X	X	X	X	X
Glaucopsyche lygdamus australis	Southern blue	X	X	X	X	X
Icaria acmon acmon	Acmon blue	X	X	X	X	X
Incisalia augustinus	Brown elfin	X	X	X	—	—
Leptotes marina	Marine blue	X	—	—	—	—
Philotes sonorensis	Sonoran blue	—	—	X	—	—
Papilionidae – Swallowtails						
Papilio eurymedon	Pale swallowtail	X	X	X	X	X
Papilio rutulus	Western swallowtail	—	X	—	X	—
Papilo zelicaon lucas	Anise swallowtail	—	—	—	—	X
Peiridae – Whites and Sulfurs						
Anthocharis centhura	Felder's orangetip	X	X	X	X	X
Anthocharis sara	Sara orangetip	X	X	X	X	X
Colias eurydice	California dogface	X	X	—	—	—
Colias harfordi	Harford's Sulfur	X	—	X	X	X
Colias sp.	Sulfur	X	X	X	—	X
Euchloe hyantis	Pearly marble	X	—	X	—	—
Euchloe lotta	Desert marble	—	—	X	X	X
Pieris rapae	European cabbage white	—	X	X	—	—
Pontia beckerii	Becker's white	X	—	X	—	—
Pontia protodice	Common white	X	X	X	X	X
Pontia sisymbrii	California white	X	X	X	—	—

Table 4
Butterflies Observed on Site

Scientific Name	Common Name	Week				
		1	*2*	*3*	*4*	*5*
Riodinidae – Metalmarks						
Apodemia virgulti	Behr's metalmark	X	X	X	X	X
Calephelis wrightii	Wright's metalmark	X	—	—	—	—

One species of QCB larval host plant, common owl's-clover (*Castilleja exserta* ssp. *exserta*), was observed within the study area during focused surveys. Occurrences of the larval host plant are shown on Figure 4. Table 5 includes the known and observed adult QCB nectar plants (according to Mattoni et al. 1997, USFWS 2002a, USFWS 2002b, USFWS 2003). Larval host plants are also included in Table 5 and are in bold print.

Table 5
QCB Larval Food and Adult Nectar Plants[1]

Scientific Name	Common Name	Observed During Focused Survey
Apiaceae – Carrot Family		
Lomatium dasycarpum ssp. *dasycarpum*	woolly-fruit lomatium	—
Lomatium utriculatum	common lomatium	—
Asteraceae – Sunflower Family		
Achillea millefolium	yarrow, milfoil	—
Lasthenia californica	common goldfields	X
Lasthenia coronaria	southern goldfields	—
Layia platyglossa	common tidy tips	X
Boraginaceae – Borage Family		
Amsinckia menziesii	rancher's fireweed	—
Amsinckia menziesii var. *intermedia*	rancher's fiddleneck	X
Amsinckia menziesii var. *menziesii*	rigid fiddleneck	—
Cryptantha spp. or *Plagyobothrys* spp.	popcorn flower	X
Fabaceae – Pea Family		
Lotus spp.	deerweed, spanishclover, lotus	X
Hydrophyllaceae – Waterleaf Family		
Eriodictyon crassifolium var. *crassifolium*	thickleaf yerba santa	—
Eriodictyon trichocalyx var. *trichocalyx*	hairy yerba santa	—
Phacelia distans	wild-heliotrope	X
Lamiaceae – Mint Family		
Salvia columbariae	chia	X
Plantaginaceae – Plantain Family		
Plantago erecta[2]	dot-seed plantain	—

Table 5
QCB Larval Food and Adult Nectar Plants[1]

Scientific Name	Common Name	Observed During Focused Survey
Plantago patagonica	woolly plantain	—
Polemoniaceae – Phlox Family		
Gilia angelensis	grassland gilia	—
Gilia capitata ssp. *abrotanifolia*	ball gilia	—
Linanthus spp.	ground pink	—
Polygonaceae – Buckwheat Family		
Eriogonum fasciculatum var. *foliolosum*	California buckwheat	X
Scrophulariaceae – Figwort Family		
Antirrhinum coulterianum	Coulter's snapdragon	—
Castilleja exserta	common owl's-clover	X
Collinsia sp.	Chinese houses	—
Cordylanthus rigidus ssp. *setiger*	dark-tipped bird's-beak	—
Keckiella antirrhinoides var. *antirrhinoides*	yellow bush-penstemon	—
Keckiella cordifolia	climbing bush penstemon	—
Liliaceae – Lily Family		
Allium haematochiton	red-skin onion	—
Allium peninsulare	red-flower onion	—
Allium praecox	early onion	—
Dichelostemma capitatum	blue dicks	X
Muilla clevelandii	San Diego goldenstar	—
Muilla maritima	common muilla	—

1 List derived from Mattoni et al. 1997; USFWS 2002a, USFWS 2002b; USFWS 2003 (for *Euphydras editha*)
2 Plants listed in **bold** print are known QCB larval host plant species.

Dudek certifies that the information in this survey report and attached exhibits fully and accurately represents the work conducted by the QCB permitted biologists who conducted this focused survey.

Please feel free to contact us at 760.942.5147, plemons@dudek.com, or bortega@dudek.com if you have any questions regarding the contents of this report.

Sincerely,

Paul M. Lemons
Permit #TE051248-4

Brock A. Ortega
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Tricia L. Wotipka
Permit # TE840619-2

Recovery Permit Coordinator

Subject: 2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California

Vipul R. Joshi	David Waller	Viviane Marquez
Permit # TE019949-0	Permit #TE025394-2	Permit #TE800930-9

Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, Biological Resources Map with Quino Survey Areas – North
Figure 4, Biological Resources Map with Quino Survey Areas – South
Appendix A – List of Wildlife Species Observed during the 2011 Jewell Valley QCB Survey
Appendix B – 2011 Jewell Valley QCB Survey Field Notes

cc: Joan Heredia, Enel Green Power North America
David Hochart, Dudek

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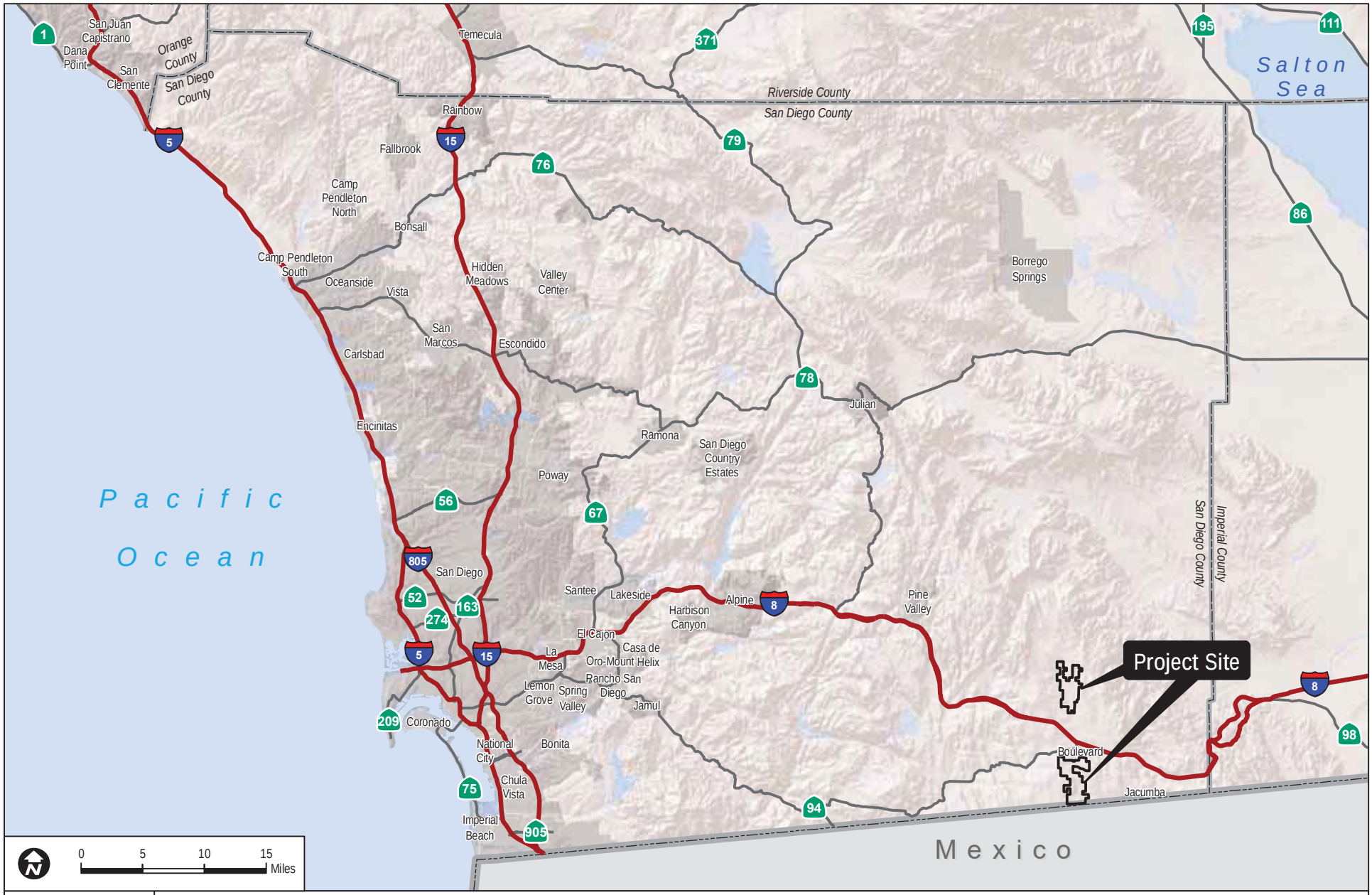


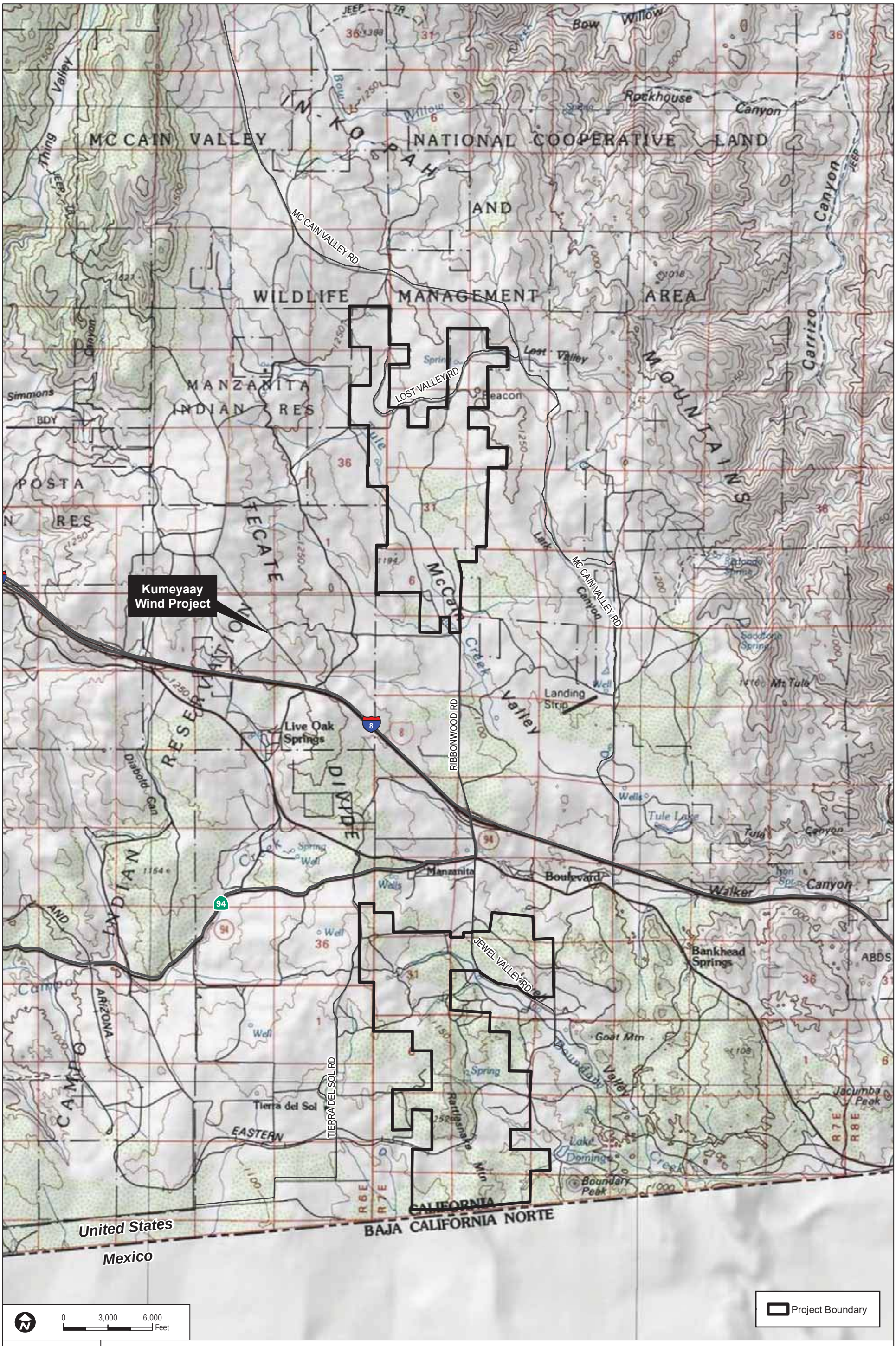
DUDEK

6759-4.7

FIGURE 1

Regional Map

2011 Focused Quino Checkerspot Butterfly Survey Report for the Jewell Valley Wind Project

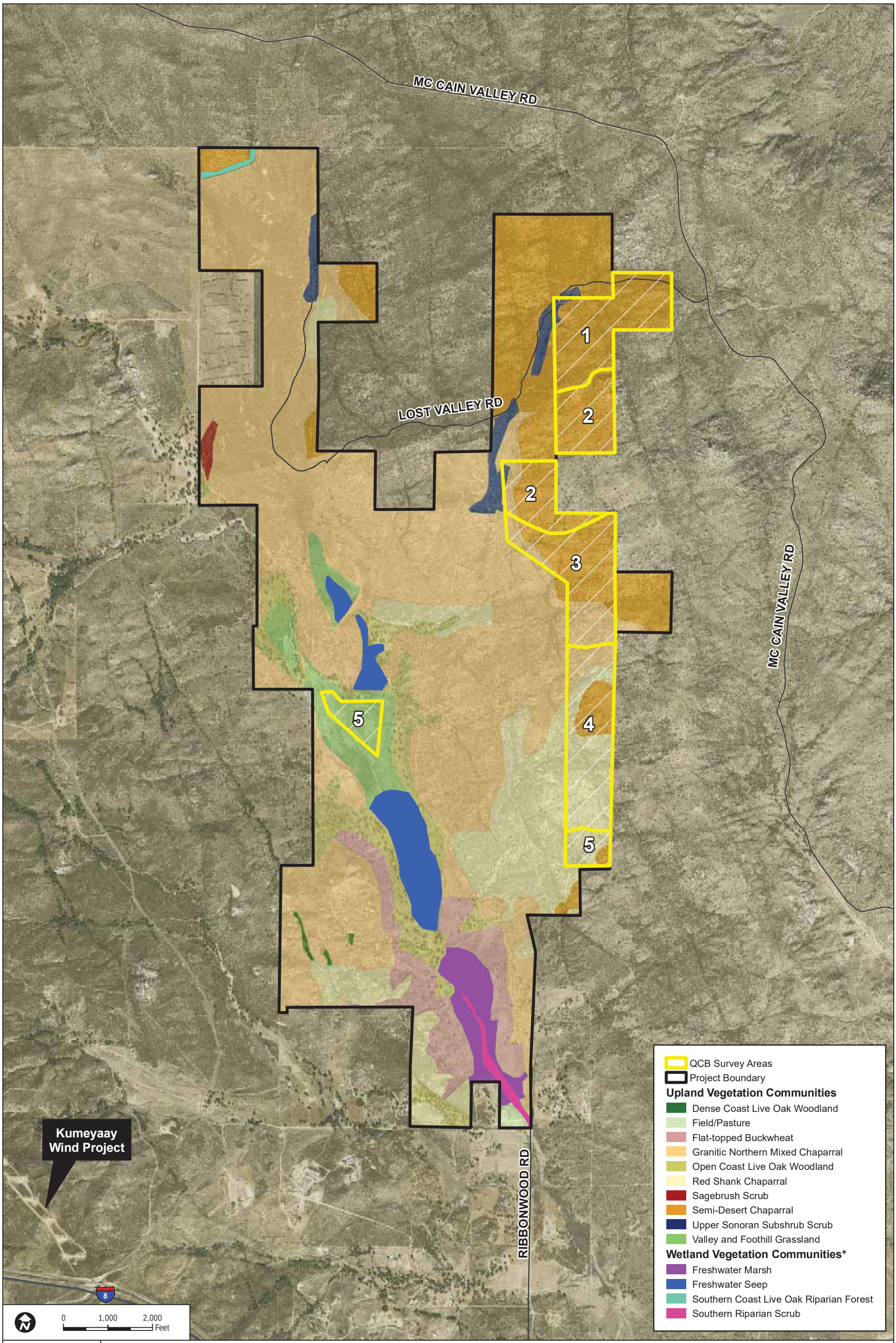


DUDEK

6759-4.7

SOURCE: Digital Globe 2008
SANGIS 2010

FIGURE 2
Vicinity Map



DUDEK

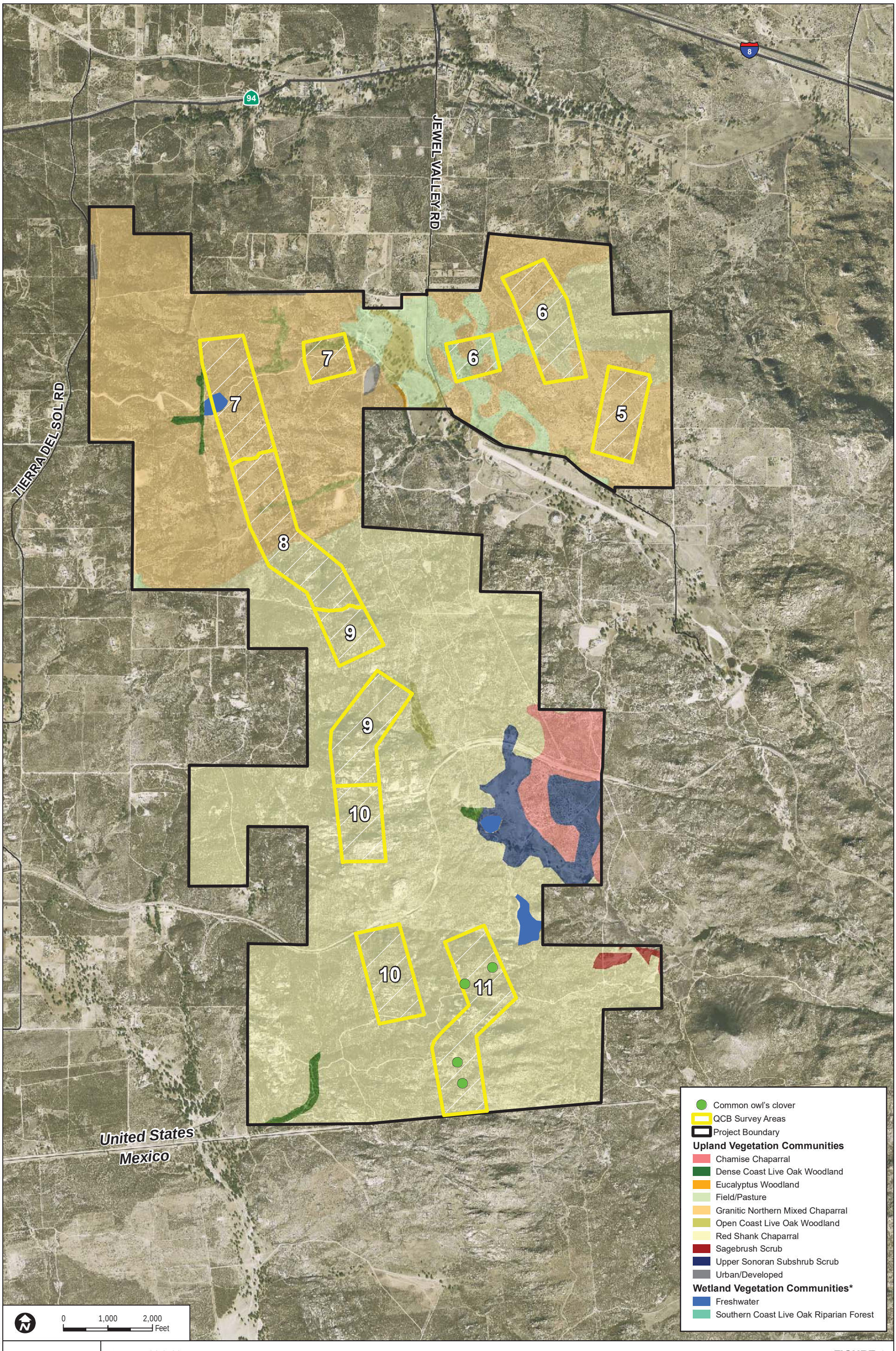
6759-4.7

SOURCE: Digital Globe 2008
SANGIS 2010

FIGURE 3

Biological Resources Map with Quino Survey Areas - North

2011 Focused Quino Checkerspot Butterfly Survey Report for the Jewell Valley Wind Project



DUDEK

6759-4.7

SOURCE: Digital Globe 2008
SANGIS 2010

FIGURE 4

Biological Resources Map with Quino Survey Areas - South

APPENDIX A

List of Wildlife Species Observed during the 2011 Jewell Valley QCB Survey

APPENDIX A
List of Wildlife Species Observed during the 2011 Jewell Valley QCB Survey

WILDLIFE SPECIES – VERTEBRATES

AMPHIBIANS

***BUFONIDAE* – TRUE TOADS**

Bufo boreas – western toad

***HYLIDAE* – TREEFROGS**

Hyla cadaverina – California treefrog
Hyla regilla – Pacific treefrog

REPTILES

***IGUANIDAE* – IGUANID LIZARDS**

Gambelia wislizenii – long-nosed leopard lizard
Phrynosoma coronatum – coast horned lizard
Sceloporus graciosus – sagebrush lizard
Sceloporus occidentalis – western fence lizard
Sceloporus orcutti – granite spiny lizard
Uta stansburiana – side-blotched lizard

***TEIIDAE* – WHIPTAIL LIZARDS**

Cnemidophorus hyperythrus – orange-throated whiptail

***COLUBRIDAE* – COLUBRID SNAKES**

Coluber constrictor – racer
Masticophis lateralis – California whipsnake
Pituophis melanoleucus – gopher snake

***VIPERIDAE* – VIPERS**

Crotalus atrox – western diamondback rattlesnake
Crotalus ruber – red-diamond rattlesnake
Crotalus oreganus helleri – Southern pacific rattlesnake

BIRDS

***ARDEIDAE* – HERONS**

Ardea alba – great egret

***ANATIDAE* – WATERFOWL**
Anas platyrhynchos – mallard

***CATHARTIDAE* – NEW WORLD VULTURES**
Cathartes aura – turkey vulture

***ACCIPITRIDAE* – HAWKS**
Accipiter cooperii – Cooper's hawk
Buteo jamaicensis – red-tailed hawk
Parabuteo unicinctus – Harris's hawk

***FALCONIDAE* – FALCONS**
Falco sparverius – American kestrel

***PHASIANIDAE* – PHEASANTS AND QUAILS**
Callipepla californica – California quail

***CHARADRIIDAE* – PLOVERS**
Charadrius vociferus – killdeer

***COLUMBIDAE* – PIGEONS AND DOVES**
Zenaida macroura – mourning dove

***CUCULIDAE* – CUCKOOS AND ROADRUNNERS**
Geococcyx californianus – greater roadrunner

***STRIGIDAE* – TRUE OWLS**
Bubo virginianus – great horned owl

***APODIDAE* – SWIFTS**
Aeronautes saxatalis – white-throated swift

***TROCHILIDAE* – HUMMINGBIRDS**
Calypte anna – Anna's hummingbird

***PICIDAE* – WOODPECKERS**
Colaptes auratus – northern flicker
Melanerpes formicivorus – acorn woodpecker
Picoides nuttallii – Nuttall's woodpecker
Picoides scalaris – ladder-backed woodpecker

***TYRANNIDAE* – TYRANT FLYCATCHERS**

Sayornis nigricans – black phoebe
Sayornis saya – Say's phoebe
Tyrannus vociferans – Cassin's kingbird
Tyrannus verticalis – western kingbird

***HIRUNDINIDAE* – SWALLOWS**

Petrochelidon pyrrhonota – cliff swallow

***CORVIDAE* – JAYS AND CROWS**

Aphelocoma californica – western scrub-jay
Corvus brachyrhynchos – American crow
Corvus corax – common raven

***PARIDAE* – TITMICE**

Baeolophus inornatus – oak titmouse

***AEGITHALIDAE* – BUSHTITS**

Psaltriparus minimus – bushtit

***TROGLODYTIDAE* – WRENS**

Campylorhynchus brunneicapillus – cactus wren
Salpinctes obsoletus – rock wren
Thryomanes bewickii – Bewick's wren

***SYLVIIDAE* – GNATCATCHERS**

Polioptila caerulea – blue-gray gnatcatcher

***TURDIDAE* – THRUSHES AND BABBLERS**

Sialia mexicana – western bluebird

***TIMALIIDAE* – LAUGHINGTHRUSH AND WRENTIT**

Chamaea fasciata – wrentit

***MIMIDAE* – THRASHERS**

Mimus polyglottos – northern mockingbird
Toxostoma redivivum – California thrasher

***PTILOGONATIDAE* – SILKY-FLYCATCHERS**

Phainopepla nitens – phainopepla

***LANIIDAE* – SHRIKES**

Lanius ludovicianus – loggerhead shrike

***STURNIDAE* – STARLINGS**

* *Sturnus vulgaris* – European starling

***PARULIDAE* – WOOD WARBLERS**

Dendroica coronata – yellow-rumped warbler
Geothlypis trichas – common yellowthroat
Oporonis tolmiei – MacGillivray's warbler
Vermivora celata – orange-crowned warbler
Wilsonia pusilla – Wilson's warbler

***EMBERIZIDAE* – BUNTINGS AND SPARROWS**

Amphispiza bilineata – black-throated sparrow
Chondestes grammacus – lark sparrow
Junco hyemalis – dark-eyed junco
Melospiza melodia – song sparrow
Pipilo crissalis – California towhee
Pipilo maculatus – spotted towhee
Spizella atrogularis – black-chinned sparrow
Zonotrichia leucophrys – white-crowned sparrow

***ICTERIDAE* – BLACKBIRDS AND ORIOLES**

Agelaius phoeniceus – red-winged blackbird
Icterus bullockii – Bullock's oriole
Icterus parisorum – Scott's oriole
Molothrus ater – brown-headed cowbird
Quiscalus mexicanus – great-tailed grackle
Sturnella neglecta – western meadowlark

***FRINGILLIDAE* – FINCHES**

Carpodacus mexicanus – house finch
Carduelis psaltria – lesser goldfinch

MAMMALS

***LEPORIDAE* – HARES AND RABBITS**

Lepus californicus – black-tailed jackrabbit
Sylvilagus bachmani – brush rabbit
Sylvilagus audubonii – desert cottontail

***SCIURIDAE* – SQUIRRELS**

Ammospermophilus leucurus – white-tailed antelope squirrel
Spermophilus beecheyi – California ground squirrel

***GEOMYIDAE* – POCKET GOPHERS**

Thomomys bottae – Botta's pocket gopher

***HETEROMYIDAE* – POCKET MICE AND KANGAROO RATS**

Dipodomys sp. – kangaroo rat (sign)

***MURIDAE* – RATS AND MICE**

Neotoma lepida – desert woodrat
Peromyscys sp. – mouse

***CANIDAE* – WOLVES AND FOXES**

* *Canis familiaris* – domestic dog
Canis latrans – coyote

***PROCYONIDAE* – RACCOONS AND RELATIVES**

Procyon lotor – common raccoon

***MUSTELIDAE* – WEASELS, SKUNKS, AND OTTERS**

Mephitis mephitis – striped skunk
Mustela frenata – long-tailed weasel

***FELIDAE* – CATS**

Felis concolor – mountain lion

***CERVIDAE* – DEERS**

Odocoileus hemionus – mule deer

WILDLIFE SPECIES – INVERTEBRATES

BUTTERFLIES AND MOTHS

***HESPERIIDAE* – SKIPPERS**

Erynnis funeralis – funereal duskywing
Erynnis propertius – propertius duskywing
Erynnis sp. – Duskywing
Thorybes pylades – Northern Cloudywing

***PAPILIONIDAE* – SWALLOWTAILS**

Papilio eurymedon – pale swallowtail
Papilio rutulus – western tiger swallowtail
Papilo zelicaon lucas – anise swallowtail

***PIERIDAE* – WHITES AND SULFURS**

Anthocharis centhura – Felder's orangetip
Anthocharis sara – Sara orangetip
Colias Eurydice – California dogface
Colias harfordi – Harford's Sulfur
Colias sp. – Sulfur
Euchloe hyantis – Pearly marble
Euchloe lotta – Desert marble
Pieris rapae – European cabbage white
Pontia beckerii – Becker's white
Pontia protodice – Common white
Pontia sisymbrii – California white

***RIODINIDAE* – METALMARKS**

Apodemia mormo virgulti – Behr's metalmark
Calephelis wrightii – Wright's metalmark

***LYCAENIDAE* – BLUES, HAIRSTREAKS, AND COPPERS**

Brephidium exile – western pygmy blue
Callophrys dumetorum perplexa – perplexing (green) hairstreak
Glaucopsyche lygdamus australis – southern blue
Icaria acmon acmon – acmon blue
Incisalia augustinus – brown elfin
Leptotes marina – marine blue
Philotes sonorensis – sonoran blue

***NYMPHALIDAE* – BRUSH-FOOTED BUTTERFLIES**

Agraulis sp. – fritillary
Coenonympha californica californica – California ringlet
Junonia coenia – buckeye
Vanessa annabella – west coast lady
Vanessa sp. – lady
Vanessa cardui – painted lady

* signifies introduced (non-native) species

INTENTIONALLY LEFT BLANK

APPENDIX B

2011 Jewell Valley QCB Survey Field Notes

AMH

3/11/2011

0805	1100	1400	Jewel Valley
64	75	81	QCB
3-5MPH	8MPH	6-10	Area 1
Clear	Clear	Clear	

WSJA — deer poop + tracks
CAQU — BUSH
WCSP — BEWR
CORA
CATH
LEGO
RTHA-overhead
WTSW flyover
WREN
SPTO — CATO

Funereal type (skipper) ~~||||~~ many
Wht + black (skipper) |
blue (marine) |
Brown (Wright's metalmark) |||
White (Becker's) ~~||||~~ |
moth - underwing w/ yellow spots ~10
Behr's Metalmark ~~||||~~ |||
S. Blue |||
Acmon Blue |
"underwing" moth ~~||||~~ ~15
Harford's |

AMH

0945 Jewel Valley
64 grnd 3/18/2011
60 air Area 2
high wispy (sun's intermittent) QCB Survey
1-3 MPH

WSJA Pactreefrog
CAQU BTSP
CQRA OATI
LEGO Kingbird sp (La or We-flewby)
BUSH WCSP
PHAI BEWR
SPTO RTHA (on nest in dead tree)
CATO DEJU
CATH

Behr's metalmark ~~||||~~ ~~||||~~ ~~||||~~ ~~||~~ many
Funereal type |||
Perplexing hairstreak ||||
Blackspotted moth ~~||||~~ |
Common white |
Nestor Coast Lady ||
Pale swallowtail |
Skipper Allblack |||
Acmon Blue ||

full sun conditions by 1100 then wind picked up but butterflies were active.

Nectar source (Lasth) was abundant between shrubs (photos).

Stopped recording B metalmark they are quite numerous

End
1515
64F
5-10 MPH
gusts to 15
Clear

AMH

0930 415 pm 3/29/2011
Clear 80% CC Week 3
3-5MPH 5-8mph Jewel Valley
64 72° Area 1

WREN CAQU
CATO CATH
DPTO OATT
YRWA BEWR
WSJA GRRO
BTSP WCSP
CAWR TUVU flyover
BTGW DEJU
Striped racer

Sara O. tip ~~||||~~ ||||
White-Becker or Common |
Brn Elfin |||
Perplexing ~~||||~~ ||
Behr's m.m. ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ many
Silv. blue ||
white-large ||
Harford's sulfur |
Skipper, large black ~~||||~~ |
Desert marble ~~||||~~ |
Lady sp. |
Pygmy blue ||

AMth

Patches w/ carpet of annuals in bloom. popcorn, Lasth
Also patches of eriodictyon
Lot of bare sandy exp. soil Also patches with shrub cover.
Some shrub cover is pretty dense w/ shrub oak. In drainage at N. end is patch of redshank/chamise
Lots of scrub jays
conditions were excellent w/ lots wind, sun, warm temps. Lots of butterfly activity - many Behr's (stopped counting)

96

site
P

AMH

4/1/2011

76 F	83F	Jewel Valley
0830	350	QCB
3-5mph	3-5	week 4
Clear	Clear	

Harford	++++ |||
Sara Otip	+++ |||
black skipper	|| – many
Metalmark, Behr's	+++|| many
Blue, Southern	|||
Desert marble	+++
perplexing	+++ ||
Common white	|||
Pale swallow tail	|
very common – flitting around the bucket	
buckeye	|
Blue (acmon)	+++

NCSP	MODO
WREN	BTSP
CATO	NUWO
SPTO	PIHA 1
WSJA	Turk overflight – 3 overhead pretty low
DEJU	CATH
CAQU	ROWR
CORA	SCOR
CAWR	WTSW – also pretty low
small yellow (forgot the name)	||

AMth

Alot more whites (common, marble, sara o'tip) also more sulfurs this week. Metal marks are abundant both small & large. first buckeye this week.

Carpet of spring ephemerals in bloom now. Did a second pass thru the areas with the carpets

AMH

- Spp list for BCB survey
  - WREN
  - BEWR
  - BTSP
  - WCSP
  - NOFL
  - TUVU
  - ~~WESJ~~ WSJA
  - CAWR
  - CORA
  - CAFI
  - CAQU
  - CATO
  - SPTO
  - GRRO
  - WTSW

ATTACHMENT B-1

2018 Focused Quino Checkerspot Butterfly Survey Report for the Torrey Wind Project, Boulevard, San Diego County, California

DUDEK

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

June 29, 2018 10212

U.S. Fish and Wildlife Service
Attention: Stacey Love, Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Torrey Wind Project, Boulevard, San Diego County, California

Dear Ms. Love:

This letter report documents the spring 2018 results of a focused survey conducted by Dudek for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino). This survey was conducted in support of the Torrey Wind project, a proposed wind energy facility project north of the community of Boulevard in southeastern San Diego County, California. This report is intended to satisfy reporting requirements for the following Quino-permitted biologists: Anita Hayworth (TE-781084-9.1), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-813545-5), Jeff Priest (TE-840619-6), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), Paul M. Lemons (TE-051248-5), and Tricia Wotipka (working under TE-840619-6).

STUDY AREA AND EXISTING CONDITIONS

The study area is located in southeastern San Diego County north of the community of Boulevard, California (Figure 1, Survey Results – Index). The study area consisted of the anticipated project disturbance areas with a 250-foot buffer (total of 500-foot-wide area) (Figures 2 and 3, Survey Results). In early April, the study area was modified slightly, resulting in 56.9 acres being removed from the study area and 41.9 acres being added to the study area (Figures 2 and 3). The additional areas were slivers of area adjacent to the existing survey areas that were within the line of sight from the Weeks 1 through 4 surveys; therefore, the addition of these areas do not change the conclusion of the report.

The study area is situated north and south of Interstate (I-) 8 and east of Buckman Springs Road, at an elevation between approximately 3,280 feet and 4,120 feet above mean sea level. The landscape north of I-8 consists of a mixture of large-lot rural residences and open space with mountainous terrain consisting of steep slopes, prominent ridgelines, and rock outcroppings.

Existing land uses within the vicinity of the study area can be characterized as predominantly rural, large-lot ranches and single-family homes, with a mixture of small-scale agriculture, recreational, and open space, with the exception of the Campo Band of Kumeyaay Indians Reservation, wind turbines to the north of I-8, and the Tule Wind Project. The 500-kilovolt Sunrise Powerlink traverses the northeast portion of the study area.

The study area is within the U.S. Geological Survey's 7.5-minute Sombrero Peak and Live Oak Springs quadrangle maps within Township 17 South, Range 6 East, Sections 01, 05, and 06; Township 17 South, Range 7 East, Sections 05 and 06; and Township 16 South, Range 6 East, Sections 19, 20, 29, 30, 31, and 32.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service, the following seven soil series were mapped within the study area: Calpine (coarse sandy loam, 5% to 9% slopes); La Posta (loamy coarse sand, 5% to 30% slopes, eroded; rocky loamy coarse sand, 5% to 30% slopes, eroded); loamy alluvial land; Mottsville (loamy coarse sand, 2% to 9% slopes); and Tollhouse (rocky coarse sandy loam, 5% to 30% slopes, eroded) (USDA 2018).

VEGETATION COMMUNITIES

The study area supports chaparral, scrub, grassland, and oak woodland communities.

QUINO CHECKERSPOT BUTTERFLY SURVEY

Background Information

The Quino subspecies was added to the federal Endangered Species List by the U.S. Fish and Wildlife Service (USFWS) on January 16, 1997 (62 FR 2313–2322). The species, Edith's checkerspot (*E. editha*), has a range extending from British Columbia and Alberta, Canada, south through Colorado and Utah, and west along the coast to northern Baja California. It is divided into 20 subspecies, each of which has its own range and biological and morphological characteristics. In California, there are 12 subspecies (Garth and Tilden 1986), three of which are currently known to occur in Southern California. The Quino is the southwesternmost subspecies of *E. editha* (Mattoni et al. 1997).

The Quino is known to occur in association with a variety of plant communities, soil types, and elevations (up to 5,000 feet above mean sea level). The plant communities include clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub (Ballmer et al. 2001). The Quino is also associated with clay soils that possess cryptogamic crusts and vernal pools (USFWS 2002).

The Quino is a medium-sized butterfly (approximately 0.8-inch to 1.1-inch wingspan) belonging to the family Nymphalidae. The adults are primarily orange-red with white and have black markings on the dorsal wing surface. They are active primarily in March and April. This active period may vary depending on weather conditions (Ballmer et al. 2001). The adult butterfly feeds on nectar, which it obtains from spring annuals such as popcorn flower (*Plagiobothrys* spp., *Cryptantha* spp.), whitedaisy tidytips (*Layia glandulosa*), goldenbush (*Ericameria* spp.), pincushion (*Chaenactis* spp.), fiddleneck (*Amsinckia* spp.), chia (*Salvia columbariae*), and bluedicks (*Dichelostemma capitatum*), among others.

Adult males and virgin females sometimes "hilltop," or travel to elevated locations to find mates. While waiting for females to arrive, the males will often exhibit territorial behavior and will chase other butterflies that approach them. Frequently, the butterflies are observed in meadows or clearings where their host plants occur (Ballmer et al. 2001).

A female may lay 20 to 75 eggs at one time and may produce up to 1,200 eggs in her lifetime. The eggs hatch in approximately 10 days under favorable weather conditions and the young larvae will immediately begin to feed upon a host plant. The feeding larvae use the dwarf plantain (*Plantago erecta*), Patagonia plantain (*P. patagonica*), Coulter's snapdragon (*Antirrhinum coulterianum*), and Chinese houses (*Collinsia concolor*) as their host plants (Pratt 2009). Stiffbranch bird's beak (*Cordylanthus rigidus*) and exserted Indian paintbrush (*Castilleja exserta*) are considered secondary hosts (USFWS 2002).

After feeding, the early larva enters an obligatory aestival diapause (dormant stage), which may be broken after fall or winter rains (Murphy and White 1984; Osborne 1998). If adverse weather conditions occur, the emergent larva may reenter a diapause stage repeatedly, for up to 5 or 6 years, until favorable weather conditions permit sufficient growth of the host plant to allow the larva to complete its development.

The Quino was once common in Southern California. It ranged north into Ventura County, west to the Pacific Ocean, east to the deserts, and south into northern Baja California. Currently, it is known to occur only in a few, probably isolated, colonies in southwestern Riverside County, San Diego County, and northern Baja California.

Reasons for the butterfly's reduction in population are not well understood. Habitat loss due to degradation and fragmentation caused by urban and rural development, agricultural conversion, off-road vehicular use, the invasion of non-native plants and insects, fire management practices, over collecting, and adverse weather conditions have likely contributed to the species' decline (62 FR 2313–2322).

Methods

Prior to the focused surveys, Dudek biologists conducted a habitat assessment within the study area to identify suitable habitat and exclude unsuitable habitat. Excluded areas consisted of developed areas and densely vegetated chaparral with tall shrubs forming closed canopies. Host plant surveys were performed in concert with the habitat assessment and augmented during the survey effort.

The 2014 USFWS protocol states that focused Quino surveys should begin the third week of February and end the second Saturday in May unless otherwise approved by USFWS. Surveys are to be conducted during the adult flight season by biologists possessing a recovery permit for this species pursuant to Section 10(a)(1)(A) of the federal Endangered Species Act (USFWS 2014). The 2018 focused surveys followed the 2014 USFWS protocol with the exception of an approved amendment included in the 2018 notification (USFWS 2018). The amendment allowed surveys to begin the week of March 12 to account for the location's higher elevation, generally colder conditions, and general later start of Quino emergence.

Focused Quino surveys were conducted over 10 visits from March 13, 2018, through May 12, 2018, per the 2014 USFWS Quino Checkerspot Butterfly Survey Guidelines (see Table 1). The survey area consisted of suitable habitat for Quino checkerspot (Figures 2 and 3). Surveys were conducted by Quino-permitted biologists Anita Hayworth (TE-781084-9.1), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-813545-5), Jeff Priest (TE-840619-6), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), Paul M. Lemons (TE-051248-5), and Tricia Wotipka (working under TE-840619-6).

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
N/A	Habitat Assessment	2018-02-16	SC	8:00 AM–5:00 PM	Air temp: 43°F–57°F; ground temp: 70°F–77°F; 80% cloud cover; 0 mph wind	
1	1	2018-03-12	CA, PS	9:45 AM–4:50 PM	Air temp: 62°F–75°F; ground temp: 70°F–77°F; 20%–40% cloud cover; 0–2 mph wind; clear	Survey included area 3
	2	2018-03-19	CA, EB, PS	9:27 AM–2:19 PM	Air temp: 55°F–57°F; ground temp: 55°F–57°F; 20% cloud cover; 0–5 mph wind; clear	
	3	2018-03-28	EB, PS	9:00 AM–12:45 PM	Air temp: 65°F–74°F; ground temp: 76°F; 0% cloud cover; 0–4 mph wind	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	4	2018-04-02	CA, PS	9:06 AM–1:14 PM	Air temp: 58°F–68°F; ground temp: 63°F–70°F; 0% cloud cover; 0–8 mph wind; clear	
	5	2018-04-14	CA, EB	9:09 AM–1:18 PM	Air temp: 69°F–71°F; ground temp: 70°F–72°F; 0% cloud cover; 0–4 mph wind; clear	
	6	2018-04-25	JP	8:30 AM–3:30 PM	Air temp: 70°F–80°F; ground temp: 70°F–84°F; 0% cloud cover; 0–14 mph wind	
	7	2018-04-29	JP	8:30 AM–3:30 PM	Air temp: 60°F–66°F; ground temp: 60°F–66°F; 0%–10% cloud cover; 3–14 mph wind	
	8	2018-05-03	PS	8:37 AM–3:40 PM	Air temp: 63°F–74°F; ground temp: 62°F–78°F; 0% cloud cover; 0–5 mph wind; clear	
	9	2018-05-07	JP	9:00 AM–4:00 PM	Air temp: 68°F–86°F; ground temp: 67°F–90°F; 0% cloud cover; 0–12 mph wind	
	10[a]	2018-05-12	MM	8:32 AM–12:43 PM	49°F–53°F; 50%–100% cloud cover; 2–10 mph wind; drizzle to patchy	
2	1	2018-03-09	CA, PS	9:04 AM–2:30 PM	Air temp: 66°F–68°F; ground temp: 70°F; 30%–80% cloud cover; 0–12 mph wind; clear to patchy	Survey included area 5
	2	2018-03-20	CA, EB, PS	2:38 PM–5:19 PM	70°F–75°F; 0–5 mph wind; clear	
	3	2018-03-30	CA, EB	8:55 AM–12:38 PM	Air temp: 73°F–87°F; ground temp: 70°F–92°F; 0% cloud cover; 0–2 mph wind; clear	
	4	2018-04-05	JP	9:00 AM–4:30 PM	Air temp: 67°F–75°F; ground temp: 65°F–77°F; 0%–30% cloud cover; 3–12 mph wind; clear	
	5 (Portion)	2018-04-09	PL	10:00 AM–2:40 PM	Air temp: 76°F–83°F; ground temp: 75°F–79°F; 0%–10% cloud cover; 2–12 mph wind	
	5 (Finish)	2018-04-10	PL	1:15 PM–5:00 PM	Air temp: 89°F–91°F; ground temp: 87°F–88°F; 10% cloud cover; 3–8 mph wind	
	6	2018-04-14	JP	8:30 AM–4:30 PM	Air temp: 62°F–74°F; ground temp: 62°F–76°F; 0% cloud cover; 2–10 mph wind; clear	
	7	2018-04-28	JP	8:30 AM–4:30 PM	Air temp: 64°F–78°F; ground temp: 66°F–80°F; 0% cloud cover; 0–14 mph wind	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	8	2018-05-04	CA	8:34 AM–4:26 PM	Air temp: 72°F–79°F; ground temp: 79°F–81°F; 0% cloud cover; 1–3 mph wind; Clear	
	9	2018-05-07	CA, PS	12:40 PM–4:46 PM	Air temp: 86°F–90°F; ground temp: 88°F–93°F; 0% cloud cover; 1–8 mph wind; clear	
	10[a]	2018-05-11	JP	8:45 AM–2:00 PM	Air temp: 62°F–72°F; ground temp: 62°F–79°F; 20% cloud cover; 2–29 mph wind	
3	1	2018-03-12	CA, PS	9:45 AM–4:50 PM	Air temp: 62°F–75°F; ground temp: 70°F–77°F; 20%–40% cloud cover; 0–2 mph wind; clear	Survey included area 1
	2	2018-03-21	CA, EB, PS	11:40 AM–2:00 PM	Air temp: 70°F–74°F; ground temp: 73°F–77°F; 0%–20% cloud cover; 0–2 mph wind; clear	
	3	2018-03-28	EB, PS	12:47 PM–4:17 PM	Air temp: 75°F–78°F; ground temp: 75°F –76°F; 0% cloud cover; 0–3 mph wind; clear	
	4	2018-04-05	PL	9:00 AM–4:00 PM	Air temp: 67°F–80°F; ground temp: 65°F–82°F; 0%–20% cloud cover; 2–10 mph wind	
	5	2018-04-09	EB, PS	9:53 AM–1:24 PM	Air temp: 79°F–83°F; ground temp: 77°F–84°F; 0% cloud cover; 0–5 mph wind; clear	
	6	2018-04-15	JP	8:30 AM–3:30 PM	Air temp: 64°F–77°F; ground temp: 62°F–80°F; 10%–90% cloud cover; 0–12 mph wind	
	7	2018-04-24	CA, PS	9:09 AM–12:44 PM	Air temp: 82°F–86°F; ground temp: 78°F–88°F; 20%–30% cloud cover; 0–1 mph wind; clear	
	8	2018-05-03	AH	10:05 AM–5:15 PM	Air temp: 21°F–62°F; ground temp: 21.5°F–64°F; 0% cloud cover; 3–8 mph wind	
	9	2018-05-07	CA, PS	8:35 AM–12:35 PM	Air temp: 76°F–86°F; ground temp: 70°F–88°F; 0%–10% cloud cover; 0–5 mph wind; clear	
	10[a]	2018-05-11	TW	8:45 AM–2:00 PM	Air temp: 62°F–72°F; ground temp: 62°F–79°F; 1-4 mph wind;; patchy	
4	1 (Portion)	2018-03-09	JP	10:30 AM–4:30 PM	Air temp: 64°F–74°F; ground temp: 68°F–70°F; 30%–90% cloud cover; 3–10 mph wind; patchy to clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	1 (Finish)	2018-03-13	JP	10:40 AM–12:10 PM	Air temp: 70°F–74°F; ground temp: 74°F–76°F; 100% cloud cover; 1–3 mph wind	
	2	2018-03-21	CA, EB, PS	2:00 PM–4:35 PM	Air temp: 74°F–75°F; ground temp: 77°F–80°F; 50%–90% cloud cover; 0–3 mph wind; patchy to overcast	
	3	2018-03-28	PL	8:00 AM–3:10 PM	Air temp: 64°F–73°F; ground temp: 60°F–70°F; 0% cloud cover; 0–6 mph wind; clear	
	4	2018-04-05	TW	9:30 AM–4:30 PM	68°F–80°F; 0%–20% cloud cover; 0–5 mph wind	
	5	2018-04-09	BO	8:05 AM–4:10 PM	Air temp: 70°F–83°F; ground temp: 69°F–82°F; 0% cloud cover; 0–5 mph wind; clear	
	6	2018-04-20	PL	10:00 AM–4:45 PM	Air temp: 71°F–75°F; ground temp: 69°F–73°F; 0% cloud cover; 0–4 mph wind; clear	
	7	2018-04-25	CA, EB	9:44 AM–3:36 PM	Air temp: 79°F–75°F; ground temp: 78°F; 0%–10% cloud cover; 1–9 mph wind; clear	
	8	2018-05-04	TW	9:15 AM–4:15 PM	Air temp: 74°F–82°F; ground temp: 78°F–84°F; 0% cloud cover; 1–3 mph wind; clear	
	9	2018-05-08	CA	8:59 AM–3:39 PM	Air temp: 84°F–90°F; ground temp: 90°F–92°F; 10% cloud cover; 0–2 mph wind; clear	
	10	2018-05-12	JP	10:00 AM–4:45 PM	Air temp: 54°F–58°F; ground temp: 62°F–64°F; 10% cloud cover; 0–10 mph wind	
5	1	2018-03-09	CA, PS	9:04 AM–2:30 PM	Air temp: 66°F–68°F; ground temp: 70°F; 30%–80% cloud cover; 0–12 mph wind; clear to patchy	Survey included area 2
	2	2018-03-20	CA, EB, PS	12:20 AM–2:38 PM	Air temp: 73°F–75°F; ground temp: 76°F5; clear	
	3	2018-03-30	CA, EB	12:45 PM–4:18 PM	Air temp: 84°F–84.9°F; ground temp: 82.5°F–83°F; 0%–50% cloud cover; 0–3 mph wind; clear to patchy	
	4	2018-04-03	AH	9:40 AM–4:20 PM	Air temp: 61°F–74°F; ground temp: 63°F–76°F; 20% cloud cover; 2–8 mph wind	
	5 (Portion)	2018-04-09	EB, PS	1:30 PM–4:30 PM	Air temp: 78°F–86°F; ground	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
					temp: 79°F–80°F; 0%–50% cloud cover; 0–5 mph wind; clear	
	5 (Finish)	2018-04-10	EB, PS	9:48 AM–10:52 AM	Air temp: 81°F–87°F; ground temp: 82°F–84°F; 10%–20% cloud cover; 0–2 mph wind; clear	
	6	2018-04-20	EB, PS	9:28 AM–1:21 PM	Air temp: 67°F–72°F; ground temp: 74°F; 0% cloud cover; 0–3 mph wind; clear	
	7 (Portion)	2018-04-25	EB	10:14 AM–12:00 PM	Air temp: 73°F–76°F; ground temp: 77°F; 0% cloud cover; 0–1 mph wind; clear	
	7 (Finish)	2018-04-25	MM	9:55 AM–3:35 PM	75°F–76°F; 0% cloud cover; 3–8 mph wind; Clear	
	8	2018-05-05	DS, EL	8:00 AM–3:35 PM	Air temp: 77°F–85°F; ground temp: 81°F–91°F; 0% cloud cover; 2–7 mph wind; clear	Survey included area 6
	9	2018-05-09	EL	8:00 AM–3:15 PM	Air temp: 78°F–90°F; ground temp: 78°F–95°F; 0%–10% cloud cover; 1–8 mph wind; clear	
	10	2018-05-13	JP	8:30 AM–4:00 PM	Air temp: 58°F–70°F; ground temp: 62°F–76°F; 0% cloud cover; 0–10 mph wind	
6	1	2018-03-19	CA, EB, PS	2:22 PM–4:31 PM	Air temp: 61°F–64°F; ground temp: 63°F–66°F; 10% cloud cover; 0–4 mph wind; clear	
	2	2018-03-21	CA, EB, PS	8:58 AM–11:30 AM	Air temp: 72°F–78°F; ground temp: 75°F; 10%–40% cloud cover; 0–5 mph wind; clear	
	3	2018-03-29	EB, PS	8:55 AM–12:30 PM	Air temp: 74°F–79°F; ground temp: 64°F–80°F; 0% cloud cover; 0–4 mph wind; clear	
	4 (Portion)	2018-04-02	CA, PS	1:31 PM–4:04 PM	Air temp: 67°F–70°F; ground temp: 69°F–72°F; 0% cloud cover; 0–16 mph wind; clear	
	4 (Finish)	2018-04-06	JP	9:15 AM–11:15 AM	Air temp: 64°F–74°F; ground temp: 62°F–74°F; 30%–40% cloud cover; 2–7 mph wind; patchy	
	5	2018-04-10	EB, PS	10:52 AM–3:00 PM	Air temp: 87°F–90°F; ground temp: 82°F–90°F; 10%–20% cloud cover; 0–4 mph wind; clear	
	6	2018-04-18	PL	8:20 AM–4:05 PM	Air temp: 61°F–65°F; ground temp: 60°F–64°F; 3–8 mph wind; clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	7	2018-04-20	TW	9:50 AM–5:30 PM	Air temp: 64°F–75°F; ground temp: 68°F–74°F; 0%–10% cloud cover; 0–3 mph wind; patchy to clear	
	8 (Portion)	2018-04-24	CA, PS	1:02 PM–5:20 PM	Air temp: 83°F–86°F; ground temp: 88°F; 20%–30% cloud cover; clear	
	8 (Finish)	2018-05-05	DS, EL	8:00 AM–3:35 PM	Air temp: 77°F–85°F; ground temp: 81°F–91°F; 0% cloud cover; 2–7 mph wind; clear	Survey included area 5
	9	2018-05-07	AH	10:28 AM–6:42 PM	Air temp: 78°F–79°F; ground temp: 76°F–83°F; 0% cloud cover; 3–8 mph wind	
	10	2018-05-11	MM	9:04 AM–2:02 PM	Air temp: 60°F–71°F; 2–13 mph wind; clear	
7	1	2018-03-13	CA, PS	10:29 AM–2:45 PM	Air temp: 70°F–71°F; ground temp: 72°F–74°F; 100% cloud cover; 0–3 mph wind; overcast	
	2 (Portion)	2018-03-19	AH, CA, PS	2:03 PM–5:15 PM	Air temp: 61°F–66°F; ground temp: 63°F–69°F; 10%–50% cloud cover; 2–8 mph wind; patchy	
	2 (Finish)	2018-03-20	CA, EB, PS	9:26 AM–12:20 PM	Air temp: 71°F–72°F; ground temp: 76°F; 0%–10% cloud cover; 0–10 mph wind; clear	
	3	2018-03-29	EB, PS	12:30 PM–4:03 PM	Air temp: 80°F–85°F; ground temp: 77°F–81°F; 0% cloud cover; 0–4 mph wind; clear	
	4	2018-04-04	PS	8:31 AM–3:28 PM	Air temp: 66°F–79°F; ground temp: 62°F–84°F; 20% cloud cover; 0–5 mph wind; patchy	
7, 8[b]	5 (Portion)	2018-04-10	EB, PS	2:37 PM–4:09 PM	Air temp: 90°F–94°F; ground temp: 90°F–92°F; 0%–10% cloud cover; 0–4 mph wind; clear	
	5 (Finish)	2018-04-11	EB	9:56 AM–4:09 PM	Air temp: 79°F–82°F; ground temp: 80°F–83.6°F; 0%–10% cloud cover; 0–3 mph wind; clear	
	6	2018-04-17	EB	8:58 AM–5:03 PM	Air temp: 67°F–84°F; ground temp: 67°F–85°F; 0% cloud cover; 0–3 mph wind; clear	
	7 (Portion)	2018-04-22	EB	9:39 AM–1:44 PM	Air temp: 75°F–83°F; ground temp: 79°F–85°F; 0% cloud cover; 0–2 mph wind; clear	
	7 (Finish)	2018-04-20	EB, PS	1:24 PM–4:01 PM	Air temp: 72°F–74°F; ground	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
					temp: 74°F–75°F; 0% cloud cover; 0–3 mph wind; clear	
	8	2018-04-27	TW	4:00 PM–8:15 AM	Air temp: 61°F–78°F; ground temp: 62°F–74°F; clear	
	9	2018-05-07	EB	9:04 AM–4:59 PM	Air temp: 73°F–74°F; ground temp: 76°F; 0%–20% cloud cover; 0–1 mph wind; clear	
	10[a]	2018-05-11	EL	8:15 AM–1:45 PM	Air temp: 60°F–70°F; ground temp: 63°F–72°F; 0%–10% cloud cover; 3–26 mph wind; clear	
8[b]	1	2018-03-19	AH	10:30 AM–2:00 PM	Air temp: 56°F–61°F; ground temp: 60°F–63°F; 20% cloud cover; 3–12 mph wind	
	2	2018-03-21	PL	8:30 AM–12:40 PM	Air temp: 62°F–71°F; ground temp: 60°F–73°F; 30%–40% cloud cover; 0–6 mph wind	
	3	2018-03-29	PL	8:30 AM–12:10 PM	Air temp: 72°F–75°F; ground temp: 67°F–71°F; 0% cloud cover; 0–5 mph wind; clear	
	4	2018-04-06	JP	11:30 AM–3:00 PM	Air temp: 74°F–78°F; ground temp: 75°F–80°F; 40%–70% cloud cover; 3–14 mph wind; patchy	

AH = Anita Hayworth (TE-781084-9.1); BO = Brock Ortega (TE-813545-6); CA = Callie Amoaku (TE-36118B-1); DS = Diana Saucedo (TE-221287-1); EB = Erin Bergman (TE-813545-5); EL = David Erik LaCoste (TE-027736-6); JP = Jeffrey Priest (TE-840619-6); MM = Margie Mulligan (TE-88969B-0); PL = Paul Lemons (TE-051248-5); PS = Patricia Schuyler (TE-27502B-1); SC = Shana Carey; TW = Tricia Wotipka (TE-840619-6).
N/A = not applicable; mph = miles per hour.
[a] Surveys terminated early due to non-protocol weather conditions.
[b] Survey area 8 was reduced to 7.7 acres after pass 4 and the remaining passes were completed in conjunction with survey area 7.

The biologists were provided with 200-scale (1 inch = 200 feet) aerial maps of the study area. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species. Surveys also focused on identifying Quino host plants; however, only dried host plants from last year were observed. Therefore, no host plants were mapped within the study area.

The survey methods consisted of slowly walking roughly parallel transects spaced approximately 30 feet (10 meters) apart throughout all suitable habitats within the 517-acre study area. The study area was divided into eight survey areas, ranging from 67 acres to 82 acres each (Figures 2 and 3). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10 acres per person hour. All wildlife species were recorded and are included in Appendix A.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; winds greater than 15 miles per hour measured 4–6 feet above ground level for more than 30 seconds; temperature in the shade at ground level less than 60°F on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the Quino survey are shown in Table 1. Copies of the surveyors' field notes are included as Appendix B.

Weather conditions varied throughout the survey season, and numerous surveys were postponed or ended early/began late due to high winds, cloud cover, and/or low temperatures. Because of these weather conditions, some areas were surveyed over 2 days to complete the survey. If a survey pass was missed due to sustained inclement weather, a makeup survey was performed on non-consecutive days the following week, in accordance with the 2014 USFWS protocol.

RESULTS

No Quino were observed during the 2018 focused surveys. A total of 33 butterfly species were observed during the surveys. The weeks in which these butterflies were observed are shown in Tables 2A and 2B.

Table 2A
Butterflies Observed on Site Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
Hesperiidae – Skippers						
Erynnis brizo	sleepy duskywing	—	—	—	—	—
Erynnis funeralis	funereal duskywing	X	X	X	X	X
Erynnis propertius	Propertius duskywing	—	—	—	X	X
Hylephila phyleus	fiery skipper	—	—	—	—	—
	duskywing sp.	—	—	—	—	X
Nymphalidae – Brush-Footed Butterflies						
Adelpha bredowii	California sister	—	—	—	—	—
Chlosyne californica	California patch	—	—	—	—	—
Chlosyne gabbii	Gabb's checkerspot	—	—	—	—	—
Danaus gilippus	queen	—	—	—	—	X
Limenitis lorquini	Lorquin's admiral	—	—	—	—	—
Nymphalis californica	California tortoiseshell	—	X	X	—	—
Vanessa cardui	painted lady	—	—	X	—	—
	lady sp.	X	X	—	—	—

Table 2A
Butterflies Observed on Site Weeks 1–5

Scientific Name	Common Name	Week				
		1	*2*	*3*	*4*	*5*
Lycaenidae – Blues and Hairstreaks						
Callophrys augustinus	brown elfin	—	—	X	X	X
Callophrys dumetorum	bramble hairstreak	X	X	X	X	X
Glaucopsyche lygdamus australis	southern blue	X	X	X	—	—
Icaricia acmon acmon	Acmon blue	—	X	X	X	X
Leptotes marina	marine blue	—	—	—	—	—
Philotes sonorensis	Sonoran blue	—	X	—	—	—
Strymon melinus	gray hairstreak	—	—	—	—	—
	blue sp.	X	—	—	X	X
Papilionidae – Swallowtails						
Papilio eurymedon	pale swallowtail	—	—	—	—	—
Papilio rutulus	western tiger swallowtail	X	X	X	—	X
Pieridae – Whites and Sulfurs						
Anthocharis cethura	desert orangetip	—	—	—	X	X
Anthocharis sara	Pacific Sara orangetip	X	X	X	X	X
Colias eurydice	California dogface	X	—	—	X	—
Colias eurytheme	orange sulphur	—	—	—	X	—
Euchloe hyantis lotta	desert pearly marble	—	—	X	X	X
Pontia protodice	checkered white	—	X	X	X	X
Pontia sisymbrii	spring white	—	—	—	X	X
	white sp.	—	X	—	—	—
	sulphur sp.	—	—	—	X	X
Riodinidae – Metalmarks						
Apodemia virgulti	Behr's metalmark	X	X	X	X	X

Table 2B
Butterflies Observed on Site Weeks 6–10

Scientific Name	Common Name	Week				
		6	*7*	*8*	*9*	*10*
Hesperiidae – Skippers						
Erynnis brizo	sleepy duskywing	—	X	—	—	—
Erynnis funeralis	funereal duskywing	X	X	X	X	—
Erynnis propertius	Propertius duskywing	X	X	X	—	X
Hylephila phyleus	fiery skipper	—	—	—	X	—

Table 2B
Butterflies Observed on Site Weeks 6–10

Scientific Name	Common Name	Week				
		6	*7*	*8*	*9*	*10*
	duskywing sp.	—	—	—	—	—
Nymphalidae – Brush-Footed Butterflies						
Adelpha bredowii	California sister	—	—	—	X	X
Chlosyne californica	California patch	—	X	—	—	—
Chlosyne gabbii	Gabb's checkerspot	—	X	X	—	—
Danaus gilippus	Queen	—	—	—	—	—
Limenitis lorquini	Lorquin's admiral	—	—	—	X	X
Nymphalis californica	California tortoiseshell	—	—	—	—	—
Vanessa cardui	painted lady	—	—	—	—	—
	lady sp.	—	X	—	—	—
Lycaenidae – Blues and Hairstreaks						
Callophrys augustinus	brown elfin	X	—	—	—	—
Callophrys dumetorum	bramble hairstreak	X	X	—	X	—
Glaucopsyche lygdamus australis	southern blue	X	X	—	X	—
Icaricia acmon acmon	Acmon blue	X	X	X	X	X
Leptotes marina	marine blue	—	—	—	—	—
Philotes sonorensis	Sonoran blue	—	—	—	—	—
Strymon melinus	gray hairstreak	—	—	—	X	—
	blue sp.	—	—	—	—	—
Papilionidae – Swallowtails						
Papilio eurymedon	pale swallowtail	X	X	X	X	—
Papilio rutulus	western tiger swallowtail	X	—	X	—	—
Pieridae – Whites and Sulfurs						
Anthocharis cethura	desert orangetip	X	—	—	—	—
Anthocharis sara	Pacific Sara orangetip	X	X	X	—	—
Colias eurydice	California dogface	—	—	—	—	—
Colias eurytheme	orange sulphur	—	—	—	—	—
Euchloe hyantis lotta	desert pearly marble	X	X	X	X	—
Pontia protodice	checkered white	X	—	—	—	—
Pontia sisymbrii	spring white	X	X	X	—	X
	white sp.	X	X	—	X	—
	sulphur sp.	—	—	—	—	—
Riodinidae – Metalmarks						
Apodemia virgulti	Behr's metalmark	X	X	X	X	X

No Quino larval host plants were observed within the study area during the habitat assessment or focused surveys. Table 3 includes the known and observed adult Quino nectar plants (according to Mattoni et al. 1997; USFWS 2002, 2003; 67 FR 18355–18395). Larval host plants are also included in Table 3 and are shown in bold print. All plant species that were in bloom were documented in the field notes.

Table 3
Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
Apiaceae – Carrot Family		
Lomatium dasycarpum ssp. *dasycarpum*	woolly-fruit lomatium	X
Lomatium utriculatum	common lomatium	—
Asteraceae – Sunflower Family		
Achillea millefolium	common yarrow, milfoil	—
Lasthenia californica or *Lasthenia gracilis*	common goldfields	X
Lasthenia coronaria	southern goldfields	—
Layia platyglossa	coastal tidytips, common tidytips	—
Boraginaceae – Borage Family		
Amsinckia menziesii	Menzies' fiddleneck, rancher's fireweed	—
Amsinckia menziesii var. *intermedia*	rancher's fiddleneck	—
Amsinckia menziesii var. *menziesii*	rigid fiddleneck	—
Cryptantha spp. or *Plagiobothrys* spp.	popcorn flower	X
Phacelia distans	distant phacelia, wild-heliotrope	—
Fabaceae – Pea Family		
Acmispon (=Lotus) spp.	deerweed, spanishclover, lotus	—
Hydrophyllaceae – Waterleaf Family		
Eriodictyon crassifolium var. *crassifolium*	thickleaf yerba santa	—
Eriodictyon trichocalyx var. *trichocalyx*	hairy yerba santa	—
Lamiaceae – Mint Family		
Salvia columbariae	chia	X
Plantaginaceae – Plantain Family		
Antirrhinum coulterianum	**Coulter's snapdragon**	—
***Collinsia* sp.**	**Chinese houses**	—
Keckiella antirrhinoides var. *antirrhinoides*	snapdragon penstemon	—
Keckiella cordifolia	heartleaf keckiella, climbing bush penstemon	—
Plantago erecta	**dwarf plantain**	—
Plantago patagonica	**woolly plantain**	—

Table 3
Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
Polemoniaceae – Phlox Family		
Gilia angelensis	grassland gilia	—
Gilia capitata ssp. *abrotanifolia*	ball gilia	—
Linanthus spp.	ground pink	X
Polygonaceae – Buckwheat Family		
Eriogonum fasciculatum	California buckwheat	—
Orobanchaceae – Broom-Rape Family		
Castilleja exserta	**exserted Indian paintbrush, common owl's-clover**	—
Scrophulariaceae – Figwort Family		
Cordylanthus rigidus* ssp. *setiger	**stiffbranch birds beak, dark-tipped bird's-beak**	—
Liliaceae – Lily Family		
Allium haematochiton	redskin onion	—
Allium peninsulare	Mexicali onion, red-flower onion	—
Allium praecox	early onion	—
Bloomeria clevelandii	San Diego goldenstar	—
Dichelostemma capitatum	bluedicks	—
Muilla maritima	sea muilla, common muilla	—

Sources: List derived from Mattoni et al. 1997; USFWS 2002, 2003; 67 FR 18355–18395 (for *Euphydryas editha*).
Note: Plants listed in **bold print** are known Quino larval host plant species.

Dudek certifies that the information in this survey report and the attached figures and appendices fully and accurately represents the work conducted by the Quino-permitted biologists who conducted this focused survey.

Please feel free to contact Brock Ortega at bortega@dudek.com or Callie Amoaku at cford@dudek.com if you have any questions regarding the contents of this report.

Sincerely,

Anita Hayworth Permit #TE-781084-9.1	Brock Ortega Permit #TE-813545-6	Callie Amoaku Permit #TE-36118B-1	David Erik LaCoste Permit #TE-027736-6
Diana Saucedo Permit #TE-221287-1	Erin Bergman Permit #TE-813545-5	Jeffrey Priest Permit #TE-840619-6	Margie Mulligan Permit #TE-88969B-0
Patricia Schuyler Permit #TE-27502B-1	Paul Lemons Permit #TE-051248-5	Tricia Wotipka Permit #TE-840619-6	

Att: Figure 1, Survey Results – Index Map
Figure 2, Survey Results
Figure 3, Survey Results
Appendix A – List of Wildlife Species Observed during the 2018 Torrey Wind Project Quino Survey
Appendix B – 2018 Torrey Wind Project Quino Survey Field Notes

cc: Brock Ortega, Dudek
Matthew Valerio, Dudek

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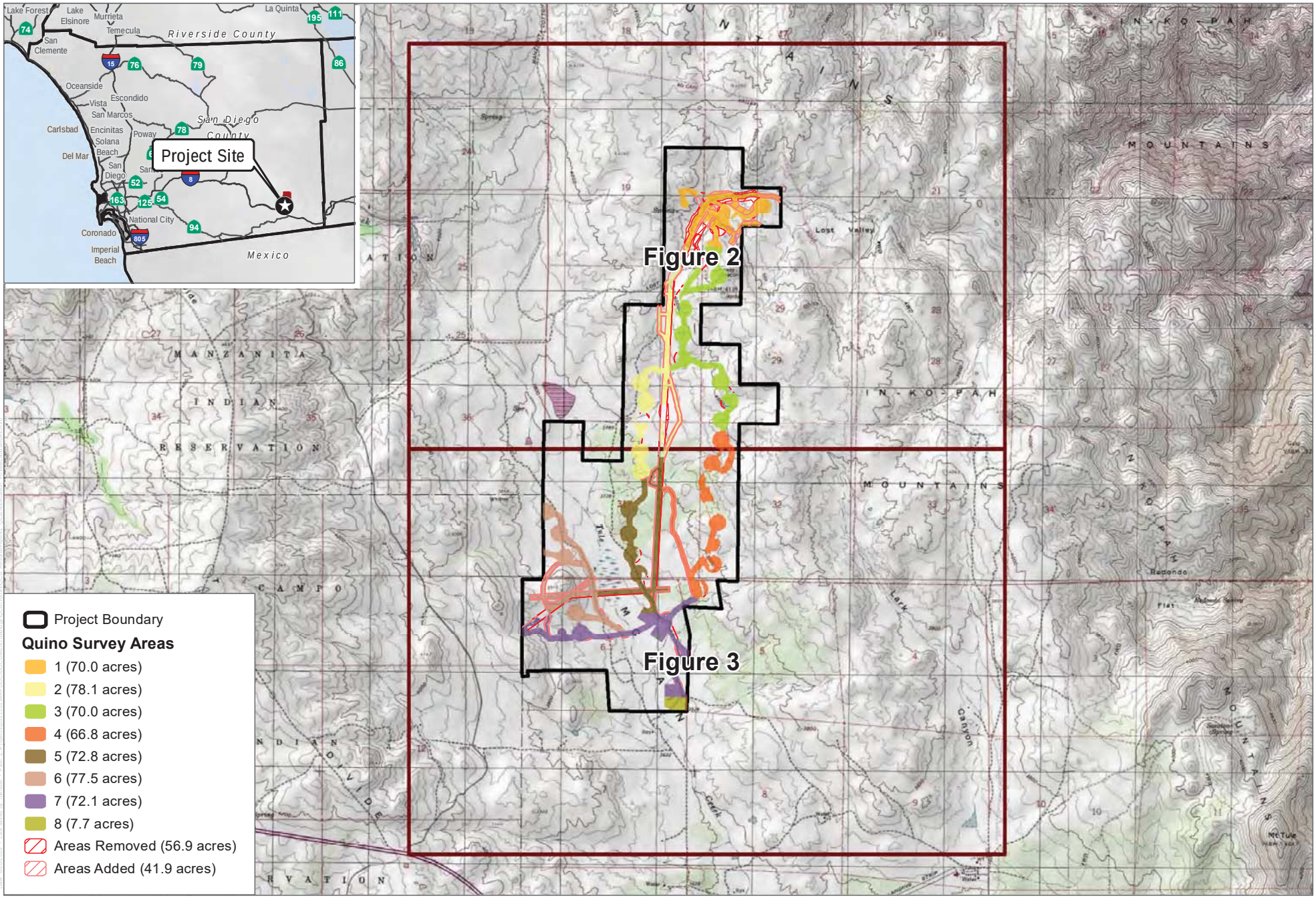


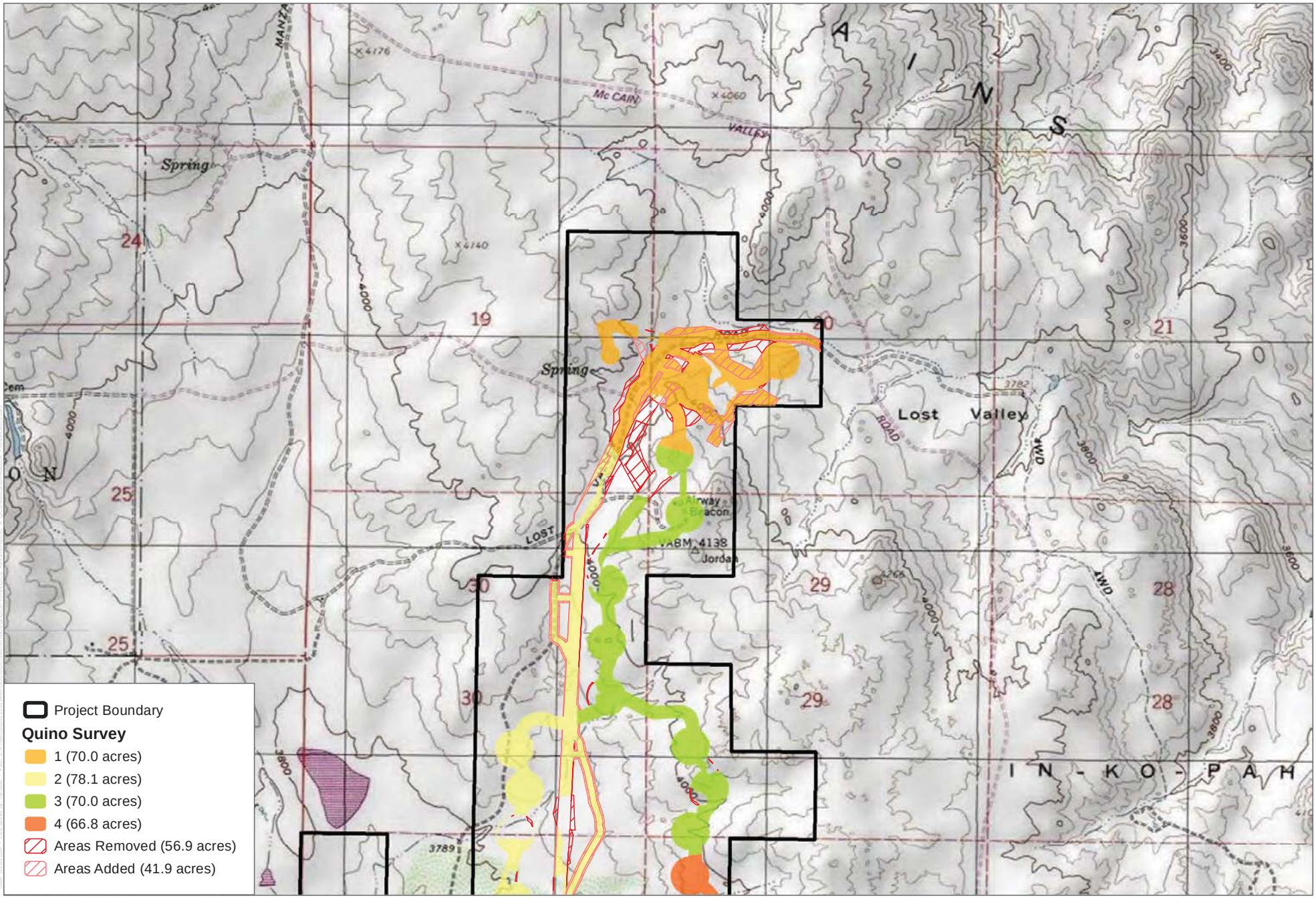
SOURCE: USGS 2018

DUDEK

FIGURE 1

Survey Results - Index

Torrey Wind Project - Results of 2018 Quino Checkerspot Survey



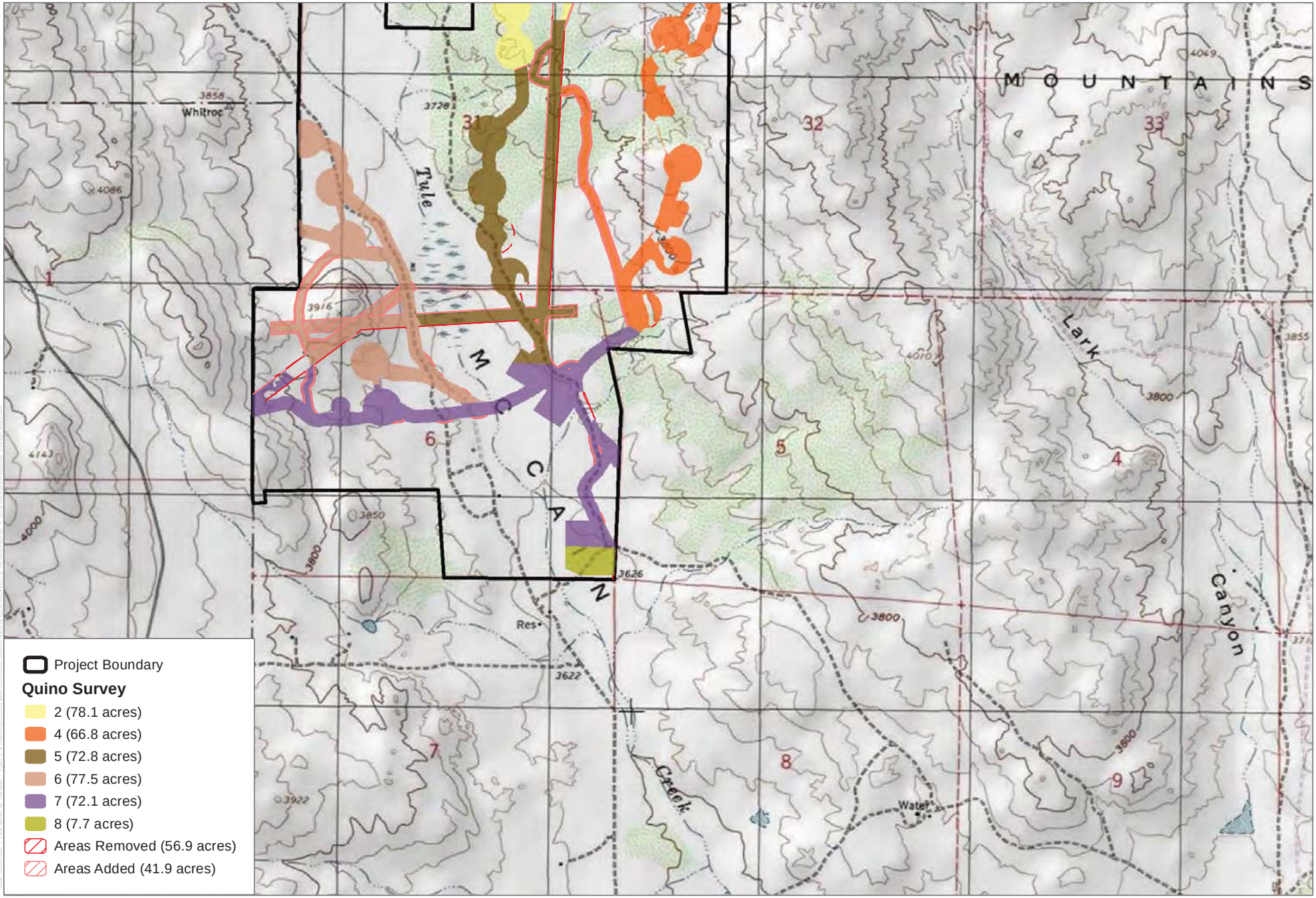
SOURCE: USGS 2018

DUDEK

FIGURE 2

Survey Results

Torrey Wind Project - Results of 2018 Quino Checkerspot Survey



SOURCE: USGS 2018

DUDEK

0 1,000 2,000 Feet

FIGURE 3

Survey Results

Torrey Wind Project - Results of 2018 Quino Checkerspot Survey

APPENDIX A

List of Wildlife Species Observed during the 2018 Torrey Wind Project Quino Survey

APPENDIX A
List of Wildlife Species Observed during the 2018 Torrey Wind Project Quino Survey

BIRD

BLACKBIRDS, ORIOLES, AND ALLIES

ICTERIDAE—BLACKBIRDS

Icterus bullockii—Bullock's oriole
Icterus cucullatus—hooded oriole
Icterus parisorum—Scott's oriole
Sturnella neglecta—western meadowlark
* *Molothrus ater*—brown-headed cowbird

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

CARDINALS, GROSBEAKS, AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black-headed grosbeak
Piranga ludoviciana—western tanager

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch
Spinus lawrencei—Lawrence's goldfinch
Spinus psaltria—lesser goldfinch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee
Empidonax difficilis—Pacific-slope flycatcher
Myiarchus cinerascens—ash-throated flycatcher
Sayornis nigricans—black phoebe

Sayornis saya—Say's phoebe
Tyrannus verticalis—western kingbird
Tyrannus vociferans—Cassin's kingbird

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk
Buteo jamaicensis—red-tailed hawk
Buteo lineatus—red-shouldered hawk

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird
Calypte costae—Costa's hummingbird
Selasphorus rufus—rufous hummingbird

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—California scrub-jay
Corvus brachyrhynchos—American crow
Corvus corax—common raven
Cyanocitta stelleri—Steller's jay

LARKS

ALAUDIDAE—LARKS

Eremophila alpestris—horned lark

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird
Oreoscoptes montanus—sage thrasher
Toxostoma redivivum—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

NEW WORLD VULTURES

CATHARTIDAE—NEW WORLD VULTURES

Cathartes aura—turkey vulture

OLD WORLD WARBLERS AND GNATCATCHERS

SYLVIIDAE—SYLVIID WARBLERS

Polioptila caerulea—blue-gray gnatcatcher

OWLS

TYTONIDAE—BARN OWLS

Tyto alba—barn owl

STRIGIDAE—TYPICAL OWLS

Bubo virginianus—great horned owl

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

* *Streptopelia decaocto*—Eurasian collared-dove

QUAILS, PHEASANTS, AND RELATIVES

PHASIANIDAE—PARTRIDGES, GROUSE, TURKEYS, AND OLD WORLD QUAIL

Meleagris gallopavo—wild turkey

ROADRUNNERS AND CUCKOOS

CUCULIDAE—CUCKOOS, ROADRUNNERS, AND ANIS

Geococcyx californianus—greater roadrunner

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

STARLINGS AND ALLIES

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Petrochelidon pyrrhonota—cliff swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis—white-throated swift

THRUSHES

TURDIDAE—THRUSHES

Sialia mexicana—western bluebird

TITMICE

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus—oak titmouse

VIREOS

VIREONIDAE—VIREOS

Vireo gilvus—warbling vireo

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Cardellina pusilla—Wilson's warbler
Oreothlypis celata—orange-crowned warbler
Setophaga coronata—yellow-rumped warbler
Setophaga occidentalis—hermit warbler
Setophaga townsendi—Townsend's warbler

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Colaptes auratus—northern flicker
Melanerpes formicivorus—acorn woodpecker
Picoides nuttallii—Nuttall's woodpecker
Picoides scalaris—ladder-backed woodpecker

WRENS

TROGLODYTIDAE—WRENS

Campylorhynchus brunneicapillus—cactus wren
Salpinctes obsoletus—rock wren
Thryomanes bewickii—Bewick's wren
Troglodytes aedon—house wren

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

NEW WORLD SPARROWS

PASSERELLIDAE—NEW WORLD SPARROWS

Amphispiza bilineata—black-throated sparrow
Artemisiospiza nevadensis—sagebrush sparrow
Junco hyemalis—dark-eyed junco
Melospiza melodia—song sparrow
Melozone crissalis—California towhee
Pipilo maculatus—spotted towhee
Spizella atrogularis—black-chinned sparrow
Spizella breweri—Brewer's sparrow
Spizella passerina—chipping sparrow
Zonotrichia leucophrys—white-crowned sparrow

INVERTEBRATE

BUTTERFLIES

LYCAENIDAE—BLUES, HAIRSTREAKS, AND COPPERS

Callophrys augustinus—brown elfin
Callophrys dumetorum—bramble hairstreak
Glaucopsyche lygdamus australis—southern blue
Icaricia acmon acmon—Acmon blue
Philotes sonorensis—Sonoran blue
Strymon melinus—gray hairstreak

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Adelpha bredowii—California sister

Chlosyne californica—California patch
Chlosyne gabbii—Gabb's checkerspot
Danaus gilippus—queen
Limenitis lorquini—Lorquin's admiral
Nymphalis californica—California tortoiseshell
Vanessa annabella—west coast lady
Vanessa cardui—painted lady

RIODINIDAE—METALMARKS

Apodemia mormo virgulti—Behr's metalmark

HESPERIIDAE—SKIPPERS

Erynnis brizo—sleepy duskywing
Erynnis funeralis—funereal duskywing
Erynnis propertius—Propertius duskywing
Hylephila phyleus—fiery skipper

PAPILIONIDAE—SWALLOWTAILS

Papilio eurymedon—pale swallowtail
Papilio rutulus—western tiger swallowtail

PIERIDAE—WHITES AND SULFURS

Anthocharis cethura—desert orangetip
Anthocharis sara sara—Pacific sara orangetip
Colias eurydice—California dogface
Colias eurytheme—orange sulphur
Euchloe hyantis lotta—desert pearly marble
Pontia protodice—checkered white
Pontia sisymbrii—spring white

MAMMAL

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

CATS

FELIDAE—CATS

Lynx rufus—bobcat

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit
Lepus californicus—black-tailed jackrabbit
Sylvilagus audubonii—desert cottontail
Sylvilagus bachmani—brush rabbit

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

SQUIRRELS

SCIURIDAE—SQUIRRELS

Ammospermophilus leucurus—white-tailed antelope squirrel
Spermophilus (Otospermophilus) beecheyi—California ground squirrel
Tamias merriami—Merriam's chipmunk
Tamias obscurus—California chipmunk

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

RATS, MICE, AND VOLES

CRICETIDAE—RATS, MICE, AND VOLES

Neotoma sp.—woodrat

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Callisaurus draconoides—zebra-tailed lizard
Phrynosoma blainvillii—Blainville's horned lizard
Sceloporus occidentalis—western fence lizard
Sceloporus orcutti—granite spiny lizard
Uta stansburiana—common side-blotched lizard

ANGUIDAE—ALLIGATOR LIZARDS

Elgaria multicarinata—southern alligator lizard

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail

SNAKES

COLUBRIDAE—COLUBRID SNAKES

Coluber lateralis—striped racer

Pituophis catenifer—gophersnake

VIPERIDAE—VIPERS

Crotalus oreganus—western rattlesnake

* Signifies introduced (non-native) species

APPENDIX B

2018 Torrey Wind Project Quino Survey
Field Notes

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-12
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 1, Private 3
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:45:00	62	70	40	2	clear	
2	11:45:00	75	77	20	2	clear	
3	13:06:00	72	76	20	2	patchy	
4	14:56:00	74	78	40	2	patchy	
End	16:50:00	71	74	50	1	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (19)	Lady sp. (1+)	western tiger swallowtail (1)
bramble hairstreak (9)	Pacific sara orangetip (4)	
funereal duskywing (5)	southern blue (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-09
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 2, Private 5
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:04:00	66	70	30	2	clear	
1100	11:00:00	76	79	30	4	clear	Gusts 10mph
1300	13:00:00	72	76	40	5	patchy	Gusts 10mph
1430	14:30:00	73	76	60	10	patchy	Gusts 15mph
End	15:30:00	68	70	80	12	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (30)	bramble hairstreak (2)	southern blue (1)
Blue sp. (1+)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-09
Biologist(s)	Jeffrey Priest
Survey Area	Private 4
Survey Pass	1

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:30:00	74	70	30	10	patchy	
End	16:30:00	64	68	90	10		Conditions at 4:00 pm: air 66, wind 8-12 with gusts 8-15 mph, could cover 90%.

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (3)	Pacific sara orangetip (8)	west coast lady (1)
funereal duskywing (1)	southern blue (3)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Bewick's wren (1+)	California towhee (1+)	mourning dove (1+)
Botta's pocket gopher (1+)	common raven (1+)	mule deer (1+)
bushtit (1+)	common side-blotched lizard (1+)	northern flicker (1+)
California chipmunk (1+)	coyote (1+)	phainopepla (1+)
California ground squirrel (1+)	greater roadrunner (1+)	red-tailed hawk (1+)
California scrub-jay (1+)	house finch (1+)	turkey vulture (1+)
California thrasher (1+)	lesser goldfinch (1+)	western meadowlark (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-13
Biologist(s)	Jeffrey Priest
Survey Area	Private 4
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:40:00	70	74	100	3		Protocol temperatures reached at 1040. Previous conditions: 0940, air 64 F, ground 66 F, 100% cc. 1000, air 64 F, ground 66 F, 100% cc. 1017, air 68 F, ground 68 F, 100% cc.
End	12:10:00	74	76	100	3		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (3)	bramble hairstreak (1)	Pacific sara orangetip (7)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	California ground squirrel (1+)	mourning dove (1+)
American crow (1+)	California quail (1+)	mule deer (1+)
Anna's hummingbird (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
black-tailed jackrabbit (1+)	common raven (1+)	turkey vulture (1+)
Botta's pocket gopher (1+)	coyote (1+)	western meadowlark (1+)
brush rabbit (1+)	house finch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 6
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:22:00	64	66	10	4	clear	
End	16:31:00	61	63	10	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (7)	funereal duskywing (1)	southern blue (1)
bramble hairstreak (5)	Pacific sara orangetip (1)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
song sparrow (1+)	California quail (1+)	red-tailed hawk (1+)
American kestrel (1+)	California scrub-jay (1+)	turkey vulture (1+)
black-throated sparrow (1+)	common raven (1+)	western meadowlark (1+)
bobcat (1+)	phainopepla (1+)	
bushtit (1+)	red-shouldered hawk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-13
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 7
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:29:00	71	74	100	0	overcast	
2	11:43:00	70	73	100	2	overcast	
3	13:38:00	76	75	100	2	overcast	
End	14:44:00	70	72	100	3	overcast	
End	14:45:00	72	70	100	5	overcast	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (15)	California dogface (2)	Pacific sara orangetip (19)
Blue sp. (1+)	funereal duskywing (6)	southern blue (4)
bramble hairstreak (6)	Lady sp. (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Anita Hayworth
Survey Area	Private 8
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:30:00	56	60	20	12		
End	14:00:00	61	63	20	8		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (4)	funereal duskywing (1)	western bluebird (1+)
bramble hairstreak (3)	Pacific sara orangetip (4)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California towhee (1+)	northern flicker (1+)
black-tailed jackrabbit (1+)	common raven (1+)	western fence lizard (1+)
black phoebe (1+)	European starling (1+)	white-crowned sparrow (1+)
bushtit (1+)	house finch (1+)	
California scrub-jay (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 1
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:27:00	55	55	20	4	clear	Still too cold to start
End	10:43:00	57	57	20	5	clear	Still cold
End	11:41:00	59.7	66	10	9	clear	Start 11:42
End	12:46:00	62	68	10	10	clear	
End	14:19:00	64		10	10	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (15)	funereal duskywing (3)	
bramble hairstreak (14)	Pacific sara orangetip (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
song sparrow (1+)	California quail (1+)	phainopepla (1+)
black-throated sparrow (1+)	California scrub-jay (1+)	wrentit (1+)
bushtit (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-20
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 2
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:38:00	75	0		5		
End	17:19:00	70	0	10	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (54)	funereal duskywing (1)	White species (1)
bramble hairstreak (9)	Pacific sara orangetip (3)	
California tortoiseshell (1)	southern blue (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California scrub-jay (1+)	coyote (1+)	wrentit (1+)
chipping sparrow (1+)	mule deer (1+)	
common raven (1+)	red-tailed hawk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-21
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 3
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:40:00	70	73	20	2	clear	Warm day
End	14:00:00	74	77	0	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (56)	checkered white (2)	western bluebird (1+)
bramble hairstreak (19)	Pacific sara orangetip (8)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California scrub-jay (1+)	red-tailed hawk (1+)	white-tailed antelope squirrel (1+)
chipping sparrow (1+)	spotted towhee (1+)	wrentit (1+)
common raven (1+)	turkey vulture (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-21
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 4
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:00:00	74	77	50	3	patchy	
2	15:04:00	75	80	90	3	overcast	
End	16:35:00	70	74	90	3	overcast	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (37)	checkered white (2)	
bramble hairstreak (8)	Pacific sara orangetip (8)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
oak titmouse (1+)	California towhee (1+)	turkey vulture (1+)
black-tailed jackrabbit (1+)	chipping sparrow (1+)	white-tailed antelope squirrel (1+)
bushtit (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-20
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 5
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	00:20:00	73	0	0	8	clear	
End	14:38:00	75	76	50	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (22)	funereal duskywing (4)	Sonoran blue (1)
bramble hairstreak (4)	Lady sp. (1+)	
California tortoiseshell (1)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
black-tailed jackrabbit (1+)	common raven (1+)	mule deer (1+)
bushtit (1+)	common side-blotched lizard (1+)	western meadowlark (1+)
California ground squirrel (1+)	greater roadrunner (1+)	
California scrub-jay (1+)	house finch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-21
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 6
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:58:00	72	75	40	5	clear	
End	11:30:00	78	0	10	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (2)	checkered white (6)	western bluebird (1+)
Behr's metalmark (28)	Pacific sara orangetip (4)	western tiger swallowtail (2)
bramble hairstreak (5)	southern blue (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	dark-eyed junco (1+)	southern alligator lizard (1+)
acorn woodpecker (1+)	granite spiny lizard (1+)	western meadowlark (1+)
Bewick's wren (1+)	northern flicker (1+)	wrentit (1+)
California quail (1+)	Nuttall's woodpecker (1+)	yellow-rumped warbler (1+)
California scrub-jay (1+)	phainopepla (1+)	
California towhee (1+)	red-tailed hawk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Anita Hayworth
Survey Area	Private 7
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:03:00	61	63	10	5		
End	16:04:00	61	63	50	8		

BUTTERFLY LIST *SPECIES (COUNT)*		
Pacific sara orangetip (1+)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California thrasher (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 7
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	16:40:00	66	69	30	3	patchy	
End	17:15:00	64	67	30	3	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	Lady sp (1)	Pacific sara orangetip (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-20
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 7
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:26:00	71		10	9	clear	
End	12:20:00	72		0	10	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (25)	funereal duskywing (2)	
bramble hairstreak (6)	Pacific sara orangetip (8)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California quail (1+)	phainopepla (1+)
song sparrow (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	common side-blotched lizard (1+)	
bushtit (1+)	northern flicker (1+)	

INCIDENTAL PLANT LIST		
Deinandra floribunda		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-21
Biologist(s)	Paul Lemons
Survey Area	Private 8
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	62	60	40	3		
End	12:40:00	71	73	30	6		

BUTTERFLY LIST *SPECIES (COUNT)*		
bramble hairstreak (1+)	funereal duskywing (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	California towhee (1+)	rock wren (1+)
American kestrel (1+)	Cassin's kingbird (1+)	white-crowned sparrow (1+)
Botta's pocket gopher (1+)	common raven (1+)	woodrat (1+)
bushtit (1+)	desert cottontail (1+)	wrentit (1+)
California quail (1+)	Eurasian collared-dove (1+)	
California scrub-jay (1+)	European starling (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-28
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 1
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	65	0	0	4		
End	12:45:00	74	0	0	4		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (25)	funereal duskywing (2)	painted lady (2)
bramble hairstreak (9)	Pacific sara orangetip (9)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
black-throated sparrow (1+)	chipping sparrow (1+)	turkey vulture (1+)
California quail (1+)	common raven (1+)	
California scrub-jay (1+)	phainopepla (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-30
Biologist(s)	Callie Amoaku, Erin Bergman
Survey Area	Private 2
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:55:00	73	70	0	1	clear	
2	10:40:00	87	92	0	2	clear	
End	12:38:00	84	83	0	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (134)	California tortoiseshell (1)	funereal duskywing (3)
bramble hairstreak (13)	checkered white (11)	Pacific sara orangetip (35)
brown elfin (1)	desert pearly marble (8)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Cooper's hawk (1+)	California towhee (1+)	spotted towhee (1+)
Bewick's wren (1+)	chipping sparrow (1+)	wrentit (1+)
California quail (1+)	common raven (1+)	
California scrub-jay (1+)	red-tailed hawk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-28
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 3
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:47:00	75	75	0	3	clear	
End	16:17:00	78	76	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (43)	funereal duskywing (1)	
bramble hairstreak (12)	Pacific sara orangetip (12)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California quail (1+)	California scrub-jay (1+)	California towhee (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-28
Biologist(s)	Paul Lemons
Survey Area	Private 4
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	64	60	0	2	clear	
End	15:10:00	73	70	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	bramble hairstreak (1+)	Pacific sara orangetip (1+)
blue-gray gnatcatcher (1+)	funereal duskywing (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Bewick's wren (1+)	dark-eyed junco (1+)	northern flicker (1+)
bushtit (1+)	granite spiny lizard (1+)	sage thrasher (1+)
California quail (1+)	greater roadrunner (1+)	western fence lizard (1+)
California scrub-jay (1+)	house finch (1+)	white-crowned sparrow (1+)
California thrasher (1+)	ladder-backed woodpecker (1+)	wrentit (1+)
common raven (1+)	Merriam's chipmunk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-30
Biologist(s)	Callie Amoaku, Erin Bergman
Survey Area	Private 5
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:45:00	84	83	0	2	clear	
End	16:18:00	84.9	82.5	50	3	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (52)	brown elfin (4)	Sulphur sp. (1+)
blue-gray gnatcatcher (1+)	desert pearly marble (7)	
bramble hairstreak (11)	Pacific sara orangetip (18)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	dark-eyed junco (1+)	western kingbird (1+)
bushtit (1+)	gophersnake (1+)	western rattlesnake (1+)
California scrub-jay (1+)	greater roadrunner (1+)	white-crowned sparrow (1+)
California towhee (1+)	mule deer (1+)	white-tailed antelope squirrel (1+)
chipping sparrow (1+)	northern mockingbird (1+)	
common raven (1+)	spotted towhee (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-29
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 6
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:55:00	74	64	0	4	clear	
End	12:30:00	79	80	0	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (5)	funereal duskywing (1)	western tiger swallowtail (1)
Behr's metalmark (48)	Pacific sara orangetip (27)	
bramble hairstreak (8)	southern blue (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
American kestrel (1+)	California scrub-jay (1+)	western kingbird (1+)
Bewick's wren (1+)	phainopepla (1+)	western meadowlark (1+)
California quail (1+)	red-tailed hawk (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-29
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 7
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:30:00	80	77	0	3	clear	
End	16:03:00	85	81	0	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (37)	brown elfin (1)	Pacific sara orangetip (21)
bramble hairstreak (9)	desert pearly marble (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California towhee (1+)	turkey vulture (1+)
acorn woodpecker (1+)	chipping sparrow (1+)	western fence lizard (1+)
California quail (1+)	common raven (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
Cordylanthus rigidus		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-29
Biologist(s)	Paul Lemons
Survey Area	Private 8
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	72	67	0	1	clear	
End	12:10:00	75	71	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
checkered white (1+)	funereal duskywing (1+)	Pacific sara orangetip (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	common raven (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	desert cottontail (1+)	western fence lizard (1+)
American kestrel (1+)	Eurasian collared-dove (1+)	western kingbird (1+)
brown-headed cowbird (1+)	European starling (1+)	white-crowned sparrow (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	wrentit (1+)
California quail (1+)	greater roadrunner (1+)	
California scrub-jay (1+)	mourning dove (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-02
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 1
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:06:00	58	63	0	1	clear	
2	10:28:00	68	70	0	8	clear	
End	13:14:00	73	71	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (64)	brown elfin (2)	Pacific sara orangetip (31)
blue-gray gnatcatcher (1+)	checkered white (3)	Sulphur sp. (1+)
bramble hairstreak (10)	desert pearly marble (11)	White sp. (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
bushtit (1+)	California quail (1+)	red-tailed hawk (1+)
cactus wren (1+)	California scrub-jay (1+)	

INCIDENTAL PLANT LIST		
Cryptantha micrantha		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-05
Biologist(s)	Jeffrey Priest
Survey Area	Private 2
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	67	65	0	8	clear	
End	16:30:00	75	77	30	12	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (25)	funereal duskywing (2)	spring white (2)
bramble hairstreak (7)	orange sulphur (1)	western bluebird (1+)
brown elfin (4)	Pacific sara orangetip (14)	
desert orangetip (2)	Propertius duskywing (3)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	common side-blotched lizard (1+)	Merriam's chipmunk (1+)
black-headed grosbeak (1+)	dark-eyed junco (1+)	mourning dove (1+)
black-tailed jackrabbit (1+)	desert cottontail (1+)	mule deer (1+)
Botta's pocket gopher (1+)	granite spiny lizard (1+)	red-tailed hawk (1+)
California scrub-jay (1+)	greater roadrunner (1+)	rock wren (1+)
California thrasher (1+)	house finch (1+)	turkey vulture (1+)
California towhee (1+)	K-rat sp. (burrows and tail-drag sign) (1+)	white-crowned sparrow (1+)
common raven (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-05
Biologist(s)	Paul Lemons
Survey Area	Private 3
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	67	65	0	4		
	13:15:00	80	82	20	10		
End	16:00:00	78	79	30	10		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	checkered white (1+)	Propertius duskywing (1+)
blue-gray gnatcatcher (1+)	desert orangetip (1+)	western bluebird (1+)
brown elfin (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
black-headed grosbeak (1+)	dark-eyed junco (1+)	red-tailed hawk (1+)
bushtit (1+)	desert cottontail (1+)	rock wren (1+)
California ground squirrel (1+)	greater roadrunner (1+)	western fence lizard (1+)
California scrub-jay (1+)	mourning dove (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-05
Biologist(s)	Tricia Wotipka
Survey Area	Private 4
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	68	0	0	3		
End	16:30:00	80	0	20	5		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	funereal duskywing (1+)	
bramble hairstreak (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
bushtit (1+)	common side-blotched lizard (1+)	Merriam's chipmunk (1+)
California quail (1+)	dark-eyed junco (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	granite spiny lizard (1+)	wrentit (1+)
California thrasher (1+)	greater roadrunner (1+)	
common raven (1+)	house finch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-03
Biologist(s)	Anita Hayworth
Survey Area	Private 5
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:40:00	61	63	20	5		
End	16:20:00	74	76	20	8		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	funereal duskywing (1+)	western bluebird (1+)
bramble hairstreak (1+)	Pacific sara orangetip (1+)	
desert pearly marble (1+)	spring white (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
black-chinned sparrow (1+)	California towhee (1+)	phainopepla (1+)
Blainville's horned lizard (1+)	common raven (1+)	red-tailed hawk (1+)
Brewer's sparrow (1+)	dark-eyed junco (1+)	rock wren (1+)
oak titmouse (1+)	desert cottontail (1+)	Scott's oriole (1+)
acorn woodpecker (1+)	European starling (1+)	Townsend's warbler (1+)
Bewick's wren (1+)	greater roadrunner (1+)	warbling vireo (1+)
black-throated sparrow (1+)	house finch (1+)	western fence lizard (1+)
bushtit (1+)	lesser goldfinch (1+)	western kingbird (1+)
California ground squirrel (1+)	mourning dove (1+)	western meadowlark (1+)
California quail (1+)	northern flicker (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	orange-crowned warbler (1+)	wrentit (1+)
California thrasher (1+)	Pacific-slope flycatcher (1+)	yellow-rumped warbler (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-02
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 6
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:31:00	67	69	0	8	clear	
End	16:04:00	70	72	0	16	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (4)	bramble hairstreak (8)	desert pearly marble (3)
Behr's metalmark (28)	brown elfin (2)	Pacific sara orangetip (6)
blue-gray gnatcatcher (1+)	checkered white (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
bushtit (1+)	lesser goldfinch (1+)	spotted towhee (1+)
California scrub-jay (1+)	northern flicker (1+)	western meadowlark (1+)
common raven (1+)	Nuttall's woodpecker (1+)	

INCIDENTAL PLANT LIST		
Ericameria sp.	***Cryptantha micrantha***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-06
Biologist(s)	Jeffrey Priest
Survey Area	Private 6
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:15:00	64	62	30	7	patchy	
End	11:15:00	74	74	40	7	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (3)	brown elfin (2)	Pacific sara orangetip (2)
Behr's metalmark (22)	checkered white (9)	Propertius duskywing (1)
bramble hairstreak (2)	desert orangetip (1)	spring white (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	common side-blotched lizard (1+)	Neotoma sp. (midden) (1+)
American crow (1+)	coyote (1+)	northern flicker (1+)
American kestrel (1+)	dark-eyed junco (1+)	red-tailed hawk (1+)
black-tailed jackrabbit (1+)	granite spiny lizard (1+)	turkey vulture (1+)
Botta's pocket gopher (1+)	lesser goldfinch (1+)	western kingbird (1+)
California quail (1+)	Merriam's chipmunk (1+)	western meadowlark (1+)
California scrub-jay (1+)	mourning dove (1+)	white-crowned sparrow (1+)
common raven (1+)	mule deer (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-04
Biologist(s)	Patricia Schuyler
Survey Area	Private 7
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:31:00	66	62	20	2	patchy	
End	15:28:00	79	84	20	5	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	bramble hairstreak (2)	Pacific sara orangetip (9)
Behr's metalmark (56)	California dogface (1)	
Blue sp (2)	desert pearly marble (15)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
San Diego black-tailed jackrabbit (1+)	European starling (1+)	red-tailed hawk (1+)
California scrub-jay (1+)	mourning dove (1+)	western kingbird (1+)
common raven (1+)	mule deer (1+)	western rattlesnake (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-06
Biologist(s)	Jeffrey Priest
Survey Area	Private 8
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:30:00	74	75	40	12	patchy	
End	15:00:00	78	80	70	14		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (11)	checkered white (2)	Pacific sara orangetip (2)
bramble hairstreak (2)	funereal duskywing (1)	Propertius duskywing (2)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
American crow (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
Botta's pocket gopher (1+)	desert cottontail (1+)	spotted towhee (1+)
California quail (1+)	European starling (1+)	turkey vulture (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	white-crowned sparrow (1+)
California towhee (1+)	mourning dove (1+)	
common raven (1+)	northern mockingbird (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-14
Biologist(s)	Callie Amoaku, Erin Bergman
Survey Area	Private 1
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:09:00	69	70	0	3	clear	
End	11:10:00	71	72	0	4	clear	Temp check
End	13:18:00	72	74	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (64)	bramble hairstreak (1)	Pacific sara orangetip (24)
blue-gray gnatcatcher (1+)	desert pearly marble (7)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California quail (1+)	chipping sparrow (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	phainopepla (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	***Ericameria linearifolia***	***Oenothera californica***
Ceanothus perplexans	***Garrya veatchii***	***Rhus aromatica***
Chenopodium californicum	***Leptosiphon lemmonii***	
Cryptantha micrantha	***Lupinus concinnus***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-09
Biologist(s)	Paul Lemons
Survey Area	Private 2
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	76	75	0	4		
	12:15:00	83	79	10	12		
End	14:40:00	85	82	30	12		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	checkered white (1+)	western bluebird (1+)
bramble hairstreak (1+)	desert orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California ground squirrel (1+)	common raven (1+)	greater roadrunner (1+)
California quail (1+)	common side-blotched lizard (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	granite spiny lizard (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-10
Biologist(s)	Paul Lemons
Survey Area	Private 2
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:15:00	91	88	10	8		
End	17:00:00	89	87	10	7		gusts to 12mph

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	desert orangetip (1+)	Propertius duskywing (1+)
bramble hairstreak (1+)	funereal duskywing (1+)	western bluebird (1+)
checkered white (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Bewick's wren (1+)	California scrub-jay (1+)	rock wren (1+)
Botta's pocket gopher (1+)	common raven (1+)	white-crowned sparrow (1+)
bushtit (1+)	common side-blotched lizard (1+)	wrentit (1+)
California quail (1+)	phainopepla (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-09
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 3
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:53:00	79	77	0	4	clear	
End	13:24:00	83	84	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (83)	brown elfin (2)	Pacific sara orangetip (14)
bramble hairstreak (1)	desert pearly marble (6)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California quail (1+)	chipping sparrow (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
Ceanothus perplexans	***Ericameria linearifolia***	
Cryptantha micrantha	***Lasthenia gracilis***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-09
Biologist(s)	Brock Ortega
Survey Area	Private 4
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:05:00	70	69	0	5	clear	
End	16:10:00	83	82	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
San Diegan tiger whiptail (1+)	brown elfin (3)	western bluebird (1+)
Acmon blue (20)	desert pearly marble (7)	western tiger swallowtail (3)
Behr's metalmark (37)	Pacific sara orangetip (9)	White sp. (1+)
Blue sp. (1+)	queen (1)	
bramble hairstreak (1)	spring white (3)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Brewer's sparrow (1+)	Cassin's kingbird (1+)	lesser goldfinch (1+)
oak titmouse (1+)	chipping sparrow (1+)	mourning dove (1+)
San Diego black-tailed jackrabbit (1+)	common side-blotched lizard (1+)	mule deer (1+)
Anna's hummingbird (1+)	coyote (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	dark-eyed junco (1+)	orange-crowned warbler (1+)
Bewick's wren (1+)	desert cottontail (1+)	red-tailed hawk (1+)
black-throated sparrow (1+)	Erynnis sp. (1+)	rock wren (1+)
bobcat (1+)	Eurasian collared-dove (1+)	Say's phoebe (1+)
bushtit (1+)	European starling (1+)	spotted towhee (1+)
California ground squirrel (1+)	gophersnake (1+)	turkey vulture (1+)
California quail (1+)	greater roadrunner (1+)	western fence lizard (1+)
California scrub-jay (1+)	horned lark (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California towhee (1+)	house finch (1+)	Wilson's warbler (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-09
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 5
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:30:00	86	80	0	5	clear	
End	16:30:00	78	79	50	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (32)	funereal duskywing (1)	spring white (4)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (21)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California scrub-jay (1+)	western meadowlark (1+)
oak titmouse (1+)	Cassin's kingbird (1+)	white-crowned sparrow (1+)
Bewick's wren (1+)	chipping sparrow (1)	
bushtit (1+)	northern mockingbird (1+)	

INCIDENTAL PLANT LIST		
Boechera californica	***Lasthenia gracilis***	***Lomatium dasycarpum***
Ceanothus perplexans	***Layia platyglossa***	
Cryptantha micrantha	***Leptosyne californica***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-10
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 5
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:48:00	81	82	20	2	clear	
End	10:52:00	87	84	10	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (2)	desert pearly marble (3)	Pacific sara orangetip (15)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California scrub-jay (1+)	western meadowlark (1+)	
chipping sparrow (1+)	white-crowned sparrow (1+)	

INCIDENTAL PLANT LIST		
Amsinckia intermedia	***Lasthenia gracilis***	***Rhus aromatica***
Ceanothus perplexans	***Leptosyne californica***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-10
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 6
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:47:00	87	82	10	2	clear	
End	15:00:00	90	90	20	4	clear	I continued survey area 6 and Tish started area 7. I got done at 3:00 and went to join her.

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (2)	bramble hairstreak (1)	Pacific sara orangetip (34)
Behr's metalmark (122)	desert pearly marble (19)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California scrub-jay (1+)	white-crowned sparrow (1+)
barn owl (1+)	California towhee (1+)	wild turkey (1+)
bushtit (1+)	greater roadrunner (1+)	wrentit (1+)
California quail (1+)	mourning dove (1+)	

INCIDENTAL PLANT LIST		
Acmispon heermannii	***Erodium cicutarium***	***Pectocarya penicillata***
Amsinckia intermedia	***Lasthenia gracilis***	***Plagiobothrys arizonicus***
Ceanothus perplexans	***Lomatium dasycarpum***	
Cryptantha micrantha	***Lupinus concinnus***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-10
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 7
Survey Pass	5

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	14:37:00	90	90	10	3	clear	
End	16:09:00	94	92		4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (35)	Pacific sara orangetip (12)	
desert pearly marble (8)	Sulphur sp (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
mule deer (1+)		

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	***Chenopodium californicum***	***Lasthenia gracilis***
Ceanothus perplexans	***Ericameria pinifolia***	***Lomatium dasycarpum***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-11
Biologist(s)	Erin Bergman
Survey Area	Private 7, Private 8
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:56:00	82	83.6	10	3	clear	Beautiful day!
End	16:09:00	79	80	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (79)	desert pearly marble (7)	spring white (2)
bramble hairstreak (3)	Pacific sara orangetip (14)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California scrub-jay (1+)	phainopepla (1+)
acorn woodpecker (1+)	California towhee (1+)	red-tailed hawk (1+)
bushtit (1+)	common raven (1+)	turkey vulture (1+)

INCIDENTAL PLANT LIST		
Ericameria linearifolia	***Leptosyne californica***	***Oenothera californica ssp. avita***
Lasthenia gracilis	***Lupinus concinnus***	***Plagiobothrys arizonicus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-25
Biologist(s)	Jeffrey Priest
Survey Area	Private 1
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	70	70	0	5		
	12:15:00	80	84	0	14		Winds 3-8 with gusts 8-14
End	15:30:00	82	85	30	12		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (17)	Pacific sara orangetip (5)	Propertius duskywing (3)
bramble hairstreak (1)	pale swallowtail (1)	spring white (2)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
rufous hummingbird (1+)	California scrub-jay (1+)	Merriam's chipmunk (1+)
American crow (1+)	California thrasher (1+)	mourning dove (1+)
Anna's hummingbird (1+)	California towhee (1+)	mule deer (1+)
ash-throated flycatcher (1+)	cliff swallow (1+)	northern flicker (1+)
Bewick's wren (1+)	common raven (1+)	northern mockingbird (1+)
black-tailed jackrabbit (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
Botta's pocket gopher (1+)	coyote (1+)	turkey vulture (1+)
brush rabbit (1+)	granite spiny lizard (1+)	white-crowned sparrow (1+)
bushtit (1+)	house finch (1+)	
California quail (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-14
Biologist(s)	Jeffrey Priest
Survey Area	Private 2
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	62	62	0	10	clear	
End	16:30:00	74	76	0	8		

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	brown elfin (8)	Propertius duskywing (7)
Behr's metalmark (47)	desert orangetip (3)	spring white (13)
bramble hairstreak (2)	Pacific sara orangetip (21)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
American crow (1+)	common raven (1+)	mourning dove (1+)
American kestrel (1+)	common side-blotched lizard (1+)	mule deer (1+)
brush rabbit (1+)	coyote (1+)	phainopepla (1+)
bushtit (1+)	dark-eyed junco (1+)	red-tailed hawk (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	spotted towhee (1+)
California quail (1+)	greater roadrunner (1+)	turkey vulture (1+)
California scrub-jay (1+)	house finch (1+)	western fence lizard (1+)
California thrasher (1+)	lesser goldfinch (1+)	western kingbird (1+)
California towhee (1+)	Merriam's chipmunk (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-15
Biologist(s)	Jeffrey Priest
Survey Area	Private 3
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	64	62	10	1		
End	15:30:00	77	80	90	12		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (41)	desert orangetip (5)	spring white (14)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (8)	
brown elfin (1+)	Propertius duskywing (14)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California quail (1+)	greater roadrunner (1+)
American crow (1+)	California scrub-jay (1+)	mourning dove (1+)
Anna's hummingbird (1+)	California towhee (1+)	red-tailed hawk (1+)
bobcat (1+)	common raven (1+)	spotted towhee (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	turkey vulture (1+)
brush rabbit (1+)	coyote (1+)	western meadowlark (1+)
bushtit (1+)	gophersnake (1+)	white-crowned sparrow (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-20
Biologist(s)	Paul Lemons
Survey Area	Private 4
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	71	69	0	4		
End	16:45:00	75	73	0	3	clear	4-8 mph gusts

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	Pacific sara orangetip (1+)	
checkered white (1+)	Propertius duskywing (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Bewick's wren (1+)	common raven (1+)	rock wren (1+)
black-throated sparrow (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
bushtit (1+)	coyote (1+)	striped racer (1+)
California ground squirrel (1+)	desert cottontail (1+)	white-crowned sparrow (1+)
California quail (1+)	granite spiny lizard (1+)	wrentit (1+)
California scrub-jay (1+)	greater roadrunner (1+)	zebra-tailed lizard (1+)
California towhee (1+)	red-tailed hawk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-20
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 5
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:28:00	67	0	0	1		
End	13:21:00	72	74	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (8)	brown elfin (1)	southern blue (1)
Behr's metalmark (57)	desert pearly marble (5)	spring white (2)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (19)	White species (10)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Bewick's wren (1+)	chipping sparrow (1+)	phainopepla (1+)
California scrub-jay (1+)	common raven (1+)	red-tailed hawk (1+)
California towhee (1+)	mourning dove (1+)	white-crowned sparrow (1+)
Cassin's kingbird (1+)	northern mockingbird (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
Anisocoma acaulis	***Eriophyllum wallacei***	***Leptosiphon lemmonii***
Ceanothus perplexans	***Euphorbia albomarginata***	***Leptosiphon parviflorus***
Cryptantha micrantha	***Geraea viscida***	***Linanthus bellus***
Descurainia pinnata	***Lasthenia gracilis***	***Lomatium dasycarpum***
Ericameria linearifolia	***Layia glandulosa***	***Lupinus concinnus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-18
Biologist(s)	Paul Lemons
Survey Area	Private 6
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:20:00	61	60	0	2	clear	
End	16:05:00	65	64	0	8		9-15 mph gusts

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1+)	checkered white (1+)	Propertius duskywing (1+)
Behr's metalmark (1+)	funereal duskywing (1+)	western tiger swallowtail (1+)
bramble hairstreak (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	California scrub-jay (1+)	mourning dove (1+)
American kestrel (1+)	common raven (1+)	red-tailed hawk (1+)
brush rabbit (1+)	common side-blotched lizard (1+)	Steller's jay (1+)
Bullock's oriole (1+)	European starling (1+)	turkey vulture (1+)
California ground squirrel (1+)	greater roadrunner (1+)	western meadowlark (1+)
California quail (1+)	Merriam's chipmunk (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-17
Biologist(s)	Erin Bergman
Survey Area	Private 7, Private 8
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:58:00	67	67	0	3	clear	
Temp check	14:26:00	84	85	0	2	clear	
End	17:03:00	68	69	0	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (58)	Pacific sara orangetip (11)	White species (8)
bramble hairstreak (1+)	southern blue (1+)	
desert pearly marble (7)	spring white (4)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	Cassin's kingbird (1+)	red-tailed hawk (1)
acorn woodpecker (1+)	chipping sparrow (1+)	turkey vulture (1+)
bushtit (1+)	common raven (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	greater roadrunner (1+)	
California towhee (1+)	phainopepla (1+)	

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	***Ericameria linearifolia***	***Layia glandulosa***
Ceanothus perplexans	***Erodium cicutarium***	***Linanthus bellus***
Chenopodium californicum	***Lasthenia gracilis***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-29
Biologist(s)	Jeffrey Priest
Survey Area	Private 1
Survey Pass	7

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	60	60	10	10		Winds highly variable: 3-10 mph with gusts 10-15 mph.
Mid day	11:11:00	66	66	0	14		Winds highly variable. 3-7 mph with gusts 7-14 mph.
End	15:30:00	68	70	0	10		Winds highly variable: 5-10 mph with gusts 10-18 mph.

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (12)	pale swallowtail (1)	Propertius duskywing (2)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
American crow (1+)	California scrub-jay (1+)	mourning dove (1+)
American kestrel (1+)	California towhee (1+)	mule deer (1+)
Bewick's wren (1+)	common raven (1+)	northern mockingbird (1+)
black-throated sparrow (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
Botta's pocket gopher (1+)	coyote (1+)	spotted towhee (1+)
brush rabbit (1+)	gophersnake (1+)	turkey vulture (1+)
bushtit (1+)	granite spiny lizard (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-28
Biologist(s)	Jeffrey Priest
Survey Area	Private 2
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	64	66	0	1		
Mid-day conditions	12:47:00	78	80	0	14		Rising winds: 6-14 mph with gusts 15-18 mph.
End	16:30:00	75	78	0	14		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (9)	funereal duskywing (1)	Propertius duskywing (1)
bramble hairstreak (1)	Pacific sara orangetip (2)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California towhee (1+)	house wren (1+)
Anna's hummingbird (1+)	cliff swallow (1+)	lesser goldfinch (1+)
ash-throated flycatcher (1+)	common raven (1+)	Merriam's chipmunk (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	northern mockingbird (1+)
brush rabbit (1+)	coyote (1+)	red-tailed hawk (1+)
bushtit (1+)	dark-eyed junco (1+)	turkey vulture (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	western rattlesnake (1+)
California quail (1+)	greater roadrunner (1+)	
California scrub-jay (1+)	house finch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-24
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 3
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:09:00	82	78	30	1	clear	
End	12:44:00	86	88	20	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (49)	Pacific sara orangetip (1)	
desert pearly marble (4)	pale swallowtail (3)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California scrub-jay (1+)	granite spiny lizard (1+)
black-throated sparrow (1+)	common side-blotched lizard (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-25
Biologist(s)	Erin Bergman
Survey Area	Private 4
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:00:00	74	78	0	1	clear	
End	15:36:00	75	78	10	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (3)	desert pearly marble (2)	western bluebird (1)
Behr's metalmark (22)	Gabb's checkerspot (2)	White species (3)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (10)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California scrub-jay (1+)	chipping sparrow (1+)	common raven (1+)

INCIDENTAL PLANT LIST		
Geraea viscida	***Linanthus bellus***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-25
Biologist(s)	Callie Amoaku
Survey Area	Private 4
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:44:00	79	78	0	5	clear	
2	12:18:00	82	83	0	9	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (32)	desert pearly marble (1)	Propertius duskywing (3)
blue-gray gnatcatcher (1+)	funereal duskywing (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	common side-blotched lizard (1+)	Townsend's warbler (1+)
Cooper's hawk (1+)	granite spiny lizard (1+)	western kingbird (1+)
ash-throated flycatcher (1+)	great horned owl (1+)	wrentit (1+)
California scrub-jay (1+)	red-tailed hawk (1+)	

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	***Ericameria linearifolia***	***Lupinus concinnus***
Ceanothus perplexans	***Eriodictyon crassifolium***	***Nama demissa***
Chaenactis glabriuscula	***Erodium cicutarium***	***Oenothera californica***
Cryptantha micrantha	***Lasthenia gracilis***	***Salvia columbariae***
Dichelostemma capitatum	***Linanthus bellus***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-25
Biologist(s)	Margie Mulligan
Survey Area	Private 5
Survey Pass	7

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:55:00	75		0	6	clear	
End	15:35:00	76	0	0	8	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (14)	Gabb's checkerspot (1)	Propertius duskywing (2)
desert pearly marble (4)	pale swallowtail (1)	sleepy duskywing (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-25
Biologist(s)	Erin Bergman
Survey Area	Private 5
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:14:00	76	77	0	1	clear	
End	12:00:00	73	77	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (18)	Pacific sara orangetip (5)	spring white (2)
desert pearly marble (9)	pale swallowtail (1)	White species (9)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	chipping sparrow (1+)	western meadowlark (1+)
California scrub-jay (1)	turkey vulture (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	***Euphorbia albomarginata***	***Lupinus concinnus***
Ceanothus perplexans	***Lasthenia gracilis***	***Pectocarya setosa***
Ericameria linearifolia	***Layia glandulosa***	***Rhus aromatica***
Eriophyllum wallacei	***Loeseliastrum schottii***	***Senecio californicus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-20
Biologist(s)	Tricia Wotipka
Survey Area	Private 6
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:50:00	64	68	10	2	patchy	
End	17:30:00	75	74	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1+)	Pacific sara orangetip (1+)	spring white (1+)
Behr's metalmark (1+)	pale swallowtail (1+)	western bluebird (1+)
funereal duskywing (1+)	southern blue (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	common side-blotched lizard (1+)	Merriam's chipmunk (1+)
ash-throated flycatcher (1+)	desert cottontail (1+)	northern flicker (1+)
Bullock's oriole (1+)	granite spiny lizard (1+)	rock wren (1+)
California ground squirrel (1+)	greater roadrunner (1+)	Steller's jay (1+)
California scrub-jay (1+)	house finch (1+)	
common raven (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-20
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 7, Private 8
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:24:00	72	74	0	3	clear	
End	16:01:00	74	75	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (60)	California patch (1)	Pacific sara orangetip (9)
blue-gray gnatcatcher (1+)	desert pearly marble (3)	White species (11)
bramble hairstreak (1)	Lady species (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1)	California scrub-jay (1+)	red-tailed hawk (1+)
black-tailed jackrabbit (1+)	chipping sparrow (1+)	turkey vulture (1+)
California quail (1+)	common raven (1+)	western meadowlark (1+)

INCIDENTAL PLANT LIST		
Amsinckia intermedia	***Phlox austromontana***	
Chenopodium californicum	***Sisymbrium altissimum***	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-22
Biologist(s)	Erin Bergman
Survey Area	Private 7, Private 8
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:39:00	75	79	0	2	clear	
End	13:44:00	83	85	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (5)	desert pearly marble (7)	Sulphur species (2)
Behr's metalmark (44)	Pacific sara orangetip (12)	White species (17)
blue-gray gnatcatcher (1+)	spring white (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	California towhee (1+)	turkey vulture (1+)
Bewick's wren (1+)	Cassin's kingbird (1+)	white-crowned sparrow (1+)
bushtit (1+)	chipping sparrow (1+)	wrentit (1+)
California scrub-jay (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-03
Biologist(s)	Patricia Schuyler
Survey Area	Private 1
Survey Pass	8

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:37:00	63	62	0	3	clear	
End	15:40:00	74	78	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (17)	blue-gray gnatcatcher (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California scrub-jay (1+)	mule deer (1+)	white-tailed antelope squirrel (1+)
common raven (1+)	turkey vulture (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-04
Biologist(s)	Callie Amoaku
Survey Area	Private 2
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:34:00	72	81	0	3	clear	
2	10:50:00	79	79	0	3	clear	
End	16:26:00	81	85	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (10)	pale swallowtail (1)	western tiger swallowtail (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
ash-throated flycatcher (1+)	California quail (1+)	phainopepla (1+)
black-throated sparrow (1+)	California scrub-jay (1+)	white-crowned sparrow (1+)
bushtit (1+)	granite spiny lizard (1+)	white-tailed antelope squirrel (1+)
California ground squirrel (1+)	northern flicker (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
Ericameria linearifolia	***Heliotropium curassavicum***	***Linanthus bellus***
Eriodictyon trichocalyx	***Hesperoyucca whipplei***	***Penstemon centranthifolius***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-03
Biologist(s)	Anita Hayworth
Survey Area	Private 3
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:05:00	62	64	0	5		
End	17:15:00	21	21.5	0	8		Gusts 10-22

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Brewer's sparrow (1+)	dark-eyed junco (1+)	red-tailed hawk (1+)
black-throated sparrow (1+)	European starling (1+)	rock wren (1+)
bushtit (1+)	house finch (1+)	Townsend's warbler (1+)
California scrub-jay (1+)	mourning dove (1+)	warbling vireo (1+)
California thrasher (1+)	northern flicker (1+)	Wilson's warbler (1+)
California towhee (1+)	orange-crowned warbler (1+)	
common raven (1+)	Pacific-slope flycatcher (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-04
Biologist(s)	Tricia Wotipka
Survey Area	Private 4
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:15:00	74	78	0	3	clear	
End	16:15:00	82	84	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1+)	Behr's metalmark (1+)	blue-gray gnatcatcher (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
oak titmouse (1+)	common raven (1+)	spotted towhee (1+)
ash-throated flycatcher (1+)	common side-blotched lizard (1+)	Townsend's warbler (1+)
brush rabbit (1+)	lesser goldfinch (1+)	western fence lizard (1+)
bushtit (1+)	mourning dove (1+)	western kingbird (1+)
California ground squirrel (1+)	mule deer (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-05
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	Private 5, Private 6
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	77	81	0	3	clear	
End	15:35:00	85	91	0	7	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (4)	funereal duskywing (1)	Propertius duskywing (3)
Behr's metalmark (22)	Gabb's checkerspot (1)	spring white (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Pectocarya spp	***Eriastrum sapphirinum***	***Leptosiphon floribundus***
Plagiobotrys	***Erodium cicutarium***	***Leptosiphon lemmonii***
Amsinckia intermedia	***Lasthenia gracilis***	***Salvia columbariae***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-24
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 6
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:02:00	86	88	20	1	clear	
End	17:20:00	83	0	30	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	desert pearly marble (6)	pale swallowtail (1)
Behr's metalmark (29)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	California scrub-jay (1+)	mule deer (1+)
black-tailed jackrabbit (1+)	common side-blotched lizard (1+)	white-crowned sparrow (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	white-tailed antelope squirrel (1+)
California quail (1+)	house finch (1+)	Wilson's warbler (1+)

INCIDENTAL PLANT LIST		
Amsinckia intermedia	***Ericameria linearifolia***	***Layia glandulosa***
Ceanothus leucodermis	***Eriodictyon crassifolium***	***Linanthus bellus***
Ceanothus perplexans	***Eriophyllum wallacei***	***Lupinus concinnus***
Dichelostemma capitatum	***Lasthenia gracilis***	***Penstemon centranthifolius***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-27
Biologist(s)	Tricia Wotipka
Survey Area	Private 7
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:15:00	61	62	0	3	clear	
End	16:00:00	78	74	0	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	pale swallowtail (1+)	
Pacific sara orangetip (1+)	western bluebird (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Lawrence's goldfinch (1+)	California quail (1+)	mourning dove (1+)
oak titmouse (1+)	California scrub-jay (1+)	northern flicker (1+)
acorn woodpecker (1+)	common raven (1+)	red-tailed hawk (1+)
American kestrel (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
ash-throated flycatcher (1+)	European starling (1+)	western meadowlark (1+)
black-tailed jackrabbit (1+)	greater roadrunner (1+)	wrentit (1+)
brush rabbit (1+)	hooded oriole (1+)	yellow-rumped warbler (1+)
bushtit (1+)	house finch (1+)	
California ground squirrel (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Jeffrey Priest
Survey Area	Private 1
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	68	67	0	5		
Mid afternoon conditions.	14:08:00	86	90	0	12		
End	16:00:00	84	86	0	10		

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	blue-gray gnatcatcher (1+)	Lorquin's admiral (2)
Behr's metalmark (9)	desert pearly marble (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
San Diego black-tailed jackrabbit (1+)	California scrub-jay (1+)	Merriam's chipmunk (1+)
acorn woodpecker (1+)	California towhee (1+)	mule deer (1+)
American crow (1+)	cliff swallow (1+)	northern flicker (1+)
Anna's hummingbird (1+)	common raven (1+)	phainopepla (1+)
ash-throated flycatcher (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
Bewick's wren (1+)	coyote (1+)	spotted towhee (1+)
brush rabbit (1+)	granite spiny lizard (1+)	turkey vulture (1+)
bushtit (1+)	greater roadrunner (1+)	western kingbird (1+)
California ground squirrel (1+)	house finch (1+)	white-throated swift (1+)
California quail (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 2
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:40:00	86	88	0	8	clear	
End	16:46:00	90	93	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (2)	Behr's metalmark (5)	California sister (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Bewick's wren (1+)	common raven (1+)	turkey vulture (1+)
California towhee (1+)	gophersnake (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 3
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:35:00	76	70	10	3	clear	
End	12:35:00	86	88	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (10)	California sister (1)	funereal duskywing (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
San Diego black-tailed jackrabbit (1+)	California scrub-jay (1+)	
bushtit (1+)	sagebrush sparrow (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-08
Biologist(s)	Callie Amoaku
Survey Area	Private 4
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:59:00	84	90	10	1	clear	
2	12:16:00	90	92	10	2	clear	
End	15:39:00	91	93	0	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
San Diegan tiger whiptail (1+)	Behr's metalmark (2)	gray hairstreak (2)
Acmon blue (3)	California sister (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
ash-throated flycatcher (1+)	common raven (1+)	red-tailed hawk (1+)
bushtit (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
California quail (1+)	hermit warbler (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-09
Biologist(s)	Erik LaCoste
Survey Area	Private 5
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	78	78	0	3	clear	
End	15:15:00	90	95	10	8	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (2)	California sister (2)	
Behr's metalmark (4)	funereal duskywing (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Anita Hayworth
Survey Area	Private 6
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:28:00	79	83	0	6		
End	18:42:00	78	76	0	8		Gusts to 13

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	southern blue (1+)	
fiery skipper (1+)	western bluebird (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	common raven (1+)	mule deer (1+)
acorn woodpecker (1+)	dark-eyed junco (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	desert cottontail (1+)	Nuttall's woodpecker (1+)
Bewick's wren (1+)	Eurasian collared-dove (1+)	red-tailed hawk (1+)
Bullock's oriole (1+)	European starling (1+)	rock wren (1+)
California ground squirrel (1+)	hermit warbler (1+)	Townsend's warbler (1+)
California quail (1+)	hooded oriole (1+)	turkey vulture (1+)
California scrub-jay (1+)	house finch (1+)	western tanager (1+)
California thrasher (1+)	lesser goldfinch (1+)	western wood-pewee (1+)
Cassin's kingbird (1+)	mourning dove (1+)	Wilson's warbler (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Erin Bergman
Survey Area	Private 7, Private 8
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:04:00	74	76	20	1	clear	
End	16:59:00	73	76	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (5)	desert pearly marble (2)	White species (5)
Behr's metalmark (16)	pale swallowtail (1)	
bramble hairstreak (1)	southern blue (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	chipping sparrow (1+)	phainopepla (1+)
black phoebe (1+)	common raven (1+)	red-tailed hawk (1+)
bushtit (1+)	house wren (1+)	turkey vulture (1+)
California scrub-jay (1+)	mourning dove (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-12
Biologist(s)	Margie Mulligan
Survey Area	Private 1
Survey Pass	10

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:32:00	49	0	100	5	drizzle	
End	09:35:00	53	0	50	10	patchy	
End	10:33:00	57	0	10	15	clear	
	11:31:00	61	0	0	15	clear	
End	12:43:00	61	0	0	20		

BUTTERFLY LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Jeffrey Priest
Survey Area	Private 2
Survey Pass	10

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	62	62	20	8		
Mid day, valley, wind rising	13:00:00	72	79	20	29		Wind 8-15, gusts 15-29 mph.
End	14:00:00	72	79	20	30		Winds above protocol, survey cut short.

BUTTERFLY LIST *SPECIES (COUNT)*

Acmon blue (1)	Behr's metalmark (1)	blue-gray gnatcatcher (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*

acorn woodpecker (1+)	common raven (1+)	Merriam's chipmunk (1+)
Bewick's wren (1+)	common side-blotched lizard (1+)	mourning dove (1+)
brush rabbit (1+)	coyote (1+)	red-tailed hawk (1+)
bushtit (1+)	granite spiny lizard (1+)	turkey vulture (1+)
California ground squirrel (1+)	house finch (1+)	white-throated swift (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST

(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Tricia Wotipka
Survey Area	Private 3
Survey Pass	10

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	62	62	20	8	patchy	
End	14:00:00	72	79	40	27	patchy	Survey was called short due to sustained high winds exceeding an average of 15mph over a 30 second period.

BUTTERFLY LIST *SPECIES (COUNT)*

Acmon blue (1+)	blue-gray gnatcatcher (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*

oak titmouse (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
American crow (1+)	granite spiny lizard (1+)	turkey vulture (1+)
brush rabbit (1+)	greater roadrunner (1+)	white-throated swift (1+)
bushtit (1+)	house finch (1+)	wrentit (1+)
California ground squirrel (1+)	lesser goldfinch (1+)	
California scrub-jay (1+)	Merriam's chipmunk (1+)	

INCIDENTAL PLANT LIST

(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-12
Biologist(s)	Jeffrey Priest
Survey Area	Private 4
Survey Pass	10

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	54	62	10	10		
Mid day	12:34:00	58	64	10	8		
End	16:45:00	63	70	0	15		Wind 5-10 with gusts 10-15

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	blue-gray gnatcatcher (1+)	Propertius duskywing (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	cliff swallow (1+)	mourning dove (1+)
American crow (1+)	common raven (1+)	mule deer (1+)
ash-throated flycatcher (1+)	common side-blotched lizard (1+)	northern flicker (1+)
Bewick's wren (1+)	coyote (1+)	red-tailed hawk (1+)
black-throated sparrow (1+)	granite spiny lizard (1+)	Say's phoebe (1+)
brush rabbit (1+)	greater roadrunner (1+)	spotted towhee (1+)
bushtit (1+)	house finch (1+)	western rattlesnake (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	white-throated swift (1+)
California towhee (1+)	Merriam's chipmunk (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-13
Biologist(s)	Jeffrey Priest
Survey Area	Private 5
Survey Pass	10

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	58	62	0	5		
Mid day	12:07:00	70	76	0	10		Wind in valley: 2-7 with gusts 7-10. Wind on small peak: 6-10 with gusts 10-15.
End	16:00:00	75	82	0	12		

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	Lorquin's admiral (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
American crow (1+)	California towhee (1+)	Merriam's chipmunk (1+)
American kestrel (1+)	common raven (1+)	mourning dove (1+)
Anna's hummingbird (1+)	coyote (1+)	mule deer (1+)
black-tailed jackrabbit (1+)	granite spiny lizard (1+)	northern flicker (1+)
black-throated sparrow (1+)	greater roadrunner (1+)	red-tailed hawk (1+)
brush rabbit (1+)	house finch (1+)	turkey vulture (1+)
bushtit (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Margie Mulligan
Survey Area	Private 6
Survey Pass	10

SURVEY CONDITIONS

Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:04:00	60	0		8	clear	
	11:55:00	71	0	10	13	clear	Gusts to 13
End	14:02:00	70	0	20	17	clear	Gusts to 25

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Erik LaCoste
Survey Area	Private 7, Private 8
Survey Pass	10

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:15:00	60	63	0	8	clear	
End	13:45:00	70	72	10	26	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
California sister (1)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

ATTACHMENT B-2

2019 Focused Quino Checkerspot Butterfly Survey for both the Torrey Wind Project and Boulder Brush Facilities, Boulevard, San Diego County, California

605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 F 760.632.0164

August 7, 2019 10212

U.S. Fish and Wildlife Service
Attention: Stacey Love, Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: 2019 Focused Quino Checkerspot Butterfly Survey Report for Proposed Wind Energy Facilities, Boulevard, San Diego County, California

Dear Ms. Love:

This letter report documents the spring 2019 results of a focused survey conducted by Dudek for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*) (Quino). This survey was conducted in support of proposed wind energy facilities north of the community of Boulevard in southeastern San Diego County, California. This report is intended to satisfy reporting requirements for the following Quino-permitted biologists: Andrew Borcher (TE-092162-4), Antonette Gutierrez (TE-50992B), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-53771B-2), Garrett Huffman (TE-20186A-2.1), Jeff Priest (TE-840619-6), Lindsay Willrick (TE-61175B-0), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), and Victor Novik (TE-069534).

Study Area and Existing Conditions

The study area is located in southeastern San Diego County north of the community of Boulevard, California (Figure 1, Survey Results – Index). The study area consisted of the anticipated disturbance areas with an additional 250-foot buffer along the outer edge of anticipated disturbance areas (Figures 2 and 3, Survey Results). The study area includes the disturbances and associated buffer for the Boulder Brush Facilities (a component of the Campo Wind Project) and for the Torrey Wind Project (see Figure 1).

The study area is situated north of the community of Boulevard and Interstate (I-)8 at an elevation between approximately 3,280 feet and 4,120 feet above mean sea level. The landscape consists of a mixture of large-lot rural residences and open space with mountainous terrain consisting of steep slopes, prominent ridgelines, and rock outcroppings.

The study area is located in the McCain Valley area of unincorporated areas of San Diego County, north of the community of Boulevard and I-8. It currently consists of largely undeveloped ranch land, a portion of which has historically been used by private, off-road recreational vehicles. The surrounding area primarily consists of vacant land. The 500 kV Sunrise Powerlink traverses the northeast portion of the study area, and wind turbines associated with the Kumeyaay Wind and Tule Wind facilities are located to the southwest, east, northeast, and north.

The study area is within the U.S. Geological Survey's 7.5-minute Sombrero Peak and Live Oak Springs quadrangle maps within Township 17 South, Range 7 East, Sections 05, 06, 07, and 08; and Township 16 South, Range 7 East, Sections 19, 20, 29, 30, 31, and 32..

According to the U.S. Department of Agriculture, Natural Resources Conservation Service, the following seven soil series were mapped within the study area: Calpine (coarse sandy loam, 5% to 9% slopes); La Posta (loamy coarse sand, 5% to 30% slopes, eroded; rocky loamy coarse sand, 5% to 30% slopes, eroded); loamy alluvial land; Mottsville (loamy coarse sand, 2% to 9% slopes); and Tollhouse (rocky coarse sandy loam, 5% to 30% slopes, eroded) (USDA 2019).

Vegetation Communities

The study area supports chaparral, scrub, grassland, and oak woodland communities.

Quino Checkerspot Butterfly Survey

Background Information

The Quino subspecies was added to the federal Endangered Species List by the U.S. Fish and Wildlife Service (USFWS) on January 16, 1997 (62 FR 2313–2322). The species, Edith's checkerspot (*E. editha*), has a range extending from British Columbia and Alberta, Canada, south through Colorado and Utah, and west along the coast to northern Baja California. It is divided into 20 subspecies, each of which has its own range and biological and morphological characteristics. In California, there are 12 subspecies (Garth and Tilden 1986), 3 of which are currently known to occur in Southern California. The Quino is the southwestern-most subspecies of *E. editha* (Mattoni et al. 1997).

The Quino is known to occur in association with a variety of plant communities, soil types, and elevations (up to 5,000 feet above mean sea level). The plant communities include clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub (Ballmer et al. 2001). The Quino is also associated with clay soils that possess cryptogamic crusts and vernal pools (USFWS 2002).

The Quino is a medium-sized butterfly (approximately 0.8-inch to 1.1-inch wingspan) belonging to the family Nymphalidae. The adults are primarily orange-red with white and black markings on the dorsal wing surface. They are active primarily in March and April, but this active period may vary depending on weather conditions (Ballmer et al. 2001). The adult butterfly feeds on nectar, which it obtains from spring annuals such as popcorn flower (*Plagiobothrys* spp., *Cryptantha* spp.), whitedaisy tidytips (*Layia glandulosa*), goldenbush (*Ericameria* spp.), pincushion (*Chaenactis* spp.), fiddleneck (*Amsinckia* spp.), chia (*Salvia columbariae*), and bluedicks (*Dichelostemma capitatum*), among others.

Adult males and virgin females sometimes "hilltop," or travel to elevated locations to find mates. While waiting for females to arrive, the males will often exhibit territorial behavior and will chase other butterflies that approach them. Frequently, the butterflies are observed in meadows or clearings where their host plants occur (Ballmer et al. 2001).

A female may lay 20 to 75 eggs at one time and may produce up to 1,200 eggs in her lifetime. The eggs hatch in approximately 10 days under favorable weather conditions and the young larvae will immediately begin to feed upon a host plant. As of 2014, the USFWS considers the following as larval host plants: dwarf plantain (*Plantago erecta*), woolly plantain (*P. patagonica*), Coulter's snapdragon (*Antirrhinum coulterianum*), purple Chinese houses (*Collinsia*

heterophylla), stiffbranch bird's beak (*Cordylanthus rigidus*), and exserted Indian paintbrush (*Castilleja exserta*) (USFWS 2014). In addition, Chinese houses (*Collinsia concolor*) is a potential larval host plant (Pratt and Pierce 2009).

After feeding, the early larva enters an obligatory aestival diapause (dormant stage), which may be broken after fall or winter rains (Murphy and White 1984; Osborne 1998). If adverse weather conditions occur, the emergent larva may reenter a diapause stage repeatedly, for up to 5 or 6 years, until favorable weather conditions permit sufficient growth of the host plant to allow the larva to complete its development.

The Quino was once common in Southern California. It ranged north into Ventura County, west to the Pacific Ocean, east to the deserts, and south into northern Baja California. Currently, it is known to occur only in a few, potentially isolated, colonies in southwestern Riverside County, San Diego County, and northern Baja California.

Reasons for the butterfly's reduction in population are not well understood. Habitat loss due to degradation and fragmentation caused by urban and rural development, agricultural conversion, off-road vehicular use, the invasion of non-native plants and insects, fire management practices, over collecting, and adverse weather conditions have likely contributed to the species' decline (62 FR 2313–2322).

Methods – Habitat Assessment and Host Plant Mapping

Prior to the 2018 focused surveys, Dudek biologists conducted a habitat assessment in 2018 within the study area in order to identify suitable habitat and exclude unsuitable habitat for focused surveys. Exclusion areas, which were based on the 2018 habitat assessment, consisted of densely vegetated chaparral with tall shrubs forming closed canopies. While host plant surveys were performed in concert with the habitat assessment, surveyors also looked for host plants during the 2018 focused surveys to document any changes from the initial host plant mapping effort. No host plants were observed in 2018 during focused surveys (Dudek 2019a, 2019b).

Dudek biologists conducted two passes of Quino host plant mapping surveys between March 6 and May 2, 2019, as shown the schedule provided in Table 1. Botanical surveys were conducted by biologists Patricia Schuyler, Shana Carey, Olivia Koziel, and Margie Mulligan. All surveys were conducted on foot. Approximately 10 person-days were spent conducting host plant mapping within the study area.

The host plant mapping surveys focused on the identification and location of six recognized host plants and one potential host plant for Quino: dwarf plantain, woolly plantain, Coulter's snapdragon, stiffbranch bird's beak, exserted Indian paintbrush, purple Chinese houses, and Chinese houses (USFWS 2014; Pratt and Pierce 2009). However, purple Chinese houses do not have an eastern San Diego County distribution and therefore are not likely to occur within the study area. Nectar plants were recorded each week of surveys.

Table 1. Schedule of 2019 Host Plant Mapping Surveys

Date	Hours	Personnel	Conditions (temperature, cloud cover, wind speed)
2019-03-06	10:30 a.m.–5:00 p.m.	Shana Carey and Patricia Schuyler	51°F–59°F; 20%–70% cloud cover; 12–22 mph wind
2019-03-07	8:29 a.m.–3:59 p.m.	Margie Mulligan	53°F–57°F; 50%–90% cloud cover; 5–20 mph wind
2019-03-07	8:30 a.m.–3:00 p.m.	Shana Carey	48°F–51°F; 50%–80% cloud cover; 8–19 mph wind
2019-04-22	8:20 a.m.–5:00 p.m.	Olivia Koziel	63°F–64°F; 10%–90% cloud cover; 2–8 mph wind

Table 1. Schedule of 2019 Host Plant Mapping Surveys

Date	Hours	Personnel	Conditions (temperature, cloud cover, wind speed)
2019-04-23	8:15 a.m.–4:40 p.m.	Olivia Koziel	67°F–77°F; 0%–10% cloud cover; 1–7 mph wind
2019-04-24	8:00 a.m.–4:15 p.m.	Shana Carey	72°F–79°F; 0% cloud cover; 3–13 mph wind
2019-04-25	9:30 a.m.–5:30 p.m.	Shana Carey	58°F–69°F; 10% cloud cover; 1–10 mph wind
2019-05-03	9:00 a.m.–5:15 p.m.	Shana Carey	57°F–69°F; 0% cloud cover; 1–3 mph wind
2019-05-02	8:00 a.m.–4:30 p.m.	Shana Carey	67°F–74°F; 1% cloud cover; 2–4 mph wind

Dudek biologists recorded locations of Quino host plants using a mobile application for data collection and mapping. Data collected included the surveyor(s) date, species of host plant, and density of the host plant where the host plant was observed. All host plant occurrences were mapped as points. Density was collected using the following classes:

- Very Low: 1–19 plants
- Low: 20–100 plants
- Medium: 100–500 plants
- High: 500–10,000+ plants

Points were collected within patches of host plant at least as close as every 3 meters (10 feet). At the conclusion of surveys, Dudek geographic information systems (GIS) analysts created a GIS coverage map for host plants. After review by a biologist, a geodatabase was created to ensure these data are topologically correct and met final quality control and assurance procedures.

Methods – Quino Protocol Surveys

The 2014 USFWS protocol states that focused Quino surveys should begin the third week of February and end the second Saturday in May, unless otherwise approved by USFWS. Surveys are to be conducted during the adult flight season by biologists possessing a recovery permit for this species pursuant to Section 10(a)(1)(A) of the federal Endangered Species Act (USFWS 2014). The 2019 focused surveys followed the 2014 USFWS protocol with the exception of an approved amendment discussed in the 2019 notification. The amendment allowed surveys to begin the week of March 11 to account for the location's higher elevation, generally colder conditions, and general later start of Quino emergence.

Focused Quino surveys were conducted over nine visits from March 15, 2019, through May 13, 2019, per the 2014 USFWS Quino Checkerspot Butterfly Survey Guidelines (see Table 2). The survey area consisted of suitable habitat for Quino within the anticipated disturbance areas and associated buffer (Figures 2 and 3). Surveys were conducted by Quino-permitted biologists Andrew Borcher (TE-092162-4), Antonette Gutierrez (TE-50992B), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-53771B-2), Garrett Huffman (TE-20186A-2.1), Jeff Priest (TE-840619-6), Lindsay Willrick (TE-61175B-0), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), and Victor Novik (TE-069534).

Table 2. Schedule of 2019 Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
1	1 (Portion)	2019-03-16	VN	11:15 a.m.–6:00 p.m.	Air temp: 59°F–64°F; Ground temp: 61°F–63°F; 0% cloud cover; 4–13 mph wind; Clear	
	1 (Finish)	2019-03-17	AG, VN	9:30 a.m.–1:45 p.m.	Air temp: 62°F–67°F; Ground temp: 60°F–68°F; 0% cloud cover; 5–14 mph wind; Clear	
	2	2019-03-24	AG	9:45 a.m.–4:45 p.m.	Air temp: 65°F–75°F; Ground temp: 0°F–70°F; 0%–10% cloud cover; 0 mph wind; Clear	
	3	2019-03-26	DS, EL, LW	12:00 p.m.–2:10 p.m.	Air temp: 69°F–72°F; Ground temp: 69°F–72°F; 0% cloud cover; 1–4 mph wind; Clear	
	4	2019-04-08	DS, EL	8:30 a.m.–11:48 a.m.	Air temp: 70°F–83°F; Ground temp: 70°F–83°F; 10%–20% cloud cover; 0–4 mph wind; Clear to patchy	
	5	2019-04-14	AG, VN	9:30 a.m.–2:00 p.m.	Air temp: 68°F–80°F; Ground temp: 68°F–80°F; 40% cloud cover; 0–12 mph wind; Overcast	
	6	2019-04-19	EL	8:00 a.m.–2:45 p.m.	Air temp: 70°F–84°F; Ground temp: 71°F–86°F; 10% cloud cover; 2–6 mph wind; Clear	
	7	2019-04-24	DS, EL	11:15 a.m.–2:45 p.m.	Air temp: 80°F–84°F; Ground temp: 84°F–85°F; Clear	
	8	2019-05-03	DS, EL, LW	8:25 a.m.–4:00 p.m.	65°F–84°F; 1–4 mph wind; Clear	Survey includes Area 2
	9	2019-05-10	AG	10:45 a.m.–5:45 p.m.	Air temp: 60°F–61°F; Ground temp: 62°F–70°F; Water temp: null; 40%–100% cloud cover; 0–6 mph wind; Overcast to null	
2	1	2019-03-15	AB	9:01 a.m.–4:01 p.m.	Air temp: 56°F–64°F; Ground temp: 0°F–56°F; 0% cloud cover; 1–14 mph wind; Clear	
	2	2019-03-19	AB	9:30 a.m.–4:32 p.m.	Air temp: 69°F–72°F; Ground temp: 0°F–65°F; 10% cloud cover; 0–3 mph wind; Clear	
	3 (Portion)	2019-03-25	LW	10:15 a.m.–11:45 a.m.	63°F–67°F; 0% cloud cover; 0–2 mph wind; Clear	
	3 (Finish)	2019-03-29	LW, DS, EL	9:45 a.m.–12:00 p.m.	67°F–70°F; 0% cloud cover; 0–3 mph wind; Clear	
	4 (Portion)	2019-04-09	CA, EL, PS	9:00 a.m.–11:30 a.m.	Air temp: 62°F–72°F; Ground temp: 62°F–71°F; 10%–30% cloud cover; 7–14 mph wind; Patchy	
	4 (Finish)	2019-04-10	CA	3:01 p.m.–4:45 p.m.	Air temp: 66°F–72°F; Ground temp: 72°F–78°F; Clear	

Table 2. Schedule of 2019 Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	5	2019-04-13	DS, LW	9:30 a.m.–1:00 p.m.	Air temp: 64°F–77°F; Ground temp: 61°F–79°F; 0% cloud cover; 0–4 mph wind; Clear	
	6	2019-04-19	DS, LW	8:00 a.m.–12:00 p.m.	71°F–85°F; 0%–10% cloud cover; 1–3 mph wind; Clear	
	7	2019-04-24	EL, LW	8:00 a.m.–11:15 a.m.	Air temp: 75°F–80°F; Ground temp: 75°F–84°F; 0% cloud cover; 1–6 mph wind; Clear	
	8	2019-05-03	DS, EL, LW	8:25 a.m.–4:00 p.m.	65°F–84°F; 1–4 mph wind; Clear	Survey includes Area 1
	9	2019-05-10	LW	10:45 a.m.–5:15 p.m.	70°F–72°F; 50%–70% cloud cover; 3–13 mph wind; Clear	
3	1	2018-03-17	GH	9:00 a.m.–4:00 p.m.	Air temp: 61°F–73°F; Ground temp: 64°F–75°F; 10% cloud cover; 2–10 mph wind; Clear	
	2	2019-03-22	CA, PS	10:22 a.m.–2:30 p.m.	Air temp: 56.3°F–68°F; Ground temp: 60.1°F–70°F; 10%–20% cloud cover; 0–2 mph wind; Clear	
	3	2019-03-29	DS, EL, LW	2:20 p.m.–4:40 p.m.	Air temp: 67°F–72°F; Ground temp: 70°F–74°F; 10% cloud cover; 2–4 mph wind; Clear	
	4	2019-04-10	JP	9:00 a.m.–3:46 p.m.	Air temp: 60°F–68°F; Ground temp: 65°F–70°F; 0% cloud cover; 0–5 mph wind; Clear	
	5	2019-04-14	AG, VN	2:00 p.m.–5:40 p.m.	Air temp: 72°F–80°F; Ground temp: 72°F–80°F; Water temp: null; 20%–40% cloud cover; 0–12 mph wind; Patchy	
	6	2019-04-19	DS, LW	12:00 p.m.–3:30 p.m.	Air temp: 84°F–85°F; Ground temp: 86.5°F–87°F; 0%–10% cloud cover; 2–11 mph wind; Clear	
	7	2019-04-25	CA, EB, PS	8:14 a.m.–1:31 p.m.	Air temp: 68°F–91°F; Ground temp: 70°F–96°F; 0%–10% cloud cover; 0–3 mph wind; Clear	
	8	2019-05-03	DS, EL, LW	8:00 a.m.–2:30 p.m.	Air temp: 65°F–78°F; Ground temp: 65°F–84°F; 0% cloud cover; 2–9 mph wind; Clear	
	9 (Portion)	2019-05-06	EB	8:03 a.m.–10:55 a.m.	Air temp: 49°F–51°F; Ground temp: 53°F–55°F; Overcast	
	9 (Finish)	2019-05-10	DS	11:00 a.m.–5:45 p.m.	Air temp: 70°F; Ground temp: 74°F–75°F; 50%–70% cloud cover; 6–13 mph wind; Overcast to patchy	

Table 2. Schedule of 2019 Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
4	1 (Portion)	2019-03-15	VN	11:15 a.m.–5:00 p.m.	Air temp: 57°F; Ground temp: 60°F; 30%–40% cloud cover; 2–14 mph wind	
	1 (Finish)	2019-03-16	VN	10:00 a.m.–11:15 a.m.	Air temp: 58°F–59°F; Ground temp: 60°F–61°F; 0% cloud cover; 8–17 mph wind; Clear	
	2	2019-03-24	DS, VN	9:15 a.m.–1:00 p.m.	Air temp: 60°F–69°F; Ground temp: 60°F–72°F; 0%–30% cloud cover; 0–7 mph wind; Clear	
	3	2019-03-30	AG, VN	9:15 p.m.–1:10 p.m.	Air temp: 62°F–70°F; Ground temp: 60°F–70°F; Water temp: null; null% cloud cover; 0–12 mph wind; Clear	
	4[a]	2019-04-05	LW, DS	11:30 a.m.–12:00 p.m.	63°F–64°F; 90% cloud cover; 5–11 mph wind; Overcast to drizzle	
	4	2019-04-08	DS, EL	12:00 p.m.–3:20 p.m.	Air temp: 82°F–89°F; Ground temp: 83°F–91°F; 20% cloud cover; 2–4 mph wind; Patchy	
	5	2019-04-13	DS, LW	1:00 p.m.–4:35 p.m.	Air temp: 74°F–77°F; Ground temp: 77°F–79°F; 0% cloud cover; 0–1 mph wind; Clear	
	6	2019-04-19	AG	9:00 a.m.–4:00 p.m.	Air temp: 70°F–89°F; Ground temp: 68°F–81°F; Water temp: null; 10% cloud cover; 0–8 mph wind; Clear	
	7	2019-04-24	LW	8:30 a.m.–3:30 p.m.	67°F–73°C; 0% cloud cover; 0–5 mph wind; Clear	
	8	2019-05-02	DS, EL	12:00 p.m.–3:30 p.m.	Air temp: 77°F; Ground temp: 77°F; 40% cloud cover; 4–7 mph wind; Patchy	
	9	2019-05-12	AG	10:00 a.m.–5:00 p.m.	Air temp: 70°F–78°F; Ground temp: 71°F–76°F; Water temp: null; 20%–30% cloud cover; 0–7 mph wind; Patchy	
5	1	2019-03-17	DS, VN	9:30 a.m.–1:45 p.m.	Air temp: 62°F–67°F; Ground temp: 60°F–68°F; 0% cloud cover; 5–14 mph wind; Clear	
	2	2019-03-24	DS, VN	1:00 p.m.–4:30 p.m.	Air temp: 67°F–69°F; Ground temp: 70°F–72°F; 20%–30% cloud cover; 2–8 mph wind; Clear	
	3	2019-03-30	AG, VN	1:10 p.m.–4:40 p.m.	Air temp: 70°F; Ground temp: 63°F–70°F; 0% cloud cover; 2–12 mph wind; Clear	
	4	2019-04-04	DS, VN	10:37 a.m.–3:15 p.m.	Air temp: 59°F–62°F; Ground temp: 60.6°F–61°F; 10%–30% cloud cover; 4–10 mph wind; Patchy to clear	

Table 2. Schedule of 2019 Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	5	2019-04-10	LW, MM	9:24 a.m.–1:02 p.m.	63°F–67°F; 0% cloud cover; 4–5 mph wind	
	6	2019-04-21	JP	9:00 a.m.–3:30 p.m.	Air temp: 56°F–68°F; Ground temp: 66°F–75°F; 0% cloud cover; 0–8 mph wind; Clear	
	7	2019-04-25	EL	7:50 a.m.–2:20 p.m.	Air temp: 67°F–90°F; Ground temp: 67°F–93°F; 0% cloud cover; 1–8 mph wind; Clear	
	8	2019-05-02	DS, EL	8:30 a.m.–12:00 p.m.	Air temp: 70°F–73°F; Ground temp: 70°F–74°F; 60%–90% cloud cover; 0–2 mph wind; Overcast to patchy	
	9	2019-05-09	AG, DS	11:15 a.m.–3:30 p.m.	Air temp: 61°F–63°F; Ground temp: 63°F–74°F; Water temp: null; 10%–30% cloud cover; 0–11 mph wind; Patchy	
6	1	2019-03-18	EB	8:51 a.m.–4:44 p.m.	Air temp: 70.2°F–77°F; Ground temp: 71.5°F–78°F; 0% cloud cover; 0–3 mph wind; Clear	
	2	2019-03-22	EB	9:41 a.m.–4:50 p.m.	Air temp: 61.4°F–67°F; Ground temp: 66.5°F–70°F; 0%–20% cloud cover; 0–3 mph wind; Clear	
	3	2019-03-29	CA, EB, PS	8:21 a.m.–12:04 p.m.	Air temp: 60°F–69°F; Ground temp: 60°F–65.7°F; 0% cloud cover; 0–3 mph wind; Clear	
	4	2019-04-04	CA, PS	10:40 a.m.–1:44 p.m.	Air temp: 52°F–61°F; Ground temp: 60°F–62.4°F; 0%–20% cloud cover; 2–7 mph wind; Clear	
	5	2019-04-10	EB	8:17 a.m.–6:09 p.m.	Air temp: 67°F–69°F; Ground temp: 69°F–74°F; 0% cloud cover; 0–4 mph wind; Clear	Survey includes Survey Area 7
	6	2019-04-17	CA, PS	1:25 p.m.–4:29 p.m.	Air temp: 75°F–76°F; Ground temp: 79°F–80°F; 0% cloud cover; 1–4 mph wind; Clear	
	7	2019-04-22	EB	8:54 a.m.–3:57 p.m.	Air temp: 69°F–70°F; Ground temp: 72°F–76°F; 30%–40% cloud cover; 0–3 mph wind; Clear to patchy	
	8	2019-05-02	EB	9:31 a.m.–4:11 p.m.	Air temp: 67°F–77°F; Ground temp: 70°F–84°F; 20%–40% cloud cover; 0–4 mph wind; Patchy to clear	
	9 (Portion)	2019-05-08	EB	8:45 a.m.–10:09 a.m.	Air temp: 50°F–57°F; Ground temp: 59°F–61°F; 100% cloud cover; 0–4 mph wind; Overcast	
	9 (Finish)	2019-05-13	EB	10:01 a.m.–5:02 p.m.	Air temp: 78°F–81°F; Ground temp: 75.2°F–87°F; 10%–60% cloud cover; 0–3 mph wind; Clear	

Table 2. Schedule of 2019 Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
7	1	2019-03-19	AB, LW	12:30 p.m.–5:15 p.m.	64°F–72°F; 0%–10% cloud cover; 0–5 mph wind; Clear	
	2	2019-03-23	JP	9:30 a.m.–4:30 p.m.	Air temp: 60°F–66°F; Ground temp: 60°F–64°F; 0% cloud cover; 2–14 mph wind; Clear	
	3	2019-03-29	CA, EB, PS	12:04 p.m.–2:54 p.m.	Air temp: 69°F–75°F; Ground temp: 65.7°F–75.7°F; 0%–20% cloud cover; 0–5 mph wind; Clear to patchy	
	4	2019-04-04	CA, PS	1:47 p.m.–5:10 p.m.	Air temp: 58°F–61°F; Ground temp: 60°F–62.4°F; 0%–50% cloud cover; 2–6 mph wind; Clear to Patchy	
	5	2019-04-10	EB, MM, LW	8:17 a.m.–6:09 p.m.	Air temp: 67°F–69°F; Ground temp: 69°F–74°F; 0% cloud cover; 0–4 mph wind; Clear	Survey includes Survey Area 6
	6	2019-04-17	CA, PS	9:48 a.m.–1:18 p.m.	Air temp: 72°F–74°F; Ground temp: 66°F–80°F; 0% cloud cover; 1–5 mph wind; Clear	
	7	2019-04-25	CA, EB, PS	1:40 p.m.–4:23 p.m.	Air temp: 81°F–91°F; Ground temp: 84°F–96°F; 0% cloud cover; 0–6 mph wind; Clear	
	8	2019-05-02	BO	8:01 AM–2:59 AM	Air temp: 70–80°F; Ground temp: 70–78°F; 30–50% cloud cover; 1–5 mph wind; Patchy	
	9	2019-05-09	CA, PS	10:33 a.m.–2:01 p.m.	Air temp: 68°F–70°F; Ground temp: 65°F–77°F; 10%–40% cloud cover; 0–10 mph wind; Patchy to clear	
8	1	2019-03-17	JP	10:00 a.m.–2:30 p.m.	Air temp: 60°F–65°F; Ground temp: 60°F–66°F; 0% cloud cover; 3–12 mph wind; Clear	
	2	2019-03-22	CA, PS	2:44 p.m.–4:49 p.m.	Air temp: 66°F–69°F; Ground temp: 70°F–73°F; 20%–30% cloud cover; 0–2 mph wind; Clear	
	3 (Portion)	2019-03-27	PS	10:00 a.m.–10:58 a.m.	Air temp: 62°F; Ground temp: 63.3°F–64°F; 60%–100% cloud cover; 3–9 mph wind; Patchy to overcast	
	3 (Finish)	2019-03-29	CA, EB, PS	2:58 p.m.–4:34 p.m.	Air temp: 67°F–75°F; Ground temp: 69°F–75.7°F; 10%–20% cloud cover; 0–5 mph wind; Patchy to clear	
	4	2019-04-03	PS	10:16 a.m.–2:27 p.m.	Air temp: 56°F–61°F; Ground temp: 61°F–72°F; 30%–40% cloud cover; 4–12 mph wind; Patchy	
	5	2019-04-08	PS	10:11 a.m.–2:41 p.m.	Air temp: 80.6°F–86°F; ground temp: 79.5°F–89°F; Clear	

Table 2. Schedule of 2019 Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	6	2019-04-15	PS	10:02 p.m.–2:26 p.m.	Air temp: 64°F–69.2°F; Ground temp: 69.4°F–71.9°F; 30%–40% cloud cover; 1–10 mph wind; Patchy to clear	
	7	2019-04-25	PS	8:14 a.m.–12:49 p.m.	Air temp: 68°F–92°F; Ground temp: 70°F–96.2°F; 0%–10% cloud cover; 0–2 mph wind; Clear	
	8	2019-05-01	CA, PS	10:05 a.m.–2:32 p.m.	Air temp: 66°F–74°F; Ground temp: 69.1°F–81°F; 0% cloud cover; 0–5 mph wind; Clear	
	9	2019-05-09	CA, PS	2:08 p.m.–4:30 p.m.	Air temp: 65°F–68°F; Ground temp: 70°F–77°F; 10%–30% cloud cover; 2–8 mph wind; Clear	

Notes: AB = Andrew Borcher (TE-092162-4); AG = Antonette Gutierrez (TE-50992B); BO = Brock Ortega (TE-813545-6); CA = Callie Amoaku (TE-36118B-1); DS = Diana Saucedo (TE-221287-1); EB = Erin Bergman (TE-53771B-2); EL = David Erik LaCoste (TE-027736-6); GH = Garrett Huffman (TE-20186A-2.1); JP = Jeffrey Priest (TE-840619-6); LW = Lindsay Willrick (TE-61175B-0); MM = Margie Mulligan (TE-88969B-0); PS = Patricia Schuyler (TE-27502B-1); VN = Victor Novik (TE-069534).

[a] Surveys terminated early due to non-protocol weather conditions.

Dudek biologists were provided with 200-scale (1 inch = 200 feet) aerial maps of the study area. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species.

The survey methods consisted of slowly walking roughly parallel transects spaced approximately 30 feet (10 meters) apart throughout all suitable habitats within the 502-acre study area. The study area was divided into eight survey areas, ranging from 44 acres to 69 acres each (Figures 2 and 3). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10 acres per person-hour. All wildlife species were recorded and are included in Appendix A.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; winds greater than 15 miles per hour measured 4 to 6 feet above ground level for more than 30 seconds; temperature in the shade at ground level less than 60°F on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the Quino survey are shown in Table 2. Copies of the surveyors' field notes are included as Appendix B.

Weather conditions varied throughout the survey season, and numerous surveys were postponed or ended early/began late due to high winds, cloud cover, and/or low temperatures. Because of these weather conditions, some areas were surveyed over 2 days to complete the survey. If a survey pass was missed due to sustained inclement weather, a makeup survey was performed on non-consecutive days the following week, in accordance with the 2014 USFWS protocol.

Results – Quino Protocol Survey

A total of five Quino were observed during the 2019 focused surveys by Ms. Erin Bergman on April 10, 2019 within the Boulder Brush Corridor (Figure 2a and 2b) (Appendix C). The Quino were observed in an area with open decomposed granite soils, hilltops, ridges, numerous granitic rock outcrops, and various nectar sources. No host plants were observed within the immediate survey area. Quino spent much of the observation time nectaring on Clearwater cryptantha (*Cryptantha intermedia* var. *intermedia*) and pointed cryptantha (*Cryptantha muricata* var. *jonesii*) for short periods of time (a few seconds), landing on bare ground (a few seconds) and performing hill topping behaviors the majority of the time. These Quino were only observed during this one survey week on this one day. No other Quino were observed during the protocol surveys. While there is suitable habitat within the Torrey Wind Project area, no Quino were observed within the Torrey Wind Project area (Figure 3a and 3b). However, based on communications with the USFWS (pers com 7/10/2019), the USFWS typically considers all suitable habitat within 1km of an observation to be occupied. The Quino observation within the Boulder Brush Corridor was within 1km of suitable habitat within the Torrey Wind Project area.

A total of 53 butterfly species were observed during the surveys. The weeks in which these butterflies were observed are shown in Tables 3A and 3B.

Table 3A. Butterflies Observed Within the Study Area During Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
Hesperiidae – Skippers						
Copaeodes aurantiacus	orange skipperling	–	–	X	–	–
Erynnis funeralis	funereal duskywing	X	X	X	X	X
Erynnis propertius	Propertius duskywing	–	–	X	X	–

Table 3A. Butterflies Observed Within the Study Area During Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
Erynnis tristis	mournful duskywing	–	–	–	–	–
Pholisora catullus	Common sootywing	–	–	X	X	X
Pyrgus albescens	white checkered-skipper	X	–	X	X	–
***Nymphalidae* – Brush-Footed Butterflies**						
Chlosyne californica	California patch	X	–	X	–	–
Chlosyne gabbii	Gabb's checkerspot	–	–	–	–	–
Danaus gilippus	queen	–	–	–	–	–
Danaus plexippus	monarch	–	X	–	–	–
Euphydryas chalcedona chalcedona	Chalcedon variable checkerspot	–	–	–	–	–
Euphydryas editha quino	quino checkerspot butterfly	–	–	–	–	X
Junonia coenia	common buckeye	–	–	–	–	–
Nymphalis antiopa	mourning cloak	–	–	–	–	–
Nymphalis californica	California tortoiseshell	X	X	X	X	X
Vanessa annabella	west coast lady	X	X	X	X	X
Vanessa cardui	painted lady	X	X	X	X	X
	lady sp.	X	X	–	–	X
Lycaenidae – Blues and Hairstreaks						
Atlides halesus	great purple hairstreak	X	–	–	–	X
Brephidium exile	western pygmy-blue	–	X	–	X	–
Callophrys augustinus	brown elfin	X	X	X	X	X
Callophrys dumetorum	bramble hairstreak	X	X	X	X	X
Callophrys dumetorum affinis	immaculate bramble hairstreak	–	–	–	–	–
Callophrys perplexa	Perplexing hairstreak	–	X	–	–	–
Euphilotes battoides bernardino	Bernardino square-spotted blue	–	–	–	–	–
Everes amyntula	western tailed-blue	–	–	–	–	–
Glaucopsyche lygdamus australis	southern blue	–	–	–	–	–
Hemiargus ceraunus gyas	Edward's blue	–	–	X	–	X
Hemiargus isola	Reakirt's blue	–	–	–	–	–
Icaricia acmon acmon	Acmon blue	–	–	X	–	X
Leptotes marina	marine blue	–	–	–	X	X
Lycaeides melissa	Melissa blue	–	–	–	–	–
Strymon melinus	gray hairstreak	–	X	–	X	X
	blue sp.	–	X	–	X	–
***Papilionidae* – Swallowtails**						
Papilio eurymedon	pale swallowtail	–	–	X	–	–

Table 3A. Butterflies Observed Within the Study Area During Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
Pieridae – Whites and Sulfurs						
Anthocharis cethura	desert orangetip	X	X	X	X	–
Anthocharis sara sara	Pacific Sara orangetip	X	X	X	X	X
Colias eurydice	California dogface	–	X	X	X	–
Colias eurytheme	orange sulphur	X	–	X	X	–
Colias harfordii	Harford's sulphur	X	X	–	X	X
Euchloe hyantis	California marble	X	–	–	–	–
Euchloe hyantis lotta	desert pearly marble	X	X	X	X	X
Eurema nicippe	sleepy orange	–	–	–	–	–
Nathalis iole	dainty sulphur	X	X	X	X	X
Phoebis sennae	cloudless sulphur	–	–	X	–	–
Pieris rapae	cabbage white	–	X	–	X	X
Pontia beckerii	Becker's white	–	–	X	X	–
Pontia protodice	checkered white	X	X	X	X	X
Pontia sisymbrii	spring white	X	X	X	X	X
	orangetip sp.	X	–	–	–	–
	sulphur sp.	X	X	X	X	X
	white sp.	–	X	X	–	X
Riodinidae – Metalmarks						
Apodemia mormo virgulti	Behr's metalmark	–	X	X	X	X

Table 3B. Butterflies Observed Within the Study Area During Weeks 6–9

Scientific Name	Common Name	Week			
		6	7	8	9
Hesperiidae – Skippers					
Copaeodes aurantiacus	orange skipperling	–	–	–	–
Erynnis funeralis	funereal duskywing	X	X	X	X
Erynnis propertius	Propertius duskywing	X	X	X	X
Erynnis tristis	mournful duskywing	–	X	–	–
Pholisora catullus	Common sootywing	X	X	–	–
Pyrgus albescens	white checkered-skipper	X	X	–	X
Nymphalidae – Brush-Footed Butterflies					
Chlosyne californica	California patch	–	–	–	–
Chlosyne gabbii	Gabb's checkerspot	X	–	–	–

Table 3B. Butterflies Observed Within the Study Area During Weeks 6–9

Scientific Name	Common Name	Week			
		6	7	8	9
Danaus gilippus	queen	X	–	–	–
Danaus plexippus	monarch	–	–	–	X
Euphydryas chalcedona chalcedona	Chalcedon variable checkerspot	X	–	–	–
Euphydryas editha quino	quino checkerspot butterfly	–	–	–	–
Junonia coenia	common buckeye	–	–	X	–
Nymphalis antiopa	mourning cloak	–	–	X	–
Nymphalis californica	California tortoiseshell	–	–	–	–
Vanessa annabella	west coast lady	X	X	X	–
Vanessa cardui	painted lady	X	X	X	X
	lady sp.	X	X	X	X
Lycaenidae **– Blues and Hairstreaks**					
Atlides halesus	great purple hairstreak	X	X	–	–
Brephidium exile	western pygmy-blue	X	X	X	X
Callophrys augustinus	brown elfin	–	–	X	–
Callophrys dumetorum	bramble hairstreak	X	–	X	–
Callophrys dumetorum affinis	immaculate bramble hairstreak	–	X	–	–
Callophrys perplexa	Perplexing hairstreak	–	–	–	–
Euphilotes battoides bernardino	Bernardino square-spotted blue	–	–	–	X
Everes amyntula	western tailed-blue	–	–	X	X
Glaucopsyche lygdamus australis	southern blue	–	X	–	–
Hemiargus ceraunus gyas	Edward's blue	X	X	X	X
Hemiargus isola	Reakirt's blue	X	–	–	–
Icaricia acmon acmon	Acmon blue	–	X	X	X
Leptotes marina	marine blue	–	X	X	X
Lycaeides melissa	Melissa blue	–	–	–	X
Strymon melinus	gray hairstreak	X	X	X	X
	blue sp.	X	–	X	X
Papilionidae **– Swallowtails**					
Papilio eurymedon	pale swallowtail	X	X	X	–
Pieridae **– Whites and Sulfurs**					
Anthocharis cethura	desert orangetip	X	–	X	–
Anthocharis sara sara	Pacific Sara orangetip	X	X	X	X
Colias eurydice	California dogface	X	–	–	–
Colias eurytheme	orange sulphur	X	X	X	X
Colias harfordii	Harford's sulphur	X	X	X	X

Table 3B. Butterflies Observed Within the Study Area During Weeks 6–9

Scientific Name	Common Name	Week			
		6	7	8	9
Euchloe hyantis	California marble	–	–	–	–
Euchloe hyantis lotta	desert pearly marble	X	X	X	X
Eurema nicippe	sleepy orange	X	–	–	–
Nathalis iole	dainty sulphur	X	X	X	X
Phoebis sennae	cloudless sulphur	–	–	–	–
Pieris rapae	cabbage white	X	–	X	X
Pontia beckerii	Becker's white	X	–	–	X
Pontia protodice	checkered white	X	X	X	X
Pontia sisymbrii	spring white	X	–	–	–
	orangetip sp.	–	–	–	–
	sulphur sp.	X	–	–	X
	white sp.	X	X	X	X
***Riodinidae* – Metalmarks**					
Apodemia mormo virgulti	Behr's metalmark	X	X	X	X

Results – Host Plant Mapping

Three Quino larval host plants, Coulter's snapdragon, Chinese houses, and stiffbranch bird's beak were observed within the study area during the focused surveys (Figures 4a, 4b, 5a, and 5b, Host Plant Mapping). Coulter's snapdragon was mapped with a Very Low density in one location in the southeastern portion of the study area (Figure 5). Chinese houses was the most abundant Quino larval host plant mapped throughout the study area with Very Low, Low, and Medium densities (Figures 4 and 5). The third Quino larval host plant, stiffbranch bird's beak, was mapped in five locations in the central and southern portions of the study area occurring in Very Low and Low densities (Figures 4 and 5). Table 4 includes the known and observed adult Quino nectar plants (according to Mattoni et al. 1997; USFWS 2002, 2003; 67 FR 18355–18395). Larval host plants are also included in Table 4 and are shown in bold print. All plant species that were in bloom during the 2019 surveys were documented in the field notes.

Table 4. Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
***Apiaceae* – Carrot Family**		
Lomatium dasycarpum ssp. *dasycarpum*	woollyfruit desertparsley	X
Lomatium utriculatum	common lomatium	—
***Asteraceae* – Sunflower Family**		
Achillea millefolium	common yarrow, milfoil	X
Lasthenia californica or *Lasthenia gracilis*	California goldfields or needle goldfields	X
Lasthenia coronaria	royal goldfields	—

Table 4. Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
Layia platyglossa	coastal tidytips, common tidytips	X
***Boraginaceae* – Borage Family**		
Amsinckia menziesii	Menzies' fiddleneck, rancher's fireweed	X
Amsinckia menziesii var. *intermedia*	rancher's fiddleneck	—
Amsinckia menziesii var. *menziesii*	rigid fiddleneck	—
Cryptantha spp. or *Plagiobothrys* spp.	cryptantha or popcorn flower	X
Phacelia distans	distant phacelia, wild-heliotrope	X
***Fabaceae* – Pea Family**		
Acmispon (=Lotus) spp.	deerweed, spanishclover, lotus	X
***Hydrophyllaceae* – Waterleaf Family**		
Eriodictyon crassifolium var. *crassifolium*	thickleaf yerba santa	—
Eriodictyon trichocalyx var. *trichocalyx*	hairy yerba santa	—
***Lamiaceae* – Mint Family**		
Salvia columbariae	chia	X
***Plantaginaceae* – Plantain Family**		
Antirrhinum coulterianum	**Coulter's snapdragon**	X
Collinsia heterophylla	**Purple Chinese houses**	—
Collinsia concolor	**Chinese houses**	X
Keckiella antirrhinoides var. *antirrhinoides*	snapdragon penstemon	—
Keckiella cordifolia	heartleaf keckiella, climbing bush penstemon	—
Plantago erecta	**dwarf plantain**	—
Plantago patagonica	**woolly plantain**	—
***Polemoniaceae* – Phlox Family**		
Gilia angelensis	chaparral gilia	X
Gilia capitata ssp. *abrotanifolia*	bluehead gilia	—
Linanthus spp.	ground pink	X
***Polygonaceae* – Buckwheat Family**		
Eriogonum fasciculatum	California buckwheat	X
***Orobanchaceae* – Broom-Rape Family**		
Castilleja exserta	**exserted Indian paintbrush, common owl's-clover**	—
***Scrophulariaceae* – Figwort Family**		
Cordylanthus rigidus	**stiffbranch bird's beak**	X
***Liliaceae* – Lily Family**		
Allium haematochiton	redskin onion	—
Allium peninsulare	Mexicali onion, red-flower onion	—

Table 4. Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
Allium praecox	early onion	—
Bloomeria clevelandii	San Diego goldenstar	—
Dichelostemma capitatum	bluedicks	X
Muilla maritima	sea muilla, common muilla	—

Sources: List derived from Mattoni et al. 1997; USFWS 2002, 2003; 67 FR 18355–18395 (for *Euphydryas editha*).
Note: Plants listed in **bold print** are known Quino larval host plant species.

Dudek certifies that the information in this survey report and the attached figures and appendices fully and accurately represents the work conducted by the Quino-permitted biologists who conducted this focused survey.

Please feel free to contact Brock Ortega at bortega@dudek.com or Callie Amoaku at cford@dudek.com if you have any questions regarding the contents of this report.

Sincerely,

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Callie Amoaku
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David Erik LaCoste
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Diana Saucedo
Permit #TE-221287-1

Erin Bergman
Permit #TE-53771B-2

Garrett Huffman
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Jeffrey Priest
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Lindsay Willrick
Permit #TE-61175B-0

Margie Mulligan
Permit #TE-88969B-0

Patricia Schuyler
Permit #TE-27502B-1

Victor Novik
Permit #TE-069534

Att: *Figure 1, Survey Results – Index Map*
Figure 2A, Survey Results – Boulder Brush
Figure 2B, Survey Results – Boulder Brush
Figure 3A, Survey Results - Torrey
Figure 3B, Survey Results - Torrey
Figure 4A, Host Plant Mapping – Boulder Brush
Figure 4B, Host Plant Mapping – Boulder Brush
Figure 5A, Host Plant Mapping - Torrey
Figure 5B, Host Plant Mapping - Torrey
Appendix A – List of Wildlife Species Observed during the 2019 Quino Survey for the Proposed Wind Energy Facilities
Appendix B – Field Notes Collected during the 2019 Quino Survey for the Proposed Wind Energy Facilities
Appendix C – Notification of Observation of Quino Checkerspot Butterfly for the Proposed Wind Energy Facilities
cc: *Brock Ortega, Dudek*
Matthew Valerio, Dudek

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Appendix A

List of Wildlife Species Observed during the 2019 Quino Survey for the Proposed Wind Energy Facilities

AMPHIBIAN

TOADS

BUFONIDAE—TRUE TOADS

Anaxyrus boreas—western toad

BIRD

BLACKBIRDS, ORIOLES, AND ALLIES

ICTERIDAE—BLACKBIRDS

Icterus cucullatus—hooded oriole
Icterus parisorum—Scott's oriole
Sturnella neglecta—western meadowlark

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

CARDINALS, GROSBEAKS, AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black-headed grosbeak
Piranga ludoviciana—western tanager

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch
Spinus psaltria—lesser goldfinch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee
Empidonax hammondii—Hammond's flycatcher
Myiarchus cinerascens—ash-throated flycatcher
Sayornis nigricans—black phoebe
Sayornis saya—Say's phoebe
Tyrannus verticalis—western kingbird
Tyrannus vociferans—Cassin's kingbird

GOATSUCKERS

CAPRIMULGIDAE—GOATSUCKERS

Phalaenoptilus nuttallii—common poorwill

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk
Buteo jamaicensis—red-tailed hawk

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Archilochus alexandri—black-chinned hummingbird
Calypte anna—Anna's hummingbird
Calypte costae—Costa's hummingbird

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—California scrub-jay
Corvus brachyrhynchos—American crow
Corvus corax—common raven
Cyanocitta stelleri—Steller's jay

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird
Toxostoma redivivum—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail
Oreortyx pictus—mountain quail

NEW WORLD SPARROWS

PASSERELLIDAE—NEW WORLD SPARROWS

Amphispiza bilineata—black-throated sparrow
Junco hyemalis—dark-eyed junco
Melospiza melodia—song sparrow
Melozone crissalis—California towhee
Pipilo maculatus—spotted towhee
Spizella atrogularis—black-chinned sparrow
Spizella passerina—chipping sparrow
Zonotrichia leucophrys—white-crowned sparrow

NEW WORLD VULTURES

CATHARTIDAE—NEW WORLD VULTURES

Cathartes aura—turkey vulture

NUTHATCHES

SITTIDAE—NUTHATCHES

Sitta carolinensis—white-breasted nuthatch

OLD WORLD WARBLERS AND GNATCATCHERS

SYLVIIDAE—SYLVIID WARBLERS

Polioptila caerulea—blue-gray gnatcatcher

OWLS

TYTONIDAE—BARN OWLS

Tyto alba—barn owl

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Patagioenas fasciata—band-tailed pigeon
Zenaida macroura—mourning dove
* *Streptopelia decaocto*—Eurasian collared-dove
Zenaida asiatica—white-winged dove

QUAILS, PHEASANTS, AND RELATIVES

PHASIANIDAE—PARTRIDGES, GROUSE, TURKEYS, AND OLD WORLD QUAIL

Meleagris gallopavo—wild turkey

ROADRUNNERS AND CUCKOOS

CUCULIDAE—CUCKOOS, ROADRUNNERS, AND ANIS

Geococcyx californianus—greater roadrunner

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

STARLINGS AND ALLIES

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis—white-throated swift

THRUSHES

TURDIDAE—THRUSHES

Sialia mexicana—western bluebird
Turdus migratorius—American robin

TITMICE

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus—oak titmouse

VIREOS

VIREONIDAE—VIREOS

Vireo gilvus—warbling vireo

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Oreothlypis celata—orange-crowned warbler
Oreothlypis ruficapilla—Nashville warbler
Setophaga coronata—yellow-rumped warbler
Setophaga occidentalis—hermit warbler
Setophaga petechia—yellow warbler
Setophaga townsendi—Townsend's warbler

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Colaptes auratus—northern flicker
Melanerpes formicivorus—acorn woodpecker
Dryobates nuttallii—Nuttall's woodpecker
Dryobates scalaris—ladder-backed woodpecker

WRENS

TROGLODYTIDAE—WRENS

Campylorhynchus brunneicapillus—cactus wren
Salpinctes obsoletus—rock wren
Thryomanes bewickii—Bewick's wren

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

INVERTEBRATE

BUTTERFLIES

LYCAENIDAE—BLUES, HAIRSTREAKS, AND COPPERS

Atlides halesus—great purple hairstreak
Brephidium exile—western pygmy-blue
Callophrys augustinus—brown elfin
Callophrys dumetorum affinis—immaculate bramble hairstreak
Callophrys dumetorum—bramble hairstreak
Euphilotes battoides bernardino—Bernardino square-spotted blue
Everes amyntula—western tailed-blue
Glaucopsyche lygdamus australis—southern blue
Hemiargus ceraunus gyas—Edward's blue
Hemiargus isola—Reakirt's blue
Icaricia acmon acmon—Acmon blue
Leptotes marina—marine blue
Lycaeides melissa—Melissa blue
Strymon melinus—gray hairstreak
Callophrys perplexa—Perplexing hairstreak
—Blue sp.

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Chlosyne californica—California patch
Chlosyne gabbii—Gabb's checkerspot
Danaus gilippus—queen
Danaus plexippus—monarch
Euphydryas chalcedona chalcedona—Chalcedon variable checkerspot
Euphydryas editha quino—quino checkerspot butterfly
Junonia coenia—common buckeye
Nymphalis antiopa—mourning cloak
Nymphalis californica—California tortoiseshell
Vanessa annabella—west coast lady
Vanessa cardui—painted lady
—Lady sp.

RIODINIDAE—METALMARKS

Apodemia mormo virgulti—Behr's metalmark

HESPERIIDAE—SKIPPERS

Copaeodes aurantiacus—orange skipperling
Erynnis funeralis—funereal duskywing
Erynnis propertius—Propertius duskywing
Erynnis tristis—mournful duskywing
Pholisora catullus—common sootywing
Pyrgus albescens—white checkered-skipper

PAPILIONIDAE—SWALLOWTAILS

Papilio eurymedon—pale swallowtail

PIERIDAE—WHITES AND SULFURS

Anthocharis cethura—desert orangetip
Anthocharis sara sara—Pacific sara orangetip
Colias eurydice—California dogface
Colias eurytheme—orange sulphur
Colias harfordii—Harford's sulphur
Euchloe hyantis lotta—desert pearly marble
Eurema nicippe—sleepy orange
Nathalis iole—dainty sulphur
Phoebis sennae—cloudless sulphur
Pieris rapae—cabbage white
Pontia beckerii—Becker's white
Pontia protodice—checkered white
Pontia sisymbrii—spring white
Euchloe hyantis—California marble
—Orangetip sp.
—Sulphur sp.
—White sp.

MOTHS

SPHINGIDAE—HAWK MOTHS

Hyles lineata—white-lined sphinx moth

MAMMAL

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

CATS

FELIDAE—CATS

Puma concolor—cougar

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit
Lepus californicus—black-tailed jackrabbit
Sylvilagus audubonii—desert cottontail
Sylvilagus bachmani—brush rabbit

KANGAROO RATS

HETEROMYIDAE—POCKET MICE AND KANGAROO RATS

Dipodomys sp.—kangaroo rat

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

RATS, MICE, AND VOLES

CRICETIDAE—RATS, MICE, AND VOLES

Neotoma lepida—desert woodrat
Neotoma sp.—woodrat

SQUIRRELS

SCIURIDAE—SQUIRRELS

Ammospermophilus leucurus—white-tailed antelope squirrel
Spermophilus (Otospermophilus) beecheyi—California ground squirrel
Tamias merriami—Merriam's chipmunk

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

REPTILE

LIZARDS

CROTAPHYTIDAE—COLLARED LIZARDS

Gambelia wislizenii—long-nosed leopard lizard

PHRYNOSOMATIDAE—IGUANID LIZARDS

Phrynosoma blainvillii—Blainville's horned lizard
Sceloporus occidentalis—western fence lizard
Sceloporus orcutti—granite spiny lizard
Uta stansburiana—common side-blotched lizard

SCINCIDAE—SKINKS

Plestiodon gilberti—Gilbert's skink

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail
Aspidoscelis tigris—tiger whiptail

SNAKES

COLUBRIDAE—COLUBRID SNAKES

Coluber lateralis—striped racer
Pituophis catenifer—gophersnake

VIPERIDAE—VIPERS

Crotalus oreganus—western rattlesnake

* signifies introduced (non-native) species

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Appendix B

Field Notes Collected During the 2019 Quino Survey for the Proposed Wind Energy Facilities

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-16
Biologist(s)	Victor Novik
Survey Area	1
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:15:00	59	63	0	13	clear	
End	18:00:00	64	61	0	11	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
brown elfin (1)	Saras orangtip (17)	
painted lady (1+)	white checkered-skipper (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Arabis sp.	*Descurainia pinnata*	*Ribes quercetorum*
Camisonia sp.	*Erodium cicutarium*	*Sanicula arguta*
Cryptantha sp.	*Plagiobothrys sp.*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-17
Biologist(s)	Antonette Gutierrez, Victor Novik
Survey Area	1
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	62	60	0	9	clear	
End	13:45:00	67	68	0	14	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
bramble hairstreak (1)	Pacific sara orangetip (43)	spring white (1)
funereal duskywing (2)	painted lady (1+)	Sulphur sp. (3)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Arctostaphylus sp.	*Descurainia pinnata*	*Plagiobothryus sp.*
Camisonia sp.	*Erodium cicutarium*	*Tropidocarpum gracile*
Cryptantha sp.	*Lasthenia californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-24
Biologist(s)	Antonette Gutierrez
Survey Area	1
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:45:00	65	0	0	2	clear	
End	16:45:00	75	70	10	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
blue sp. (1)	funereal duskywing (5)	spring white (5)
cabbage white (1)	Pacific sara orangetip (23)	sulphur butterfly sp (1+)
dainty sulphur (1)	painted lady (11)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
black-chinned sparrow (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
California quail (1+)	coyote (1+)	Vanessa butterfly sp. (1+)
California scrub-jay (1+)	granite spiny lizard (1+)	western fence lizard (1+)
California thrasher (1+)	greater roadrunner (1+)	white butterfly sp (6)
common raven (1+)	mule deer (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
Boechera pulchra	*Erodium cicutarium*	*Ranunculus californicus*
Camissoniopsis micrantha	*Gilia diegensis*	*Rhus ovata*
Cercocarpus betuloides var. betuloides	*Lasthenia glabrata*	*Salvia columbariae*
Descurainia pinnata ssp. brachycarpa	*Lomatium mohavense*	*Xylococcus bicolor*
Ericameria pinifolia	*Phacelia parryi*	
Eriogonum fasciculatum var. fasciculatum	*Plagiobothrys bracteatus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-26
Biologist(s)	Diana Saucedo, Erik LaCoste, Lindsay Willrick
Survey Area	1
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:00:00	69	69	0	3	clear	
End	14:10:00	72	72	0	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	common sootywing (14)	funereal duskywing (2)
California tortoiseshell (7)	desert orangetip (2)	Pacific sara orangetip (11)
checkered white (3)	desert pearly marble (2)	painted lady (40)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Descurainia sophia	*Lomatium dasycarpum*	***Linanthus bellus***
Eriophyllum wallacei	*Plagiobothrys sp.*	
Erodium cicutarium	*Ribes quercetorum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-08
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	1
Survey Pass	4, Round 4 make up.

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	70	70	10	2	clear	
End	11:48:00	83	83	20	4	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (19)	desert orangetip (5)	orange sulphur (8)
bramble hairstreak (2)	desert pearly marble (34)	Pacific sara orangetip (16)
brown elfin (3)	funereal duskywing (3)	painted lady (50)
California tortoiseshell (6)	gray hairstreak (1)	
common sootywing (1)	Harford's sulphur (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Descurainia pinnata*	*Oenothera californica*
Amsinckia menziesii	*Erodium sp.*	*Salvia columbariae*
Camissoniopsis pallida	*Gilia angelensis*	***Linanthus bellus***
Ceanothus perplexans	*Gilia diegensis*	
Cryptantha sp.	*Lasthenia sp.*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-14
Biologist(s)	Antonette Gutierrez, Victor Novik
Survey Area	1
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	68	68	40	1	overcast	
End	14:00:00	80	80	40	12	overcast	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (178)	great purple hairstreak (1)	painted lady (32)
brown elfin (1)	Harford's sulphur (1)	Unidentified lady (32)
checkered white (10)	marine blue (4)	Unidentified sulphur (19)
funereal duskywing (1)	Pacific sara orangetip (24)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Ericameria palmeri*	*Marah macrocarpa*
Arabis sp.	*Erodium cicutarium*	*Oenothera californica*
Camisonia spp.	*Gilia diegensis*	*Penstemon clevelandii*
Ceanothus leucodermis	*Hypochaeris glabra*	*Phacelia distans*
Ceanothus perplexans	*Lasthenia californica*	*Plagibothryus sp.*
Cercocarpus betuloides	*Layia glandulosa*	*Platystemon californicus*
Chamyesecea sp.	*Leptosiphon lemmonii*	*Salvia columbariae*
Cryptantha sp.	*Linanthus sp.*	*Uropappus lindleyi*
Descurainia pinnata	*Lomatium lucidum*	*Yucca schidigera*
Dichelostemma capitatum	*Lupinus concinnus*	
Emmenanthe penduliflora	*Malacothrix californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-19
Biologist(s)	Erik LaCoste
Survey Area	1
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	70	71	10	4	clear	
End	14:45:00	84	86	10	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (45)	dainty sulphur (8)	Reakirt's blue (1)
Blue sp. (1+)	desert pearly marble (10)	sleepy orange (2)
bramble hairstreak (1)	orange sulphur (4)	white checkered-skipper (1)
checkered white (2)	Pacific sara orangetip (8)	
common sootywing (2)	painted lady (8)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Sulfur sp. (1+)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Erodium cicutarium*	*Penstemon clevelandii*
Camissonia strigulosa	*Gilia diegensis*	*Phacelia cicutaria*
Ceanothus leucodermis	*Lasthenia glabrata*	*Phacelia parryi*
Delphinium parishii	*Leptosiphon lemmonii*	*Plagiobothrys sp.*
Dichelostemma capitatum	*Lupinus concinnus*	*Salvia columbariae*
Eriophyllum wallacei	*Oenothera californica*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-24
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	1
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:15:00	80	84	0	6	clear	
End	14:45:00	84	85	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (3)	Edward's blue (3)	orange sulphur (4)
Behr's metalmark (104)	funereal duskywing (7)	Pacific sara orangetip (27)
dainty sulphur (3)	great purple hairstreak (1)	painted lady (22)
desert pearly marble (11)	Harford's sulphur (3)	pale swallowtail (2)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Checkered white Skipper (1)		

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	*Ericameria sp*	*Phacelia*
Ceanothus perplexans	*Erodium cicutarium*	*Plagiobotrys sp*
Chaenactis sp	*Lasthenia gracilis*	*Salvia columbariae*
Cryptantha micrantha	*Layia platyglossa*	*Tropidocarpum gracile*
Delphinium	*Lupinus concinnus*	***Linanthus bellus***
Descurainia pinnata	*Malacothrix glabrata*	
Descurainia sophia	*Pectocarya recurvata*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-10
Biologist(s)	Antonette Gutierrez
Survey Area	1
Survey Pass	9null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:45:00	61	70	100	0	overcast	not overcast just clouds
End	17:45:00	60	62	40	6		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	funereal duskywing (1+)	painted lady (1+)
checkered white (1+)	gray hairstreak (1+)	
Edward's blue (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Descurainia pinnata ssp. brachycarpa*	*Lupinus concinnus*
Adenostoma fasciculatum	*Dichelostemma capitatum ssp. capitatum*	*Oenothera californica ssp. avita*
Anisocoma acaulis	*Emmenanthe penduliflora*	*Phacelia cicutaria var. hispida*
Astragulas sp	*Ephedra californica*	*plagiobothrys sp*
Camissonia sp	*Eriastrum eremicum*	*Rhus aromatica*
Ceanothus leucodermis	*Ericameria linearifolia*	*Rhus ovata*
Chaenactis fremontii	*Eriodictyon crassifolium var. nigrescens*	*Salvia columbariae*
Chaenactis glabriuscula	*Eriogonum fasciculatum var. foliolosum*	*Solanum parishii*
Chorizanthe fimbriata	*Eriophyllum wallacei*	***Geraea viscida***

INCIDENTAL PLANT LIST		
Collinsia concolor	*Erodium cicutarium*	***Linanthus bellus***
cryptantha sp	*Lasthenia glabrata*	
Delphinium parishii ssp. parishii	*Leptosiphon lemmonii*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-16
Biologist(s)	Andrew Borcher
Survey Area	2
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:01:00	56	56	0	5		Pass 1
End	16:01:00	64	0	0	14	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
painted lady (1+)	Sara's orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Cactus wren (1+)	Turkey vulture (1+)	Western scrub jay (1+)

INCIDENTAL PLANT LIST		
Cryptantha sp.	*Erodium cicutarium*	*Lomatium dasycarpum*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-19
Biologist(s)	Andrew Borcher
Survey Area	2
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	69	65	10	1	clear	Pass 2
End	16:32:00	72	0	10	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Painted Lady (1+)	Sara's orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Black-throated sparrow (1+)	Dainty sulfur (1+)	Perplexing hairstreak (1+)
California tortoiseshell (1+)	Gilberts skink (1+)	

INCIDENTAL PLANT LIST		
Cammosonia sp.	*Descuriana sp*	*Lomatium*
Chryptantha sp	*Erodium cicutarium*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-29
Biologist(s)	Diana Saucedo, Erik Lacoste, Lindsay Willrick
Survey Area	2
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:45:00	67	0	0	3	clear	
End	12:00:00	70	0	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (3)	common sootywing (24)	painted lady (74)
Behr's metalmark (2)	desert orangetip (5)	pale swallowtail (1)
blue-gray gnatcatcher (1+)	desert pearly marble (10)	spring white (3)
bramble hairstreak (3)	funereal duskywing (7)	west coast lady (3)
California patch (2)	orange skipperling (1)	
California tortoiseshell (23)	Pacific sara orangetip (7)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	common raven (1+)	Sulfur sp. (1+)
barn swallow (1+)	coyote (1+)	turkey vulture (1+)
cactus wren (1+)	Nashville warbler (1+)	white-crowned sparrow (1+)
California quail (1+)	red-tailed hawk (1+)	wrentit (1+)
California scrub-jay (1+)	rock wren (1+)	
California thrasher (1+)	spotted towhee (1+)	

INCIDENTAL PLANT LIST		
Caulanthus heterophyllus	*Lasthenia californica*	*Platystemon californicus*
Descurainia sophia	*Leptosyne californica*	*Ribes quercetorum*
Eriophyllum wallacei	*Lomatium dasycarpum*	*Salvia columbariae*
Erodium cicutarium	*Nama demissa*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-25
Biologist(s)	Lindsay Willrick
Survey Area	2
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:15:00	63	0	0	2	clear	
End	11:45:00	67	0	0	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
California patch (2)	painted lady (3)	
desert orangetip (2)	white checkered-skipper (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California scrub-jay (1+)	common raven (1+)	white-crowned sparrow (1+)
California thrasher (1+)	cougar (1+)	

INCIDENTAL PLANT LIST		
Erodium cicutarium	*Lomatium dasycarpum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-10
Biologist(s)	Callie Amoaku
Survey Area	2
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	15:01:00	72	78	0	2	clear	
End	16:45:00	66	72	0	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (12)	painted lady (16)	
desert pearly marble (8)	Propertius duskywing (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
spotted towhee (1+)	white-crowned sparrow (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-09
Biologist(s)	Callie Amoaku, Erik LaCoste, Patricia Schuyler
Survey Area	2
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	62	62	30	12	patchy	
Mid	10:43:00	72	71	10	14	patchy	
End	11:30:00	72	76	20	21	patchy	Called off early due to heavy winds.

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (27)	checkered white (1)	orange sulphur (1)
Blue sp. (1+)	common sootywing (3)	Pacific sara orangetip (3)
bramble hairstreak (1)	desert orangetip (3)	painted lady (38)
cabbage white (1)	desert pearly marble (5)	Propertius duskywing (1)
California tortoiseshell (3)	funereal duskywing (3)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Boechera pulchra	*Gilia diegensis*	*Plagiobothrys sp*
Descurainia pinnata	*Lasthenia sp.*	*Salvia columbariae*
Erodium sp.	*Lomatium dasycarpum*	***Linanthus bellus***
Gilia angelensis	*Lupinus concinnus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-13
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	2
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	64	61	0	4	clear	
End	13:00:00	77	79	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	common sootywing (4)	Harford's sulphur (5)
bramble hairstreak (1)	desert pearly marble (17)	Pacific sara orangetip (6)
California tortoiseshell (4)	Edward's blue (3)	painted lady (21)
checkered white (4)	funereal duskywing (6)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Cryptantha micrantha	*Gilia sp*	*Lupinus concinnus*
Descurainia pinnata	*Lasthenia gracilis*	*Salvia columbariae*
Descurainia sophia	*Layia platyglossa*	***Linanthus bellus***
Erodium cicutarium	*Leptosyne californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-13
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	2
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	64	61	0	4	clear	
End	13:00:00	77	79	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	common sootywing (4)	Harford's sulphur (5)
bramble hairstreak (1)	desert pearly marble (17)	Pacific sara orangetip (6)
California tortoiseshell (4)	Edward's blue (3)	painted lady (21)
checkered white (4)	funereal duskywing (6)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Cryptantha micrantha	*Gilia sp*	*Lupinus concinnus*
Descurainia pinnata	*Lasthenia gracilis*	*Salvia columbariae*
Descurainia sophia	*Layia platyglossa*	***Linanthus bellus***
Erodium cicutarium	*Leptosyne californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-19
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	2
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	71	0	0	3	clear	
End	12:00:00	85	0	10	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (2)	common sootywing (4)	Pacific sara orangetip (11)
Behr's metalmark (95)	dainty sulphur (10)	painted lady (23)
blue-gray gnatcatcher (1+)	desert pearly marble (5)	
checkered white (12)	orange sulphur (11)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	common raven (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	dark-eyed junco (1+)	orange-crowned warbler (1+)
Bewick's wren (1+)	desert cottontail (1+)	red-tailed hawk (1+)
black-throated sparrow (1+)	European starling (1+)	spotted towhee (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	Steller's jay (1+)
California quail (1+)	greater roadrunner (1+)	warbling vireo (1+)
California scrub-jay (1+)	Hammond's flycatcher (1+)	western fence lizard (1+)
California towhee (1+)	ladder-backed woodpecker (1+)	wild turkey (1+)
chipping sparrow (1+)	mourning dove (1+)	wrentit (1+)
common poorwill (1+)	Nashville warbler (1+)	

INCIDENTAL PLANT LIST		
Ceanothus palmeri	*Eriophyllum wallacei*	*Sisymbrium altissimum*
Cryptantha micrantha	*Layia platyglossa*	***Caulanthus simulans***

INCIDENTAL PLANT LIST		
Descurainia pinnata	*Leptosiphon lemmonii*	***Geraea viscida***
Descurainia sophia	*Platystemon californicus*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-24
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	2
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	75	75	0	2	clear	
End	11:15:00	80	84	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (4)	Edward's blue (1)	Pacific sara orangetip (13)
Behr's metalmark (66)	funereal duskywing (2)	painted lady (18)
checkered white (8)	gray hairstreak (1)	pale swallowtail (3)
dainty sulphur (5)	Harford's sulphur (3)	
desert pearly marble (6)	orange sulphur (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	*Ericameria sp*	*Phacelia*
Ceanothus perplexans	*Erodium cicutarium*	*Plagiobotrys sp*
Chaenactis sp	*Lasthenia gracilis*	*Salvia columbariae*
Cryptantha micrantha	*Layia platyglossa*	*Tropidocarpum gracile*
Delphinium	*Lupinus concinnus*	***Linanthus bellus***
Descurainia pinnata	*Malacothrix glabrata*	
Descurainia sophia	*Pectocarya recurvata*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-24
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	1
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	75	75	0	2	clear	
End	11:15:00	80	84	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (4)	Edward's blue (1)	Pacific sara orangetip (13)
Behr's metalmark (66)	funereal duskywing (2)	painted lady (18)
checkered white (8)	gray hairstreak (1)	pale swallowtail (3)
dainty sulphur (5)	Harford's sulphur (3)	
desert pearly marble (6)	orange sulphur (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Ceanothus leucodermis	*Ericameria sp*	*Phacelia*
Ceanothus perplexans	*Erodium cicutarium*	*Plagiobotrys sp*
Chaenactis sp	*Lasthenia gracilis*	*Salvia columbariae*
Cryptantha micrantha	*Layia platyglossa*	*Tropidocarpum gracile*
Delphinium	*Lupinus concinnus*	***Linanthus bellus***
Descurainia pinnata	*Malacothrix glabrata*	
Descurainia sophia	*Pectocarya recurvata*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-09
Biologist(s)	Lindsay Willrick
Survey Area	2
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:45:00	70	0	70	13	clear	
End	17:15:00	72	0	50	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
San Diegan tiger whiptail (1+)	Bernardino square-spotted blue (1)	gray hairstreak (2)
Acmon blue (3)	checkered white (13)	Harford's sulphur (14)
Becker's white (2)	dainty sulphur (2)	painted lady (4)
Behr's metalmark (35)	Edward's blue (7)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Costa's hummingbird (1+)	California thrasher (1+)	mourning dove (1+)
oak titmouse (1+)	chipping sparrow (1+)	northern flicker (1+)
yellow warbler (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	cougar (1+)	Say's phoebe (1+)
ash-throated flycatcher (1+)	coyote (1+)	Scott's oriole (1+)
black-chinned hummingbird (1+)	desert cottontail (1+)	spotted towhee (1+)
black-throated sparrow (1+)	granite spiny lizard (1+)	turkey vulture (1+)
bushtit (1+)	ladder-backed woodpecker (1+)	western wood-pewee (1+)
California quail (1+)	long-nosed leopard lizard (1+)	white-throated swift (1+)
California scrub-jay (1+)	Mountain Quail (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Eriophyllum wallacei*	*Navar.etia hamata*
Astragalus didymocarpus	*Erodium cicutarium*	*Pectocarya linearis*

INCIDENTAL PLANT LIST		
Chorizanthe fimbriata	*Euphorbia albomarginata*	*Pectocarya setosa*
Cryptantha micrantha	*Heliotropium curassavicum*	*Salvia columbariae*
Dichelostemma capitatum	*Lasthenia gracilis*	*Sisymbrium altissimum*
Ericameria pinifolia	*Leptosiphon lemmonii*	***Geraea viscida***
Eriogonum fasciculatum	*Lupinus bicolor*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-17
Biologist(s)	Garrett Huffman
Survey Area	3
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	61	64	10	8	clear	
End	16:00:00	73	75	10	10	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
California tortoiseshell (5)	funereal duskywing (3)	painted lady (350)
checkered white (2)	orange sulphur (1)	
dainty sulphur (2)	Pacific sara orangetip (50)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Camissoniopsis pallida	*Erodium ssp./em>*	*Ribes quercetorum*
Cercocarpus betuloides	*Plagiobothrys spp*	*Ziziphus parryi*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-22
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	3
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:22:00	56.3	60.1	10	1	clear	
End	14:30:00	68	70	20	2		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (7)	California tortoiseshell (61)	Pacific sara orangetip (53)
bramble hairstreak (4)	dainty sulphur (16)	painted lady (94)
brown elfin (1)	desert pearly marble (5)	western pygmy-blue (2)
California dogface (2)	monarch (3)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
common raven (1+)	spotted towhee (1+)	white-crowned sparrow (1+)
dark-eyed junco (1+)	western fence lizard (1+)	White-lined sphyx moth (1)

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Descurainia pinnata*	*Plagiobothrys sp*
Boechera californica	*Erodium cicutarium*	***Caulanthus simulans***
Camissoniopsis pallida	*Lasthenia gracilis*	
Cryptantha sp	*Lomatium dasycarpum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-29
Biologist(s)	Diana Saucedo, Erik LaCoste, Lindsay Willrick
Survey Area	3
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:20:00	72	74	10	4	clear	High haze
End	16:40:00	67	70	10	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (6)	dainty sulphur (2)	Pacific sara orangetip (13)
Behr's metalmark (1+)	desert orangetip (9)	painted lady (120)
California tortoiseshell (11)	desert pearly marble (30)	
checkered white (3)	funereal duskywing (6)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Common sootywing (11)		

INCIDENTAL PLANT LIST		
Boechera sp	*Descurainia sophia*	*Prunus ilicifolia*
Ceanothus perplexans	*Eriophyllum wallacei*	*Viola spp*
Coreopsis tinctoria	*Phacelia campanularia*	***Caulanthus simulans***
Descurainia pinnata	*Platystemon californicus*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-29
Biologist(s)	Diana Saucedo, Erik LaCoste, Lindsay Willrick
Survey Area	3
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:20:00	72	74	10	4	clear	High haze
End	16:40:00	67	70	10	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (5)	dainty sulphur (1)	Pacific sara orangetip (6)
Behr's metalmark (1+)	desert orangetip (4)	painted lady (85)
California tortoiseshell (6)	desert pearly marble (28)	
checkered white (1)	funereal duskywing (6)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Common sootywing (6)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-10
Biologist(s)	Jeffrey Priest
Survey Area	3
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	60	65	0	5	clear	
Mid day	12:48:00	68	70	0	5	clear	
End	15:46:00	72	72	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (12)	Pacific sara orangetip (12)	tiger whiptail (1+)
checkered white (18)	painted lady (12)	western pygmy-blue (2)
funereal duskywing (11)	spring white (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	coyote (1+)	northern flicker (1+)
Bewick's wren (1+)	granite spiny lizard (1+)	red-tailed hawk (1+)
brush rabbit (1+)	greater roadrunner (1+)	spotted towhee (1+)
California quail (1+)	house finch (1+)	turkey vulture (1+)
California scrub-jay (1+)	K-rat sp. (tail-drags/prints sign) (1+)	white-crowned sparrow (1+)
California thrasher (1+)	lesser goldfinch (1+)	wrentit (1+)
common raven (1+)	mourning dove (1+)	
common side-blotched lizard (1+)	mule deer (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-14
Biologist(s)	Antonette Gutierrez, Victor Novik
Survey Area	3
Survey Pass	6null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:00:00	80	80	40	12	patchy	
End	17:40:00	72	72	20	0	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	Edward's blue (1)	painted lady (1)
brown elfin (1)	great purple hairstreak (1+)	spring white (1)
checkered white (1)	Pacific sara orangetip (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Ericameria brachylepis*	*Malacothrix californica*
Amsinckia intermedia	*Erodium cicutarium*	*Oenothera californica*
Anisocoma acaulis	*Gilia diegensis*	*Pectocarya peninsularis*
Castilleja subinclusa ssp. subinclusa	*Lasthenia glabrata*	*Phacelia distans*
Ceanothus perplexans	*Leptosiphon lemmonii*	*Plagiobothrys bracteatus*
Descurainia pinnata	*Logfia filaginoides*	*Platystemon californicus*
Emmenanthe penduliflora	*Lupinus concinnus*	*Sisymbrium irio*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-19
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	3
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:00:00	85	87	10	3	clear	
End	15:30:00	84	86.5	0	11	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (3)	desert pearly marble (9)	painted lady (23)
Behr's metalmark (50)	Edward's blue (2)	pale swallowtail (2)
bramble hairstreak (1)	funereal duskywing (11)	queen (1)
checkered white (10)	orange sulphur (3)	
dainty sulphur (12)	Pacific sara orangetip (4)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Boechera californica	*Erodium cicutarium*	*Platystemon californicus*
Camissoniopsis bistorta	*Lasthenia gracilis*	*Salvia columbariae*
Ceanothus leucodermis	*Layia platyglossa*	*Tropidocarpum gracile*
Cryptantha micrantha	*Lomatium dasycarpum*	***Geraea viscida***
Descurainia pinnata	*Lupinus concinnus*	***Linanthus bellus***
Descurainia sophia	*Malacothrix glabrata*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-25
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	3
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:14:00	68	70	10	2	clear	
Temp check	13:31:00	91	96	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (10)	Edward's blue (5)	Pacific sara orangetip (29)
Behr's metalmark (188)	Lady species (1+)	painted lady (22)
dainty sulphur (16)	orange sulphur (7)	pale swallowtail (9)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California towhee (1+)		

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Ericameria linearifolia*	*Leptosiphon lemmonii*
Anisocoma acaulis	*Eriophyllum wallacei*	*Leptosiphon parviflorus*
Calyptridium monandrum	*Erodium cicutarium*	*Nama demissa*
Castilleja foliolosa	*Galium andrewsii*	*Nama demissa var. demissa*
Ceanothus leucodermis	*Gilia angelensis*	*Pectocarya setosa*
Chaenactis glabriuscula	*Gilia capitata*	*Platystemon californicus*
Collinsia concolor	*Gilia diegensis*	*Salvia columbariae*
Cryptantha intermedia var. intermedia	*Lasthenia gracilis*	***Geraea viscida***
Cryptantha micrantha	*Layia glandulosa*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-06
Biologist(s)	Erin Bergman
Survey Area	3
Survey Pass	10

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:03:00	49	53	100	2	overcast	
Temp check	09:11:00	51	55	100	3	overcast	
Temp check	10:09:00	53	64	100	2	overcast	Too cold too cloudy
End	10:55:00	52	66	100	4	drizzle	Start to rain — headed back to office

BUTTERFLY LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-03
Biologist(s)	Diana Saucedo, Erik LaCoste, Lindsay Willrick
Survey Area	3
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:00:00	65	65	0	4	clear	
End	14:30:00	78	84	0	9	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (70)	gray hairstreak (1)	painted lady (4)
checkered white (23)	marine blue (5)	pale swallowtail (1)
dainty sulphur (12)	orange sulphur (3)	Propertius duskywing (1)
funereal duskywing (2)	Pacific sara orangetip (17)	western tailed-blue (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Erodium cicutarium*	*Penstemon clevelandii*
Anisocoma acaulis	*Eulobus californicus*	*Plagiobothrys sp.*
Antirrhinum coulterianum	*Gilia capitata*	*Platystemon californicus*
Delphinium parishii	*Lasthenia glabrata*	*Salvia columbariae*
Descurainia sophia	*Layia glandulosa*	*Senecio californicus*
Dichelostemma capitatum	*Leptosiphon lemmonii*	*Uropappus lindleyi*
Ericameria linearifolia	*Oenothera californica*	***Geraea viscida***
Eriodictyon trichocalyx	*Penstemon centranthifolius*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-10
Biologist(s)	Diana Saucedo
Survey Area	3
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:00:00	70	75	70	13	overcast	Clouds breaking
Mid survey check	13:30:00	70	74	50	8	patchy	
End	17:45:00	68	71.4	40	6	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (14)	gray hairstreak (2)	painted lady (7)
checkered white (17)	marine blue (1)	Propertius duskywing (1)
Edward's blue (1)	orange sulphur (1)	
funereal duskywing (1)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Antirrhinum coulterianum	*Ericameria pinifolia*	*Layia glandulosa*
Chaenactis sp	*Eriodyction sp*	*Leptosiphon lemmonii*
Collinsia heterophylla	*Eriophyllum confertiflorum var. confertiflorum*	*Leptosiphon parviflorus*
Cryptantha micrantha	*Eriophyllum wallacei*	*Lupinus concinnus*
Cryptantha sp	*Gilia angelensis*	*Malacothrix glabrata*
Descurainia pinnata	*Lasthenia gracilis*	*Solanum parishii*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-16
Biologist(s)	Victor Novik
Survey Area	4
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	58	60	0	17	clear	Gusts to 18
End	11:15:00	59	61	0	12	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
painted lady (427)	Saras orangetip (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Arctostaphylus sp.	*Descurainia pinnata*	*Plagiobothrys sp.*
Cryptantha sp.	*Erodium cicutarium*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-15
Biologist(s)	Victor Novik
Survey Area	4
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:15:00	57	60	40	14		
End	17:00:00	57	60	30	8		

BUTTERFLY LIST *SPECIES (COUNT)*		
desert orangetip (1)	painted lady (99)	Sara's orangetip (11)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Arctostaphylos sp.	*Lasthenia californica*	*Tauschia arguta*
Descurainia pinnata	*Plagiobothrys sp.*	
Erodium cicutarium	*Senecio californicus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-24
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	4
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	60	62	0	4	clear	
End	13:00:00	67	72	30	4	patchy	High haze

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	dainty sulphur (2)	painted lady (102)
bramble hairstreak (1)	desert orangetip (8)	Sara orange-tip (15)
brown elfin (1)	funereal duskywing (3)	spring white (10)
checkered white (3)	Harford's sulphur (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Erodium cicutarium*	*Sisymbrium irio*
Arctostaphylos spp	*Lasthenia californica*	*Tropidocarpum gracile*
Camissoniopsis bistorta	*Lomatium dasycarpum*	
Cryptantha spp	*Ribes quercetorum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-24
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	4
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:15:00	60	60	0	7	clear	
End	13:00:00	69	72	30	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
bramble hairstreak (1)	Pacific sara orangetip (18)	Spring white (8)
dainty sulphur (4)	painted lady (500)	Unidentified sulphur (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
White butterfly unidentified (5)		

INCIDENTAL PLANT LIST		
Arabis sp.	*Descurainia pinnata*	*Ribes quercetorum*
Camisonia sp.	*Erodium cicutarium*	*Sanicula arguta*
Ceanothus greggi	*Lasthenia californica*	*Senicio sp.*
Cryptantha sp.	*Plagiobothryus sp.*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-30
Biologist(s)	Antonette Gutierrez, Victor Novik
Survey Area	4
Survey Pass	3null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:15:00	62	60	0	5	clear	
End	13:10:00	70	70	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	dainty sulphur (1+)	west coast lady (1+)
blue-gray gnatcatcher (1+)	desert pearly marble (1+)	western bluebird (1+)
bramble hairstreak (1+)	Pacific sara orangetip (1+)	white sp (1+)
brown elfin (1+)	painted lady (1+)	
checkered white (1+)	Propertius duskywing (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
black-chinned sparrow (1+)	California towhee (1+)	southern Pacific rattlesnake (1+)
Bewick's wren (1+)	common raven (1+)	spotted towhee (1+)
California ground squirrel (1+)	desert cottontail (1+)	vanessa sp (1+)
California quail (1+)	greater roadrunner (1+)	wrentit (1+)
California scrub-jay (1+)	ladder-backed woodpecker (1+)	
California thrasher (1+)	mule deer (1+)	

INCIDENTAL PLANT LIST		
Amsinckia intermedia	*Gilia diegensis*	*Platystemon californicus*
Boechera arcuata	*Hypochaeris glabra*	*Salvia columbariae*
Camissoniopsis micrantha	*Lasthenia glaberrima*	*Sanicula arguta*
Ericameria linearifolia	*Leptosyne californica*	*Tauschia arguta*
Erodium cicutarium	*Lomatium dasycarpum*	*Yucca schidigera*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-08
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	4
Survey Pass	4, Round 4 make up day

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:00:00	82	83	20	4	patchy	
End	15:20:00	89	91	20	4	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (1)	checkered white (15)	marine blue (1)
Behr's metalmark (63)	dainty sulphur (1)	orange sulphur (4)
bramble hairstreak (4)	desert pearly marble (9)	Pacific sara orangetip (12)
California tortoiseshell (7)	funereal duskywing (2)	painted lady (20)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Sootywing (2)		

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Eriophyllum wallacei*	*Lupinus concinnus*
Amsinckia menziesii	*Gilia angelensis*	*Malacothrix californica*
Boechera pulchra	*Gilia diegensis*	*Mentzelia veatchiana*
Ceanothus perplexans	*Lasthenia gracilis*	*Plagiobothrys sp.*
Descurainia pinnata	*Layia glandulosa*	***Linanthus bellus***
Descurainia sophia	*Leptosyne californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-05
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	4
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:30:00	64	0	90	11	overcast	
End	12:00:00	63	0	90	10	drizzle	

BUTTERFLY LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-13
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	3
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:00:00	77	79	0	1	clear	
End	16:35:00	74	77	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (40)	common sootywing (1)	funereal duskywing (2)
bramble hairstreak (1)	dainty sulphur (2)	Harford's sulphur (1)
California tortoiseshell (1)	desert pearly marble (13)	Pacific sara orangetip (3)
checkered white (1)	Edward's blue (3)	painted lady (24)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Gre (1+)		

INCIDENTAL PLANT LIST		
Cryptantha micrantha	*Gilia sp*	*Lupinus concinnus*
Descurainia pinnata	*Lasthenia gracilis*	*Salvia columbariae*
Descurainia sophia	*Layia platyglossa*	***Linanthus bellus***
Erodium cicutarium	*Leptosyne californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-13
Biologist(s)	Diana Saucedo, Lindsay Willrick
Survey Area	3
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:00:00	77	79	0	1	clear	
End	16:35:00	74	77	0	1	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (40)	common sootywing (1)	funereal duskywing (2)
bramble hairstreak (1)	dainty sulphur (2)	Harford's sulphur (1)
California tortoiseshell (1)	desert pearly marble (13)	Pacific sara orangetip (3)
checkered white (1)	Edward's blue (3)	painted lady (24)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Gre (1+)		

INCIDENTAL PLANT LIST		
Cryptantha micrantha	*Gilia sp*	*Lupinus concinnus*
Descurainia pinnata	*Lasthenia gracilis*	*Salvia columbariae*
Descurainia sophia	*Layia platyglossa*	***Linanthus bellus***
Erodium cicutarium	*Leptosyne californica*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-19
Biologist(s)	Antonette Gutierrez
Survey Area	4
Survey Pass	6null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	68	70	10	0	clear	
End	16:00:00	89	81	10	8	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	great purple hairstreak (1)	unidentified blue sp (1)
checkered white (1)	orange sulphur (1)	unidentified sulphur sp (1)
dainty sulphur (1)	Pacific sara orangetip (1)	unidentified white sp (1)
desert pearly marble (1)	painted lady (1)	west coast lady (1)
Edward's blue (1)	Propertius duskywing (1)	
funereal duskywing (1)	queen (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
unidentified Vanessa sp (1)		

INCIDENTAL PLANT LIST		
Achillea millefolium	*Dichelostemma capitatum*	*Phacelia cicutaria*
Amsinckia intermedia	*Emmenanthe penduliflora*	*Phacelia distans*
Anisocoma acaulis	*Ericameria linearifolia*	*Plagiobothrys sp*
Boechera arcuata	*Eriophyllum wallacei*	*Platystemon californicus*
Camissonia sp	*Erodium cicutarium*	*Salvia columbariae*
Castilleja subinclusa ssp. subinclusa	*Gilia diegensis*	*Yucca schidigera*
Ceanothus leucodermis	*Lasthenia glabrata*	***Linanthus bellus***
cryptantha sp	*Leptosiphon lemmonii*	

INCIDENTAL PLANT LIST		
Descurainia pinnata ssp. glabra	*Lupinus concinnus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-19
Biologist(s)	Antonette Gutierrez
Survey Area	4
Survey Pass	6null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	70	68	10	0	clear	
End	16:00:00	89	81	10	8	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1+)	Edward's blue (1+)	queen (1+)
blue sp (1+)	funereal duskywing (1+)	sulphur sp (1+)
checkered white (1+)	great purple hairstreak (1+)	west coast lady (1+)
common sootywing (1+)	orange sulphur (1+)	white sp. (1+)
dainty sulphur (1+)	Pacific sara orangetip (1+)	
desert pearly marble (1+)	painted lady (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Vanessa sp. (1+)		

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Ericameria linearifolia*	*Lupinus concinnus*
Amsinckia menziesii	*Eriophyllum wallacei*	*Mimulus palmeri*
Anisocoma acaulis	*Erodium cicutarium*	*Phacelia distans*
Boechera californica	*Gilia diegensis*	*Platystemon californicus*
Castilleja subinclusa ssp. subinclusa	*Lasthenia glabrata*	*Salvia columbariae*
Ceanothus perplexans	*Layia glandulosa*	*Yucca schidigera*
Descurainia pinnata ssp. brachycarpa	*Leptosyne californica*	***Linanthus bellus***
Dichelostemma capitatum	*Lomatium dasycarpum*	

INCIDENTAL PLANT LIST		
Emmenanthe penduliflora	*Lomatium mohavense*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-24
Biologist(s)	Lindsay Willrick
Survey Area	4
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	67	0	0	1	clear	
Midday	11:30:00	73	0		5	clear	
End	15:30:00	84	0	0	8	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
San Diegan tiger whiptail (1+)	dainty sulphur (18)	Harford's sulphur (3)
Behr's metalmark (75)	desert pearly marble (12)	orange sulphur (1)
blue-gray gnatcatcher (1+)	Edward's blue (12)	Pacific sara orangetip (4)
checkered white (27)	gray hairstreak (2)	painted lady (17)
common sootywing (8)	great purple hairstreak (1)	western pygmy-blue (2)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Costa's hummingbird (1+)	California thrasher (1+)	granite spiny lizard (1+)
oak titmouse (1+)	California towhee (1+)	mourning dove (1+)
acorn woodpecker (1+)	chipping sparrow (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	common raven (1+)	red-tailed hawk (1+)
black-throated sparrow (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
bushtit (1+)	coyote (1+)	turkey vulture (1+)
California ground squirrel (1+)	desert cottontail (1+)	western fence lizard (1+)
California quail (1+)	Eurasian collared-dove (1+)	wrentit (1+)
California scrub-jay (1+)	European starling (1+)	

INCIDENTAL PLANT LIST		
Ceanothus perplexans	*Leptosiphon lemmonii*	*Rhus aromatica*

INCIDENTAL PLANT LIST		
Cryptantha micrantha	*Leptosyne californica*	*Salvia columbariae*
Ericameria pinifolia	*Lupinus concinnus*	*Sisymbrium altissimum*
Erodium cicutarium	*Malacothrix glabrata*	***Geraea viscida***
Lasthenia gracilis	*Pectocarya setosa*	***Linanthus bellus***
Layia platyglossa	*Platystemon californicus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-02
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	4
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
End	15:30:00	77	77	40	7	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (63)	funereal duskywing (1)	Pacific sara orangetip (15)
brown elfin (1)	gray hairstreak (1)	painted lady (4)
checkered white (10)	Harford's sulphur (2)	pale swallowtail (1)
dainty sulphur (13)	marine blue (4)	Propertius duskywing (4)
Edward's blue (1)	orange sulphur (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Delphinium parishii	*Erodium cicutarium*	*Mentzelia sp.*
Descurainia pinnata ssp. glabra	*Gilia diegensis*	*Plagiobothrys sp.*
Dichelostemma capitatum	*Lasthenia glabrata*	*Salvia columbariae*
Emmenanthe penduliflora	*Layia glandulosa*	*Senecio californicus*
Ericameria paniculata	*Leptosiphon lemmonii*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-12
Biologist(s)	Antonette Gutierrez
Survey Area	4
Survey Pass	9null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	70	71	20	0	patchy	
End	17:00:00	78	76	30	7	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1+)	funereal duskywing (1+)	painted lady (1+)
Behr's metalmark (1+)	gray hairstreak (1+)	Propertius duskywing (1+)
checkered white (1+)	marine blue (1+)	unidentified blue sp (1+)
dainty sulphur (1+)	orange sulphur (1+)	unidentified sulphur sp (1+)
Edward's blue (1+)	Pacific sara orangetip (1+)	unidentified white sp (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
unidentified Vanessa sp (1+)		

INCIDENTAL PLANT LIST		
Adenostoma fasciculatum var. obtusifolium	*Dichelostemma capitatum*	*Mentzelia veatchiana*
Anisocoma acaulis	*Emmenanthe penduliflora*	*Monardella nana*
Astragalus sp	*Ericameria linearifolia*	*Orobanche fasciculata*
Camissonia sp	*Eriodictyon trichocalyx*	*Penstemon spectabilis*
Ceanothus leucodermis	*Eriogonum fasciculatum var. foliolosum*	*Plagiobothrys sp.*
Chaenactis fremontii	*Eriophyllum confertiflorum*	*Prunus ilicifolia ssp. ilicifolia*
Chaenactis glabriuscula	*Eriophyllum wallacei*	*Quercus agrifolia*
Chamaesyce sp	*Erodium cicutarium*	*Salvia columbariae*
Chorizanthe fimbriata	*Gilia diegensis*	*Solanum parishii*

INCIDENTAL PLANT LIST		
Collinsia concolor	*Lasthenia glabrata*	*Tauschia arguta*
Cordylanthus rigidus	*Layia glandulosa*	*Yucca schidigera*
Cryptantha sp	*Leptosiphon lemmonii*	***Geraea viscida***
Delphinium parishii	*Leptosyne californica*	***Linanthus bellus***
Descurainia pinnata ssp. glabra	*Lupinus concinnus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-17
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	5
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	62	60	0	9	clear	
End	13:45:00	67	68	0	14	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
brown elfin (1)	funereal duskywing (3)	spring white (1)
dainty sulphur (2)	Pacific sara orangetip (10)	
desert orangetip (5)	painted lady (100)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Camissoniopsis bistorta	*Pentachaeta aurea*	*Tropidocarpum gracile*
Erodium cicutarium	*Sanicula sp*	
Lasthenia gracilis	*Sisymbrium irio*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-17
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	5
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	62	60	0	9	clear	
End	13:45:00	67	68	0	14	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
brown elfin (1)	funereal duskywing (3)	spring white (1)
dainty sulphur (2)	Pacific sara orangetip (10)	
desert orangetip (5)	painted lady (100)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Camissoniopsis bistorta	*Pentachaeta aurea*	*Tropidocarpum gracile*
Erodium cicutarium	*Sanicula sp*	
Lasthenia gracilis	*Sisymbrium irio*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-17
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	5
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	62	60	0	9	clear	
End	13:45:00	67	68	0	14	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
brown elfin (1)	funereal duskywing (3)	spring white (1)
dainty sulphur (2)	Pacific sara orangetip (10)	
desert orangetip (5)	painted lady (4)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-24
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	5
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:00:00	67	72	30	4	patchy	
End	16:30:00	69	72	20	8	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	dainty sulphur (3)	painted lady (102)
bramble hairstreak (1)	desert orangetip (9)	Sara orange-tip (15)
brown elfin (1)	funereal duskywing (3)	spring white (9)
checkered white (5)	Harford's sulphur (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Erodium cicutarium*	*Sisymbrium irio*
Arctostaphylos spp	*Lasthenia californica*	*Tropidocarpum gracile*
Camissoniopsis bistorta	*Lomatium dasycarpum*	
Cryptantha spp	*Ribes quercetorum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-24
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	5
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:00:00	69	72	30	4	clear	High haze
End	16:30:00	67	70	20	8	clear	Light haze

BUTTERFLY LIST *SPECIES (COUNT)*		
California tortoiseshell (1)	funereal duskywing (1)	Unifentified sulphur (1)
checkered white (7)	Pacific sara orangetip (15)	
dainty sulphur (1)	painted lady (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Unidentified white (3)		

INCIDENTAL PLANT LIST		
Arabis sp.	*Descurainia pinnata*	*Nuttalianthus canadensis*
Brassica sp.	*Erodium cicutarium*	*Plagiobothryus sp.*
Camisonia sp.	*Leptosyne californica*	
Cryptantha sp.	*Mimulus fremontii*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-30
Biologist(s)	Antonette Gutierrez, Victor Novik
Survey Area	5
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:10:00	70	70	0	12	clear	
End	16:40:00	70	63	0	7	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (10)	funereal duskywing (1)	spring white (20)
California tortoiseshell (4)	Pacific sara orangetip (47)	
checkered white (24)	painted lady (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Gilia sp.*	*Mimulus fremontii*
Arabis sp.	*Hypochaeris glabra*	*Plagiobothryus sp.*
Ceanothus greggi	*Lasthenia californica*	*Prunus fremontii*
Cryptantha sp.	*Layia glandulosa*	*Sisymbrium irio*
Descurainia pinnata	*Leptosyne californica*	*Tauschia arguta*
Erodium cicutarium	*Lomatium sp.*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-04
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	5
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:37:00	59	60.6	30	6	patchy	
End	15:15:00	62	61	10	10	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (5)	desert orangetip (7)	painted lady (28)
Behr's metalmark (27)	desert pearly marble (60)	spring white (2)
California tortoiseshell (14)	funereal duskywing (6)	Unidentified sulphur (1+)
common sootywing (3)	Pacific sara orangetip (17)	white checkered-skipper (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Calandrinia menziesii	*Lasthenia gracilis*	*Mimulus fremontii*
Ceanothus perplexans	*Layia glandulosa*	*Plagiobotrys sp*
Crytantha sp	*Leptosyne californica*	*Platystemon californicus*
Descurainia pinnata	*Lomatium dasycarpum ssp. dasycarpum*	*Sisymbrium irio*
Descurainia sophia	*Lupinus hirsutissimus*	*Tropidocarpum gracile*
Erodium cicutarium	*Malacothrix californica*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-10
Biologist(s)	Lindsay Willrick, Margie Mullian
Survey Area	5
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:24:00	63	0	0	6		
End	13:02:00	67	0	0	7		

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (26)	common sootywing (4)	gray hairstreak (2)
bramble hairstreak (3)	dainty sulphur (2)	painted lady (33)
California tortoiseshell (2)	desert pearly marble (11)	
checkered white (10)	Edward's blue (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Cordylanthus rigidus	*Layia glandulosa*	*Lupinus concinnus*
Descurainia sophia	*Leptosiphon lemmonii*	*Platystemon californicus*
Erodium botrys	*Leptosyne californica*	*Rhus aromatica*
Lasthenia gracilis	*Lomatium dasycarpum ssp. dasycarpum*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-21
Biologist(s)	Jeffrey Priest
Survey Area	5
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	56	66	0	4	clear	
Mid day	12:08:00	68	75	0	8	clear	
End	15:30:00	67	73	0	12	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (20)	orange sulphur (2)	spring white (1)
checkered white (16)	Pacific sara orangetip (11)	western pygmy-blue (3)
desert orangetip (1)	painted lady (10)	
funereal duskywing (2)	queen (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	California towhee (1+)	mourning dove (1+)
Bewick's wren (1+)	common raven (1+)	mule deer (1+)
black-tailed jackrabbit (1+)	common side-blotched lizard (1+)	Neotoma sp. (middens) (1+)
brush rabbit (1+)	coyote (1+)	northern mockingbird (1+)
bushtit (1+)	granite spiny lizard (1+)	red-tailed hawk (1+)
California ground squirrel (1+)	greater roadrunner (1+)	spotted towhee (1+)
California quail (1+)	hooded oriole (1+)	turkey vulture (1+)
California scrub-jay (1+)	house finch (1+)	white-crowned sparrow (1+)
California thrasher (1+)	Merriam's chipmunk (1+)	yellow-rumped warbler (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-25
Biologist(s)	Erik LaCoste
Survey Area	5
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	07:50:00	67	67	0	2	clear	
End	14:20:00	90	93	0	8	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (54)	funereal duskywing (2)	Pacific sara orangetip (25)
checkered white (8)	gray hairstreak (1)	painted lady (18)
dainty sulphur (6)	marine blue (1)	Propertius duskywing (1)
Edward's blue (1)	orange sulphur (5)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Ericameria linearifolia*	*Lasthenia glabrata*
Collinsia concolor	*Erodium sp.*	*Leptosiphon lemmonii*
Descurainia pinnata	*Eulobus californicus*	*Plagiobothrys sp.*
Dichelostemma capitatum	*Gilia diegensis*	*Salvia columbariae*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-02
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	5
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:30:00	70	70	90	1	overcast	
End	12:00:00	73	74	60	2	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (70)	funereal duskywing (1)	Pacific sara orangetip (18)
checkered white (16)	gray hairstreak (3)	painted lady (4)
dainty sulphur (1)	marine blue (14)	
Edward's blue (1)	mourning cloak (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Castilleja subinclusa	*Eriophyllum confertiflorum*	*Plagiobothrys sp.*
Ceanothus leucodermis	*Erodium cicutarium*	*Salvia columbariae*
Descurainia pinnata	*Gilia diegensis*	*Uropappus lindleyi*
Dichelostemma capitatum	*Lasthenia gracilis*	***Geraea viscida***
Emmenanthe penduliflora	*Layia glandulosa*	***Linanthus bellus***
Ericameria linearifolia	*Leptosiphon lemmonii*	
Eriodictyon trichocalyx	*Penstemon centranthifolius*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-09
Biologist(s)	Antonette Gutierrez, Diana Saucedonull
Survey Area	5
Survey Pass	9null

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	11:15:00	61	63	30	10	patchy	
End	15:30:00	63	74	10	11	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Becker's white (1+)	funereal duskywing (1+)	painted lady (1+)
Behr's metalmark (1+)	gray hairstreak (1+)	Propertius duskywing (1+)
checkered white (1+)	marine blue (1+)	western tailed-blue (1+)
dainty sulphur (1+)	monarch (1+)	
desert pearly marble (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
unidentified Vanessa Species (1+)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-18
Biologist(s)	Erin Bergman
Survey Area	6
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:51:00	70.2	71.5	0	2	clear	
End	16:44:00	77	78	0	3	clear	Really nice day

BUTTERFLY LIST *SPECIES (COUNT)*		
desert orangetip (1)	Harford's sulphur (1)	Pacific sara orangetip (19)
desert pearly marble (6)	Lady species (15)	painted lady (52)
great purple hairstreak (1)	Orangetip species (1+)	west coast lady (3)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California quail (1+)	chipping sparrow (1+)	European starling (1+)
California scrub-jay (1+)	common raven (1+)	western meadowlark (1+)

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Lasthenia gracilis*	
Cryptantha micrantha	*Sisymbrium altissimum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-22
Biologist(s)	Erin Bergman
Survey Area	6
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:41:00	61.4	66.5	0	2	clear	
End	16:50:00	67	70	20	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
brown elfin (2)	desert pearly marble (14)	Pacific sara orangetip (21)
California tortoiseshell (12)	gray hairstreak (1)	painted lady (82)
dainty sulphur (3)	Lady species (5)	west coast lady (2)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California quail (1+)	European starling (1+)
San Diego black-tailed jackrabbit (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	California thrasher (1+)	turkey vulture (1+)
American robin (1+)	common raven (1+)	wild turkey (1+)

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Erodium cicutarium*	
Descurainia pinnata	*Nemophila menziesii*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-29
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	6
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:21:00	60	60	0	2	clear	
End	12:04:00	69	65.7	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (3)	desert pearly marble (7)	painted lady (96)
blue-gray gnatcatcher (1+)	funereal duskywing (3)	White species (4)
bramble hairstreak (3)	Pacific sara orangetip (6)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
American kestrel (1+)	mule deer (1+)	turkey vulture (1+)
California scrub-jay (1+)	northern flicker (1+)	western kingbird (1+)
common raven (1+)	northern mockingbird (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
Acmispon heermannii	*Erodium cicutarium*	*Phacelia distans*
Acmispon strigosus	*Eschscholzia californica*	*Phacelia imbricata*
Amsinckia menziesii	*Lasthenia gracilis*	*Salvia columbariae*
Anisocoma acaulis	*Lomatium dasycarpum*	*Taraxacum officinale*
Calyptridium monandrum	*Lupinus concinnus*	*Tropidocarpum gracile*
Cryptantha micrantha	*Marah macrocarpa*	***Caulanthus simulans***
Descurainia pinnata	*Nemophila menziesii*	***Streptanthus campestris***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-04
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	6
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:40:00	52	60	20	7	clear	
End	13:44:00	61	62.4	0	5	clear	Gusts at 8-12 but not sustained.

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (23)	dainty sulphur (1)	painted lady (41)
blue-gray gnatcatcher (1+)	desert orangetip (1)	Propertius duskywing (2)
bramble hairstreak (4)	desert pearly marble (32)	
cabbage white (2)	funereal duskywing (1)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California quail (1+)	Nuttall's woodpecker (1+)
acorn woodpecker (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
American kestrel (1+)	California towhee (1+)	turkey vulture (1+)
ash-throated flycatcher (1+)	common raven (1+)	white-breasted nuthatch (1+)
Bewick's wren (1+)	European starling (1+)	
bushtit (1+)	northern mockingbird (1+)	

INCIDENTAL PLANT LIST		
Boechera pulchra	*Ericameria linearifolia*	*Layia glandulosa*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-17
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	6
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:25:00	75	80	0	4		
End	16:29:00	76	79	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (90)	Edward's blue (1)	painted lady (15)
cabbage white (13)	Gabb's checkerspot (1)	Propertius duskywing (2)
desert orangetip (3)	Harford's sulphur (1)	Sulphur sp (2)
desert pearly marble (11)	Pacific sara orangetip (1)	western pygmy-blue (1)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-22
Biologist(s)	Erin Bergman
Survey Area	6
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:54:00	70	76	30	3	clear	
End	15:57:00	69	72	40	2	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	great purple hairstreak (4)	Pacific sara orangetip (44)
Behr's metalmark (104)	immaculate bramble hairstreak (6)	painted lady (33)
desert pearly marble (17)	Lady species (1+)	southern blue (14)
funereal duskywing (7)	mournful duskywing (1)	west coast lady (10)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	chipping sparrow (1+)	red-tailed hawk (1+)
acorn woodpecker (1)	common raven (1+)	western kingbird (1+)
barn owl (1+)	European starling (1+)	western meadowlark (1)
black-tailed jackrabbit (1+)	mourning dove (1+)	western rattlesnake (1+)
California quail (1+)	northern flicker (1+)	
California scrub-jay (1+)	phainopepla (1+)	

INCIDENTAL PLANT LIST		
Amsinckia intermedia	*Eschscholzia californica*	*Malacothrix glabrata*
Arctostaphylos pungens	*Euphorbia albomarginata*	*Oenothera californica ssp. avita*
Boechera pulchra	*Gilia angelensis*	*Pectocarya setosa*
Calyptridium monandrum	*Gilia diegensis*	*Penstemon centranthifolius*
Ceanothus leucodermis	*Lasthenia gracilis*	*Phacelia distans*
Ceanothus perplexans	*Layia glandulosa*	*Plagiobothrys arizonicus*

INCIDENTAL PLANT LIST		
Collinsia concolor	*Leptosiphon floribundus ssp. glaber*	*Salvia columbariae*
Cryptantha intermedia var. intermedia	*Leptosiphon lemmonii*	*Sisymbrium altissimum*
Cryptantha micrantha	*Leptosiphon parviflorus*	*Sisymbrium irio*
Descurainia pinnata	*Lomatium dasycarpum ssp. dasycarpum*	*Uropappus lindleyi*
Ericameria linearifolia	*Lupinus bicolor*	***Linanthus bellus***
Erodium cicutarium	*Lupinus concinnus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-02
Biologist(s)	Erin Bergman
Survey Area	6
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
End	04:11:00	70	75	20	3	patchy	
Start	09:31:00	67	70	40	4	patchy	Sky clear in my area
Temp check	14:38:00	77	84	20	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (2)	desert pearly marble (15)	painted lady (21)
Behr's metalmark (174)	Edward's blue (8)	west coast lady (6)
checkered white (5)	gray hairstreak (16)	White species (1+)
common buckeye (2)	Lady species (1+)	
desert orangetip (2)	Pacific sara orangetip (14)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
acorn woodpecker (1+)	common raven (1+)	red-tailed hawk (1+)
California quail (1+)	European starling (1+)	Townsend's warbler (1+)
California scrub-jay (1+)	mourning dove (1+)	warbling vireo (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-08
Biologist(s)	Erin Bergman
Survey Area	6
Survey Pass	10

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:45:00	50	59	100	4	overcast	Can't start too cold and too cloudy
End	09:25:00	57	61	100	3	overcast	Too cold and cloudy
End	10:09:00	58	64	100	3	overcast	Too cold too cloudy going to help others in Jacumba

BUTTERFLY LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-13
Biologist(s)	Erin Bergman
Survey Area	6
Survey Pass	10

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:01:00	78	75.2	10	3	clear	
Temp check	13:47:00	81	87	60	3	clear	
Temp check	14:37:00	78	86	50	2	clear	
End	17:02:00	91	86	20	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (11)	gray hairstreak (7)	painted lady (42)
Behr's metalmark (45)	Harford's sulphur (1)	Sulphur species (1+)
checkered white (22)	Melissa blue (1)	White species (10)
dainty sulphur (11)	orange sulphur (2)	
funereal duskywing (1)	Pacific sara orangetip (11)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	common raven (1+)	mule deer (1)
California scrub-jay (1+)	hooded oriole (1+)	red-tailed hawk (1+)
California towhee (1+)	mourning dove (1+)	

INCIDENTAL PLANT LIST		
Anisocoma acaulis	*Eriastrum eremicum ssp. eremicum*	*Lupinus concinnus*
Antirrhinum coulterianum	*Eriodictyon trichocalyx var. lanatum*	*Oenothera californica ssp. avita*
Calycoseris parryi	*Erodium cicutarium*	*Pectocarya setosa*
Calyptridium monandrum	*Eulobus californicus*	*Penstemon centranthifolius*
Castilleja applegatei	*Euphorbia albomarginata*	*Rhus aromatica*

INCIDENTAL PLANT LIST		
Chaenactis glabriuscula	*Lasthenia gracilis*	*Uropappus lindleyi*
Chenopodium californicum	*Layia glandulosa*	***Astragalus douglasii var. perstrictus***
Chorizanthe fimbriata	*Leptosiphon lemmonii*	***Delphinium parishii ssp. subglobosum***
Cryptantha intermedia var. intermedia	*Leptosiphon parviflorus*	***Geraea viscida***
Cryptantha micrantha	*Lupinus bicolor*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-19
Biologist(s)	Antonette Gutierrez, Victor Novik
Survey Area	7
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:30:00	72	0	0	2	clear	
End	17:15:00	64	0	10	5	clear	Wind gusts 8-11

BUTTERFLY LIST *SPECIES (COUNT)*		
brown elfin (1)	California tortoiseshell (3)	Pacific sara orangetip (13)
California patch (2)	dainty sulphur (7)	painted lady (9)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California thrasher (1+)	northern flicker (1+)
oak titmouse (1+)	chipping sparrow (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	common raven (1+)	western meadowlark (1+)
American kestrel (1+)	dark-eyed junco (1)	white-crowned sparrow (1+)
California marble (4)	European starling (1+)	yellow-rumped warbler (1+)
California quail (1+)	granite spiny lizard (1+)	
California scrub-jay (1+)	mourning dove (1+)	

INCIDENTAL PLANT LIST		
Caulanthus heterophyllus	*Erodium cicutarium*	*Lomatium dasycarpum*
Cryptantha intermedia	*Eschscholzia californica*	*Pectocarya linearis*
Descurainia pinnata	*Lasthenia californica*	*Tropidocarpum gracile*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-23
Biologist(s)	Jeffrey Priest
Survey Area	7
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:30:00	60	60	0	7	clear	Less than 5% clouds cover.
Hilltop	12:01:00	66	64	0	14	clear	Wind 8-10 with gusts 10-14. Wind higher on hilltop. Clouds less than 10%.
Mid day	13:16:00	68	70	30	10	patchy	
End	16:30:00	64	66	40	14	patchy	Wind 5-12 with gusts 12-14

BUTTERFLY LIST *SPECIES (COUNT)*		
desert orangetip (2)	Lady sp. butterfly (fly-by) (101)	painted lady (25)
funereal duskywing (2)	Pacific sara orangetip (10)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California towhee (1+)	mourning dove (1+)
acorn woodpecker (1+)	Cassin's kingbird (1+)	mule deer (1+)
American kestrel (1+)	common raven (1+)	Neotoma sp. (midden) (1+)
Bewick's wren (1+)	common side-blotched lizard (1+)	northern mockingbird (1+)
black-tailed jackrabbit (1+)	coyote (1+)	red-tailed hawk (1+)
black phoebe (1+)	granite spiny lizard (1+)	spotted towhee (1+)
bushtit (1+)	house finch (1+)	turkey vulture (1+)
California quail (1+)	K-rat sp. (tail drag sign) (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	wild turkey (1+)
California thrasher (1+)	Merriam's chipmunk (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
Erodium cicutarium		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-29
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	7
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	12:04:00	69	65.7	0	5	clear	
End	14:54:00	75	75.7	20	2	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
San Diegan tiger whiptail (1+)	desert pearly marble (23)	painted lady (761)
California tortoiseshell (7)	funereal duskywing (5)	Sulphur sp. (1+)
cloudless sulphur (1)	orange sulphur (1)	White sp. (1+)
desert orangetip (1)	Pacific sara orangetip (37)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	California thrasher (1+)	red-tailed hawk (1+)
oak titmouse (1+)	European starling (1+)	turkey vulture (1+)
San Diego black-tailed jackrabbit (1+)	granite spiny lizard (1+)	western kingbird (1+)
acorn woodpecker (1+)	mourning dove (1+)	western meadowlark (1+)
California quail (1+)	mule deer (1+)	wild turkey (1+)
California scrub-jay (1+)	northern mockingbird (1+)	

INCIDENTAL PLANT LIST		
Acmispon heermannii	*Eschscholzia californica*	*Phacelia distans*
Acmispon strigosus	*Lasthenia gracilis*	*Phacelia imbricata*
Amsinckia menziesii	*Leptosiphon floribundus*	*Plagiobothrys arizonicus*
Anisocoma acaulis	*Leptosyne californica*	*Platystemon californicus*
Arctostaphylos pungens	*Lupinus concinnus*	*Salvia columbariae*

INCIDENTAL PLANT LIST		
Calyptridium monandrum	*Marah macrocarpa*	*Taraxacum officinale*
Cryptantha micrantha	*Nama demissa*	*Tropidocarpum gracile*
Descurainia pinnata	*Nemophila menziesii*	***Caulanthus simulans***
Erodium cicutarium	*Pectocarya sp.*	***Streptanthus campestris***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-04
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	7
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:47:00	61	62.4	0	5	clear	
End	17:10:00	58	60	50	6	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (10)	desert pearly marble (6)	Propertius duskywing (2)
bramble hairstreak (1)	painted lady (56)	west coast lady (3)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Cooper's hawk (1+)	California scrub-jay (1+)	white-crowned sparrow (1+)
oak titmouse (1+)	desert cottontail (1+)	white-tailed antelope squirrel (1+)
San Diego black-tailed jackrabbit (1+)	European starling (1+)	wild turkey (1+)
California ground squirrel (1+)	red-tailed hawk (1+)	
California quail (1+)	western meadowlark (1+)	

INCIDENTAL PLANT LIST		
Castilleja affinis	*Ericameria linearifolia*	***Caulanthus simulans***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-10
Biologist(s)	Margie Mulligan, Lindsay Willrick
Survey Area	7
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
End	05:07:00	72	0	0	7	clear	
Start	13:03:00	66	0	0	7	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (15)	checkered white (4)	painted lady (15)
bramble hairstreak (2)	common sootywing (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-17
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	7
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:48:00	72	66	0	4	clear	
End	13:18:00	74	80	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (180)	desert pearly marble (22)	painted lady (12)
blue-gray gnatcatcher (1+)	Edward's blue (5)	Propertius duskywing (4)
bramble hairstreak (4)	funereal duskywing (7)	Sulphur sp. (1+)
cabbage white (6)	gray hairstreak (1)	western pygmy-blue (5)
Chalcedon variable checkerspot (1)	great purple hairstreak (2)	white-lined sphinx moth (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
ash-throated flycatcher (1+)	common side-blotched lizard (1+)	wrentit (1+)
California towhee (1+)	red-tailed hawk (1+)	
common raven (1+)	striped racer (1+)	

INCIDENTAL PLANT LIST		
Collinsia concolor	*Penstemon spectabilis*	
Oenothera californica ssp. avita	*Viola pedunculata*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-25
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	7
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	13:40:00	91	96	0	2	clear	
End	16:23:00	81	84	0	6	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	desert pearly marble (7)	painted lady (17)
Behr's metalmark (92)	Edward's blue (6)	Propertius duskywing (2)
checkered white (2)	funereal duskywing (12)	White sp (15)
dainty sulphur (5)	Pacific sara orangetip (17)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Cryptantha micrantha	*Lasthenia gracilis*	*Phacelia distans*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-09
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	7
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:33:00	70	65	40	2	patchy	
End	14:01:00	68	77	10	10	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	Edward's blue (2)	painted lady (5)
Behr's metalmark (37)	Harford's sulphur (1)	Propertius duskywing (2)
Blue spp. (1+)	Lady spp. (1+)	Sulphur spp. (1+)
cabbage white (16)	marine blue (1)	western pygmy-blue (5)
checkered white (8)	Pacific sara orangetip (6)	White spp. (1+)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Blainville's horned lizard (1+)	black-headed grosbeak (1+)	European starling (1+)
ash-throated flycatcher (1+)	bushtit (1+)	orange-crowned warbler (1+)
band-tailed pigeon (1+)	California scrub-jay (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-17
Biologist(s)	Jeffrey Priest
Survey Area	8
Survey Pass	1

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	60	60	0	12	clear	Wind 4-10 with gusts 10-12
Mid day	12:07:00	65	66	0	12	clear	Wind 3-10 with gusts 12-15
End	14:30:00	64	65	0	12	clear	Wind 3-12, gusts 12-15

BUTTERFLY LIST *SPECIES (COUNT)*		
funereal duskywing (2)	Pacific sara orangetip (2)	painted lady (18)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	California quail (1+)	Lasy sp. butterfly fly-by (70)
acorn woodpecker (1+)	California scrub-jay (1+)	mourning dove (1+)
American crow (1+)	California thrasher (1+)	red-tailed hawk (1+)
Bewick's wren (1+)	common raven (1+)	turkey vulture (1+)
brush rabbit (1+)	common side-blotched lizard (1+)	western fence lizard (1+)
California ground squirrel (1+)	coyote (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
Erodium cicutarium		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-22
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	8
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:44:00	69	73	30	2	clear	
End	16:49:00	66	70	20	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
California tortoiseshell (2)	Pacific sara orangetip (6)	
desert pearly marble (7)	painted lady (18)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
bushtit (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
California ground squirrel (1+)	desert cottontail (1+)	spotted towhee (1+)
California quail (1+)	granite spiny lizard (1+)	turkey vulture (1+)

INCIDENTAL PLANT LIST		
Cryptantha sp.	*Lasthenia gracilis*	
Erodium cicutarium	*Plagiobothrys sp.*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-29
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	8
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
End	14:58:00	75	75.7	20	2	patchy	
End	16:34:00	67	69	10	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	Edward's blue (1)	painted lady (325)
California dogface (1)	funereal duskywing (5)	western bluebird (1+)
desert pearly marble (14)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
oak titmouse (1+)	common raven (1+)	western kingbird (1+)
bushtit (1+)	desert cottontail (1+)	white-crowned sparrow (1+)
California ground squirrel (1+)	turkey vulture (1+)	
California scrub-jay (1+)	western fence lizard (1+)	

INCIDENTAL PLANT LIST		
Acmispon strigosus	*Erodium cicutarium*	*Salvia columbariae*
Amsinckia menziesii	*Lasthenia gracilis*	*Tropidocarpum gracile*
Cryptantha micrantha	*Lomatium dasycarpum*	
Descurainia pinnata	*Lupinus concinnus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-27
Biologist(s)	Patricia Schuyler
Survey Area	8
Survey Pass	3

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:00:00	60	63	80	7	patchy	
Start	10:58:00	62	63.3	60	6	patchy	Out of protocol. Survey rescheduled.
End	11:31:00	62	64	100	9	overcast	

BUTTERFLY LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-03
Biologist(s)	Patricia Schuyler
Survey Area	8
Survey Pass	4

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:16:00	56	61	40	10	patchy	Survey area 8
Mid survey	12:01:00	61	72	30	12	patchy	
End	14:27:00	67	72	60	10	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	cabbage white (5)	dainty sulphur (1)
bramble hairstreak (1)	California dogface (2)	painted lady (20)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-08
Biologist(s)	Patricia Schuyler
Survey Area	8
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:11:00	80.6	79.5	20	1	clear	
End	14:41:00	86	89	30	4	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (51)	dainty sulphur (2)	Pacific sara orangetip (4)
cabbage white (13)	desert pearly marble (15)	painted lady (24)
California tortoiseshell (1)	funereal duskywing (5)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-15
Biologist(s)	Patricia Schuyler
Survey Area	8
Survey Pass	6

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
End	14:26:00	69.2	71.9	30	10	clear	
Start	22:02:00	64	69.4	40	2	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (55)	California dogface (2)	western pygmy-blue (1)
bramble hairstreak (2)	desert pearly marble (4)	
cabbage white (5)	painted lady (23)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-25
Biologist(s)	Patricia Schuyler
Survey Area	8
Survey Pass	7

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:14:00	68	70	10	2	clear	
End	12:49:00	92	96.2	0	2	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (49)	Pacific sara orangetip (28)	southern blue (2)
desert pearly marble (2)	painted lady (10)	White sp (13)

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia intermedia	*Euphorbia albomarginata*	*Pectocarya setosa*
Arctostaphylos pungens	*Gilia angelensis*	*Phacelia distans*
Boechera pulchra	*Gilia diegensis*	*Salvia columbariae*
Calyptridium monandrum	*Lasthenia gracilis*	*Sisymbrium altissimum*
Cryptantha micrantha	*Lepidium perfoliatum*	*Uropappus lindleyi*
Descurainia pinnata	*Lupinus bicolor*	
Ericameria linearifolia	*Lupinus concinnus*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-01
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	8
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	10:05:00	66	69.1	0	1		
End	14:32:00	74	81	0	5	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (1)	desert orangetip (8)	Propertius duskywing (6)
Behr's metalmark (56)	Edward's blue (1)	western pygmy-blue (2)
cabbage white (35)	Pacific sara orangetip (7)	
dainty sulphur (4)	painted lady (12)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-09
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	8
Survey Pass	9

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	14:08:00	68	77	10	8	clear	
End	16:30:00	65	70	30	6	clear	Gusts up to 13

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (14)	Lady spp. (1+)	White spp. (1+)
checkered white (7)	painted lady (5)	
Edward's blue (4)	white checkered-skipper (2)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
ash-throated flycatcher (1+)	California scrub-jay (1+)	orange-crowned warbler (1+)
bushtit (1+)	European starling (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-03
Biologist(s)	Diana Saucedo, Erik LaCoste, Lindsay Willrick
Survey Area	1, 2
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:25:00	65	0	0	4	clear	
Midday	12:00:00	84	0	0	4	clear	
End	16:00:00	84	0	0	9	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
Acmon blue (11)	dainty sulphur (11)	Pacific sara orangetip (13)
Behr's metalmark (105)	desert orangetip (13)	painted lady (8)
bramble hairstreak (2)	Edward's blue (17)	pale swallowtail (7)
brown elfin (2)	gray hairstreak (2)	Propertius duskywing (11)
checkered white (22)	Harford's sulphur (15)	
common buckeye (1)	marine blue (10)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
Anna's hummingbird (1+)	common side-blotched lizard (1+)	phainopepla (1+)
ash-throated flycatcher (1+)	granite spiny lizard (1+)	red-tailed hawk (1+)
Bewick's wren (1+)	greater roadrunner (1+)	Scott's oriole (1+)
black-throated sparrow (1+)	hermit warbler (1+)	spotted towhee (1+)
bushtit (1+)	house finch (1+)	Townsend's warbler (1+)
California quail (1+)	Kangaroo rat spp. (1+)	western kingbird (1+)
California scrub-jay (1+)	ladder-backed woodpecker (1+)	western tanager (1+)
California thrasher (1+)	long-nosed leopard lizard (1+)	white-crowned sparrow (1+)
California towhee (1+)	mourning dove (1+)	wrentit (1+)
common raven (1+)	northern flicker (1+)	

INCIDENTAL PLANT LIST		
Descurainia sophia	*Heliotropium curassavicum*	*Pectocarya setosa*
Dichelostemma capitatum	*Lasthenia gracilis*	*Platystemon californicus*
Ericameria linearifolia	*Layia glandulosa*	*Salvia columbariae*
Eriodictyon trichocalyx	*Leptosiphon lemmonii*	*Uropappus lindleyi*
Eriophyllum wallacei	*Lupinus concinnus*	***Geraea viscida***
Erodium cicutarium	*Malacothrix glabrata*	***Linanthus bellus***

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-24
Biologist(s)	Diana Saucedo, Victor Novik
Survey Area	4, 5
Survey Pass	2

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	09:00:00	60	62	0	4	clear	
End	16:30:00	69	72	20	8	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Behr's metalmark (1)	dainty sulphur (7)	painted lady (102)
bramble hairstreak (1)	desert orangetip (15)	Sara orange-tip (27)
brown elfin (1)	funereal duskywing (6)	spring white (17)
checkered white (10)	Harford's sulphur (5)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
(none)		

INCIDENTAL PLANT LIST		
Amsinckia menziesii	*Erodium cicutarium*	*Sisymbrium irio*
Arctostaphylos spp	*Lasthenia californica*	*Tropidocarpum gracile*
Camissoniopsis bistorta	*Lomatium dasycarpum*	
Cryptantha spp	*Ribes quercetorum*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-04-10
Biologist(s)	Erin Bergman
Survey Area	6, 7
Survey Pass	5

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
Start	08:17:00	67	69	0	4	clear	
End	18:09:00	69	74	0	3	clear	

BUTTERFLY LIST *SPECIES (COUNT)*		
quino checkerspot butterfly (5)	desert pearly marble (45)	Pacific sara orangetip (34)
Acmon blue (30)	funereal duskywing (43)	painted lady (82)
Behr's metalmark (87)	gray hairstreak (36)	west coast lady (23)
bramble hairstreak (47)	great purple hairstreak (13)	White species (26)
brown elfin (1)	Lady species (51)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
California quail (1+)	European starling (1+)	wild turkey (1+)
California scrub-jay (1+)	red-tailed hawk (1+)	
chipping sparrow (1+)	turkey vulture (1+)	

INCIDENTAL PLANT LIST		
Acmispon argophyllus var. argophyllus	*Eriophyllum wallacei*	*Lupinus concinnus*
Amsinckia intermedia	*Lasthenia gracilis*	*Salvia columbariae*
Boechera pulchra	*Layia glandulosa*	
Calycoseris parryi	*Lupinus bicolor*	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-05-02
Biologist(s)	Brock Ortega
Survey Area	7
Survey Pass	8

SURVEY CONDITIONS							
Status	**Time**	**Air Temp. (F)**	**Ground Temp. (F)**	**Cloud Cover (%)**	**Wind (mph)**	**Sky**	**Notes**
End	02:59:00	80	78	30	5	patchy	
Start	08:01:00	70	70	50	3	patchy	

BUTTERFLY LIST *SPECIES (COUNT)*		
Blue sp (30)	Edward's blue (11)	painted lady (15)
brown elfin (4)	Lady sp (15)	west coast lady (11)
cabbage white (16)	marine blue (23)	western pygmy-blue (25)
common buckeye (14)	mourning cloak (1+)	
desert pearly marble (6)	Pacific sara orangetip (12)	

INCIDENTAL WILDLIFE LIST *SPECIES (COUNT)*		
song sparrow (1+)	Cassin's kingbird (1+)	house finch (1+)
American kestrel (1+)	common raven (1+)	Kangaroo rat sp (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	mule deer (1+)
California quail (1+)	coyote (1+)	red-tailed hawk (1+)
California scrub-jay (1+)	desert cottontail (1+)	rock wren (1+)
California thrasher (1+)	desert woodrat (1+)	western toad (1+)
California towhee (1+)	gophersnake (1+)	

INCIDENTAL PLANT LIST		
(none)		

Appendix C

Notification of Observation of Quino Checkerspot Butterfly for the Proposed Wind Energy Facilities

DUDEK

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

April 11, 2019

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
2177 Salk Avenue; Suite 250
Carlsbad, CA 92008

Re: Notification of Observation of Quino Checkerspot Butterfly Campo Wind Project, Boulder Brush Portion, Boulevard, County of San Diego, California.

Dear Recovery Permit Coordinator,

The purpose of this letter is to provide the U. S. Fish and Wildlife Service 24-hour written notification of Quino checkerspot butterfly observations on the Boulder Brush portion of the Campo Wind project site. The observation was made on April 10, 2019. A total of five butterflies were identified by Erin Bergman (TE-53771B-0). See attached map.

The Quino was observed around 2:00- 3:00 pm. Ms. Bergman immediately observed it sitting on the ground approximately 3 feet in front of her. Ms. Bergman wanted to confirm the observation with binoculars so she followed quino as it moved up in elevation. As Ms. Bergman moved up in elevation, 5 total were observed performing hill topping behaviors. Ms. Bergman confirmed that all 5 butterflies were quino with binoculars and took a few photos. No other checkerspot species were present but numerous other butterflies were observed hill topping with quino. Since the quino butterflies were hill topping they stayed at the location for over an hour. Callie Amoaku joined Ms. Bergman to observe the butterflies with binoculars and also took photos.

Weather conditions were approximately 77 degrees F., the sky was clear with 0 percent cloud cover and wind speeds were 0-6 miles per hour.

The Quino was observed in an area with open decomposed granite soils, hilltops, ridges, numerous granitic rock outcrops, and various nectar sources. No host plants were observed anywhere within the survey area. Quino spent much of the observation time nectaring on Clearwater cryptantha (*Cryptantha intermedia var. intermedia*) and pointed cryptantha *(Crytantha muricata var. jonesii*) for short periods of time (a few seconds), landing on bare ground (a few seconds) and performing hill topping behaviors the majority of the time.

Please contact me at (760) 274-3927 if there are any questions concerning this observation.

Very truly yours,

DUDEK



_____
Erin Bergman
Biologist



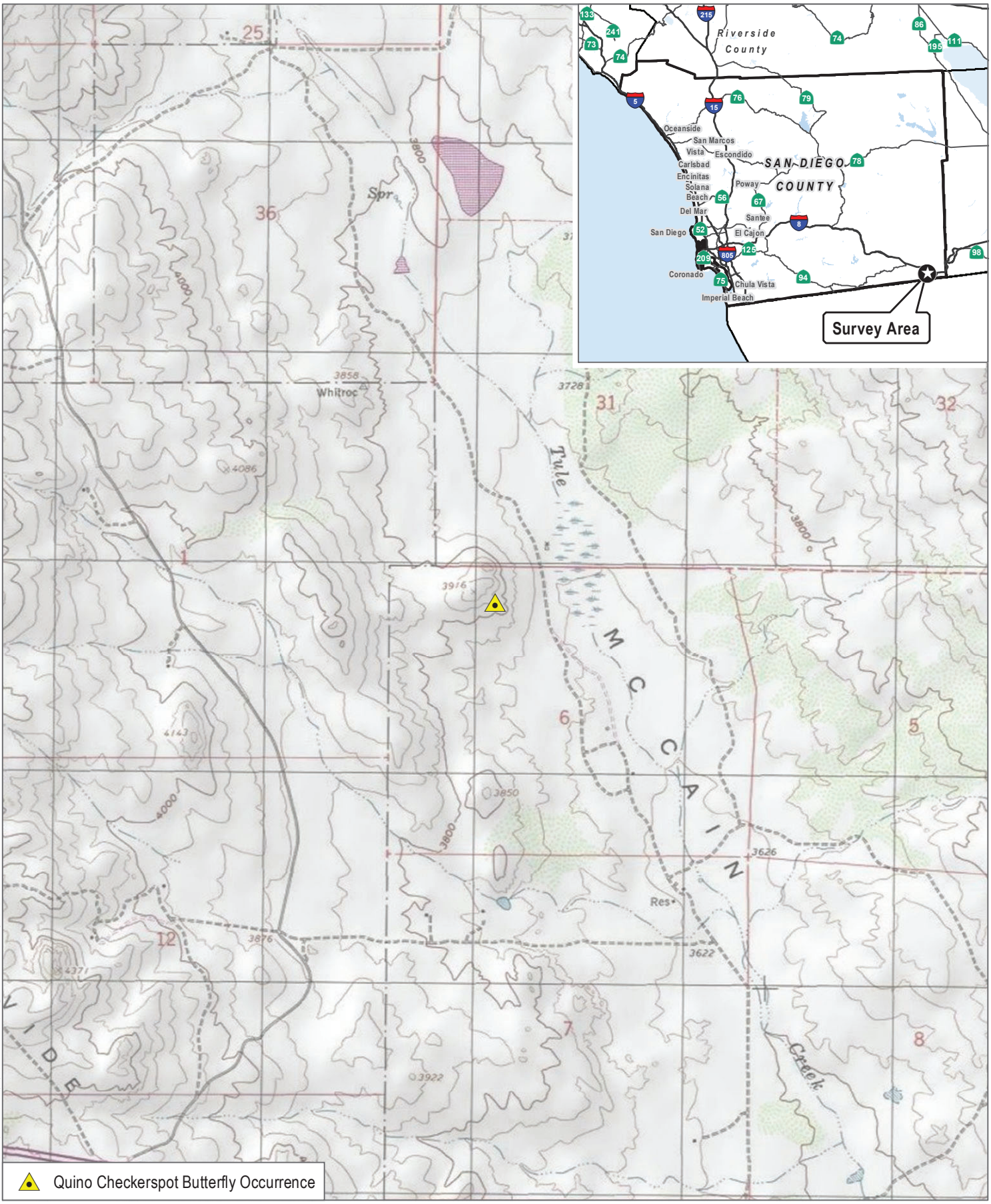
Quino Photo 1



Quino Photo 2



Quino Photo 3

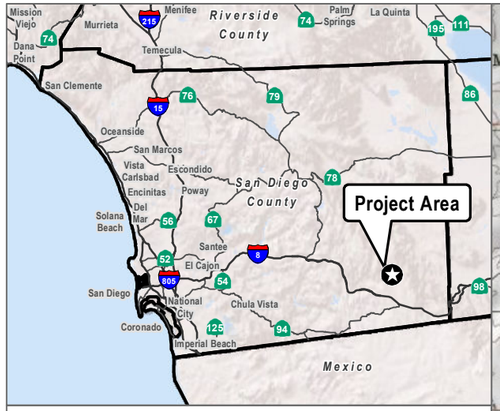


SOURCE: USGS 7.5-Minute Series Live Oak Springs Quadrangle

DUDEK

0 1,000 2,000 Feet

Quino Checkerspot Butterfly Occurrence



- Project Boundary
- Study Area
- Torrey Wind Project Site
- Boulder Brush Facilities Corridor
- QUINO checkerspot butterfly observation
- Exclusion Areas

Quino Survey Areas

- 1 (67 acres)
- 2 (65 acres)
- 3 (64 acres)
- 4 (67 acres)
- 5 (65 acres)
- 6 (61 acres)
- 7 (69 acres)
- 8 (44 acres)

SOURCE: USGS 7.5-minute Quadrangle

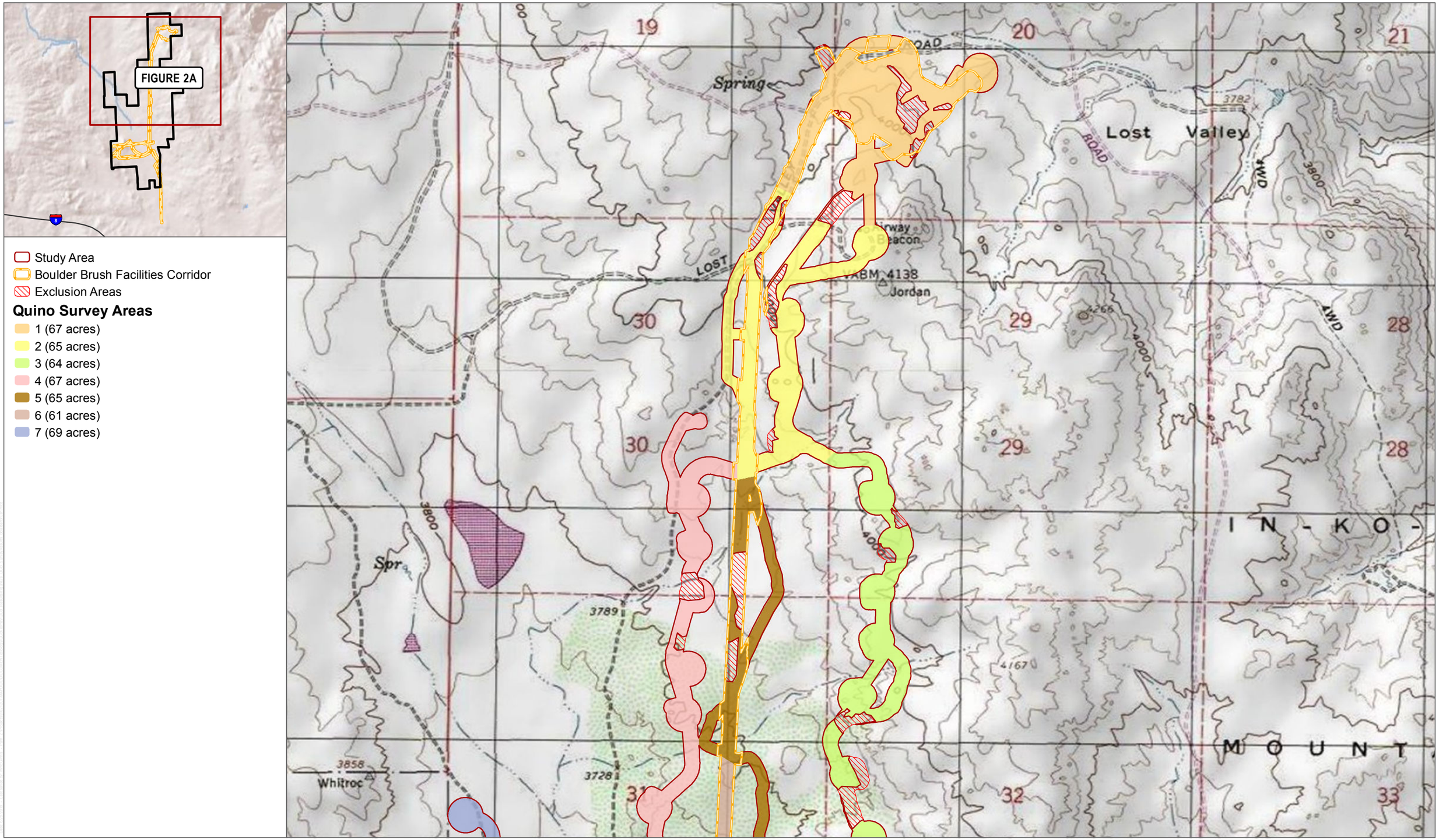
DUDEK

0 1,375 2,750 Feet

FIGURE 1

Survey Results

2019 Focused Quino Checkerspot Butterfly Survey Report



SOURCE: USGS 7.5-minute Quadrangle

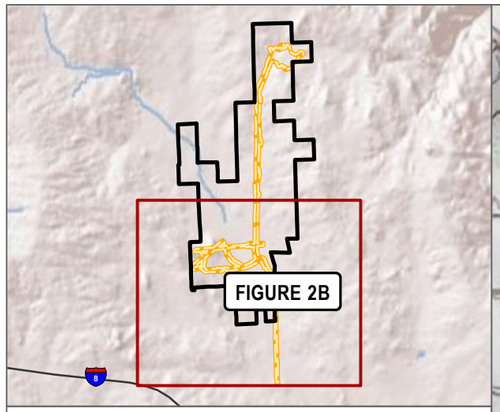
DUDEK

0 625 1,250 Feet

FIGURE 2A

Survey Results - Boulder Brush

2019 Focused Quino Checkerspot Butterfly Survey Report



- Study Area
- Boulder Brush Facilities Corridor
- QUINO checkerspot butterfly observation
- Exclusion Areas

Quino Survey Areas

- 1 (67 acres)
- 2 (65 acres)
- 3 (64 acres)
- 4 (67 acres)
- 5 (65 acres)
- 6 (61 acres)
- 7 (69 acres)
- 8 (44 acres)

SOURCE: USGS 7.5-minute Quadrangle

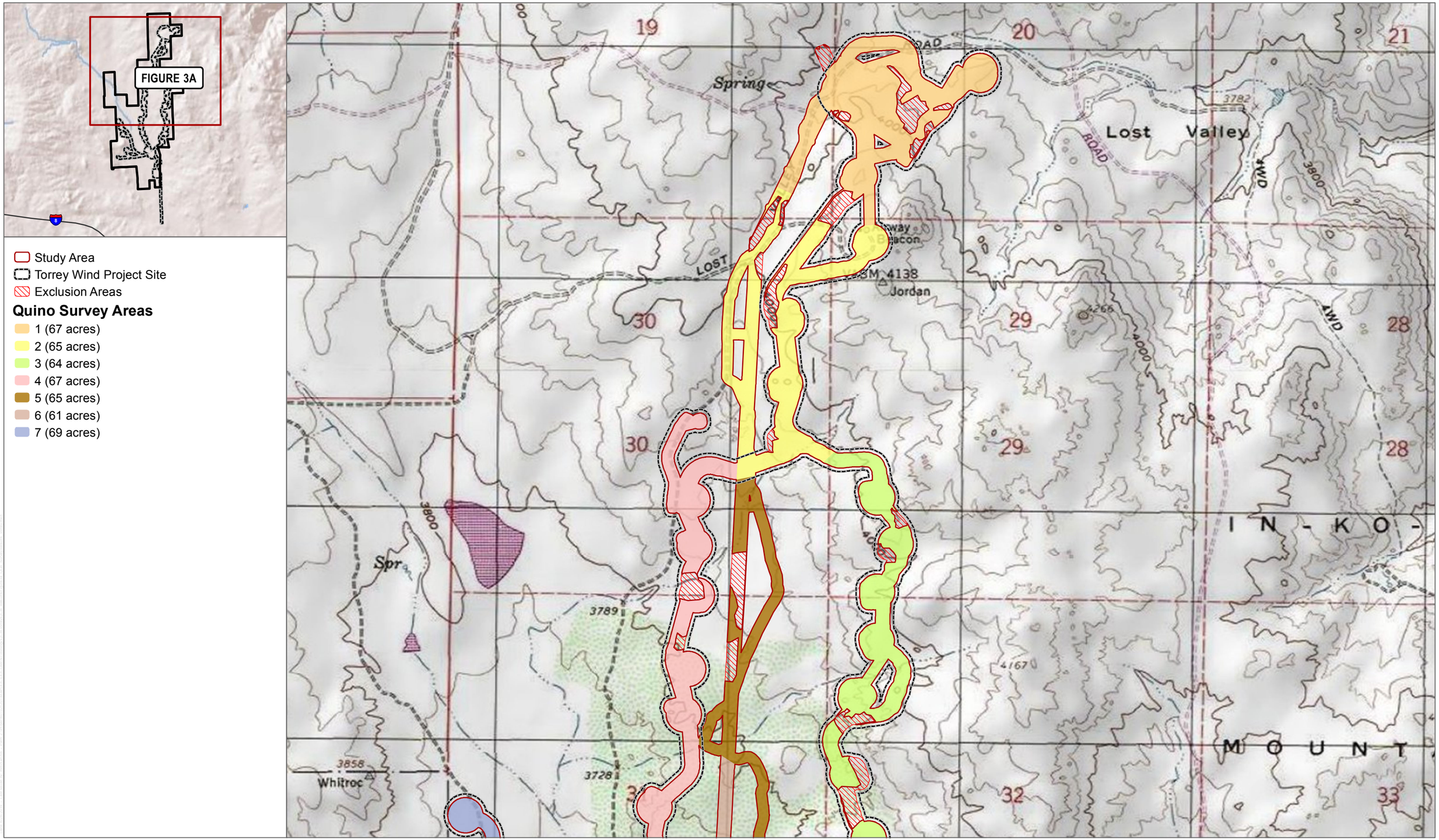
DUDEK

0 650 1,300 Feet

FIGURE 2B

Survey Results - Boulder Brush

2019 Focused Quino Checkerspot Butterfly Survey Report



SOURCE: USGS 7.5-minute Quadrangle

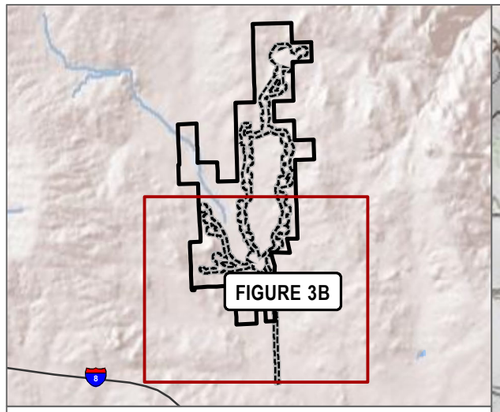
DUDEK

0 625 1,250 Feet

FIGURE 3A

Survey Results - Torrey

2019 Focused Quino Checkerspot Butterfly Survey Report



Study Area
Torrey Wind Project Site
Exclusion Areas

Quino Survey Areas

- 1 (67 acres)
- 2 (65 acres)
- 3 (64 acres)
- 4 (67 acres)
- 5 (65 acres)
- 6 (61 acres)
- 7 (69 acres)
- 8 (44 acres)

SOURCE: USGS 7.5-minute Quadrangle

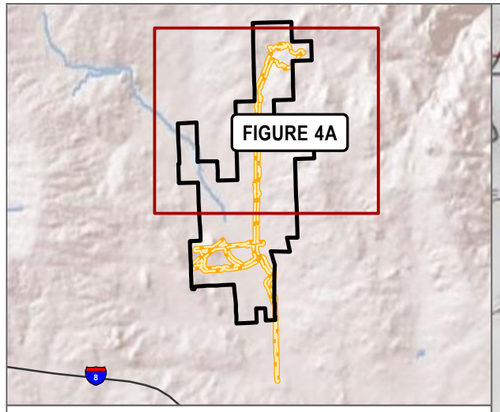
DUDEK

0 650 1,300 Feet

FIGURE 3B

Survey Results - Torrey

2019 Focused Quino Checkerspot Butterfly Survey Report



Study Area
Boulder Brush Facilities Corridor
Exclusion Areas

Quino Survey Areas

1 (67 acres)
2 (65 acres)
3 (64 acres)
4 (67 acres)
5 (65 acres)
6 (61 acres)
7 (69 acres)

Host Plants

Chinese houses *(Collinsia concolor)*

Very Low: 1-19 plants
Low: 20-100 plants
Medium: 100-500 plants

SOURCE: USGS 7.5-minute Quadrangle

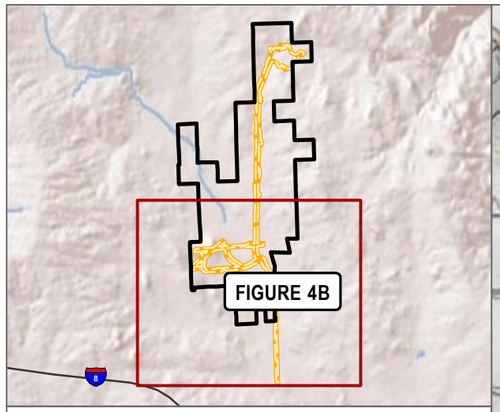
DUDEK

0 625 1,250 Feet

FIGURE 4A

Host Plant Mapping - Boulder Brush

2019 Focused Quino Checkerspot Butterfly Survey Report



- Study Area
- Boulder Brush Facilities Corridor
- QUINO checkerspot butterfly observation
- Exclusion Areas

Quino Survey Areas

- 3 (64 acres)
- 4 (67 acres)
- 5 (65 acres)
- 6 (61 acres)
- 7 (69 acres)
- 8 (44 acres)

Host Plants

Chinese houses *(Collinsia concolor)*

- Very Low: 1-19 plants
- Low: 20-100 plants
- Medium: 100-500 plants

stiffbranch bird's beak *(Cordylanthus rigidus)*

- Very Low: 1-19 plants
- Low: 20-100 plants

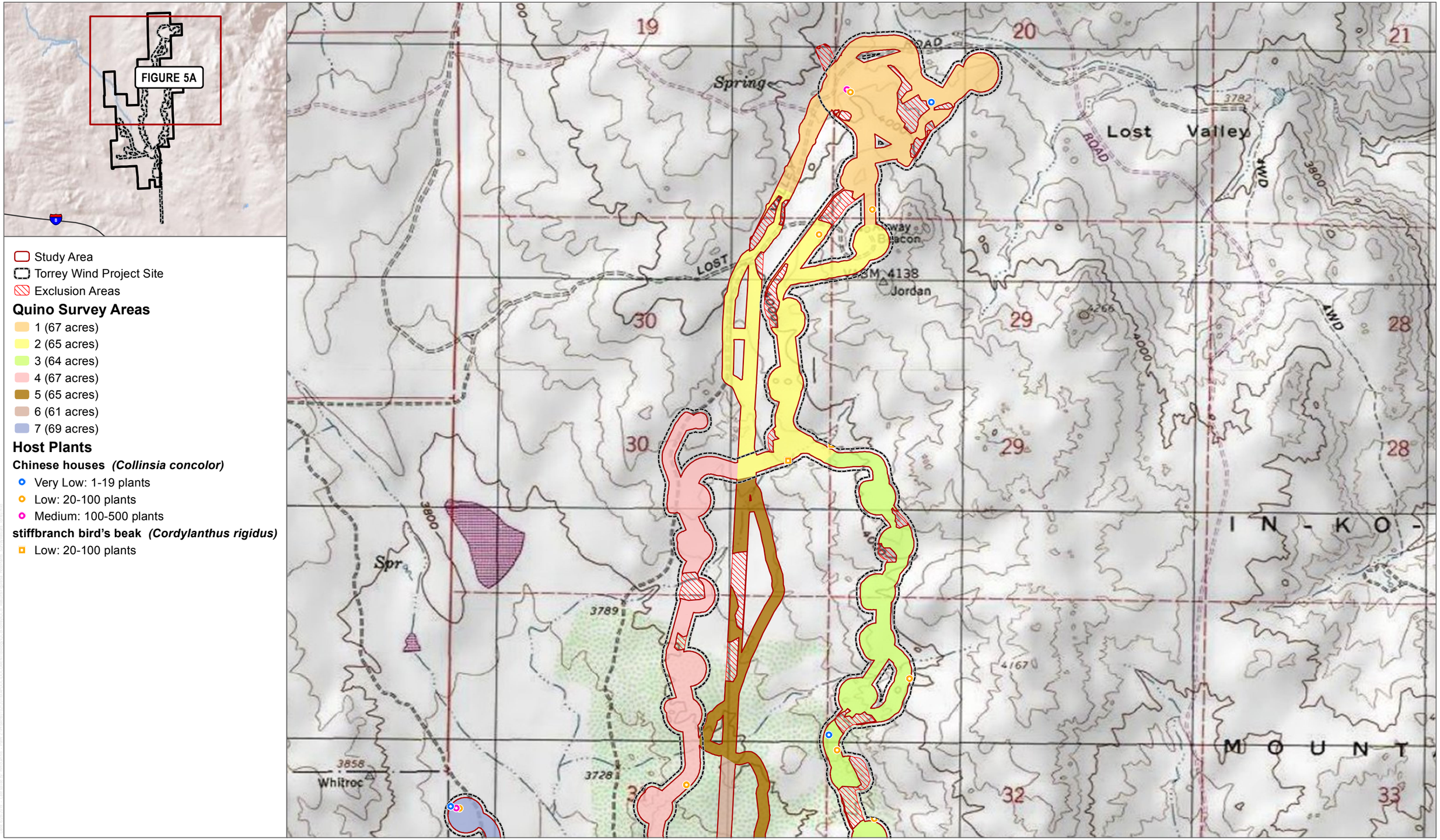
SOURCE: USGS 7.5-minute Quadrangle

DUDEK 0 650 1,300 Feet

FIGURE 4B

Host Plant Mapping - Boulder Brush

2019 Focused Quino Checkerspot Butterfly Survey Report



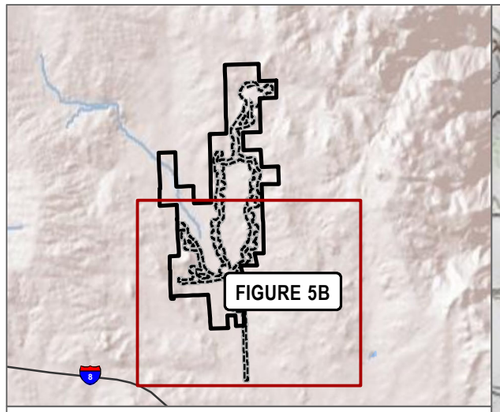
SOURCE: USGS 7.5-minute Quadrangle

DUDEK 0 625 1,250 Feet

FIGURE 5A

Host Plant Mapping - Torrey

2019 Focused Quino Checkerspot Butterfly Survey Report



Study Area
Torrey Wind Project Site
Exclusion Areas

Quino Survey Areas

- 3 (64 acres)
- 4 (67 acres)
- 5 (65 acres)
- 6 (61 acres)
- 7 (69 acres)
- 8 (44 acres)

Host Plants

Coulter's snapdragon ***(Antirrhinum coulterianum)***

- Very Low: 1-19 plants

Chinese houses ***(Collinsia concolor)***

- Very Low: 1-19 plants
- Low: 20-100 plants
- Medium: 100-500 plants

stiffbranch bird's beak ***(Cordylanthus rigidus)***

- Very Low: 1-19 plants

SOURCE: USGS 7.5-minute Quadrangle

DUDEK

0 650 1,300 Feet

FIGURE 5B

Host Plant Mapping - Torrey

2019 Focused Quino Checkerspot Butterfly Survey Report

ATTACHMENT C

2018 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report for the Torrey Wind Project, Boulevard, San Diego County, California

DUDEK

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

October 10, 2018 10212

Recovery Permit Coordinator
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: ***2018 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report for the Torrey Wind Project, Boulevard, San Diego County, California***

Dear Recovery Permit Coordinator:

This report documents the results of protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's Vireo (*Vireo bellii pusillus*; vireo) and the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher). The surveys were conducted in support of the Torrey Wind project (Project), located in the County of San Diego, California. The Project would involve construction and operation of approximately 32 new wind turbines (rated up to 4.2 megawatts each), an underground electrical collection system, a collector substation, an operation and maintenance (O&M) building and associated parking areas, a temporary staging area, a batch plant, meteorological towers, and various access roads. The Project site contains approximately 13.1 acres of potentially suitable vireo and flycatcher habitat that were surveyed in 2018.

The vireo and flycatcher are closely associated with riparian habitats, especially densely vegetated willow scrub and riparian forest vegetation. These species are threatened primarily by loss, degradation, and fragmentation of riparian habitats. They also are impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The study area is entirely on private land in southeastern San Diego County, California in the McCain Valley area, north of the community of Boulevard and is accessed via Interstate 8 and Ribbonwood Road (Figure 1, Project Location). The study area is within the U.S. Geological Survey's 7.5-minute Sombrero Peak and Live Oak Springs quadrangle maps within Township 17 South, Range 6 East, Sections 01, 05, and 06; Township 17 South, Range 7 East, Sections 05 and 06; and Township 16 South, Range 6 East, Sections 19, 20, 29, 30, 31, and 32 (Figure 1).

Elevations range from about 3,280 feet above mean sea level to approximately 4,120 feet above mean sea level.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service, the following seven soil series were mapped within the study area: Calpine (coarse sandy loam, 5% to 9% slopes); La Posta (loamy coarse sand, 5% to 30% slopes, eroded; rocky loamy coarse sand, 5% to 30% slopes, eroded); loamy alluvial land; Mottsville (loamy coarse sand, 2% to 9% slopes); and Tollhouse (rocky coarse sandy loam, 5% to 30% slopes, eroded) (USDA 2018).

VEGETATION COMMUNITIES

Approximately 13.1 acres of vireo- and flycatcher-suitable habitat were mapped on the Project site according to Oberbauer et al. (2008) (Figure 2, Least Bell's Vireo and Southwestern Willow Flycatcher Survey Results). Habitats suitable for vireo and flycatcher within the study area include mulefat scrub, mature riparian woodland, and oak woodland.

Mulefat Scrub

Mulefat scrub is a depauperate, tall, herbaceous riparian scrub strongly dominated by mulefat (*Baccharis salicifolia*). This early seral community is maintained by frequent flooding. Site factors include intermittent stream channels with fairly coarse substrate and moderate depth to the water table (Oberbauer et al. 2008). This community type is widely scattered along intermittent streams and near larger rivers.

Riparian Woodland

Riparian woodland is an open to dense riparian woodland dominated by riparian trees, including western sycamore (*Platanus racemosa*), *Populus* species, *Sambucus* species, and other wetland plants (Oberbauer et al. 2008). Riparian woodland is primarily found along streams and rivers.

Oak Woodland

Oak woodland is a forest dominated by oak (*Quercus* sp.) in the tree canopy cover and has a poorly developed shrub layer (Oberbauer et al. 2008). Oak woodland is primarily found along shaded ravines.

METHODS

Suitable habitat areas within the study area were surveyed eight times for vireo and five times for flycatcher. Flycatcher-permitted Dudek wildlife biologist, Brock A. Ortega (Permit # TE813545-

6), conducted all combined flycatcher/vireo surveys (Table 1). The flycatcher-permitted biologist used audio-playback techniques to elicit flycatcher responses. Focused surveys for these species were initiated on May 19, 2018, and continued through July 28, 2018.

Table 1
Vireo and Flycatcher Survey Schedule and Conditions

Survey Pass #/ Focus	Date	Hours	Personnel	Conditions (temperature, cloud cover, wind speed)
1-LBVI 1-SWFL	2018-05-19	6:30 AM–11:00 AM	BAO	60–72°F; 0–20% cc; 0–3 mph wind
2-LBVI	2018-05-28	5:30 AM–10:30 AM	BAO	57–74°F; 0–50% cc; 3–8 mph wind
3-LBVI 2-SWFL	2018-06-07	5:35 AM–10:06 AM	BAO	57–70°F; 20% cc; 3–8 mph wind
4-LBVI 3-SWFL	2018-06-17	6:10 AM–11:05 AM	BAO	60–80°F; 0% cc; 3–5 mph wind
5-LBVI	2018-06-27	5:20 AM–11:10 AM	BAO	55–90°F; 0% cc; 3–8 mph wind
6-LBVI 4-SWFL	2018-07-07	5:30 AM–10:30 AM	BAO	78–95°F; 0% cc; 0–1 mph wind
7-LBVI 5-SWFL	2018-07-17	5:30 AM–10:30 AM	BAO	76–88°F; 20–100% cc; 0–10 mph wind
8-LBVI	2018-07-28	5:45 AM–10:30 AM	BAO	60–89°F; 10–80% cc; 0–3 mph wind

Notes: LBVI = least Bell's vireo; SWFL = Southwestern willow flycatcher; BAO = Brock Ortega; cc = cloud cover; mph = miles per hour; °F = degrees Fahrenheit.

As directed by Stacey Love, United States Fish & Wildlife Service (USFWS) Recovery Permit Coordinator, surveys for vireo and flycatcher were not conducted concurrently. Due to differences in detectability, surveys were conducted sequentially, with surveys for the flycatcher first (i.e., first thing in the morning) and surveys for the vireo conducted afterwards. Additionally, for linear survey routes within a riparian corridor: flycatchers were surveyed from the starting point to the end, and vireos were surveyed on the way back. This route was arranged to cover all suitable habitat on site. A vegetation map (1:2,400 scale; 1 inch=200 feet) of the study area was available to record any detected vireo or flycatcher. Binoculars (7×50, 10×42, 10×50) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (*A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher* [Sogge et al. 2010]), which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. It is recommended that one survey is made between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Surveys during the

final period (June 25 and July 17) were separated by at least five days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. If a flycatcher had been detected, playing of the tape would have ceased to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted *Least Bell's Vireo Survey Guidelines* (USFWS, 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations were not used during the surveys. Surveys were conducted between dawn and noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

Weather conditions, time of day, and season were appropriate for the detection of flycatcher and vireo (Table 1).

RESULTS

No vireo or flycatchers were observed during focused surveys.

Sensitive species observed included yellow warbler (*Dendroica petechia*), a California Department of Fish and Wildlife (CDFW) Species of Special Concern; Cooper's hawk (*Accipiter cooperii*), a CDFW Watch List species; Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), a CDFW Watch List species; and San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), a CDFW Species of Special Concern. However, only yellow warbler was mapped during the focused survey. Sensitive species observation locations are shown in Figure 2. Brown-headed cowbird was also detected within the study area.

Fifty-three wildlife species were observed during the focused surveys. A full list of wildlife species observed during the survey is provided in Appendix A.

Please feel free to contact me at 760.479.4254 with questions or if you require additional information.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,

Brock Ortega
Permit #TE813545-6

Att: Figures 1–2
Appendix A

REFERENCES

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Robert F. Holland, Ph.D., October 1986.

Sogge, M.K., Ahlers, Darrell, and Sferra, S.J., 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*. U.S. Geological Survey Techniques and Methods 2A-10, 38 p.

USDA (U.S. Department of Agriculture). 2018. Web Soil Survey [web application]. USDA, Natural Resources Conservation Service. http://websoilsurvey.nrcs.usda.gov/app/.

USFWS. 2001. *Least Bell's Vireo Survey Guidelines*. January 19.

APPENDIX A

Wildlife Species Observed in Study Area

BIRD

BLACKBIRDS, ORIOLES & ALLIES

ICTERIDAE—BLACKBIRDS

Euphagus cyanocephalus—Brewer's blackbird
Icterus cucullatus—hooded oriole
* *Molothrus ater*—brown-headed cowbird

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS & BUSHTITS

Psaltriparus minimus—bushtit

CARDINALS, GROSBEAKS & ALLIES

CARDINALIDAE—CARDINALS & ALLIES

Piranga ludoviciana—western tanager

FINCHES

FRINGILLIDAE—FRINGILLINE & CARDUELINE FINCHES & ALLIES

Haemorhous mexicanus—house finch
Spinus tristis—American goldfinch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Sayornis nigricans—black phoebe
Sayornis saya—Say's phoebe
Tyrannus vociferans—Cassin's kingbird

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, & ALLIES

Accipiter cooperii—Cooper's hawk
Buteo jamaicensis—red-tailed hawk

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Archilochus alexandri—black-chinned hummingbird
Calypte anna—Anna's hummingbird

JAYS, MAGPIES & CROWS

CORVIDAE—CROWS & JAYS

Aphelocoma californica—California scrub-jay
Corvus brachyrhynchos—American crow
Corvus corax—common raven

MOCKINGBIRDS & THRASHERS

MIMIDAE—MOCKINGBIRDS & THRASHERS

Toxostoma redivivum—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

NEW WORLD VULTURES

CATHARTIDAE—NEW WORLD VULTURES

Cathartes aura—turkey vulture

PIGEONS & DOVES

COLUMBIDAE—PIGEONS & DOVES

Zenaida macroura—mourning dove

ROADRUNNERS & CUCKOOS

CUCULIDAE—CUCKOOS, ROADRUNNERS, & ANIS

Geococcyx californianus—greater roadrunner

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis—white-throated swift

THRUSHES

TURDIDAE—THRUSHES

Sialia mexicana—western bluebird

TITMICE

PARIDAE—CHICKADEES & TITMICE

Baeolophus inornatus—oak titmouse

WOOD WARBLERS & ALLIES

PARULIDAE—WOOD-WARBLERS

Cardellina pusilla—Wilson's warbler

Setophaga petechia—yellow warbler

WOODPECKERS

PICIDAE—WOODPECKERS & ALLIES

Colaptes auratus—northern flicker

Dryobates nuttallii—Nuttall's woodpecker

WRENS

TROGLODYTIDAE—WRENS

Salpinctes obsoletus—rock wren

Thryomanes bewickii—Bewick’s wren

Troglodytes aedon—house wren

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

NEW WORLD SPARROWS

PASSERELLIDAE—NEW WORLD SPARROWS

Aimophila ruficeps canescens—Southern California rufous-crowned sparrow
Aimophila ruficeps—rufous-crowned sparrow
Artemisiospiza nevadensis—sagebrush sparrow
Melospiza melodia—song sparrow
Pipilo maculatus—spotted towhee
Spizella atrogularis—black-chinned sparrow

MAMMAL

CANIDS

CANIDAE—WOLVES & FOXES

Canis latrans—coyote

CATS

FELIDAE—CATS

Lynx rufus—bobcat

HARES & RABBITS

LEPORIDAE—HARES & RABBITS

Lepus californicus—black-tailed jackrabbit
Sylvilagus audubonii—desert cottontail

MUSTELIDS

MEPHITIDAE—SKUNKS

Mephitis mephitis—striped skunk

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

SQUIRRELS

SCIURIDAE—SQUIRRELS

Ammospermophilus leucurus—white-tailed antelope squirrel

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

RATS, MICE, & VOLES

CRICETIDAE—RATS, MICE, & VOLES

Neotoma sp.—woodrat

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

Uta stansburiana—common side-blotched lizard

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail

* signifies introduced (non-native) species

ATTACHMENT D

Plant Species Observed

APPENDIX D
Plant Compendium

VASCULAR SPECIES

EUDICOTS

ADOXACEAE—MUSKROOT FAMILY

Sambucus nigra ssp. *caerulea*—blue elderberry

AMARANTHACEAE—AMARANTH FAMILY

* *Amaranthus albus*—prostrate pigweed

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina—laurel sumac
Rhus aromatica var. *aromatica*—single-leaved skunkbrush
Rhus aromatica var. *simplicifolia*—single-leaved skunkbrush
Rhus ovata—sugarbush

APIACEAE—CARROT FAMILY

* *Apium graveolens*—wild celery
Lomatium dasycarpum ssp. *dasycarpum*—woollyfruit desertparsley
Lomatium lucidum—shiny biscuitroot
Lomatium mohavense—Mojave desertparsley
Lomatium sp.—no common name
Sanicula arguta—sharptooth blacksnakeroot
Tauschia arguta—southern umbrellawort

APOCYNACEAE—DOGBANE FAMILY

Asclepias fascicularis—Mexican whorled milkweed

ASTERACEAE—SUNFLOWER FAMILY

Acamptopappus sphaerocephalus—rayless goldenhead
Achillea millefolium—common yarrow
Acourtia microcephala—sacapellote
Ambrosia acanthicarpa—flatspine bur ragweed
Ambrosia psilostachya—western ragweed
Anisocoma acaulis—scalebud
Artemisia douglasiana—Douglas' sagewort
Artemisia dracunculus—wild tarragon
Artemisia tridentata—big sagebrush
Baccharis pilularis—coyote brush
Baccharis salicifolia ssp. *salicifolia*–mulefat
Baccharis sergiloides—broom baccharis
Calycoseris parryi—yellow tackstem
Chaenactis fremontii—pincushion flower

Chaenactis glabriuscula var. *glabriuscula*—yellow pincushion
Chaenactis sp.—no common name
Cirsium occidentale—cobwebby thistle
* *Coreopsis tinctoria*—golden tickseed
Corethrogyne filaginifolia—common sandaster
Deinandra floribunda—Tecate tarplant
Ericameria brachylepis—chaparral goldenbush
Ericameria cuneata var. *spathulata*—cliff goldenbush
Ericameria linearifolia—narrowleaf goldenbush
Ericameria nauseosa—rubber rabbitbrush
Ericameria palmeri—Palmer's goldenbush
Ericameria paniculata—black-stem rabbitbrush
Ericameria pinifolia—pinebush
Ericameria sp.—no common name
Erigeron foliosus var. *foliosus*—leafy fleabane
Eriophyllum confertiflorum var. *confertiflorum*—golden-yarrow
Eriophyllum wallacei—woolly easterbonnets
Geraea viscida—sticky geraea
Gutierrezia californica—California match weed
Gutierrezia sarothrae—broom snake weed
* *Hypochaeris glabra*—smooth cat's ear
Lasthenia californica—California goldfields
Lasthenia glaberrima—smooth goldfields
Lasthenia glabrata—yellowray goldfields
Lasthenia gracilis—needle goldfields
Lasthenia sp.—no common name
Layia glandulosa—whitedaisy tidytips
Layia platyglossa—coastal tidytips
Leptosyne californica—California tickseed
Lessingia glandulifera—valley lessingia
Logfia filaginoides—California cottonrose
Malacothrix californica—California desertdandelion
Malacothrix glabrata—smooth desertdandelion
* *Matricaria discoidea*—disc mayweed
Pentachaeta aurea—golden chaetopappa
Senecio californicus—California ragwort
Senecio flaccidus—threadleaf ragwort
Stephanomeria exigua—small wirelettuce
Stylocline gnaphaloides—mountain neststraw
* *Taraxacum officinale*—common dandelion
Uropappus lindleyi—Lindley's silverpuffs

BORAGINACEAE—BORAGE FAMILY
Amsinckia intermedia—common fiddleneck
Amsinckia menziesii—Menzies' fiddleneck

Amsinckia tessellata—bristly fiddleneck
Cryptantha intermedia var. *intermedia*—Clearwater cryptantha
Cryptantha micrantha var. *lepida*—redroot cryptantha
Cryptantha micrantha—redroot cryptantha
Cryptantha sp.—no common name
Emmenanthe penduliflora var. *penduliflora*—whisperingbells
Eriodictyon crassifolium var. *nigrescens*—thickleaf yerba santa
Eriodictyon crassifolium—thick leaf yerba santa
Eriodictyon sp.—no common name
Eriodictyon trichocalyx var. *lanatum*—hairy yerba santa
Eriodictyon trichocalyx—hairy yerba santa
Heliotropium curassavicum var. *oculatum*—seaside heliotrope
Heliotropium curassavicum—salt heliotrope
Nama demissa var. *demissa*— Nama
Nemophila menziesii—baby blue eyes
Pectocarya linearis—sagebrush combseed
Pectocarya penicillata—sleeping combseed
Pectocarya peninsularis—peninsular pectocarya
Pectocarya recurvata—curvenut combseed
Pectocarya setosa—moth combseed
Pectocarya sp.—no common name
Phacelia campanularia—desertbells
Phacelia cicutaria var. *hispida*—caterpillar phacelia
Phacelia cicutaria—caterpillar phacelia
Phacelia distans—distant phacelia
Phacelia imbricata var. *imbricata*—no common name
Phacelia parryi—Parry's phacelia
Phacelia ramosissima var. *latifolia*—branching phacelia
Phacelia sp.—no common name
Phacelia tanacetifolia—lacy phacelia
Plagiobothrys arizonicus—Arizona popcornflower
Plagiobothrys bracteatus—bracted popcornflower
Plagiobothrys collinus—Cooper's popcornflower
Plagiobothrys sp.—no common name

BRASSICACEAE—MUSTARD FAMILY

Arabis sp.—no common name
Boechera arcuata—elegant rockcress
Boechera californica—California rockcress
Boechera perennans—perennial rockcress
Boechera pulchra—beautiful rockcress
Boechera sp.—no common name
* *Brassica* sp.—no common name
* *Capsella bursa-pastoris*—shepherd's purse
Caulanthus heterophyllus—San Diego wild cabbage

Descurainia pinnata ssp. *brachycarpa*—western tansymustard
Descurainia pinnata ssp. *glabra*—western tansymustard
* *Descurainia sophia*—herb sophia
Descurainia sp.—no common name
* *Hirschfeldia incana*—shortpod mustard
* *Lepidium perfoliatum*—clasping pepperweed
Lepidium virginicum ssp. *menziesii*—intermediate pepperweed
* *Sisymbrium altissimum*—tall tumblemustard
* *Sisymbrium irio*—London rocket
Streptanthus campestris—southern jewelflower
Tropidocarpum gracile—dobie pod

CACTACEAE—CACTUS FAMILY
Cylindropuntia californica var. *parkeri*—brownspined pricklypear
Cylindropuntia ganderi—Gander's buckhorn cholla
Opuntia phaeacantha—tulip pricklypear

CAPRIFOLIACEAE—HONEYSUCKLE FAMILY
Lonicera subspicata var. *denudata*—Santa Barbara honeysuckle

CARYOPHYLLACEAE—PINK FAMILY
Minuartia douglasii—Douglas' stitchwort

CHENOPODIACEAE—GOOSEFOOT FAMILY
Chenopodium californicum—California goosefoot
* *Chenopodium murale*—nettleleaf goosefoot

CONVOLVULACEAE—MORNING-GLORY FAMILY
Cuscuta californica—chaparral dodder

CRASSULACEAE—STONECROP FAMILY
Dudleya pulverulenta—chalk dudleya

CUCURBITACEAE—GOURD FAMILY
Cucurbita foetidissima—Missouri gourd
Cucurbita palmata—coyote gourd
Marah macrocarpa—Cucamonga manroot

ERICACEAE—HEATH FAMILY
Arctostaphylos glauca—bigberry manzanita
Arctostaphylos pungens—pointleaf manzanita
Arctostaphylos sp.—no common name
Xylococcus bicolor—mission manzanita

EUPHORBIACEAE—SPURGE FAMILY

Croton setiger—dove weed
Euphorbia albomarginata—whitemargin sandmat
* *Euphorbia maculata*—spotted sandmat
Euphorbia polycarpa—smallseed sandmat
* *Euphorbia* sp.—no common name

FABACEAE—LEGUME FAMILY

* *Acacia decurrens*—green wattle
Acmispon argophyllus var. *argophyllus*—silver bird's-foot trefoil
Acmispon glaber var. *brevialatus*—western bird's-foot trefoil
Acmispon heermannii—Heermann's bird's-foot trefoil
Acmispon strigosus—strigose bird's-foot trefoil
Astragalus didymocarpus—dwarf white milkvetch
Astragalus douglasii var. *parishii*—Parish's milkvetch
Astragalus douglasii var. *perstrictus*—Jacumba milk-vetch
Lupinus bicolor—miniature lupine
Lupinus concinnus—bajada lupine
Lupinus excubitus—grape soda lupine
Lupinus hirsutissimus—stinging annual lupine
Lupinus succulentus—hollowleaf annual lupine
Lupinus truncatus—collared annual lupine
Trifolium willdenovii—tomcat clover

FAGACEAE—OAK FAMILY

Quercus ×*acutidens*—hybrid oak
Quercus agrifolia var. *oxyadenia*—coast live oak
Quercus agrifolia—coast live oak
Quercus chrysolepis—Canyon live oak
Quercus cornelius-mulleri—Muller oak

GARRYACEAE—SILK TASSEL FAMILY

Garrya veatchii—canyon silktassel

GENTIANACEAE—GENTIAN FAMILY

Frasera parryi—Coahuila frasera

GERANIACEAE—GERANIUM FAMILY

* *Erodium botrys*—longbeak stork's bill
* *Erodium cicutarium*—redstem stork's bill
* *Erodium* sp.—no common name

GROSSULARIACEAE—GOOSEBERRY FAMILY

Ribes quercetorum—oak gooseberry

LAMIACEAE—MINT FAMILY

Monardella nana—yellow monardella
Salvia clevelandii—fragrant sage
Salvia columbariae—chia
Trichostema lanatum—woolly bluecurls

LOASACEAE—LOASA FAMILY

Mentzelia sp.—no common name
Mentzelia veatchiana—Veatch's blazingstar

MONTIACEAE—MONTIA FAMILY

Calandrinia menziesii—red maids
Calyptridium monandrum—common pussypaws

MYRSINACEAE—MYRSINE FAMILY

* *Lysimachia arvensis*—scarlet pimpernel

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Abronia villosa var. *aurita*—chaparral sand-verbena
Boerhavia triquetra var. *intermedia*—slender spiderling
Mirabilis multiflora var. *pubescens*—Colorado four o'clock
Mirabilis multiflora—Colorado four o'clock

ONAGRACEAE—EVENING PRIMROSE FAMILY

Camissonia sp.—no common name
Camissonia strigulosa—sandysoil suncup
Camissoniopsis bistorta—southern suncup
Camissoniopsis confusa—San Bernardino suncup
Camissoniopsis micrantha—miniature suncup
Camissoniopsis pallida—paleyellow suncup
Clarkia purpurea—winecup clarkia
Eulobus californicus—California suncup
Oenothera californica ssp. *avita*—California evening primrose

Oenothera californica—California evening primrose

OROBANCHACEAE—BROOM-RAPE FAMILY

Aphyllon fasciculatum—clustered broomrape
Castilleja affinis—coast Indian paintbrush
Castilleja applegatei—wavyleaf Indian paintbrush
Castilleja foliolosa—Texas Indian paintbrush
Castilleja subinclusa ssp. *subinclusa*—longleaf Indian paintbrush
Cordylanthus rigidus—stiffbranch bird's beak

PAEONIACEAE—PEONY FAMILY

Paeonia californica—California peony

PAPAVERACEAE—POPPY FAMILY

Argemone munita—flatbud pricklypoppy
Dendromecon rigida—bush poppy
Eschscholzia californica—California poppy
Platystemon californicus—creamcups

PHRYMACEAE—LOPSEED FAMILY

Diplacus aurantiacus—bush monkeyflower
Diplacus fremontii—Fremont's monkeyflower
Erythranthe guttata—common monkey flower
Erythranthe palmeri—Palmer's monkeyflower
Mimetanthe pilosa—false monkeyflower

PLANTAGINACEAE—PLANTAIN FAMILY

Antirrhinum coulterianum—Coulter's snapdragon
Antirrhinum nuttallianum—violet snapdragon
Collinsia concolor—Chinese houses
Collinsia heterophylla—purple Chinese houses
Penstemon centranthifolius—scarlet bugler
Penstemon clevelandii—Cleveland's beardtongue
Penstemon spectabilis—showy penstemon
* *Veronica anagallis-aquatica*—water speedwell

POLEMONIACEAE—PHLOX FAMILY

Eriastrum densifolium ssp. *elongatum*—giant woollystar
Eriastrum eremicum ssp. *eremicum*—desert woollystar
Eriastrum sapphirinum ssp. *sapphirinum*—sapphire woollystar
Gilia angelensis—chaparral gilia
Gilia capitata ssp. *abrotanifolia*—bluehead gilia
Gilia capitata—bluehead gilia
Gilia diegensis—coastal gilia
Gilia sp.—no common name
Leptosiphon floribundus ssp. *glaber*—manyflower linanthus
Leptosiphon floribundus—many-flower linanthus
Leptosiphon lemmonii—Lemmon's linanthus
Leptosiphon parviflorus—variable linanthus
Linanthus bellus—desert beauty
Linanthus dianthiflorus—fringed linanthus
Linanthus sp.—no common name
Loeseliastrum matthewsii—desert calico
Loeseliastrum schottii—Schott's calico
Navarretia hamata—hooked pincushionplant

Phlox austromontana—mountain phlox
Saltugilia caruifolia—caraway-leaved woodland-gilia

POLYGONACEAE—BUCKWHEAT FAMILY

Chorizanthe fimbriata var. *laciniata*—fringed spineflower
Chorizanthe fimbriata—fringed spineflower
Eriogonum davidsonii—Davidson's buckwheat
Eriogonum elongatum var. *elongatum*—longstem buckwheat
Eriogonum fasciculatum var. *fasciculatum*—California buckwheat
Eriogonum fasciculatum var. *foliolosum*—California buckwheat
Eriogonum fasciculatum var. *polifolium*—California buckwheat
Eriogonum thurberi—Thurber's buckwheat
Eriogonum wrightii var. *membranaceum*—bastardsage

RANUNCULACEAE—BUTTERCUP FAMILY

Clematis ligusticifolia—western white clematis
Clematis pauciflora—ropevine clematis
Delphinium parishii ssp. *parishii*—Parish's larkspur
Delphinium parishii ssp. *subglobosum*—Colorado Desert larkspur
Delphinium parishii—desert larkspur
Delphinium sp.—no common name
Ranunculus californicus—California buttercup

RHAMNACEAE—BUCKTHORN FAMILY

Ceanothus leucodermis—chaparral white thorn
Ceanothus palmeri—Palmer ceanothus
Ceanothus perplexans—desert ceanothus
Frangula californica—California coffee berry
Rhamnus ilicifolia—hollyleaf redberry
Ziziphus parryi—Parry's jujube

ROSACEAE—ROSE FAMILY

Adenostoma fasciculatum var. *obtusifolium*—chamise
Adenostoma fasciculatum—chamise
Adenostoma sparsifolium—redshank
Cercocarpus betuloides var. *betuloides*—birch leaf mountain mahogany
Cercocarpus minutiflorus—smooth mountain mahogany
Prunus fremontii—desert apricot
Prunus ilicifolia ssp. *ilicifolia* —holly leaf cherry

RUBIACEAE—MADDER FAMILY

Galium andrewsii ssp. *andrewsii*—Andrews' bedstraw
Galium angustifolium—narrowleaf bedstraw

SALICACEAE—WILLOW FAMILY

Salix laevigata—red willow
Salix lasiolepis—arroyo willow

SCROPHULARIACEAE—FIGWORT FAMILY

Scrophularia californica—California figwort

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii—sacred thorn-apple
Nicotiana attenuata—coyote tobacco
Nicotiana quadrivalvis—Indian tobacco
Solanum douglasii—greenspot nightshade
Solanum parishii—Parish's nightshade
Solanum xanti—chaparral nightshade

TAMARICACEAE—TAMARISK FAMILY

* *Tamarix ramosissima*—tamarisk

URTICACEAE—NETTLE FAMILY

Urtica dioica ssp. *holosericea*—stinging nettle

VIOLACEAE—Violet Family

Viola pedunculata—Johnny-jump-up
Viola sp.—no common name

VISCACEAE—MISTLETOE FAMILY

Phoradendron bolleanum—Bollean mistletoe
Phoradendron californicum—mesquite mistletoe

VASCULAR SPECIES

FERNS AND FERN ALLIES

PTERIDACEAE—BRAKE FAMILY

Pellaea mucronata—birdfoot cliffbrake

VASCULAR SPECIES

GYMNOSPERMS AND GNETOPHYTES

CUPRESSACEAE—CYPRESS FAMILY

Juniperus californica—California juniper

EPHEDRACEAE—EPHEDRA FAMILY

Ephedra californica—California joint fir

PINACEAE—PINE FAMILY

Pinus monophylla—singleleaf pinyons

VASCULAR SPECIES

MONOCOTS

AGAVACEAE—AGAVE FAMILY

Hesperoyucca whipplei—chaparral yucca
Yucca schidigera—Mojave yucca

CYPERACEAE—SEDGE FAMILY

Carex praegracilis—clustered field sedge
Carex spissa—San Diego sedge

JUNCACEAE—RUSH FAMILY

Juncus bufonius—toad rush
Juncus mexicanus—Mexican rush

LILIACEAE—LILY FAMILY

Calochortus concolor—goldenbowl mariposa lily
Calochortus splendens—splendid mariposa lily

POACEAE—GRASS FAMILY

* *Avena barbata*—slender oat
Bothriochloa barbinodis—cane bluestem
* *Bromus diandrus*—ripgut brome
* *Bromus madritensis* ssp. *madritensis*—compact brome
* *Bromus madritensis* ssp. *rubens*—red brome
* *Bromus tectorum*—cheatgrass
Distichlis spicata—salt grass
Elymus elymoides var. *brevifolius*—squirreltail
Elymus glaucus—blue wild rye
* *Festuca myuros*—rat-tail fescue
* *Hordeum murinum* ssp. *glaucum*—smooth barley
* *Hordeum murinum*—mouse barley
Melica imperfecta—smallflower melicgrass
Muhlenbergia rigens—deer grass beds
* *Poa bulbosa* ssp. *bulbosa*—bulbous bluegrass
* *Polypogon monspeliensis*—annual rabbitsfoot grass
* *Schismus barbatus*—common Mediterranean grass
Sporobolus airoides—alkali sacaton

Stipa cernua—nodding needle grass
Stipa lepida—foothill needle grass
Stipa pulchra—purple needle grass
Stipa speciosa—desert needlegrass

THEMIDACEAE—BRODIAEA FAMILY

Dichelostemma capitatum ssp. *capitatum*—bluedicks

* Non-native species

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ATTACHMENT E

Wildlife Species Observed

APPENDIX E
Wildlife Compendium

AMPHIBIAN

TOADS

BUFONIDAE—TRUE TOADS

Anaxyrus boreas—western toad

BIRD

BLACKBIRDS, ORIOLES AND ALLIES

ICTERIDAE—BLACKBIRDS

Euphagus cyanocephalus—Brewer's blackbird
Icterus bullockii—Bullock's oriole
Icterus cucullatus—hooded oriole
Icterus parisorum—Scott's oriole
Sturnella neglecta—western meadowlark
* *Molothrus ater*—brown-headed cowbird

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

CARDINALS, GROSBEAKS AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black-headed grosbeak
Piranga ludoviciana—western tanager

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch
Spinus lawrencei—Lawrence's goldfinch
Spinus psaltria—lesser goldfinch
Spinus tristis—American goldfinch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee
Empidonax difficilis—Pacific-slope flycatcher
Empidonax hammondii—Hammond's flycatcher
Myiarchus cinerascens—ash-throated flycatcher
Sayornis nigricans—black phoebe
Sayornis saya—Say's phoebe
Tyrannus verticalis—western kingbird
Tyrannus vociferans—Cassin's kingbird

GOATSUCKERS

CAPRIMULGIDAE—GOATSUCKERS

Phalaenoptilus nuttallii—common poorwill

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES AND ALLIES

Accipiter cooperii—Cooper's hawk
Accipiter striatus—sharp-shinned hawk
Aquila chrysaetos—golden eagle
Buteo jamaicensis—red-tailed hawk
Buteo lineatus—red-shouldered hawk
Circus hudsonius—northern harrier

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Archilochus alexANDri—black-chinned hummingbird
Calypte anna—Anna's hummingbird
Calypte costae—Costa's hummingbird
Selasphorus rufus—rufous hummingbird
Selasphorus sp.—Allen's/rufous hummingbird

JAYS, MAGPIES AND CROWS

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—California scrub-jay
Corvus brachyrhynchos—American crow
Corvus corax—common raven
Cyanocitta stelleri—Steller's jay

KINGLETS

REGULIDAE—KINGLETS
Regulus calendula—ruby-crowned kinglet

LARKS

ALAUDIDAE—LARKS
Eremophila alpestris actia—California horned lark

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS
Mimus polyglottos—northern mockingbird
Oreoscoptes montanus—sage thrasher
Toxostoma redivivum—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL
Callipepla californica—California quail
Oreortyx pictus—mountain quail

NEW WORLD VULTURES

CATHARTIDAE—CARDINALS AND ALLIES
Cathartes aura—turkey vulture

NUTHATCHES

SITTIDAE—NUTHATCHES
Sitta carolinensis—white-breasted nuthatch

OLD WORLD WARBLERS AND GNATCATCHERS

SYLVIIDAE—SYLVIID WARBLERS
Polioptila caerulea—blue-gray gnatcatcher

OWLS

TYTONIDAE—BARN OWLS
Tyto alba—barn owl
STRIGIDAE—TYPICAL OWLS
Bubo virginianus—great horned owl

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Patagioenas fasciata—bAND-tailed pigeon
Zenaida macroura—mourning dove
* *Streptopelia decaocto*—Eurasian collared-dove
Zenaida asiatica—white-winged dove

QUAILS, PHEASANTS AND RELATIVES

PHASIANIDAE—PARTRIGES, GROUSE, TURKEYS AND OLD WORLD QUAIL

Meleagris gallopavo—wild turkey

ROADRUNNERS AND CUCKOOS

CUCULIDAE—CUCKOOS, ROADRUNNERS AND ANIS

Geococcyx californianus—greater roadrunner

SHRIKES

LANIIDAE—SHRIKES

Lanius ludovicianus—loggerhead shrike

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

STARLINGS AND ALLIES

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow
Petrochelidon pyrrhonota—cliff swallow
Stelgidopteryx serripennis—northern rough-winged swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis—white-throated swift

THRUSHES

TURDIDAE—THRUSHES

Catharus ustulatus—Swainson's thrush
Sialia mexicana—western bluebird
Turdus migratorius—American robin

TITMICE

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus—oak titmouse

VIREOS

VIREONIDAE—VIREOS

Vireo gilvus—warbling vireo

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Cardellina pusilla—Wilson's warbler
Oreothlypis celata—orange-crowned warbler
Oreothlypis ruficapilla—Nashville warbler
Setophaga coronata—yellow-rumped warbler
Setophaga nigrescens—black-throated gray warbler
Setophaga occidentalis—hermit warbler
Setophaga petechia—yellow warbler
Setophaga townsendi—Townsend's warbler

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Colaptes auratus—northern flicker
Melanerpes formicivorus—acorn woodpecker
Picoides nuttallii—Nuttall's woodpecker
Picoides scalaris—ladder-backed woodpecker

WRENS

TROGLODYTIDAE—WRENS

Campylorhynchus brunneicapillus—cactus wren
Catherpes mexicanus—canyon wren
Salpinctes obsoletus—rock wren
Thryomanes bewickii—Bewick's wren
Troglodytes aedon—house wren

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

NEW WORLD SPARROWS

PASSERELLIDAE—NEW WORLD SPARROWS

Aimophila ruficeps canescens—Southern California rufous-crowned sparrow
Aimophila ruficeps—rufous-crowned sparrow
Amphispiza bilineata—black-throated sparrow
Artemisiospiza belli belli —Bell's sage sparrow
Artemisiospiza nevadensis—sagebrush sparrow
Junco hyemalis—dark-eyed junco
Melospiza melodia—song sparrow
Melozone crissalis—California towhee
Pipilo maculatus—spotted towhee
Spizella atrogularis—black-chinned sparrow
Spizella breweri—Brewer's sparrow
Spizella passerina—chipping sparrow
Zonotrichia leucophrys—white-crowned sparrow

INVERTEBRATE

BUTTERFLIES

LYCAENIDAE—BLUES, HAIRSTREAKS AND COPPERS

Atlides halesus—great purple hairstreak
Brephidium exile—western pygmy-blue
Callophrys augustinus—brown elfin
Callophrys dumetorum affinis—immaculate bramble hairstreak
Callophrys dumetorum—bramble hairstreak
Callophrys perplexa—Perplexing hairstreak
Euphilotes battoides bernardino—Bernardino square-spotted blue
Everes amyntula—western tailed-blue
Glaucopsyche lygdamus australis—southern blue
Hemiargus ceraunus gyas—Edward's blue
Hemiargus isola—Reakirt's blue
Icaricia acmon acmon—Acmon blue
Leptotes marina—marine blue
Lycaeides melissa—Melissa blue
Philotes sonorensis—Sonoran blue
Strymon melinus—gray hairstreak
Blue sp.—no common name

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Adelpha bredowii—California sister
Chlosyne californica—California patch
Chlosyne gabbii—Gabb's checkerspot
Danaus gilippus—queen
Danaus plexippus—monarch
Euphydryas chalcedona chalcedona—Chalcedon variable checkerspot
Euphydryas editha quino—quino checkerspot butterfly
Junonia coenia—common buckeye
Limenitis lorquini—Lorquin's admiral
Nymphalis antiopa—mourning cloak
Nymphalis californica—California tortoiseshell
Vanessa annabella—west coast lady
Vanessa cardui—painted lady
Vanessa sp.—lady

RIODINIDAE—METALMARKS

Apodemia mormo virgulti—Behr's metalmark

HESPERIIDAE—SKIPPERS

Copaeodes aurantiacus—orange skipperling
Erynnis brizo—sleepy duskywing
Erynnis funeralis—funereal duskywing
Erynnis propertius—Propertius duskywing
Erynnis tristis—mournful duskywing
Erynnis sp.—duskywing
Hylephila phyleus—fiery skipper
Pholisora catullus—common sootywing
Pyrgus albescens—white checkered-skipper

PAPILIONIDAE—SWALLOWTAILS

Papilio eurymedon—pale swallowtail
Papilio rutulus—western tiger swallowtail

PIERIDAE—WHITES AND SULFURS

Anthocharis cethura—desert orangetip
Anthocharis sara sara—Pacific sara orangetip
Colias eurydice—California dogface
Colias eurytheme—orange sulphur
Colias harfordii—Harford's sulphur
Euchloe hyantis—California marble
Euchloe hyantis lotta—desert pearly marble
Eurema nicippe—sleepy orange
Nathalis iole—dainty sulphur
Phoebis sennae—cloudless sulphur
Pieris rapae—cabbage white
Pontia beckerii—Becker's white

Pontia protodice—checkered white
Pontia sisymbrii—spring white
Orangetip sp.—no common name
Sulphur sp.—no common name
White sp. —no common name

MOTHS

SPHINGIDAE—HAWK MOTHS

Hyles lineata—white-lined phinx moth

ANTS

FORMICIDAE—ANTS

Harvester ant sp.

MAMMALS

BATS

MOLOSSIDAE—FREE-TAILED BATS

Eumops perotis californicus—western mastiff bat
Nyctinomops femorosaccus—pocketed free-tailed bat
Nyctinomops macrotis—big free-tailed bat
Tadarida brasiliensis—Brazilian free-tailed bat

VESPERTILIONIDAE—EVENING BATS

Antrozous pallidus—pallid bat
Corynorhinus townsendii—Townsend's big-eared bat
Eptesicus fuscus—big brown bat
Lasiurus cinereus—hoary bat

Lasiurus xanthinus—western yellow bat
Myotis californicus—Californian myotis
Myotis ciliolabrum—western small-footed myotis
Myotis yumanensis—Yuma myotis
Parastrellus hesperus—canyon bat

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

CATS

FELIDAE—CATS

Lynx rufus—bobcat
Puma concolor—cougar

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Lepus californicus bennettii—San Diego black-tailed jackrabbit
Lepus californicus—black-tailed jackrabbit
Sylvilagus audubonii—desert cottontail
Sylvilagus bachmani—brush rabbit

KANGAROO RATS

HETEROMYIDAE—POCKET MICE AND KANGAROO RATS

Dipodomys sp.—kangaroo rat (sign only)

MUSTELIDS

MEPHITIDAE—SKUNKS

Mephitis mephitis—striped skunk

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

SQUIRRELS

SCIURIDAE—SQUIRRELS

Ammospermophilus leucurus—white-tailed antelope squirrel
Spermophilus (Otospermophilus) beecheyi—California ground squirrel
Tamias merriami—Merriam's chipmunk
Tamias obscurus—California chipmunk

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

RATS, MICE AND VOLES

CRICETIDAE—RATS, MICE AND VOLES

Neotoma lepida intermedia—San Diego desert woodrat
Neotoma lepida—desert woodrat
Neotoma sp.—woodrat
Microtus sp.—vole

REPTILES

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Callisaurus draconoides—zebra-tailed lizard
Phrynosoma blainvillii—Blainville's horned lizard
Sceloporus occidentalis—western fence lizard
Sceloporus orcutti—granite spiny lizard
Uta stanburiana—common side-blotched lizard

ANGUIDAE—ALLIGATOR LIZARDS

Elgaria multicarinata—southern alligator lizard

SCINCIDAE—SKINKS

Plestiodon gilberti—Gilbert's skink

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail

CROTAPHYTIDAE—COLLARED LIZARDS

Gambelia wislizenii—long-nosed leopard lizard

SNAKES

COLUBRIDAE—COLUBRID SNAKES

Coluber lateralis—striped racer
Pituophis catenifer—gophersnake
Lampropeltis sp.—kingsnake

VIPERIDAE—VIPERS

Crotalus oreganus—western rattlesnake

* Non-native species

ATTACHMENT F-1

Special-Status Plant Species Detected or Potentially Occurring in the Boulder Brush Corridor

APPENDIX F-1
Special-Status Plant Species Detected or Potentially Occurring in the Boulder Brush Corridor

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego MSCP	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Astragalus douglasii var. *perstrictus*	Jacumba milk-vetch	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland; rocky/perennial herb/Apr–June/2,950–4,495	Observed. This species was observed throughout the biological study area.
Caulanthus simulans	Payson's jewelflower	None/None/4.2	Covered/List D	Chaparral, coastal scrub; sandy, granitic/annual herb/(Feb)Mar–May(June)/295–7,220	Observed. Payson's jewelflower was observed in March and April 2019 during 2019 the Quino checkerspot butterfly survey season. It was not observed during the 2017 or 2018 rare plant surveys. Its locations were not generally not mapped.
Deinandra floribunda	Tecate tarplant	None/None/1B.2	Covered/List A	Chaparral, coastal scrub/annual herb/Aug–Oct/225–4,005	Observed. This species was observed in numerous washes in the study area, including the eastern and southern portions.
Delphinium parishii ssp. *subglobosum*	Colorado Desert larkspur	None/None/4.3	None/List D	Chaparral, cismontane woodland, pinyon and juniper woodland, Sonoran Desert scrub/perennial herb/Mar–June/1,965–5,905	Observed. This species was observed in several locations throughout the biological study area, including the southern, eastern, and central portions.
Geraea viscida	sticky geraea	None/None/2B.2	Covered/List B	Chaparral (often in disturbed areas)/perennial herb/(Apr)May–June/1,475–5,575	Observed. This species was observed in several locations throughout the biological study area, including the central and northern portions.
Hesperocyparis forbesii	Tecate cypress	None/None/1B.1	Covered/List A	Closed-cone coniferous forest, chaparral; clay, gabbroic or metavolcanic/perennial evergreen tree/N.A./260–4,920	Observed. This species was observed in the northern portion of the biological study area.
Linanthus bellus	desert beauty	None/None/2B.1	Covered/List B	Chaparral (sandy)/annual herb/Apr–May/3,280–4,595	Observed. This species was observed throughout the biological study area.
Streptanthus campestris	southern jewelflower	None/None/1B.3	None/List A	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; rocky/perennial herb/(Apr)May–July/2,950–7,545	Observed. This species was observed in several locations throughout the biological study area.

Status Legend
CRPR: **California Rare Plant Rank** 1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which more information is needed—A Review List
4: Plants of limited distribution—A Watch List
Threat Rank
.1: Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)
.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
County of San Diego Multiple Species Conservation Program (MSCP), East County Plan
Covered: Covered under the plan
None: Not covered
County of San Diego MSCP Listed Species
List A: Plants rare, threatened, or endangered in California or elsewhere
List B: Plants rare, threatened, or endangered in California but more common elsewhere
List D: Plants of limited distribution and are uncommon, but not presently rare or endangered

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ATTACHMENT F-2

Special-Status Plant Species Detected or Potentially Occurring in the Campo Corridor

APPENDIX F-2
Special-Status Plant Species Detected or Potentially Occurring in the Campo Corridor

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego MSCP	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Astragalus douglasii var. *perstrictus*	Jacumba milk-vetch	None/None/ 1B.2	Covered/List A	Chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland; rocky/perennial herb/Apr–June/2,950–4,495	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.
Caulanthus simulans	Payson's jewelflower	None/None/ 4.2	Covered/List D	Chaparral, coastal scrub; sandy, granitic/annual herb/(Feb)Mar–May(June)/295–7,220	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.
Chorizanthe leptotheca	Peninsular spineflower	None/None/ 4.2	None/List D	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/980–6,235	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.
Deinandra floribunda	Tecate tarplant	None/None/ 1B.2	Covered/List A	Chaparral, coastal scrub/annual herb/Aug–Oct/225–4,005	High potential to occur. This species was observed in numerous washes in the Boulder Brush study area and suitable habitat occurs on site.
Delphinium parishii ssp. *subglobosum*	Colorado Desert larkspur	None/None/ 4.3	None/List D	Chaparral, cismontane woodland, pinyon and juniper woodland, Sonoran Desert scrub/perennial herb/Mar–June/1,965–5,905	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.
Geraea viscida	sticky geraea	None/None/ 2B.2	Covered/List B	Chaparral (often in disturbed areas)/perennial herb/(Apr)May–June/1,475–5,575	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.
Hesperocyparis forbesii	Tecate cypress	None/None/ 1B.1	Covered/List A	Closed-cone coniferous forest, chaparral; clay, gabbroic or metavolcanic/perennial evergreen tree/N.A./260–4,920	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego MSCP	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Lathyrus splendens	pride-of-California	None/None/ 4.3	Covered/List D	Chaparral/perennial herb/Mar–June/655–5,005	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.
Linanthus bellus	desert beauty	None/None/ 2B.1	Covered/List B	Chaparral (sandy)/annual herb/Apr–May/3,280–4,595	High potential to occur. This species was observed throughout the biological study area for Boulder Brush and suitable habitat occurs on site.
Streptanthus campestris	southern jewelflower	None/None/ 1B.3	None/List A	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; rocky/perennial herb/(Apr)May–July/2,950–7,545	Observed during surveys conducted in spring and fall of 2010 and spring 2011 for the Shu'luuk Wind Project (AECOM 2012), which is located in the same general area as the study area.

Status Legend
CRPR: California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
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ATTACHMENT G-1

Special-Status Plant Species with Low Potential or Not Expected to Occur in the Boulder Brush Corridor

APPENDIX G-1
Special-Status Plant Species with Low Potential or Not Expected to Occur in the Boulder Brush Corridor

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2	None/List D	Coastal dunes/perennial herb/Feb–Nov/0–330	Not expected to occur. Red sand verbena occurs only on well-developed beach dunes (Reiser 2001). Beach dunes are more than 65 miles from the site. Generally, the site is outside of the species' known elevation range and there is no suitable vegetation present. Also, does not occur in vicinity (CDFW 2018; CNPS 2018).
Abronia villosa var. *aurita*	chaparral sand-verbena	None/None/1B.1	None/List A	Chaparral, coastal scrub, desert dunes; sandy/annual herb/(Jan)Mar–Sep/245–5,250	Low potential to occur. Chaparral sand verbena has been documented around Camp Pendleton and near Fallbrook, California (San Diego Plant Atlas 2018). Chaparral sand-verbena is more likely to be found in sandy floodplains (Reiser 2001). This species would have been observed if present; focused surveys were conducted during the species' blooming period.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/1B.1	Covered/List A	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/30–3,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018). Friable clay soils (cracked clay) are the typical habitat for San Diego thorn-mint (Reiser 2001). Cracked clay soils were not present in the survey area. In addition, San Diego thorn mint is most often associated with small flowered morning glory (*Convolvulus simulans*) (Reiser 2001). Small flowered morning glory was not present within the survey area.
Acmispon haydonii	pygmy lotus	None/None/1B.3	Covered/List A	Pinyon and juniper woodland, Sonoran desert scrub; rocky/perennial herb/Jan–June/1,705–3,935	Low potential to occur. This species would have been observed if present; focused surveys were conducted during the species' blooming period. Pygmy lotus occurs east of Jacumba, California. Pygmy lotus is more likely to occur in the high desert and desert region (San Diego Plant Atlas 2018).

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Acmispon prostratus	Nuttall's acmispon	None/None/1B.1	None/List A	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June(July)/0–35	Not expected to occur. Nuttall's acmispon occurs west of Interstate (I) 15 (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Adolphia californica	California adolphia	None/None/2B.1	None/List B	Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/ Dec–May/30–2,430	Not expected to occur. California adolphia occurs west of El Cajon, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1	None/List B	Coastal bluff scrub, coastal scrub; maritime succulent scrub/perennial leaf succulent/Sep–May/5–395	Not expected to occur. Shaw's agave occurs west of I-5 near the beach (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1	None/List B	Coastal scrub/perennial shrub/Apr–June/180–510	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	None/List A	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/65–1,360	Not expected to occur. San Diego ambrosia occurs in creek beds and dry drainages with a protective tree canopy (Reiser 2001). San Diego ambrosia occurs west of Crest, California (San Diego Plant Atlas 2018). This habitat was not present in the survey area. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Androsace elongata ssp. *acuta*	California androsace	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland/annual herb/Mar–June/490–4,280	Not expected to occur. California androsace occurs north of Cuyamaca Rancho State Park (San Diego Plant Atlas 2018). California androsace grows in open montane grassy meadows within Cuyamaca Rancho State Park (Reiser 2001). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Aphanisma blitoides	aphanisma	None/None/1B.2	None/List A	Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Feb–June/0–1,000	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1	None/List A	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1,200	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland; metavolcanic/perennial evergreen shrub/Jan–Apr/900–5,575	Not expected to occur. Otay manzanita occurs west of Dulzura, California, within the Otay area and north up to Rancho San Diego, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018). Otay manzanita occurs on metavolcanic peaks and soils that are shallow with exposed rock (Reiser 2001).
Arctostaphylos rainbowensis	Rainbow manzanita	None/None/1B.1	None/List A	Chaparral/perennial evergreen shrub/Dec–Mar/670–2,200	Not expected to occur. Rainbow manzanita occurs north of Escondido, and the majority of the population is near Rainbow, California, and Pala, California (San Diego Plant Atlas 2018). The project site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Artemisia palmeri	San Diego sagewort	None/None/4.2	None/List D	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb)May–Sep/45–3,000	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Asplenium vespertinum	western spleenwort	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/590–3,280	Not expected to occur. The site is outside of the species' known elevation range.

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Astragalus crotalariae	Salton milk-vetch	None/None/4.3	Covered/List D	Sonoran desert scrub (sandy or gravelly)/perennial herb/Jan–Apr/195–820	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus deanei	Dean's milk-vetch	None/None/1B.1	Covered/List A	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/Feb–May/245–2,280	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus insularis var. *harwoodii*	Harwood's milk-vetch	None/None/2B.2	Covered/List B	Desert dunes, Mojavean desert scrub; sandy or gravelly/annual herb/Jan–May/0–2,330	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Astragalus lentiginosus var. *borreganus*	Borrego milk-vetch	None/None/4.3	Covered/List D	Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/ Feb–May/95–2,935	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus magdalenae var. *peirsonii*	Peirson's milk-vetch	FT/SE/1B.2	None/List A	Desert dunes/perennial herb/Dec–Apr/195–740	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus nutans	Providence Mountains milk-vetch	None/None/4.3	None/None	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland, Sonoran desert scrub; sandy or gravelly/annual herb/Mar–June(Oct)/1,475–6,400	Low potential to occur. This species would have been observed if present; focused surveys were conducted during the species' blooming period. Has been documented within the Sonoran Desert (Calflora 2018). The San Diego Plant Atlas does not have any collections of Providence Mountains milk-vetch within San Diego County (San Diego Plant Atlas 2018).
Astragalus oocarpus	San Diego milk-vetch	None/None/1B.2	Covered/List A	Chaparral (openings), cismontane woodland/perennial herb/May–Aug/1,000–5,000	Low potential to occur. Collections of San Diego milk-vetch are west of State Route (SR) 79 near Cuyamaca Rancho State Park and north of this area (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.

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Astragalus pachypus var. *jaegeri*	Jaeger's bush milk-vetch	None/None/1B.1	None/List A	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; sandy or rocky/perennial shrub/Dec–June/1,195–3,200	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/SE/1B.1	None/List A	Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/0–165	Not expected to occur. Occurs on coastal dunes (Reiser 2001). The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex coulteri	Coulter's saltbush	None/None/1B.2	None/List A	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/5–1,510	Not expected to occur. Coulter's saltbush is more typical on seabluff habitat (Reiser 2001). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex pacifica	South Coast saltscale	None/None/1B.2	None/List A	Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/Mar–Oct/0–460	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex parishii	Parish's brittlescale	None/None/1B.1	None/List A	Chenopod scrub, playas, vernal pools; alkaline/annual herb/June–Oct/80–6,235	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None/1B.2	None/List A	Coastal bluff scrub, coastal scrub; alkaline/annual herb/Apr–Oct/30–655	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ayenia compacta	California ayenia	None/None/2B.3	None/List B	Mojavean desert scrub, Sonoran desert scrub; rocky/perennial herb/Mar–Apr/490–3,595	Low potential to occur. This species is only known from areas north of Mount Laguna (San Diego Plant Atlas 2018). Rocky canyons and desert arroyos are the preferred habitat of California ayenia. California ayenia prefers the periphery of sandy washes (Reiser 2001).

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Azolla microphylla	Mexican mosquito fern	None/None/4.2	None/List D	Marshes and swamps (ponds, slow water)/annual / perennial herb/Aug/95–330	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Baccharis vanessae	Encinitas baccharis	FT/SE/1B.1	None/List A	Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous shrub/ Aug,Oct,Nov/195–2,360	Not expected to occur. Generally occurs northwest of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Berberis fremontii	Fremont barberry	None/None/2B.3	Covered/List C	Joshua tree woodland, pinyon and juniper woodland; rocky, sometimes granitic/perennial evergreen shrub/Mar–May/3,755–5,645	Low potential to occur. Occurs in high desert chaparral and high desert badlands on fairly level terrain with granitic boulder fields (Reiser 2001). Fremont barberry is extremely rare (Reiser 2001). This perennial evergreen shrub would have been observed during focused surveys if present. Has not been collected in the San Diego Plant Atlas (2018).
Berberis higginsiae	Higgins barberry	None/None/3.2	Covered/None	Chaparral, Sonoran desert scrub; rocky, sometimes granitic/perennial shrub/Mar–Apr/2,620–3,495	Not expected to occur. The site is outside of the species' known elevation range.
Berberis nevinii	Nevin's barberry	FE/SE/1B.1	None/List A	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/ perennial evergreen shrub/(Feb)Mar–June/225–2,705	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2	None/List B	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/perennial stem succulent/May–June/5–1,295	Not expected to occur. Golden-spined cereus occurs near the beach or within Otay (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1	Covered/List A	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Apr–May/160–1,525	Not expected to occur. San Diego goldenstar occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Boechera hirshbergiae	Hirshberg's rockcress	None/None/1B.2	None/List A	Pebble (Pavement) plain/perennial herb/Mar–May/4,590–4,640	Not expected to occur. Occurs north of Cuyamaca Rancho State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Boykinia rotundifolia	round leaved boykinia	None/None/None	None/None	Streambanks//May–July/0–6,562	Not expected to occur. This species is known north of Julian in San Diego County (San Diego Plant Atlas 2018).
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	None/List A	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/80–3,675	Not expected to occur. Thread-leaved Brodiaea occurs north of Rancho Santa Fe, California, and is more likely to be found near Camp Pendleton, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1	Covered/List A	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay/perennial bulbiferous herb/May–July/95–5,550	Low potential to occur. Orcutt's brodiea occurs in vernally moist grasslands and around vernal pools with mina mound topography (Reiser 2001). Vernal pools were not present on site. Occurs west of Sunrise Highway within the southern mountain range and reaches the Pacific Ocean (San Diego Plant Atlas 2018). This annual herb would have been observed during focused surveys if present.
Bursera microphylla	little-leaf elephant tree	None/None/2B.3	Covered/List B	Sonoran desert scrub (rocky)/perennial deciduous tree/June–July/655–2,295	Not expected to occur. Little-leaf elephant plant occurs in the desert and high desert region (San Diego Plant Atlas 2018). Sonoran Desert scrub is the preferred habitat of little-leaf elephant tree, and prefers desert

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					alluvial fan scrub and rocky slopes. Is also associated with desert plants like desert lavender (*Hyptis emoryi*) and smoke tree (*Psorothamnus spinosus*) (Reiser 2001). These associates are typically found in desert environments and were not within the survey area. The site is outside of the species' known elevation range.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2	None/List D	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/(Jan)Mar–June/30–4,005	Not expected to occur. Brewer's calandrinia occurs west of Pine Valley, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
California macrophylla	round-leaved filaree	None/None/None	None/List B	Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/45–3,935	Low potential to occur. This species is known from west of Alpine, California (San Diego Plant Atlas 2018).
Calliandra eriophylla	pink fairy-duster	None/None/2B.3	Covered/List B	Sonoran desert scrub (sandy or rocky)/perennial deciduous shrub/Jan–Mar/390–4,920	Low potential to occur. This species is known to occur within Anza-Borrego Desert State Park and east of Jacumba, California (San Diego Plant Atlas 2018).
Calochortus catalinae	Catalina mariposa lily	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial bulbiferous herb/(Feb)Mar–June/45–2,295	Not expected to occur. Catalina mariposa lily occurs in grassland communities (Reiser 2001). The site did not consist of grassland vegetation communities. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Calochortus dunnii	Dunn's mariposa lily	None/SR/1B.2	Covered/List A	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/ (Feb)Apr–June/605–6,005	Low potential to occur. Dunn's mariposa lily is generally located west of Pine Valley, California, and east of El Cajon, California (San Diego Plant Atlas 2018). Dunn's mariposa lily occurs in gabbroic derived soils and metavolcanic soils (Reiser 2001). Gabbroic and metavolcanic soils are not present on site (UC Davis 2018). This perennial herb would have been observed during focused surveys if present.

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Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3	None/List C	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May(June)/0–985	Not expected to occur. Lewis' evening primrose occurs west of Alpine, California, and generally on the coastline (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Carex obispoensis	San Luis Obispo sedge	None/None/1B.2	Covered/None	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland; often serpentinite seeps, sometimes gabbro; often on clay soils/perennial herb/ Apr–June/30–2,690	Not expected to occur. San Luis Obispo sedge occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Carlowrightia arizonica	Arizona carlowrightia	None/None/2B.2	Covered/None/List B	Sonoran desert scrub (sandy, granitic alluvium)/perennial deciduous shrub/Mar–May/935–1,410	Not expected to occur. Arizona carlowrightia occurs near Borrego Springs and Agua Caliente. Arizona carlowrightia is found in Anza Borrego Desert State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	None/None/1B.2	None	Chaparral, meadows and seeps, pebble (pavement) plain, riparian woodland, upper montane coniferous forest; mesic/annual herb (hemiparasitic)/May–Aug/4,265–7,840	Not expected to occur. The site is outside of the species' known elevation range.
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2	Covered/List A	Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/770–2,475	Not expected to occur. Lakeside ceanothus occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2	None/None	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/Jan–Apr/1,965–3,610	Low potential to occur. Otay Mountain ceanothus occurs generally west of Campo, California, but commonly west of Potrero, California (San Diego Plant Atlas 2018). This perennial evergreen shrub would have been observed during focused surveys if present.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2	None/List B	Chaparral/perennial evergreen shrub/Dec–May/0–1,245	Not expected to occur. Wart-stemmed ceanothus occurs generally west of I-15. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1	None/List A	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/0–1,575	Not expected to occur. Southern tarplant occurs near Ramona, California; Del Dios, California; and Solana Beach, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1	None/List A	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2,100	Not expected to occur. Smooth tarplant occurs west of the SR-79 and on Camp Pendleton (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chaenactis carphoclinia var. *peirsonii*	Peirson's pincushion	None/None/1B.3	Covered/List A	Sonoran desert scrub (sandy)/annual herb/Mar–Apr/5–1,640	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1	None/List A	Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–330	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Chaenactis parishii	Parish's chaenactis	None/None/1B.3	None/List A	Chaparral (rocky) /perennial herb/May–July/4,265–8,200	Not expected to occur. The site is outside of the species' known elevation range.

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Chamaebatia australis	southern mountain misery	None/None/4.2	Covered/List D	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/980–3,345	Not expected to occur. The site is outside of the species' known elevation range.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE/1B.2	None/List A	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Chorizanthe leptotheca	Peninsular spineflower	None/None/4.2	None/List D	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/980–6,235	Low potential to occur. Peninsular spineflower has been documented west of Live Oak Springs, California (San Diego Plant Atlas 2018). This species would have been observed if present; focused surveys were conducted during the species' blooming period.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE/1B.1	None/List A	Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy openings/annual herb/Mar–May/5–410	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FC/SE/1B.1	None/List A	Coastal scrub (sandy), valley and foothill grassland/annual herb/Apr–July/490–4,005	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	Covered/List A	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/Apr–July/95–5,020	Low potential to occur. Long-spined spineflower occurs west of Pine Valley, California (San Diego Plant Atlas 2018). This species would have been observed if present; focused surveys were conducted during the species' blooming period.
Cistanthe maritima	seaside cistanthe	None/None/4.2	None/List D	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb)Mar–June(Aug)/15–985	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Clarkia delicata	delicate clarkia	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/770–3,280	Not expected to occur. Delicate clarkia occurs within or on the periphery of oak woodlands. Locales where delicate clarkia is observed are within shaded tree canopies or the shade of large shrubs where vernally mesic (Reiser 2001). Habitat needed for delicate clarkia was not present on site. Distribution is generally west of Pine Valley, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Clinopodium chandleri	San Miguel savory	None/None/1B.2	None/List A	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic or metavolcanic/perennial shrub/Mar–July/390–3,525	Not expected to occur. San Miguel savory occurs west of Alpine, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Colubrina californica	Las Animas colubrina	None/None/2B.3	None/List B	Mojavean Desert scrub, Sonoran Desert scrub/perennial deciduous shrub/Apr–June/30–3,280	Not expected to occur. Los Aminas colubrina occurs in the desert region (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2	None/List A	Chaparral, cismontane woodland/perennial evergreen shrub/Apr–June/95–2,590	Not expected to occur. Occurs west of Barret Junction, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Convolvulus simulans	small-flowered morning-glory	None/None/4.2	None/List D	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/ Mar–July/95–2,430	Not expected to occur. Small-flowered morning-glory occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1	None/List A	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May,July,Aug,Sep/45–490	Not expected to occur. Del Mar Mesa sand aster occurs near the beach (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Cryptantha ganderi	Gander's cryptantha	None/None/1B.1	Covered/List A	Desert dunes, Sonoran Desert scrub (sandy)/annual herb/Feb–May/520–1,310	Not expected to occur. Gander's cryptantha occurs in the desert region and is found north of Anza Borrego Desert State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1	None/List A	Chaparral, coastal scrub/perennial stem succulent/Apr–May/95–490	Not expected to occur. Snake cholla is distributed west of El Cajon, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Cylindropuntia fosbergii	pink teddy-bear cholla	None/None/1B.3	Covered/None	Sonoran Desert scrub/perennial stem succulent/Mar–May/275–2,790	Not expected to occur. Pink teddy-bear cholla is distributed north of Mount Laguna (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Cylindropuntia wolfii	Wolf's cholla	None/None/4.3	Covered/List D	Sonoran Desert scrub/perennial stem succulent/Mar–May/325–3,935	Low potential to occur. Wolf's cholla is generally distributed east of Jacumba, California, in the desert region (San Diego Plant Atlas 2018). This perennial succulent would have been observed during focused surveys if present.
Deinandra conjugens	Otay tarplant	FT/SE/1B.1	None/List A	Coastal scrub, valley and foothill grassland; clay/annual herb/(Apr)May–June/80–985	Not expected to occur. Otay tarplant populations occur west of Dulzura, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Deinandra mohavensis	Mojave tarplant	None/SE/1B.3	Covered/List A	Chaparral, coastal scrub, riparian scrub; mesic/annual herb/(May)June–Oct(Jan)/2,095–5,250	Not expected to occur. Populations of Mojave tarplant occur north of Warner Springs, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Deinandra paniculata	paniculate tarplant	None/None/4.2	None/List D	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/(Mar)Apr–Nov/80–3,085	Not expected to occur. Paniculate tarplant populations are north of Cuyamaca Rancho State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Delphinium hesperium ssp. *cuyamacae*	Cuyamaca larkspur	None/SR/1B.2	Covered/None	Lower montane coniferous forest, meadows and seeps, vernal pools; mesic/perennial herb/May–July/4,000–5,350	Not expected to occur. Cuyamaca larkspur occurs north of Pine Valley, California (San Diego Plant Atlas 2018). No suitable vegetation present.
Dichondra occidentalis	western dichondra	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/160–1,640	Not expected to occur. Western dichondra occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/2B.1	None/List B	Coastal scrub/annual herb (hemiparasitic)/ (Mar)Apr–July(Sep)/30–1,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dieteria asteroides var. *lagunensis*	Mount Laguna aster	None/SR/2B.1	Covered/List B	Cismontane woodland, lower montane coniferous forest/perennial herb/(May)July–Aug/2,590–7,875	Low potential to occur. Mount Laguna aster is known only form the Mount Laguna area north of the biological study area (San Diego Plant Atlas 2018).

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Diplacus aridus	low bush monkeyflower	None/None/4.3	Covered/List D	Chaparral (rocky), Sonoran Desert scrub/perennial evergreen shrub/Apr–July/2,460–3,935	Low potential to occur. Low bush monkey flower occurs in the high and low desert near Jacumba, California, and farther east (San Diego Plant Atlas 2018). This perennial evergreen shrub would have been observed during focused surveys if present.
Diplacus clevelandii	Cleveland's bush monkeyflower	None/None/4.2	None/List D	Chaparral, cismontane woodland, lower montane coniferous forest; gabbroic, often in disturbed areas, openings, rocky/perennial rhizomatous herb/Apr–July/1,475–6,560	Low potential to occur. Cleveland's bush monkeyflower occurs west of Pine Valley, California (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Ditaxis serrata var. *californica*	California ditaxis	None/None/3.2	None/List C	Sonoran Desert scrub/perennial herb/Mar–Dec/95–3,280	Not expected to occur. California ditaxis occurs in Anza Borrego Desert State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Downingia concolor var. *brevior*	Cuyamaca Lake downingia	None/SE/1B.1	Covered/List A	Meadows and seeps (vernally mesic), vernal pools/annual herb/May–July/4,525–4,920	Not expected to occur. Cuyamaca Lake downingia occurs north of Cuyamca Rancho State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya alainae	Banner dudleya	None/None/3.2	None/List C	Chaparral, lower montane coniferous forest, Sonoran Desert scrub; rocky/ perennial herb/ Apr–July/2,425–3,935	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya attenuata ssp. *attenuata*	Orcutt's dudleya	None/None/2B.1	None/List B	Coastal bluff scrub, chaparral, coastal scrub; rocky or gravelly/perennial herb/May–July/5–165	Not expected to occur. Orcutt's dudleya occurs near the border in Border Field State Park right next to the ocean (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Dudleya blochmaniae ssp. *Blochmaniae*	Blochman's dudleya	None/None/1B.1	None/List A	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; rocky, often clay or serpentinite/ perennial herb/Apr–June/15–1,475	Not expected to occur. Blochman's dudleya occurs near the ocean (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya brevifolia	short-leaved dudleya	None/SE/1B.1	None/List A	Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/95–820	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya multicaulis	many-stemmed dudleya	None/None/1B.2	None/List A	Chaparral, coastal scrub, valley and foothill grassland; often clay/perennial herb/Apr–July/45–2,590	Not expected to occur. Many stemmed dudleya occurs near San Clemente, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya variegata	variegated dudleya	None/None/1B.2	None/List A	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/Apr–June/5–1,905	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya viscida	sticky dudleya	None/None/1B.2	None/List A	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/May–June/30–1,805	Not expected to occur. Sticky dudleya occurs near Oceanside, California, and Camp Pendleton, California (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ericameria cuneata var. *macrocephala*	Laguna Mountains goldenbush	None/None/1B.3	Covered/List A	Chaparral (granitic)/perennial shrub/Sep–Dec/3,920–6,070	Low potential to occur. Laguna Mountains goldenbush occurs west of Boulder Oaks and Mount Laguna (San Diego Plant Atlas 2018). Numerous *Ericameria* species were found on site, but not of this variety. This perennial shrub would have been observed during focused surveys if present.

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Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1	Covered/List B	Chaparral, coastal scrub; mesic/perennial evergreen shrub/(July)Sep–Nov/95–1,970	Not expected to occur. Palmer's goldenbush occurs west of Alpine, California. Numerous *Ericameria* species were found on site, but not this specific species. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Eriogonum evanidum	vanishing wild buckwheat	None/None/1B.1	Covered/List A	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland; sandy or gravelly/annual herb/July–Oct/3,605–7,300	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1	None/List A	Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual / perennial herb/Apr–June/65–2,035	Not expected to occur. San Diego button celery generally occurs west of Alpine, California (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Eryngium pendletonense	Pendleton button-celery	None/None/1B.1	None/List A	Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernally mesic/perennial herb/Apr–June(July)/45–360	Not expected to occur. Pendleton button celery only occurs on Camp Pendleton (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Erythranthe diffusa	Palomar monkeyflower	None/None/4.3	Covered/List D	Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4,000–6,005	Low potential to occur. Palomar monkeyflower occurs west of Mount Laguna (San Diego Plant Atlas 2018). This species would have been observed if present; focused surveys were conducted during the species' blooming period.
Eucnide rupestris	annual rock-nettle	None/None/2B.2	None/List B	Sonoran Desert scrub/annual herb/Dec–Apr/1,640–1,970	Not expected to occur. Annual rock nettle occurs in the desert region and just south of Anza Borrego Desert State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.

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Euphorbia abramsiana	Abrams' spurge	None/None/2B.2	None/None	Mojavean Desert scrub, Sonoran Desert scrub; sandy/annual herb/(Aug)Sep–Nov/-5–4,300	Low potential to occur. This species is occurs far north of the biological study area in the Anza-Borrego Desert State Park area in San Diego County (San Diego Plant Atlas 2018).
Euphorbia arizonica	Arizona spurge	None/None/2B.3	None/List B	Sonoran Desert scrub (sandy)/perennial herb/Mar–Apr/160–985	Not expected to occur. Arizona spurge occurs west of Borrego Springs (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Euphorbia misera	cliff spurge	None/None/2B.2	None/List B	Coastal bluff scrub, coastal scrub, Mojavean Desert scrub; rocky/perennial shrub/Dec–Aug(Oct)/30–1,640	Not expected to occur. Cliff spurge occurs near the coast and in the Otay area (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Euphorbia platysperma	flat-seeded spurge	None/None/1B.2	None/List A	Desert dunes, Sonoran Desert scrub (sandy)/annual herb/Feb–Sep/210–330	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Euphorbia revoluta	revolute spurge	None/None/4.3	None/List D	Mojavean Desert scrub (rocky)/annual herb/Aug–Sep/3,590–10,170	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1	None/List B	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/5–1,475	Not expected to occur. San Diego barrel cactus occurs west of El Cajon, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Frankenia palmeri	Palmer's frankenia	None/None/2B.1	None/List B	Coastal dunes, marshes and swamps (coastal salt), playas/perennial herb/May–July/0–35	Not expected to occur. Palmer's frankenia occurs west of I-5 along the coast in marshes (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Fremontodendron mexicanum	Mexican flannelbush	FE/SR/1B.1	None/List A	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentinite/perennial evergreen shrub/Mar–June/30–2,350	Not expected to occur. Mexican flannelbush occurs generally near the Otay area (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Fritillaria biflora	Chocolate lily	None/None/None	None/List D	Coastal scrub, chaparral, valley and foothill grassland; sometimes clay, cobbly loam/perennial herb/Feb–June/1,030–3,379	Not expected to occur. Chocolate lily occurs west of Descanso, California (San Diego Plant Atlas 2018). Chocolate lily does not occur in the Campo/Boulevard area (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range.
Funastrum utahense	Utah vine milkweed	None/None/4.2	None/List D	Mojavean Desert scrub, Sonoran Desert scrub; sandy or gravelly/perennial herb/(Mar)Apr–June(Sep–Oct)/325–4,710	Not expected to occur. Utah vine milkweed occurs far east and northeast of Jacumba, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Galium angustifolium ssp. *borregoense*	Borrego bedstraw	None/SR/1B.3	Covered/List A	Sonoran Desert scrub (rocky)/perennial herb/Mar(May)/1,145–4,100	Low potential to occur. Borrego bedstraw occurs in Anza Borrego Desert State Park and near Borrego Springs, California (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Galium angustifolium ssp. *jacinticum*	San Jacinto Mountains bedstraw	None/None/1B.3	None/List A	Lower montane coniferous forest/perennial herb/June–Aug/4,425–6,890	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Galium californicum ssp. *flaccidum*	California bedstraw	None/None/None	Covered/None	Open or dense non-coastal woodland/ perennial herb/Mar–July/1,500–4,921	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Galium johnstonii	Johnston's bedstraw	None/None/4.3	None/List D	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, riparian woodland/ perennial herb/June–July/4,000–7,545	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1	None/List C	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1,475–2,295	Not expected to occur. Mission canyon bluecup is west of Pine Valley (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Grindelia hallii	San Diego gumplant	None/None/1B.2	Covered/List A	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/ perennial herb/May–Oct/605–5,725	Low potential to occur. San Diego gumplant occurs generally north of Pine Valley, California (San Diego Plant Atlas 2018).This perennial herb would have been observed during focused surveys if present. No Grindelia species were found in the biological study area.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2	Covered/List D	Chaparral, coastal scrub, valley and foothill grassland; clay; open grassy areas within shrubland/annual herb/Mar–May/65–3,135	Not expected to occur. Palmer's grapplinghook occurs west of Pine Valley, California, and in the high desert near Jacumba, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Hazardia orcuttii	Orcutt's hazardia	None/ST/1B.1	None/List A	Chaparral (maritime), coastal scrub; often clay/perennial evergreen shrub/Aug–Oct/260–280	Not expected to occur. Orcutt's hazardia occurs near Encinitas, California, and Rancho Santa Fe, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Herissantia crispa	curly herissantia	None/None/2B.3	Covered/List B	Sonoran Desert scrub/annual/perennial herb/(Apr)Aug–Sep/2,295–2,380	Not expected to occur. Curly herissantia occurs near Anza Borrego Desert State Park (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Hesperocyparis stephensonii	Cuyamaca cypress	None/None/1B.1	Covered/List A	Closed-cone coniferous forest, chaparral, cismontane woodland, riparian forest; gabbroic/perennial evergreen tree/N.A./3,395–5,595	Low potential to occur. Cuyamaca cypress has a narrow distribution just west of Cuyamaca Rancho State Park (San Diego Plant Atlas 2018). This perennial evergreen tree would have been observed during focused surveys if present.
Heterotheca sessiliflora ssp. *sanjacintensis*	Sessileflower false goldenaster	None/None/None	None/List D	Montane habitats; reported to be endemic to Mount Palomar and the San Jacinto Mountains (Reiser 2001)/perennial herb/July–Sep/2,200–7,218	Not expected to occur. The site is outside of the species' known elevation range and is endemic to the Mount Palomar and the San Jacinto Mountains (Reiser 2001).
Heuchera brevistaminea	Laguna Mountains alumroot	None/None/1B.3	Covered/List A	Broadleafed upland forest, chaparral, cismontane woodland, riparian forest; rocky/perennial rhizomatous herb/Apr–July(Sep)/4,490–6,560	Not expected to occur. Laguna Mountains alumroot occurs north of Mount Laguna, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Heuchera rubescens var. *versicolor*	San Diego County alumroot	None/None/3.3	None/List B	Chaparral, lower montane coniferous forest; rocky/perennial rhizomatous herb/May–June/4,920–13,125	Not expected to occur. San Diego county alumroot occurs north of Mount Laguna, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/195–3,610	Not expected to occur. Graceful tarplant occurs west of Alpine, California, and north of Ramona, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Hordeum intercedens	vernal barley	None/None/3.2	None/List C	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/ annual herb/Mar–June/15–3,280	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Horkelia bolanderi	Bolander's horkelia	None/None/1B.2	None/None	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; edges, vernally mesic areas/perennial herb/(May)June–Aug/1,475–3,610	Low potential to occur. This species is known from north of Mount Laguna (CNPS 2018).
Horkelia cuneata var. *puberula*	mesa horkelia	None/None/1B.1	None/List A	Chaparral (maritime), cismontane woodland, coastal scrub; sandy or gravelly/perennial herb/Feb–July(Sep)/225–2,655	Not expected to occur. Mesa horkelia occurs north of Oceanside, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Horkelia truncata	Ramona horkelia	None/None/1B.3	Covered/List A	Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1,310–4,265	Not expected to occur. Ramona horkelia occurs west of Pine Valley, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Horsfordia newberryi	Newberry's velvet-mallow	None/None/4.3	None/List D	Sonoran Desert scrub (rocky)/perennial shrub/Feb,Apr,Nov,Dec/5–2,625	Not expected to occur. The site is outside of the species' known elevation range.
Hosackia crassifolia var. *otayensis*	Otay Mountain lotus	None/None/1B.1	None/List A	Chaparral (metavolcanic, often in disturbed areas)/perennial herb/May–Aug/1,245–3,295	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Hulsea californica	San Diego sunflower	None/None/1B.3	Covered/List A	Chaparral, lower montane coniferous forest, upper montane coniferous forest; openings and burned areas/perennial herb/Apr–June/3,000–9,565	Low potential to occur. This perennial herb would have been observed during focused surveys if present.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Hulsea mexicana	Mexican hulsea	None/None/2B.3	Covered/List B	Chaparral (volcanic, often on burns or disturbed areas)/ annual/ perennial herb/Apr–June/3,935–3,935	Low potential to occur. This perennial herb would have been observed during focused surveys if present.
Hulsea vestita ssp. *callicarpha*	beautiful hulsea	None/None/4.2	Covered/None	Chaparral, lower montane coniferous forest; rocky or gravelly, granitic/perennial herb/May–Oct/3,000–10,005	Not expected to occur. Beautiful hulsea occurs north of Warner Springs, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Hymenothrix wrightii	Wright's hymenothrix	None/None/4.3	None/List D	Cismontane woodland, lower montane coniferous forest, valley and foothill grassland/perennial herb/June–Oct/4,590–5,085	Not expected to occur. Wright's hymenothrix occurs north of Pine Valley, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ipomopsis tenuifolia	slender-leaved ipomopsis	None/None/2B.3	None/List B	Chaparral, pinyon and juniper woodland, Sonoran Desert scrub; gravelly or rocky/perennial herb/Mar–May/325–3,935	Low potential to occur. Slender-leaved ipomospsis generally occurs east of Boulevard, California, in the high desert region of Jacumba, California (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2	None/List A	Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/30–445	Not expected to occur. Decumbent goldenbush occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Iva hayesiana	San Diego marsh-elder	None/None/2B.2	None/List B	Marshes and swamps, playas/perennial herb/Apr–Oct/30–1,640	Not expected to occur. San Diego marsh-elder occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Johnstonella costata	ribbed cryptantha	None/None/4.3	Covered/List D	Desert dunes, Mojavean Desert scrub, Sonoran Desert scrub; sandy/annual herb/Feb–May/-195–1,640	Not expected to occur. Ribbed cryptantha occurs in the desert region (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Johnstonella holoptera	winged cryptantha	None/None/4.3	None/List D	Mojavean Desert scrub, Sonoran Desert scrub/annual herb/Mar–Apr/325–5,545	Not expected to occur. Winged cryptantha occurs in the desert region (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Juglans californica	Southern California black walnut	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, riparian woodland; alluvial/perennial deciduous tree/Mar–Aug/160–2,955	Not expected to occur. Southern California black walnut occurs north of Julian, California, and west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2	None/List D	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/ (Mar)May–June/5–2,955	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Juncus cooperi	Cooper's rush	None/None/4.3	None/List D	Meadows and seeps (mesic, alkaline or saline)/perennial herb/Apr–May(Aug)/-850–5,805	Not expected to occur. Cooper's rush is located just north of Jacumba Hotsprings, California (San Diego Plant Atlas 2018). No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	None/List A	Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/0–4,005	Not expected to occur. Coulter's goldfields occur west of El Cajon, California (San Diego Plant Atlas 2018). No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lathyrus splendens	pride-of-California	None/None/4.3	Covered/List D	Chaparral/perennial herb/Mar–June/655–5,005	Low potential to occur. This perennial herb would have been observed during focused surveys if present.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2	None/List A	Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1,705–4,495	Not expected to occur. Heart-leaved pitcher sage occurs just northeast of Poway, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3	None/List A	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/1,000–3,295	Not expected to occur. Gander's pitcher sage occurs west of Dulzura, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lepidium flavum var. *felipense*	Blair Valley pepper-grass	None/None/1B.2	Covered/List A	Pinyon and juniper woodland, Sonoran Desert scrub; sandy/annual herb/Mar–May/1,490–2,755	Not expected to occur. Blair Valley pepper-grass occur in Anza Borrego Desert State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3	None/List A	Chaparral, coastal scrub/annual herb/Jan–July/0–2,905	Not expected to occur. Robinson's pepper-grass occurs west of Pine Valley, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Leptosiphon floribundus ssp. *hallii*	Santa Rosa Mountains leptosiphon	None/None/1B.3	None/List A	Pinyon and juniper woodland, Sonoran Desert scrub/perennial herb/May–July(Nov)/3,280–6,560	Not expected to occur. Santa Rosa Mountains leptosiphon occurs just west of Borrego Springs, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Leptosyne maritima	sea dahlia	None/None/2B.2	None/List B	Coastal bluff scrub, coastal scrub/perennial herb/Mar–May/15–490	Not expected to occur. Sea dahlia occurs west of I-5 along the coast (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lessingia glandulifera var. *tomentosa*	Warner Springs lessingia	None/None/1B.1	Covered/List A	Chaparral (sandy)/annual herb/Aug,Oct/2,850–4,005	Not expected to occur. Warner Springs lessingia occurs north of Santa Ysabel, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Lewisia brachycalyx	short-sepaled lewisia	None/None/2B.2	Covered/List B	Lower montane coniferous forest, meadows and seeps; mesic/perennial herb/(Feb)Apr–June(July)/4,490–7,545	Not expected to occur. Short-sepaled lewisia occurs north of Cuyamaca Rancho State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; openings/perennial bulbiferous herb/Mar–July(Aug)/95–5,905	Not expected to occur. Ocellated Humboldt lily occurs north and west of Pine Valley, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lilium parryi	lemon lily	None/None/1B.2	Covered/List A	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest; mesic/perennial bulbiferous herb/July–Aug/4,000–9,005	Not expected to occur. Lemon lily occurs near Palomar Mountain (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Limnanthes alba ssp. *parishii*	Parish's meadowfoam	None/SE/1B.2	Covered/List A	Lower montane coniferous forest, meadows and seeps, vernal pools; vernally mesic/annual herb/Apr–June/1,965–6,560	Not expected to occur. Parish's meadowfoam occurs north of Mount Laguna, California (San Diego Plant Atlas 2018). Occurs in areas devoid of shrubs that consist of high concentrations of annuals and are vernally mesic (Reiser 2001). High concentrations of annuals were not present on site. No suitable vegetation is present.
Linanthus maculatus ssp. *emaculatus*	Jacumba Mountains linanthus	None/None/1B.1	None/None	Desert dunes (edges), Sonoran Desert scrub; sandy or course, opaque-white, decomposed granite soils of washes and on flats	Not expected to occur. Jacumba Mountains occurs26us occurs just west of Ocotillo, California, in the desert region (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.

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				near wash margins/annual herb/(Mar)Apr(May)/ 1,295–1,920	
Linanthus orcuttii	Orcutt's linanthus	None/None/1B.3	Covered/List A	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; openings/annual herb/May–June/3,000–7,035	Low potential to occur. Orcutt's linanthus occurs north of Boulder Oaks, California (San Diego Plant Atlas 2018). This species would have been observed if present; focused surveys were conducted during the species' blooming period.
Lupinus albifrons var. *medius*	Mountain Springs bush lupine	None/None/1B.3	Covered/List A	Pinyon and juniper woodland, Sonoran Desert scrub/perennial shrub/Mar–May/1,390–4,495	Low potential to occur. This perennial shrub would have been observed during focused surveys if present.
Lycium californicum	California box-thorn	None/None/4.2	None/List D	Coastal bluff scrub, coastal scrub/perennial shrub/(Dec)Mar, June, July, Aug/15–490	Not expected to occur. California box-thorn occurs west of Rancho San Diego (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lycium parishii	Parish's desert-thorn	None/None/2B.3	Covered/List B	Coastal scrub, Sonoran Desert scrub/perennial shrub/Mar–Apr/440–3,280	Not expected to occur. Parish's desert-thorn occurs near Agua Caliente County Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Lyrocarpa coulteri	Palmer's lyrepod	None/None/4.3	None/List D	Sonoran Desert scrub (gravelly or rocky)/perennial herb/Dec–Apr/390–2,610	Not expected to occur. Palmer's lyrepod occurs north of Mount Laguna in Anza Borrego Desert State Park (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Malacothamnus aboriginum	Indian Valley bush-mallow	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland; rocky, granitic, often in burned areas/perennial deciduous shrub/Apr–Oct/490–5,575	Not expected to occur. Indian Valley bush-mallow occurs north of Pine Valley, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Malperia tenuis	brown turbans	None/None/2B.3	None/List B	Sonoran Desert scrub (sandy, gravelly)/annual herb/(Feb)Mar–Apr/45–1,100	Not expected to occur. Brown turbans occurs in the desert region (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Matelea parvifolia	spearleaf	None/None/2B.3	None/List B	Mojavean Desert scrub, Sonoran Desert scrub; rocky/perennial herb/Mar–May(July)/ 1,440–3,595	Low potential to occur. Spearleaf occurs in Anza Borrego Desert State Park (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Mentzelia hirsutissima	hairy stickleaf	None/None/2B.3	None/List B	Sonoran Desert scrub (rocky)/annual herb/Mar–May/0–2,295	Not expected to occur. The site is outside of the species' known elevation range.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2	None/List D	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/45–3,510	Not expected to occur. Small-flowered microseris occurs west of Alpine, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Mimulus latidens	vernal pool monkeyflower	None/None/None	None/List A	Vernal pools/annual herb/Apr–June/900–2,953	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Mirabilis tenuiloba	slender-lobed four o'clock	None/None/4.3	None/List D	Sonoran Desert scrub/perennial herb/(Feb)Mar–May/750–3,595	Low potential to occur. Slender lobed four o'clock occurs in the high desert and desert region (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/980–5,165	Not expected to occur. Felt-leaved monardella occurs west of Pine Valley, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Monardella macrantha ssp. *hallii*	Hall's monardella	None/None/1B.3	None/List A	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and	Not expected to occur. Hall's monardella occurs on Palomar Mountain (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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				foothill grassland/perennial rhizomatous herb/June–Oct/2,395–7,200	
Monardella nana ssp. *leptosiphon*	San Felipe monardella	None/None/1B.2	Covered/None	Chaparral, lower montane coniferous forest/perennial rhizomatous herb/June–July/3,935–6,085	Low potential to occur. San Felipe monardella is known from north of Julian in San Diego County (San Diego Plant Atlas 2018).
Monardella stoneana	Jennifer's monardella	None/None/1B.2	None/List A	Closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub; usually rocky intermittent streambeds/perennial herb/June–Sep/30–2,590	Not expected to occur. Jennifer's monardella occurs west of Barrett Junction (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Monardella viminea	willowy monardella	FE/SE/1B.1	None/List A	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/160–740	Not expected to occur. Willowy monardella occurs west of U.S. Route 67 (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Mucronea californica	California spineflower	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/Mar–July(Aug)/0–4,595	Not expected to occur. California spineflower occurs west of I-5 on the coast (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1	None/List C	Valley and foothill grassland, vernal pools (alkaline)/annual herb/Mar–June/65–2,100	Not expected to occur. Little mousetail occurs in the Otay area (San Diego Plant Atlas 2018). Found in deeper portions of vernal pools (Resier 2001). Vernal pools were not present on site. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Nama stenocarpa	mud nama	None/None/2B.2	None/List B	Marshes and swamps (lake margins, riverbanks)/annual/ perennial herb/Jan–July/15–1,640	Not expected to occur. Mud nama has been documented near Lake Henshaw (San Diego Plant Atlas 2018). Found on muddy embankments of lakes (Reiser 2001). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nasturtium gambelii	Gambel's water cress	FE/ST/1B.1	None/List A	Marshes and swamps (freshwater or brackish)/perennial rhizomatous herb/Apr–Oct/15–1,085	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Navarretia fossalis	spreading navarretia	FT/None/1B.1	None/List A	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/95–2,150	Not expected to occur. Spreading navarretia occurs west of Ramona, California (San Diego Plant Atlas 2018). Is found in vernal pools and vernal swales (Reiser 2001). No vernal pools were present on site. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Navarretia peninsularis	Baja navarretia	None/None/1B.2	Covered/List A	Chaparral (openings), lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland; mesic/annual herb/(May)June–Aug/4,920–7,545	Not expected to occur. Baja navarretia occurs in Cuyamaca Rancho State Park (San Diego Plant Atlas 2018).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.1	None/List A	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/annual herb/Apr–July/5–3,970	Not expected to occur. Prostrate vernal pool navarretia occurs west of I-15 (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2	None/List A	Coastal dunes/annual herb/Apr–Sep/0–330	Not expected to occur. Coast woolly-heads occur west of I-15 (San Diego Plant Atlas).The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2	None/List B	Coastal dunes, desert dunes, Sonoran Desert scrub/annual herb/(Mar)Apr–May/-160–1,310	Not expected to occur. Slender cottonheads prefer well-developed dune soils (Reiser 2001). Slender cottonheads occur west of I-15 (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nolina cismontana	chaparral nolina	None/None/1B.2	Covered/List A	Chaparral, coastal scrub; sandstone or gabbro/ perennial evergreen shrub/(Mar)May–July/455–4,185	Not expected to occur. Chaparral 31olina occurs near Alpine, California, Palomar Mountain, and Cleveland National Forest within the central range of San Diego County (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nolina interrata	Dehesa nolina	None/SE/1B.1	None/List A	Chaparral (gabbroic, metavolcanic, or serpentinite)/perennial herb/June–July/605–2,805	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ophioglossum californicum	California adder's-tongue	None/None/4.2	None/List D	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec)Jan–June/195–1,720	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Opuntia wigginsii	Wiggins' cholla	None/None/3.3	None/List C	Sonoran Desert scrub (sandy)/perennial stem succulent/Mar/95–2,905	Not expected to occur. The site is outside of the species' known elevation range.
Orcuttia californica	California Orcutt grass	FE/SE/1B.1	None/List A	Vernal pools/annual herb/Apr–Aug/45–2,165	Not expected to occur. California orcutts grass occurs within vernal pools (Reiser 2001). No vernal pools were present on site. The site is outside of the species'

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
					known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ornithostaphylos oppositifolia	Baja California birdbush	None/SE/2B.1	None/List B	Chaparral/perennial evergreen shrub/Jan–Apr/180–2,625	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2	None/List D	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/5–1,000	Not expected to occur. Short-lobed broomrape occurs west of I-5 (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Packera ganderi	Gander's ragwort	None/SR/1B.2	Covered/List A	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1,310–3,935	Not expected to occur. Gander's ragwort occurs west of Pine Valley (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pectocarya peninsularis	Baja California bur-comb	None/None/None	None/List D	Sonoran Desert scrub; washes, roadsides, clearings, sandy, silty, or gravelly soil/annual herb/Feb–Apr/300–984	Not expected to occur. Baja California bur-comb occurs in the desert region (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Penstemon clevelandii var. *connatus*	San Jacinto beardtongue	None/None/4.3	None/List D	Chaparral, pinyon and juniper woodland, Sonoran Desert scrub; rocky/perennial herb/Mar–May/1,310–4,920	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Penstemon thurberi	Thurber's beardtongue	None/None/4.2	None/List D	Chaparral, Joshua tree woodland, pinyon and juniper woodland, Sonoran Desert scrub/perennial herb/May–July/1,640–4,005	Not expected to occur. Thurber's beardtongue occurs just west of Anza Borrego Desert State Park (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest,	Not expected to occur. Golden rayed pentachaeta occurs west of Mount Laguna, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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				riparian woodland, valley and foothill grassland/ annual herb/Mar–July/260–6,070	
Pentagramma triangularis ssp. *nov.* [described as *P.t. rebmanii*]	goldenback fern	None/None/None	Covered/None	Chaparral, coastal scrub, riparian woodland, cismontane woodland; mesic, sometimes gabbro soils/fern/N.A./1,250–4,101	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	None/None/4.2	None/List D	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools; vernally mesic/perennial herb/June–Oct/0–2,000	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Petalonyx linearis	narrow-leaf sandpaper-plant	None/None/2B.3	None/None	Mojavean Desert scrub, Sonoran Desert scrub; sandy or rocky canyons/ perennial shrub/(Jan–Feb) Mar–May(June–Dec)/-80–3,660	Low potential to occur. Narrow-leaf sandpaper plant occurs north of Mount Laguna within Anza Borrego Desert State Park (San Diego Plant Atlas 2018). This perennial shrub would have been observed during focused surveys if present.
Phacelia nashiana	Charlotte's phacelia	None/None/1B.2	Covered/None	Joshua tree woodland, Mojavean Desert scrub, pinyon and juniper woodland; usually granitic, sandy/annual herb/Mar–June/1,965–7,220	Not expected to occur. Charlotte's phacelia occurs north of Borrego Springs, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Phacelia stellaris	Brand's star phacelia	None/None/1B.1	None/List A	Coastal dunes, coastal scrub/annual herb/Mar–June/0–1,310	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pholistoma auritum var. *arizonicum*	Arizona pholistoma	None/None/2B.3	Covered/None	Mojavean Desert scrub /annual herb/Mar/900–2,740	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Pilostyles thurberi	Thurber's pilostyles	None/None/4.3	None/List D	Sonoran Desert scrub/perennial herb (parasitic)/Dec–Apr/0–1,200	Not expected to occur. The site is outside of the species' known elevation range.
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2	None/List A	Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/N.A./95–525	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Piperia cooperi	chaparral rein orchid	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/Mar–June/45–5,200	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Piperia leptopetala	narrow-petaled rein orchid	None/None/4.3	Covered/List D	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest/ perennial herb/May–July/1,245–7,300	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Poa atropurpurea	San Bernardino blue grass	FE/None/1B.2	Covered/List A	Meadows and seeps (mesic)/perennial rhizomatous herb/(Apr)May–July(Aug)/4,460–8,055	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Pogogyne abramsii	San Diego mesa mint	FE/SE/1B.1	None/List A	Vernal pools/annual herb/Mar–July/295–655	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pogogyne nudiuscula	Otay Mesa mint	FE/SE/1B.1	None/List A	Vernal pools/annual herb/May–July/295–820	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Polygala cornuta var. *fishiae*	Fish's milkwort	None/None/4.3	None/List D	Chaparral, cismontane woodland, riparian woodland/perennial	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
				deciduous shrub/May–Aug/325–3,280	
Proboscidea althaeifolia	desert unicorn-plant	None/None/4.3	None/List D	Sonoran Desert scrub; gently sloping sandy flats and washes, sometimes roadsides/perennial herb/ May–Sep(Oct)/275–3,280	Not expected to occur. Desert unicorn plant occurs northeast of Mount Laguna, California, in the desert region (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.
Quercus cedrosensis	Cedros Island oak	None/None/2B.2	None/List B	Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/835–3,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1	None/List A	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/ perennial evergreen shrub/ Feb–Apr(May–Aug)/45–1,310	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Quercus engelmannii	Engelmann oak	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/160–4,265	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rhus aromatica var. *simplicifolia*	single-leaved skunkbrush	None/None/2B.3	None/List B	Pinyon and juniper woodland; usually granitic/perennial deciduous shrub/Mar–Apr/4,000–4,495	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ribes canthariforme	Moreno currant	None/None/1B.3	Covered/List A	Chaparral, riparian scrub/perennial deciduous shrub/Feb–Apr/1,115–3,935	Not expected to occur. Moreno currant occurs west of Pine Valley, California (San Diego Plant Atlas 2018). Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Ribes viburnifolium	Santa Catalina Island currant	None/None/1B.2	None/List A	Chaparral, cismontane woodland/perennial evergreen shrub/Feb–Apr/95–1,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Romneya coulteri	Coulter's matilija poppy	None/None/4.2	None/List D	Chaparral, coastal scrub; often in burns/perennial rhizomatous herb/Mar–July(Aug)/65–3,935	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rosa minutifolia	small-leaved rose	None/SE/2B.1	None/List B	Chaparral, coastal scrub/perennial deciduous shrub/Jan–June/490–525	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rubus glaucifolius var. *ganderi*	Cuyamaca raspberry	None/None/3.1	Covered/List A	Lower montane coniferous forest (gabbroic)/perennial evergreen shrub/May–June/3,935–5,495	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rupertia rigida	Parish's rupertia	None/None/4.3	Covered/List D	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, valley and foothill grassland/perennial herb/June–Aug/2,295–8,200	Low potential to occur. Parish's rupertia occurs north of Pine Valley, California (San Diego Plant Atlas 2018).This perennial herb would have been observed during focused surveys if present.
Saltugilia caruifolia	caraway-leaved woodland-gilia	None/None/4.3	None/List D	Chaparral, lower montane coniferous forest; sandy, openings/annual herb/May–Aug/2,755–7,545	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Salvia eremostachya	desert sage	None/None/4.3	None/List D	Sonoran Desert scrub (rocky or gravelly)/ perennial evergreen shrub/Mar–May/2,295–4,595	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Salvia munzii	Munz's sage	None/None/2B.2	None/List B	Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/375–3,495	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	None/None/1B.2	None/List A	Chaparral, cismontane woodland, lower montane coniferous forest; mesic/perennial rhizomatous herb/June–Aug/1,390–6,560	Low potential to occur. Southern mountains skullcap occurs north of Boulder Oaks and collections are most abundant in the Palomar Mountain area (San Diego Plant Atlas 2018).
Selaginella asprella	bluish spike-moss	None/None/4.3	None/List D	Cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest; granitic, rocky/perennial rhizomatous herb/July/5,245–8,860	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Selaginella cinerascens	ashy spike-moss	None/None/4.1	None/List D	Chaparral, coastal scrub/perennial rhizomatous herb/N.A./65–2,100	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Selaginella eremophila	desert spike-moss	None/None/2B.2	None/List B	Chaparral, Sonoran Desert scrub (gravelly or rocky)/perennial rhizomatous herb/(May)June(July)/ 655–4,250	Low potential to occur. Desert spike-moss occurs in the high desert region and desert region east of the site (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	None/List B	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr(May)/45–2,625	Not expected to occur. Chaparral ragwort occurs west of Alpine, California (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Senna covesii	Coves' cassia	None/None/2B.2	None/List B	Sonoran Desert scrub; dry, sandy desert washes and slopes/perennial herb/Mar–June(Aug)/ 735–4,250	Low potential to occur. This perennial herb would have been observed during focused surveys if present.
Sibaropsis hammittii	Hammitt's clay-cress	None/None/1B.2	Covered/List A	Chaparral (openings), valley and foothill grassland; clay/annual herb/Mar–Apr/2,360–3,495	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Spermolepis echinata	bristly scaleseed	None/None/None	None/List B	Sonoran Desert scrub (sandy or rocky)/annual herb/Mar–Apr/1,500–4,921	Not expected to occur. The site is outside of the species' known elevation range.
Spermolepis lateriflora	western bristly scaleseed	None/None/2A	None/None	Sonoran Desert scrub; rocky or sandy/annual herb/Mar–Apr/1,195–2,200	Not expected to occur. The site is outside of the species' known elevation range.
Stemodia durantifolia	purple stemodia	None/None/2B.1	None/List B	Sonoran Desert scrub (often mesic, sandy)/perennial herb/(Jan)Apr, June, Aug, Sep, Oct, Dec/590–985	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Stipa diegoensis	San Diego County needle grass	None/None/4.2	None/List D	Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/30–2,625	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3	None/List D	Chaparral, lower montane coniferous forest/perennial herb/May–Aug/2,195–8,200	Low potential to occur. Laguna Mountains jewelflower occurs north of Mount Laguna, California (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.
Stylocline citroleum	oil neststraw	None/None/1B.1	None/List A	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–Apr/160–1,310	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Suaeda esteroa	estuary seablite	None/None/1B.2	None/List A	Marshes and swamps (coastal salt)/perennial herb/(May)July–Oct(Jan)/0–15	Not expected to occur. Esturary seablite occurs west of Rancho San Diego, California, and is generally close to the coastline (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Suaeda taxifolia	woolly seablite	None/None/4.2	None/List D	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/ perennial evergreen shrub/Jan–Dec/0–165	Not expected to occur. Woolly seablite occurs on the coastline and is generally found west of I-5 (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Symphyotrichum defoliatum	San Bernardino aster	None/None/1B.2	None/None	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic); near ditches, streams, springs/perennial rhizomatous herb/July–Nov/5–6,695	Low potential to occur. San Bernardino sand aster occurs near springs and seeps (Reiser 2001). Springs and seeps were limited on site. This perennial herb would have been observed during focused surveys if present.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2	None/List A	Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/540–3,280	Not expected to occur. The site is outside of the species' known elevation range.
Thermopsis californica var. *semota*	velvety false lupine	None/None/1B.2	Covered/List A	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial rhizomatous herb/Mar–June/3,280–6,135	Low potential to occur. Velvety false lupine occurs generally north of Pine Valley (San Diego Plant Atlas 2018). This perennial herb would have been observed during focused surveys if present.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Thysanocarpus rigidus	rigid fringepod	None/None/1B.2	None/None	Pinyon and juniper woodland; dry rocky slopes/annual herb/Feb–May/1,965–7,220	Not expected to occur. No suitable vegetation present.
Viguiera laciniata	San Diego County viguiera	None/None/4.3	None/List D	Chaparral, coastal scrub/perennial shrub/Feb–June(Aug)/195–2,460	Not expected to occur. The site is outside of the species' known elevation range.
Viguiera purisimae	La Purisima viguiera	None/None/2B.3	None/List A	Coastal bluff scrub, chaparral/shrub/Apr–Sep/1,195–1,395	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Viola purpurea ssp. *aurea*	golden violet	None/None/2B.2	None/List B	Great Basin scrub, pinyon and juniper woodland; sandy/perennial herb/Apr–June/3,280–8,200	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Xanthisma junceum	rush-like bristleweed	None/None/4.3	Covered/List D	Chaparral, coastal scrub/perennial herb/May–Jan/785–3,280	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Xylorhiza orcuttii	Orcutt's woody-aster	None/None/1B.2	Covered/List A	Sonoran Desert scrub/perennial herb/Mar–Apr/0–1,200	Not expected to occur. Orcutt's woody-aster occurs in Anza Borrego Desert State Park and in the desert all the way to the Salton Sea (San Diego Plant Atlas 2018). The site is outside of the species' known elevation range.

Status Legend

Federal

FC: Federal candidate for listing
FE: Federally listed as endangered
FT: Federally listed as threatened

State

SE: State-listed as endangered
SR: State rare
ST: State-listed as threatened

CRPR: California Rare Plant Rank

1B: Plants rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California but common elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which more information is needed—A Review List
4: Plants of limited distribution—A Watch List

Threat Rank
.1: Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)
.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

County of San Diego Multiple Species Conservation Program (MSCP), East County Plan
Covered: Covered under the plan
None: Not covered

County of San Diego MSCP Listed Species
List A: Plants rare, threatened, or endangered in California or elsewhere
List B: Plants rare, threatened, or endangered in California but more common elsewhere
List C: Plants that may be quite rare, but more information is needed to determine rarity status
List D: Plants of limited distribution and are uncommon, but not presently rare or endangered
None = not listed
N.A. = not applicable

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ATTACHMENT G-2

Special-Status Plant Species with Low Potential or Not Expected to Occur in the Campo Corridor

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2	None/List D	Coastal dunes/perennial herb/Feb–Nov/0–330	Not expected to occur. Red sand verbena occurs only on well-developed beach dunes (Reiser 2001), which do not occur on site. Generally, the site is outside of the species' known elevation range and there is no suitable vegetation present. Also, does not occur in vicinity (CDFW 2018; CNPS 2018).
Abronia villosa var. *aurita*	chaparral sand-verbena	None/None/1B.1	None/List A	Chaparral, coastal scrub, desert dunes; sandy/annual herb/(Jan)Mar–Sep/245–5,250	Not expected to occur. Chaparral sand verbena has been documented around Camp Pendleton and near Fallbrook, California (SDNHM 2012). The project site is therefore outside of the geographic range this species would be expected to occur in. In addition, chaparral sand-verbena is more likely to be found in sandy floodplains (Reiser 2001).
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/1B.1	Covered/List A	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/30–3,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Acmispon haydonii	pygmy lotus	None/None/1B.3	Covered/List A	Pinyon and juniper woodland, Sonoran desert scrub; rocky/perennial herb/Jan–June/1,705–3,935	Low potential to occur. Pygmy lotus occurs east of Jacumba, California. Pygmy lotus is more likely to occur in the high desert and desert region (SDNHM 2012).
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1	None/List A	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June(July)/0–35	Not expected to occur. Nuttall's acmispon occurs west of Interstate (I) 15 (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Adolphia californica	California adolphia	None/None/2B.1	None/List B	Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/ Dec–May/30–2,430	Not expected to occur. California adolphia occurs west of El Cajon, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1	None/List B	Coastal bluff scrub, coastal scrub; maritime succulent scrub/perennial leaf succulent/Sep–May/5–395	Not expected to occur. Shaw's agave occurs west of I-5 near the beach (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2	None/None	Chaparral, Sonoran desert scrub; sandy/perennial shrub/Aug–Nov/30–1640	Not expected to occur. The site is outside of the species' known elevation range.
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1	None/List B	Coastal scrub/perennial shrub/Apr–June/180–510	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	None/List A	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/65–1,360	Not expected to occur. San Diego ambrosia occurs in creek beds and dry drainages with a protective tree canopy (Reiser 2001). San Diego ambrosia occurs west of Crest, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Androsace elongata ssp. *acuta*	California androsace	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland/annual herb/Mar–June/490–4,280	Not expected to occur. California androsace occurs north of Cuyamaca Rancho State Park (SDNHM 2012). California androsace grows in open montane grassy meadows within Cuyamaca Rancho State Park (Reiser 2001). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Aphanisma blitoides	aphanisma	None/None/1B.2	None/List A	Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Feb–June/0–1,000	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1	None/List A	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1,200	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland; metavolcanic/perennial evergreen shrub/Jan–Apr/900–5,575	Not expected to occur. Otay manzanita occurs west of Dulzura, California, within the Otay area and north up to Rancho San Diego, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018). Otay manzanita occurs on metavolcanic peaks and soils that are shallow with exposed rock (Reiser 2001).
Arctostaphylos rainbowensis	Rainbow manzanita	None/None/1B.1	None/List A	Chaparral/perennial evergreen shrub/Dec–Mar/670–2,200	Not expected to occur. Rainbow manzanita occurs north of Escondido, and the majority of the population is near Rainbow, California, and Pala, California (SDNHM 2012). The project site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Artemisia palmeri	San Diego sagewort	None/None/4.2	None/List D	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb)May–Sep/45–3,000	Not expected to occur. This species occurs north of Dulzura and west of Descanso (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Asplenium vespertinum	western spleenwort	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/590–3,280	Low potential to occur. This species is recorded west of Morena Village and west of Potrero (SDNHM 2012).
Astragalus crotalariae	Salton milk-vetch	None/None/4.3	Covered/List D	Sonoran desert scrub (sandy or gravelly)/perennial herb/Jan–Apr/195–820	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus deanei	Dean's milk-vetch	None/None/1B.1	Covered/List A	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/Feb–May/245–2,280	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Astragalus insularis var. *harwoodii*	Harwood's milk-vetch	None/None/2B.2	Covered/List B	Desert dunes, Mojavean desert scrub; sandy or gravelly/annual herb/Jan–May/0–2,330	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Astragalus lentiginosus var. *borreganus*	Borrego milk-vetch	None/None/4.3	Covered/List D	Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/ Feb–May/95–2,935	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus magdalenae var. *peirsonii*	Peirson's milk-vetch	FT/SE/1B.2	None/List A	Desert dunes/perennial herb/Dec–Apr/195–740	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus oocarpus	San Diego milk-vetch	None/None/1B.2	Covered/List A	Chaparral (openings), cismontane woodland/perennial herb/May–Aug/1,000–5,000	Low potential to occur. Collections of San Diego milk-vetch are west of State Route (SR) 79 near Cuyamaca Rancho State Park and north of this area (SDNHM 2012).
Astragalus pachypus var. *jaegeri*	Jaeger's bush milk-vetch	None/None/1B.1	None/List A	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; sandy or rocky/perennial shrub/Dec–June/1,195–3,200	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/SE/1B.1	None/List A	Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/0–165	Not expected to occur. Occurs on coastal dunes (Reiser 2001). The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex coulteri	Coulter's saltbush	None/None/1B.2	None/List A	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/5–1,510	Not expected to occur. Coulter's saltbush is more typical on seabluff habitat (Reiser 2001). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Atriplex pacifica	South Coast saltscale	None/None/1B.2	None/List A	Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/Mar–Oct/0–460	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex parishii	Parish's brittlescale	None/None/1B.1	None/List A	Chenopod scrub, playas, vernal pools; alkaline/annual herb/June–Oct/80–6,235	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None/1B.2	None/List A	Coastal bluff scrub, coastal scrub; alkaline/annual herb/Apr–Oct/30–655	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ayenia compacta	California ayenia	None/None/2B.3	None/List B	Mojavean desert scrub, Sonoran desert scrub; rocky/perennial herb/Mar–Apr/490–3,595	Low potential to occur. This species is only known from areas north of Mount Laguna (SDNHM 2012). Rocky canyons and desert arroyos are the preferred habitat of California ayenia. California ayenia prefers the periphery of sandy washes (Reiser 2001).
Azolla microphylla	Mexican mosquito fern	None/None/4.2	None/List D	Marshes and swamps (ponds, slow water)/annual / perennial herb/Aug/95–330	Not expected to occur. The site is outside of the species' known elevation range. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Baccharis vanessae	Encinitas baccharis	FT/SE/1B.1	None/List A	Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous shrub/ Aug,Oct,Nov/195–2,360	Not expected to occur. Generally occurs northwest of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Berberis fremontii	Fremont barberry	None/None/2B.3	Covered/List C	Joshua tree woodland, pinyon and juniper woodland; rocky, sometimes granitic/perennial evergreen shrub/Mar–May/3,755–5,645	Low potential to occur. No suitable Joshua tree woodland or pinyon and juniper woodland in the study area. This species occurs in high desert chaparral and high desert badlands on fairly level terrain with granitic boulder fields (Reiser 2001). Fremont barberry is extremely rare (Reiser 2001). This species has only been recorded near Jacumba in San Diego County (CCH 2019).

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Berberis higginsiae	Higgins barberry	None/None/3.2	Covered/None	Chaparral, Sonoran desert scrub; rocky, sometimes granitic/perennial shrub/Mar–Apr/2,620–3,495	Not expected to occur. Records of this species are generally between Boulevard and Jacumba Hot Springs, east of the study area (CCH 2019).
Berberis nevinii	Nevin's barberry	FE/SE/1B.1	None/List A	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/perennial evergreen shrub/(Feb)Mar–June/225–2,705	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2	None/List B	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/perennial stem succulent/May–June/5–1,295	Not expected to occur. Golden-spined cereus occurs near the beach or within Otay (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1	Covered/List A	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Apr–May/160–1,525	Not expected to occur. San Diego goldenstar occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Boechera hirshbergiae	Hirshberg's rockcress	None/None/1B.2	None/List A	Pebble (Pavement) plain/perennial herb/Mar–May/4,590–4,640	Not expected to occur. Occurs north of Cuyamaca Rancho State Park (SDNHM 2012). The site is outside of the species' known elevation range and there is no suitable pebble plain habitat present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	None/List A	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/80–3,675	Not expected to occur. Thread-leaved brodiaea occurs north of Rancho Santa Fe, California, and is more likely to be found near Camp Pendleton, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1	Covered/List A	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay/perennial bulbiferous herb/May–July/95–5,550	Low potential to occur. Orcutt's brodiea occurs in vernally moist grasslands and around vernal pools with mina mound topography (Reiser 2001). Vernal pools were not present on site. Occurs west of Sunrise Highway within the southern mountain range and reaches the Pacific Ocean (SDNHM 2012).
Bursera microphylla	little-leaf elephant tree	None/None/2B.3	Covered/List B	Sonoran desert scrub (rocky)/perennial deciduous tree/June–July/655–2,295	Not expected to occur. The site is outside of the species' known elevation range. Little-leaf elephant plant occurs in the desert and high desert region (SDNHM 2012). Sonoran Desert scrub is the preferred habitat of little-leaf elephant tree, and prefers desert alluvial fan scrub and rocky slopes.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2	None/List D	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/(Jan)Mar–June/30–4,005	Not expected to occur. Brewer's calandrinia occurs west of Pine Valley, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
California macrophylla	round-leaved filaree	None/None/None	None/List B	Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/45–3,935	Low potential to occur. This species is known from west of Alpine, California (SDNHM 2012).
Calliandra eriophylla	pink fairy-duster	None/None/2B.3	Covered/List B	Sonoran desert scrub (sandy or rocky)/perennial deciduous shrub/Jan–Mar/390–4,920	Low potential to occur. This species is known to occur within Anza-Borrego Desert State Park and east of Jacumba, California (SDNHM 2012).
Calochortus catalinae	Catalina mariposa lily	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial bulbiferous herb/(Feb)Mar–June/45–2,295	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Calochortus dunnii	Dunn's mariposa lily	None/SR/1B.2	Covered/List A	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/ (Feb)Apr–June/605–6,005	Low potential to occur. Dunn's mariposa lily is generally located west of Pine Valley, California, and east of El Cajon, California (SDNHM 2012).
Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3	None/List C	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May(June)/0–985	Not expected to occur. Lewis' evening primrose occurs west of Alpine, California, and generally on the coastline (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Carlowrightia arizonica	Arizona carlowrightia	None/None/2B.2	Covered/None/List B	Sonoran desert scrub (sandy, granitic alluvium)/perennial deciduous shrub/Mar–May/935–1,410	Not expected to occur. The site is outside of the species' known elevation range. Arizona carlowrightia occurs near Borrego Springs and Agua Caliente. Arizona carlowrightia is found in Anza Borrego Desert State Park (SDNHM 2012).
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2	Covered/List A	Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/770–2,475	Not expected to occur. Lakeside ceanothus occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2	None/None	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/Jan–Apr/1,965–3,610	Low potential to occur. Otay Mountain ceanothus occurs generally west of Campo, California, but commonly west of Potrero, California (SDNHM 2012).
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2	None/List B	Chaparral/perennial evergreen shrub/Dec–May/0–1,245	Not expected to occur. Wart-stemmed ceanothus occurs generally west of I-15. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1	None/List A	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/0–1,575	Not expected to occur. Southern tarplant occurs near Ramona, California; Del Dios, California; and Solana Beach, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1	None/List A	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2,100	Not expected to occur. Smooth tarplant occurs west of the SR-79 and on Camp Pendleton (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chaenactis carphoclinia var. *peirsonii*	Peirson's pincushion	None/None/1B.3	Covered/List A	Sonoran desert scrub (sandy)/annual herb/Mar–Apr/5–1,640	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1	None/List A	Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–330	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Chaenactis parishii	Parish's chaenactis	None/None/1B.3	None/List A	Chaparral (rocky) /perennial herb/May–July/4,265–8,200	Not expected to occur. The site is outside of the species' known elevation range. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Chamaebatia australis	southern mountain misery	None/None/4.2	Covered/List D	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/980–3,345	Low potential to occur. This species is only recorded west of Potrero (SDNHM 2012).
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE/1B.2	None/List A	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE/1B.1	None/List A	Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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				openings/annual herb/Mar–May/5–410	
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FC/SE/1B.1	None/List A	Coastal scrub (sandy), valley and foothill grassland/annual herb/Apr–July/490–4,005	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	Covered/List A	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/Apr–July/95–5,020	Low potential to occur. Long-spined spineflower occurs west of Pine Valley, California (SDNHM 2012).
Cistanthe maritima	seaside cistanthe	None/None/4.2	None/List D	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb)Mar–June(Aug)/15–985	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Clarkia delicata	delicate clarkia	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/770–3,280	Low potential to occur. Distribution is generally west of Pine Valley, California (SDNHM 2012).
Clinopodium chandleri	San Miguel savory	None/None/1B.2	None/List A	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic or metavolcanic/perennial shrub/Mar–July/390–3,525	Not expected to occur. San Miguel savory occurs west of Alpine, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Colubrina californica	Las Animas colubrina	None/None/2B.3	None/List B	Mojavean Desert scrub, Sonoran Desert scrub/perennial deciduous shrub/Apr–June/30–3,280	Not expected to occur. Los Aminas colubrina occurs in the desert region (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2	None/List A	Chaparral, cismontane woodland/perennial evergreen shrub/Apr–June/95–2,590	Not expected to occur. Occurs west of Barret Junction, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Convolvulus simulans	small-flowered morning-glory	None/None/4.2	None/List D	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/ Mar–July/95–2,430	Not expected to occur. Small-flowered morning-glory occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1	None/None	Coastal bluff scrub, Chaparral, Coastal scrub/perennial herb/June–Sep/5–375	Not expected to occur. The site is outside of the species' known elevation range.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1	None/List A	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May, July,Aug,Sep/45–490	Not expected to occur. Del Mar Mesa sand aster occurs near the beach (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Cryptantha ganderi	Gander's cryptantha	None/None/1B.1	Covered/List A	Desert dunes, Sonoran Desert scrub (sandy)/annual herb/Feb–May/520–1,310	Not expected to occur. Gander's cryptantha occurs in the desert region and is found north of Anza Borrego Desert State Park (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1	None/List A	Chaparral, coastal scrub/perennial stem succulent/Apr–May/95–490	Not expected to occur. Snake cholla is distributed west of El Cajon, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Cylindropuntia fosbergii	pink teddy-bear cholla	None/None/1B.3	Covered/None	Sonoran Desert scrub/perennial stem succulent/Mar–May/275–2,790	Not expected to occur. Pink teddy-bear cholla is distributed north of Mount Laguna (SDNHM 2012). The site is outside of the species' known elevation range.

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Cylindropuntia wolfii	Wolf's cholla	None/None/4.3	Covered/List D	Sonoran Desert scrub/perennial stem succulent/Mar–May/325–3,935	Low potential to occur. Wolf's cholla is generally distributed east of Jacumba, California, in the desert region (SDNHM 2012).
Deinandra conjugens	Otay tarplant	FT/SE/1B.1	None/List A	Coastal scrub, valley and foothill grassland; clay/annual herb/(Apr)May–June/80–985	Not expected to occur. Otay tarplant populations occur west of Dulzura, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Deinandra mohavensis	Mojave tarplant	None/SE/1B.3	Covered/List A	Chaparral, coastal scrub, riparian scrub; mesic/annual herb/(May)June–Oct(Jan)/2,095–5,250	Not expected to occur. Populations of Mojave tarplant occur north of Warner Springs, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Deinandra paniculata	paniculate tarplant	None/None/4.2	None/List D	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/(Mar)Apr–Nov/80–3,085	Not expected to occur. Paniculate tarplant populations are north of Cuyamaca Rancho State Park (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Delphinium hesperium ssp. *cuyamacae*	Cuyamaca larkspur	None/SR/1B.2	Covered/None	Lower montane coniferous forest, meadows and seeps, vernal pools; mesic/perennial herb/May–July/4,000–5,350	Not expected to occur. Cuyamaca larkspur occurs north of Pine Valley, California (SDNHM 2012).
Dichondra occidentalis	western dichondra	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/160–1,640	Not expected to occur. Western dichondra occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/2B.1	None/List B	Coastal scrub/annual herb (hemiparasitic)/(Mar)Apr–July(Sep)/30–1,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dieteria asteroides var. *lagunensis*	Mount Laguna aster	None/SR/2B.1	Covered/List B	Cismontane woodland, lower montane coniferous forest/perennial herb/(May)July–Aug/2,590–7,875	Low potential to occur. Mount Laguna aster is known only form the Mount Laguna area north of the biological study area (SDNHM 2012).
Diplacus aridus	low bush monkeyflower	None/None/4.3	Covered/List D	Chaparral (rocky), Sonoran Desert scrub/perennial evergreen shrub/Apr–July/2,460–3,935	Low potential to occur. Low bush monkey flower occurs in the high and low desert near Jacumba, California, and farther east (SDNHM 2012).
Diplacus clevelandii	Cleveland's bush monkeyflower	None/None/4.2	None/List D	Chaparral, cismontane woodland, lower montane coniferous forest; gabbroic, often in disturbed areas, openings, rocky/perennial rhizomatous herb/Apr–July/1,475–6,560	Low potential to occur. Cleveland's bush monkeyflower occurs west of Pine Valley, California (SDNHM 2012).
Ditaxis serrata var. *californica*	California ditaxis	None/None/3.2	None/List C	Sonoran Desert scrub/perennial herb/Mar–Dec/95–3,280	Not expected to occur. California ditaxis occurs in Anza Borrego Desert State Park (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Downingia concolor var. *brevior*	Cuyamaca Lake downingia	None/SE/1B.1	Covered/List A	Meadows and seeps (vernally mesic), vernal pools/annual herb/May–July/4,525–4,920	Not expected to occur. Cuyamaca Lake downingia occurs north of Cuyamca Rancho State Park (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya alainae	Banner dudleya	None/None/3.2	None/List C	Chaparral, lower montane coniferous forest, Sonoran Desert scrub; rocky/ perennial herb/ Apr–July/2,425–3,935	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018). Records in San Diego County are near Julian (CCH 2019).

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Dudleya attenuata ssp. *attenuata*	Orcutt's dudleya	None/None/2B.1	None/List B	Coastal bluff scrub, chaparral, coastal scrub; rocky or gravelly/perennial herb/May–July/5–165	Not expected to occur. Orcutt's dudleya occurs near the border in Border Field State Park right next to the ocean (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1	None/List A	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; rocky, often clay or serpentinite/ perennial herb/Apr–June/15–1,475	Not expected to occur. Blochman's dudleya occurs near the ocean (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya brevifolia	short-leaved dudleya	None/SE/1B.1	None/List A	Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/95–820	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya multicaulis	many-stemmed dudleya	None/None/1B.2	None/List A	Chaparral, coastal scrub, valley and foothill grassland; often clay/perennial herb/Apr–July/45–2,590	Not expected to occur. Many stemmed dudleya occurs near San Clemente, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya variegata	variegated dudleya	None/None/1B.2	None/List A	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/Apr–June/5–1,905	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Dudleya viscida	sticky dudleya	None/None/1B.2	None/List A	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/May–June/30–1,805	Not expected to occur. Sticky dudleya occurs near Oceanside, California, and Camp Pendleton, California (SDNHM 2012).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Ericameria cuneata var. *macrocephala*	Laguna Mountains goldenbush	None/None/1B.3	Covered/List A	Chaparral (granitic)/perennial shrub/Sep–Dec/3,920–6,070	Low potential to occur. Laguna Mountains goldenbush occurs west of Boulder Oaks and Mount Laguna (SDNHM 2012).
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1	Covered/List B	Chaparral, coastal scrub; mesic/perennial evergreen shrub/(July)Sep–Nov/95–1,970	Not expected to occur. Palmer's goldenbush occurs west of Alpine, California. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Eriogonum evanidum	vanishing wild buckwheat	None/None/1B.1	Covered/List A	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland; sandy or gravelly/annual herb/July–Oct/3,605–7,300	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018). Records from San Diego County are north of Pine Valley (CCH 2019).
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1	None/List A	Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual / perennial herb/Apr–June/65–2,035	Not expected to occur. San Diego button celery generally occurs west of Alpine, California (SDNHM 2012).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Eryngium pendletonense	Pendleton button-celery	None/None/1B.1	None/List A	Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernally mesic/perennial herb/Apr–June(July)/45–360	Not expected to occur. Pendleton button celery only occurs on Camp Pendleton (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Erythranthe diffusa	Palomar monkeyflower	None/None/4.3	Covered/List D	Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4,000–6,005	Low potential to occur. Palomar monkeyflower occurs west of Mount Laguna (SDNHM 2012).
Eucnide rupestris	annual rock-nettle	None/None/2B.2	None/List B	Sonoran Desert scrub/annual herb/Dec–Apr/1,640–1,970	Not expected to occur. Annual rock nettle occurs in the desert region and just south of Anza Borrego Desert State Park (SDNHM 2012). The site is outside of the species' known elevation range.

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Euphorbia abramsiana	Abrams' spurge	None/None/2B.2	None/None	Mojavean Desert scrub, Sonoran Desert scrub; sandy/annual herb/(Aug)Sep–Nov/-5–4,300	Low potential to occur. This species is occurs far north of the biological study area in the Anza-Borrego Desert State Park area in San Diego County (SDNHM 2012).
Euphorbia arizonica	Arizona spurge	None/None/2B.3	None/List B	Sonoran Desert scrub (sandy)/perennial herb/Mar–Apr/160–985	Not expected to occur. Arizona spurge occurs west of Borrego Springs (SDNHM 2012). The site is outside of the species' known elevation range.
Euphorbia misera	cliff spurge	None/None/2B.2	None/List B	Coastal bluff scrub, coastal scrub, Mojavean Desert scrub; rocky/perennial shrub/Dec–Aug(Oct)/30–1,640	Not expected to occur. Cliff spurge occurs near the coast and in the Otay area (SDNHM 2012).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Euphorbia platysperma	flat-seeded spurge	None/None/1B.2	None/List A	Desert dunes, Sonoran Desert scrub (sandy)/annual herb/Feb–Sep/210–330	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Euphorbia revoluta	revolute spurge	None/None/4.3	None/List D	Mojavean Desert scrub (rocky)/annual herb/Aug–Sep/3,590–10,170	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1	None/List B	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/5–1,475	Not expected to occur. San Diego barrel cactus occurs west of El Cajon, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Frankenia palmeri	Palmer's frankenia	None/None/2B.1	None/List B	Coastal dunes, marshes and swamps (coastal salt), playas/perennial herb/May–July/0–35	Not expected to occur. Palmer's frankenia occurs west of I-5 along the coast in marshes (SDNHM 2012). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Fremontodendron mexicanum	Mexican flannelbush	FE/SR/1B.1	None/List A	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentinite/perennial evergreen shrub/Mar–June/30–2,350	Not expected to occur. Mexican flannelbush occurs generally near the Otay area (SDNHM 2012). The site is outside of the species' known elevation range.
Fritillaria biflora	Chocolate lily	None/None/None	None/List D	Coastal scrub, chaparral, valley and foothill grassland; sometimes clay, cobbly loam/perennial herb/Feb–June/1,030–3,379	Low potential to occur. Chocolate lily occurs west of Descanso, California (SDNHM 2012). Chocolate lily does not occur in the Campo/Boulevard area (SDNHM 2012).
Funastrum utahense	Utah vine milkweed	None/None/4.2	None/List D	Mojavean Desert scrub, Sonoran Desert scrub; sandy or gravelly/perennial herb/(Mar)Apr–June(Sep–Oct)/325–4,710	Not expected to occur. Utah vine milkweed occurs far east and northeast of Jacumba, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Galium angustifolium ssp. *borregoense*	Borrego bedstraw	None/SR/1B.3	Covered/List A	Sonoran Desert scrub (rocky)/perennial herb/Mar(May)/1,145–4,100	Low potential to occur. Borrego bedstraw occurs in Anza Borrego Desert State Park and near Borrego Springs, California (SDNHM 2012).
Galium angustifolium ssp. *jacinticum*	San Jacinto Mountains bedstraw	None/None/1B.3	None/List A	Lower montane coniferous forest/perennial herb/June–Aug/4,425–6,890	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable coniferous forest vegetation present.
Galium johnstonii	Johnston's bedstraw	None/None/4.3	None/List D	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, riparian woodland/ perennial herb/June–July/4,000–7,545	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018). This species is recorded at and north of Mt. Laguna (CCH 2019).

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Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1	None/List C	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1,475–2,295	Not expected to occur. Mission canyon bluecup is west of Pine Valley (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Grindelia hallii	San Diego gumplant	None/None/1B.2	Covered/List A	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/ perennial herb/May–Oct/605–5,725	Low potential to occur. San Diego gumplant occurs generally north of Pine Valley, California (SDNHM 2012).
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2	Covered/List D	Chaparral, coastal scrub, valley and foothill grassland; clay; open grassy areas within shrubland/annual herb/Mar–May/65–3,135	Not expected to occur. Palmer's grapplinghook occurs west of Pine Valley, California, and in the high desert near Jacumba, California (SDNHM 2012).
Hazardia orcuttii	Orcutt's hazardia	None/ST/1B.1	None/List A	Chaparral (maritime), coastal scrub; often clay/perennial evergreen shrub/Aug–Oct/260–280	Not expected to occur. Orcutt's hazardia occurs near Encinitas, California, and Rancho Santa Fe, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Herissantia crispa	curly herissantia	None/None/2B.3	Covered/List B	Sonoran Desert scrub/annual/perennial herb/(Apr)Aug–Sep/2,295–2,380	Not expected to occur. Curly herissantia occurs near Anza Borrego Desert State Park (SDNHM 2012).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Hesperocyparis stephensonii	Cuyamaca cypress	None/None/1B.1	Covered/List A	Closed-cone coniferous forest, chaparral, cismontane woodland, riparian forest; gabbroic/perennial evergreen tree/N.A./3,395–5,595	Low potential to occur. Cuyamaca cypress has a narrow distribution just west of Cuyamaca Rancho State Park (SDNHM 2012).

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Heterotheca sessiliflora ssp. *sanjacintensis*	Sessileflower false goldenaster	None/None/None	None/List D	Montane habitats; reported to be endemic to Mount Palomar and the San Jacinto Mountains (Reiser 2001)/perennial herb/July–Sep/2,200–7,218	Not expected to occur. This species is endemic to the Mount Palomar and the San Jacinto Mountains (Reiser 2001).
Heuchera brevistaminea	Laguna Mountains alumroot	None/None/1B.3	Covered/List A	Broadleafed upland forest, chaparral, cismontane woodland, riparian forest; rocky/perennial rhizomatous herb/Apr–July(Sep)/4,490–6,560	Not expected to occur. Laguna Mountains alumroot occurs north of Mount Laguna, California (SDNHM 2012). The site is outside of the species' known elevation range.
Heuchera rubescens var. *versicolor*	San Diego County alumroot	None/None/3.3	None/List B	Chaparral, lower montane coniferous forest; rocky/perennial rhizomatous herb/May–June/4,920–13,125	Not expected to occur. San Diego county alumroot occurs north of Mount Laguna, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/195–3,610	Not expected to occur. Graceful tarplant occurs west of Alpine, California, and north of Ramona, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Hordeum intercedens	vernal barley	None/None/3.2	None/List C	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/ annual herb/Mar–June/15–3,280	Not expected to occur. No suitable saline habitats present. This species occurs west of Potrero (CCH 2019).
Horkelia cuneata var. *puberula*	mesa horkelia	None/None/1B.1	None/List A	Chaparral (maritime), cismontane woodland, coastal scrub; sandy or gravelly/perennial herb/Feb–July(Sep)/225–2,655	Not expected to occur. Mesa horkelia occurs north of Oceanside, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Horkelia truncata	Ramona horkelia	None/None/1B.3	Covered/List A	Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1,310–4,265	Not expected to occur. Ramona horkelia occurs west of Pine Valley, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Horsfordia newberryi	Newberry's velvet-mallow	None/None/4.3	None/List D	Sonoran Desert scrub (rocky)/perennial shrub/ Feb,Apr,Nov,Dec/5–2,625	Not expected to occur. The site is outside of the species' known elevation range.
Hosackia crassifolia var. *otayensis*	Otay Mountain lotus	None/None/1B.1	None/List A	Chaparral (metavolcanic, often in disturbed areas)/perennial herb/May–Aug/1,245–3,295	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Hulsea californica	San Diego sunflower	None/None/1B.3	Covered/List A	Chaparral, lower montane coniferous forest, upper montane coniferous forest; openings and burned areas/perennial herb/Apr–June/3,000–9,565	Low potential to occur. There is suitable chaparral habitat for this species, but this species is known from north of Morena Village (SDNHM 2012).
Hulsea mexicana	Mexican hulsea	None/None/2B.3	Covered/List B	Chaparral (volcanic, often on burns or disturbed areas)/ annual/ perennial herb/Apr–June/3,935–3,935	Low potential to occur. This species is recorded from Jacumba and Mt. Laguna and not the Campo area (CCH 2019).
Hymenothrix wrightii	Wright's hymenothrix	None/None/4.3	None/List D	Cismontane woodland, lower montane coniferous forest, valley and foothill grassland/perennial herb/June–Oct/4,590–5,085	Not expected to occur. Wright's hymenothrix occurs north of Pine Valley, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ipomopsis tenuifolia	slender-leaved ipomopsis	None/None/2B.3	None/List B	Chaparral, pinyon and juniper woodland, Sonoran Desert scrub; gravelly or rocky/perennial herb/Mar–May/325–3,935	Low potential to occur. Slender-leaved ipomospsis generally occurs east of Boulevard, California, in the high desert region of Jacumba, California (SDNHM 2012).

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Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2	None/List A	Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/30–445	Not expected to occur. Decumbent goldenbush occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range.
Iva hayesiana	San Diego marsh-elder	None/None/2B.2	None/List B	Marshes and swamps, playas/perennial herb/Apr–Oct/30–1,640	Not expected to occur. San Diego marsh-elder occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Johnstonella costata	ribbed cryptantha	None/None/4.3	Covered/List D	Desert dunes, Mojavean Desert scrub, Sonoran Desert scrub; sandy/annual herb/Feb–May/-195–1,640	Not expected to occur. Ribbed cryptantha occurs in the desert region (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Johnstonella holoptera	winged cryptantha	None/None/4.3	None/List D	Mojavean Desert scrub, Sonoran Desert scrub/annual herb/Mar–Apr/325–5,545	Not expected to occur. Winged cryptantha occurs in the desert region (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Juglans californica	Southern California black walnut	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, riparian woodland; alluvial/perennial deciduous tree/Mar–Aug/160–2,955	Not expected to occur. Southern California black walnut occurs north of Julian, California, and west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2	None/List D	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/ (Mar)May–June/5–2,955	Not expected to occur. The site is outside of the species' known elevation range. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Juncus cooperi	Cooper's rush	None/None/4.3	None/List D	Meadows and seeps (mesic, alkaline or saline)/perennial herb/Apr–May(Aug)/-850–5,805	Not expected to occur. Cooper's rush is located just north of Jacumba Hot Springs, California (SDNHM 2012). No suitable alkaline or saline meadows and seeps present. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	None/List A	Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/0–4,005	Not expected to occur. Coulter's goldfields occur west of El Cajon, California (SDNHM 2012). No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2	None/List A	Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1,705–4,495	Not expected to occur. Heart-leaved pitcher sage occurs just northeast of Poway, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3	None/List A	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/1,000–3,295	Not expected to occur. Gander's pitcher sage occurs west of Dulzura, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lepidium flavum var. *felipense*	Blair Valley pepper-grass	None/None/1B.2	Covered/List A	Pinyon and juniper woodland, Sonoran Desert scrub; sandy/annual herb/Mar–May/1,490–2,755	Not expected to occur. Blair Valley pepper-grass occurs in Anza Borrego Desert State Park (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3	None/List A	Chaparral, coastal scrub/annual herb/Jan–July/0–2,905	Not expected to occur. Robinson's pepper-grass occurs west of Pine Valley, California (SDNHM 2012). The site is outside of the species' known elevation range.
Leptosiphon floribundus ssp. *hallii*	Santa Rosa Mountains leptosiphon	None/None/1B.3	None/List A	Pinyon and juniper woodland, Sonoran Desert scrub/perennial herb/May–July(Nov)/3,280–6,560	Not expected to occur. Santa Rosa Mountains leptosiphon occurs just west of Borrego Springs, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Leptosyne maritima	sea dahlia	None/None/2B.2	None/List B	Coastal bluff scrub, coastal scrub/perennial herb/Mar–May/15–490	Not expected to occur. Sea dahlia occurs west of I-5 along the coast (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Lessingia glandulifera var. *tomentosa*	Warner Springs lessingia	None/None/1B.1	Covered/List A	Chaparral (sandy)/annual herb/Aug,Oct/2,850–4,005	Not expected to occur. Warner Springs lessingia occurs north of Santa Ysabel, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lewisia brachycalyx	short-sepaled lewisia	None/None/2B.2	Covered/List B	Lower montane coniferous forest, meadows and seeps; mesic/perennial herb/(Feb)Apr–June(July)/4,490–7,545	Not expected to occur. Short-sepaled lewisia occurs north of Cuyamaca Rancho State Park (SDNHM 2012). The site is outside of the species' known elevation range. Also does not occur in vicinity (CDFW 2018; CNPS 2018).
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; openings/perennial bulbiferous herb/Mar–July(Aug)/95–5,905	Not expected to occur. Ocellated Humboldt lily occurs north and west of Pine Valley, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lilium parryi	lemon lily	None/None/1B.2	Covered/List A	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest; mesic/perennial bulbiferous herb/July–Aug/4,000–9,005	Not expected to occur. Lemon lily occurs near Palomar Mountain (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Limnanthes alba ssp. *parishii*	Parish's meadowfoam	None/SE/1B.2	Covered/List A	Lower montane coniferous forest, meadows and seeps, vernal pools; vernally mesic/annual herb/Apr–June/1,965–6,560	Low potential to occur. Parish's meadowfoam occurs north of Mount Laguna, California (SDNHM 2012).
Linanthus maculatus ssp. *emaculatus*	Jacumba Mountains linanthus	None/None/1B.1	None/None	Desert dunes (edges), Sonoran Desert scrub; sandy or course, opaque-white, decomposed granite soils of washes and on flats near wash margins/annual	Not expected to occur. Jacumba Mountains occurs just west of Ocotillo, California, in the desert region (SDNHM 2012). The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
				herb/(Mar)Apr(May)/ 1,295–1,920	
Linanthus orcuttii	Orcutt's linanthus	None/None/1B.3	Covered/List A	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; openings/annual herb/May–June/3,000–7,035	Low potential to occur. Orcutt's linanthus occurs north of Boulder Oaks, California (SDNHM 2012).
Lupinus albifrons var. *medius*	Mountain Springs bush lupine	None/None/1B.3	Covered/List A	Pinyon and juniper woodland, Sonoran Desert scrub/perennial shrub/Mar–May/1,390–4,495	Low potential to occur. This species occurs east of the project near Jacumba Hot Spring north to Mt. Laguna (CCH 2019).
Lycium californicum	California box-thorn	None/None/4.2	None/List D	Coastal bluff scrub, coastal scrub/perennial shrub/(Dec)Mar, June, July, Aug/15–490	Not expected to occur. California box-thorn occurs west of Rancho San Diego (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Lycium parishii	Parish's desert-thorn	None/None/2B.3	Covered/List B	Coastal scrub, Sonoran Desert scrub/perennial shrub/Mar–Apr/440–3,280	Not expected to occur. Parish's desert-thorn occurs near Agua Caliente County Park (SDNHM 2012).
Lyrocarpa coulteri	Palmer's lyrepod	None/None/4.3	None/List D	Sonoran Desert scrub (gravelly or rocky)/perennial herb/Dec–Apr/390–2,610	Not expected to occur. Palmer's lyrepod occurs north of Mount Laguna in Anza Borrego Desert State Park (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Malacothamnus aboriginum	Indian Valley bush-mallow	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland; rocky, granitic, often in burned areas/perennial deciduous shrub/Apr–Oct/490–5,575	Not expected to occur. Indian Valley bush-mallow occurs north of Pine Valley, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Malperia tenuis	brown turbans	None/None/2B.3	None/List B	Sonoran Desert scrub (sandy, gravelly)/annual herb/(Feb)Mar–Apr/45–1,100	Not expected to occur. Brown turbans occurs in the desert region (SDNHM 2012). The site is outside of the species' known elevation range.

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Matelea parvifolia	spearleaf	None/None/2B.3	None/List B	Mojavean Desert scrub, Sonoran Desert scrub; rocky/perennial herb/Mar–May(July)/ 1,440–3,595	Low potential to occur. Spearleaf occurs in Anza Borrego Desert State Park (SDNHM 2012).
Mentzelia hirsutissima	hairy stickleaf	None/None/2B.3	None/List B	Sonoran Desert scrub (rocky)/annual herb/Mar–May/0–2,295	Not expected to occur. The site is outside of the species' known elevation range.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2	None/List D	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/45–3,510	Not expected to occur. Small-flowered microseris occurs west of Alpine, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Mimulus latidens	vernal pool monkeyflower	None/None/None	None/List A	Vernal pools/annual herb/Apr–June/900–2,953	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vernal pool habitat present.
Mirabilis tenuiloba	slender-lobed four o'clock	None/None/4.3	None/List D	Sonoran Desert scrub/perennial herb/(Feb)Mar–May/750–3,595	Low potential to occur. Slender-lobed four o'clock occurs in the high desert and desert region (SDNHM 2012).
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2	Covered/List A	Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/980–5,165	Not expected to occur. Felt-leaved monardella occurs west of Pine Valley, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Monardella macrantha ssp. *hallii*	Hall's monardella	None/None/1B.3	None/List A	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland/perennial rhizomatous herb/June–Oct/2,395–7,200	Not expected to occur. Hall's monardella occurs on Palomar Mountain (SDNHM 2012).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Monardella nana ssp. *leptosiphon*	San Felipe monardella	None/None/1B.2	Covered/None	Chaparral, lower montane coniferous forest/perennial rhizomatous herb/June–July/3,935–6,085	Low potential to occur. San Felipe monardella is known from north of Julian in San Diego County (SDNHM 2012).
Monardella stoneana	Jennifer's monardella	None/None/1B.2	None/List A	Closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub; usually rocky intermittent streambeds/perennial herb/June–Sep/30–2,590	Not expected to occur. Jennifer's monardella occurs west of Barrett Junction (SDNHM 2012).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Monardella viminea	willowy monardella	FE/SE/1B.1	None/List A	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/160–740	Not expected to occur. Willowy monardella occurs west of U.S. Route 67 (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Mucronea californica	California spineflower	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/Mar–July(Aug)/0–4,595	Not expected to occur. California spineflower occurs west of I-5 on the coast (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1	None/List C	Valley and foothill grassland, vernal pools (alkaline)/annual herb/Mar–June/65–2,100	Not expected to occur. Little mousetail occurs in the Otay area (SDNHM 2012). Found in deeper portions of vernal pools (Resier 2001). Vernal pools were not present on site. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nama stenocarpa	mud nama	None/None/2B.2	None/List B	Marshes and swamps (lake margins, riverbanks)/annual/ perennial herb/Jan–July/15–1,640	Not expected to occur. Mud nama has been documented near Lake Henshaw (SDNHM 2012). Found on muddy embankments of lakes (Reiser 2001). The site is outside of the species' known elevation

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
					range and there is no suitable lake margin habitat present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nasturtium gambelii	Gambel's water cress	FE/ST/1B.1	None/List A	Marshes and swamps (freshwater or brackish)/perennial rhizomatous herb/Apr–Oct/15–1,085	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Navarretia fossalis	spreading navarretia	FT/None/1B.1	None/List A	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/95–2,150	Not expected to occur. Spreading navarretia occurs west of Ramona, California (SDNHM 2012). It is found in vernal pools and vernal swales (Reiser 2001). No vernal pools were present on site. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Navarretia peninsularis	Baja navarretia	None/None/1B.2	Covered/List A	Chaparral (openings), lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland; mesic/annual herb/(May)June–Aug/4,920–7,545	Not expected to occur. Baja navarretia occurs in Cuyamaca Rancho State Park (SDNHM 2012).The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.1	None/List A	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/annual herb/Apr–July/5–3,970	Not expected to occur. Prostrate vernal pool navarretia occurs west of I-15 (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2	None/List A	Coastal dunes/annual herb/Apr–Sep/0–330	Not expected to occur. Coast woolly-heads occur west of I-15 (SDNHM).The site is outside of the species' known elevation range and there is no suitable coastal dunes present. Also does not occur in vicinity (CDFW 2018; CNPS 2018).

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Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2	None/List B	Coastal dunes, desert dunes, Sonoran Desert scrub/annual herb/(Mar)Apr–May/-160–1,310	Not expected to occur. Slender cottonheads prefer well-developed dune soils (Reiser 2001). Slender cottonheads occur west of I-15 (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nolina cismontana	chaparral nolina	None/None/1B.2	Covered/List A	Chaparral, coastal scrub; sandstone or gabbro/ perennial evergreen shrub/(Mar)May–July/455–4,185	Not expected to occur. Chaparral nolina occurs near Alpine, California, Palomar Mountain, and Cleveland National Forest within the central range of San Diego County (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Nolina interrata	Dehesa nolina	None/SE/1B.1	None/List A	Chaparral (gabbroic, metavolcanic, or serpentinite)/perennial herb/June–July/605–2,805	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ophioglossum californicum	California adder's-tongue	None/None/4.2	None/List D	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec)Jan–June/195–1,720	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Opuntia wigginsii	Wiggins' cholla	None/None/3.3	None/List C	Sonoran Desert scrub (sandy)/perennial stem succulent/Mar/95–2,905	Not expected to occur. The site is outside of the species' known elevation range.
Orcuttia californica	California Orcutt grass	FE/SE/1B.1	None/List A	Vernal pools/annual herb/Apr–Aug/45–2,165	Not expected to occur. California Orcutt grass occurs within vernal pools (Reiser 2001). No vernal pools were present on site. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ornithostaphylos oppositifolia	Baja California birdbush	None/SE/2B.1	None/List B	Chaparral/perennial evergreen shrub/Jan–Apr/180–2,625	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2	None/List D	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/5–1,000	Not expected to occur. Short-lobed broomrape occurs west of I-5 (SDNHM 2012). The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Packera ganderi	Gander's ragwort	None/SR/1B.2	Covered/List A	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1,310–3,935	Not expected to occur. Gander's ragwort occurs west of Pine Valley (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pectocarya peninsularis	Baja California bur-comb	None/None/None	None/List D	Sonoran Desert scrub; washes, roadsides, clearings, sandy, silty, or gravelly soil/annual herb/Feb–Apr/300–984	Not expected to occur. Baja California bur-comb occurs in the desert region (SDNHM 2012). The site is outside of the species' known elevation range.
Penstemon clevelandii var. *connatus*	San Jacinto beardtongue	None/None/4.3	None/List D	Chaparral, pinyon and juniper woodland, Sonoran Desert scrub; rocky/perennial herb/Mar–May/1,310–4,920	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Penstemon thurberi	Thurber's beardtongue	None/None/4.2	None/List D	Chaparral, Joshua tree woodland, pinyon and juniper woodland, Sonoran Desert scrub/perennial herb/May–July/1,640–4,005	Not expected to occur. Thurber's beardtongue occurs just west of Anza Borrego Desert State Park (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2	None/List D	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/ annual herb/Mar–July/260–6,070	Not expected to occur. Golden-rayed pentachaeta occurs west of Mount Laguna, California (SDNHM 2012). Does not occur in vicinity (CDFW 2018; CNPS 2018).
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	None/None/4.2	None/List D	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland,	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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				vernal pools; vernally mesic/perennial herb/June–Oct/0–2,000	
Phacelia stellaris	Brand's star phacelia	None/None/1B.1	None/List A	Coastal dunes, coastal scrub/annual herb/Mar–June/0–1,310	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pholistoma auritum var. *arizonicum*	Arizona pholistoma	None/None/2B.3	Covered/None	Mojavean Desert scrub /annual herb/Mar/900–2,740	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Pickeringia montana var. tomentosa	woolly chaparral-pea	None/None/4.3	None/None	Chaparral; Gabbroic, granitic, clay/evergreen shrub/May–Aug/0–5575	Low potential to occur. Records are all west of Potrero or north of Moreno Village (SDNHM 2012).
Pilostyles thurberi	Thurber's pilostyles	None/None/4.3	None/List D	Sonoran Desert scrub/perennial herb (parasitic)/Dec–Apr/0–1,200	Not expected to occur. The site is outside of the species' known elevation range.
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2	None/List A	Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/N.A./95–525	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Piperia cooperi	chaparral rein orchid	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, valley and foothill grassland/ perennial herb/Mar–June/45–5,200	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Piperia leptopetala	narrow-petaled rein orchid	None/None/4.3	Covered/List D	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest/ perennial herb/May–July/1,245–7,300	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Plagiobryoides vinosula	wine-colored tufa moss	None/None/4.2	None/None	Cismontane woodland, Mojavean desert scrub,	Low potential to occur. This species is restricted to calcareous springs (NatureServe 2018).

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				Meadows and seeps, Pinyon and juniper woodland, Riparian woodland; usually granitic rock or granitic soil along seeps and streams, sometimes clay/moss/ N.A./95–5690	
Poa atropurpurea	San Bernardino blue grass	FE/None/1B.2	Covered/List A	Meadows and seeps (mesic)/perennial rhizomatous herb/(Apr)May–July(Aug)/4,460–8,055	Not expected to occur. The site is outside of the species' known elevation range. This species is known from north of Boulder Oaks (CCH 2019).
Pogogyne abramsii	San Diego mesa mint	FE/SE/1B.1	None/List A	Vernal pools/annual herb/Mar–July/295–655	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vernal pool habitat present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Pogogyne nudiuscula	Otay Mesa mint	FE/SE/1B.1	None/List A	Vernal pools/annual herb/May–July/295–820	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Polygala cornuta var. *fishiae*	Fish's milkwort	None/None/4.3	None/List D	Chaparral, cismontane woodland, riparian woodland/perennial deciduous shrub/ May–Aug/ 325–3,280	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Proboscidea althaeifolia	desert unicorn-plant	None/None/4.3	None/List D	Sonoran Desert scrub; gently sloping sandy flats and washes, sometimes roadsides/perennial herb/ May–Sep(Oct)/275–3,280	Not expected to occur. Desert unicorn plant occurs northeast of Mount Laguna, California, in the desert region (SDNHM 2012).
Quercus cedrosensis	Cedros Island oak	None/None/2B.2	None/List B	Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/835–3,150	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Quercus dumosa	Nuttall's scrub oak	None/None/1B.1	None/List A	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/ perennial evergreen shrub/ Feb–Apr(May–Aug)/45–1,310	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Quercus engelmannii	Engelmann oak	None/None/4.2	Covered/List D	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/160–4,265	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rhus aromatica var. *simplicifolia*	single-leaved skunkbrush	None/None/2B.3	None/List B	Pinyon and juniper woodland; usually granitic/perennial deciduous shrub/Mar–Apr/4,000–4,495	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Ribes canthariforme	Moreno currant	None/None/1B.3	Covered/List A	Chaparral, riparian scrub/perennial deciduous shrub/Feb–Apr/1,115–3,935	Not expected to occur. Moreno currant occurs west of Pine Valley, California (SDNHM 2012).
Ribes viburnifolium	Santa Catalina Island currant	None/None/1B.2	None/List A	Chaparral, cismontane woodland/perennial evergreen shrub/Feb–Apr/95–1,150	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Romneya coulteri	Coulter's matilija poppy	None/None/4.2	None/List D	Chaparral, coastal scrub; often in burns/perennial rhizomatous herb/Mar–July(Aug)/65–3,935	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rosa minutifolia	small-leaved rose	None/SE/2B.1	None/List B	Chaparral, coastal scrub/perennial deciduous shrub/Jan–June/490–525	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Rubus glaucifolius var. *ganderi*	Cuyamaca raspberry	None/None/3.1	Covered/List A	Lower montane coniferous forest (gabbroic)/perennial evergreen shrub/May–June/3,935–5,495	Not expected to occur. No suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Rupertia rigida	Parish's rupertia	None/None/4.3	Covered/List D	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, valley and foothill grassland/perennial herb/June–Aug/2,295–8,200	Low potential to occur. Parish's rupertia occurs north of Pine Valley, California (SDNHM 2012).
Saltugilia caruifolia	caraway-leaved woodland-gilia	None/None/4.3	None/List D	Chaparral, lower montane coniferous forest; sandy, openings/annual herb/May–Aug/2,755–7,545	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Salvia eremostachya	desert sage	None/None/4.3	None/List D	Sonoran Desert scrub (rocky or gravelly)/ perennial evergreen shrub/Mar–May/2,295–4,595	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Salvia munzii	Munz's sage	None/None/2B.2	None/List B	Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/375–3,495	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	None/None/1B.2	None/List A	Chaparral, cismontane woodland, lower montane coniferous forest; mesic/perennial rhizomatous herb/June–Aug/1,390–6,560	Low potential to occur. Southern mountains skullcap occurs north of Boulder Oaks and collections are most concentrated in the Palomar Mountain area (SDNHM 2012).
Selaginella asprella	bluish spike-moss	None/None/4.3	None/List D	Cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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				coniferous forest, upper montane coniferous forest; granitic, rocky/perennial rhizomatous herb/July/5,245–8,860	
Selaginella cinerascens	ashy spike-moss	None/None/4.1	None/List D	Chaparral, coastal scrub/perennial rhizomatous herb/N.A./65–2,100	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Selaginella eremophila	desert spike-moss	None/None/2B.2	None/List B	Chaparral, Sonoran Desert scrub (gravelly or rocky)/perennial rhizomatous herb/(May)June(July)/ 655–4,250	Low potential to occur. Desert spike-moss occurs in the high desert region and desert region east of the site (SDNHM 2012).
Senecio aphanactis	chaparral ragwort	None/None/2B.2	None/List B	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr(May)/45–2,625	Not expected to occur. Chaparral ragwort occurs west of Alpine, California (SDNHM 2012). The site is outside of the species' known elevation range.
Senna covesii	Coves' cassia	None/None/2B.2	None/List B	Sonoran Desert scrub; dry, sandy desert washes and slopes/perennial herb/Mar–June(Aug)/ 735–4,250	Not expected to occur. No suitable desert wash and slope habitat. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Sibaropsis hammittii	Hammitt's clay-cress	None/None/1B.2	Covered/List A	Chaparral (openings), valley and foothill grassland; clay/annual herb/Mar–Apr/2,360–3,495	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Spermolepis echinata	bristly scaleseed	None/None/None	None/List B	Sonoran Desert scrub (sandy or rocky)/annual herb/Mar–Apr/1,500–4,921	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).

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Stemodia durantifolia	purple stemodia	None/None/2B.1	None/List B	Sonoran Desert scrub (often mesic, sandy)/perennial herb/(Jan)Apr, June, Aug, Sep, Oct, Dec/590–985	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Stipa diegoensis	San Diego County needle grass	None/None/4.2	None/List D	Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/30–2,625	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3	None/List D	Chaparral, lower montane coniferous forest/perennial herb/May–Aug/2,195–8,200	Low potential to occur. Laguna Mountains jewelflower occurs north of Mount Laguna, California (SDNHM 2012).
Stylocline citroleum	oil neststraw	None/None/1B.1	None/List A	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–Apr/160–1,310	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Suaeda esteroa	estuary seablite	None/None/1B.2	None/List A	Marshes and swamps (coastal salt)/perennial herb/(May)July–Oct(Jan)/0–15	Not expected to occur. Esturary seablite occurs west of Rancho San Diego, California, and is generally close to the coastline (SDNHM 2012). The site is outside of the species' known elevation range and there is no suitable coastal salt marsh habitat present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Suaeda taxifolia	woolly seablite	None/None/4.2	None/List D	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/ perennial evergreen shrub/Jan–Dec/0–165	Not expected to occur. Woolly seablite occurs on the coastline and is generally found west of I-5 (SDNHM 2012). The site is outside of the species' known elevation range and there is no suitable vegetation present. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Symphyotrichum defoliatum	San Bernardino aster	None/None/1B.2	None/None	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley	Low potential to occur. Limited suitable mesic habitat on site. San Bernardino aster generally occurs north and east of the project site. The nearest occurrences of this species are from Morena Village and north of Tierra Del Sol (CCH 2019).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
				and foothill grassland (vernally mesic); near ditches, streams, springs/perennial rhizomatous herb/July–Nov/5–6,695	
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2	None/List A	Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/540–3,280	Low potential to occur. The species occurs north of Jamul (SDNHM 2012).
Thermopsis californica var. *semota*	velvety false lupine	None/None/1B.2	Covered/List A	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial rhizomatous herb/Mar–June/3,280–6,135	Low potential to occur. Velvety false lupine occurs generally north of Pine Valley (SDNHM 2012).
Thysanocarpus rigidus	rigid fringepod	None/None/1B.2	None/None	Pinyon and juniper woodland; dry rocky slopes/annual herb/Feb–May/1,965–7,220	Not expected to occur. No suitable pinyon and juniper woodland vegetation present.
Viguiera laciniata	San Diego County viguiera	None/None/4.3	None/List D	Chaparral, coastal scrub/perennial shrub/Feb–June(Aug)/195–2,460	Not expected to occur. The site is outside of the species' known elevation range.
Viguiera purisimae	La Purisima viguiera	None/None/2B.3	None/List A	Coastal bluff scrub, chaparral/shrub/Apr–Sep/1,195–1,395	Not expected to occur. The site is outside of the species' known elevation range. Does not occur in vicinity (CDFW 2018; CNPS 2018).
Viola purpurea ssp. *aurea*	golden violet	None/None/2B.2	None/List B	Great Basin scrub, pinyon and juniper woodland; sandy/perennial herb/Apr–June/3,280–8,200	Not expected to occur. Does not occur in vicinity (CDFW 2018; CNPS 2018).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	East County MSCP/ County of San Diego	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Xanthisma junceum	rush-like bristleweed	None/None/4.3	Covered/List D	Chaparral, coastal scrub/perennial herb/May–Jan/785–3,280	Low potential to occur. Campo is just east of the species' general range (SDNHM 2012).
Xylorhiza orcuttii	Orcutt's woody-aster	None/None/1B.2	Covered/List A	Sonoran Desert scrub/perennial herb/Mar–Apr/0–1,200	Not expected to occur. Orcutt's woody-aster occurs in Anza Borrego Desert State Park and in the desert all the way to the Salton Sea (SDNHM 2012). The site is outside of the species' known elevation range.

Status Legend

Federal

FC: Federal candidate for listing
FE: Federally listed as endangered
FT: Federally listed as threatened

State

SE: State-listed as endangered
SR: State rare
ST: State-listed as threatened

CRPR: California Rare Plant Rank

1B: Plants rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California but common elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which more information is needed—A Review List
4: Plants of limited distribution—A Watch List

Threat Rank

.1: Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)
.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

County of San Diego Multiple Species Conservation Program (MSCP), East County Plan

Covered: Covered under the plan
None: Not covered

County of San Diego MSCP Listed Species

List A: Plants rare, threatened, or endangered in California or elsewhere
List B: Plants rare, threatened, or endangered in California but more common elsewhere
List C: Plants that may be quite rare, but more information is needed to determine rarity status
List D: Plants of limited distribution and are uncommon, but not presently rare or endangered

None = not listed
N.A. = not applicable

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ATTACHMENT H-1

Special-Status Wildlife Species Detected or Potentially Occurring in the Boulder Brush Corridor

APPENDIX H-1
Special-Status Wildlife Species Detected or Potentially Occurring in the Boulder Brush Corridor

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
			Amphibians		
Spea hammondii	western spadefoot	None/SSC/Covered	Group 2	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Moderate potential to occur onsite; in general there is a lack of persistent water sources but there could be isolated ponding in drainages, Tule Creek, and road ruts during and after rain events. This species was recorded south of the project site in the Campo Indian Reservation (AECOM 2012).
			Birds		
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/None	Group 1	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Observed. This species was observed nesting on site.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL/Covered	Group 1	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Moderate potential to occur on site. This species has potential to occur on site in the coastal scrub and chaparral habitats. It was not documented during extensive wildlife surveys; however, it has been recorded in the vicinity (Unitt 2004).
Aquila chrysaetos (nesting and wintering)	golden eagle	BCC/FP, WL/Covered	Group 1	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	A golden eagle was observed flying over the project site during wildlife surveys in 2018. There are no suitable large trees and cliffs present for nesting; therefore, this species is not expected to nest on site. Eagle surveys have been conducted on site in 2017 and 2018 and no golden eagles were observed, indicating that this species does not occur in the project site frequently. Data received from USFWS shows the closest nest approximately 5.5 miles east of the Project site in the Carrizo Gorge area of the Jacumba Mountains; it was noted as active in February 2012 (Dietsch 2018).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Artemisiospiza belli belli	Bell's sage sparrow	BCC/WL/Covered	Group 1	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Observed. This species nests in coastal scrub and chaparral and is known to occur in the vicinity (Unitt 2004; AECOM 2012).
Asio otus (nesting)	long-eared owl	None/SSC/Covered	Group 1	Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats	Moderate potential to occur. This species is not widespread in San Diego County, but it was documented in the vicinity of the project site (AECOM 2012). There is potential for this species to winter in the oak woodland habitat on site.
Buteo lineatus	red-shouldered hawk	None/None/None	Group 1	Nests in dense riparian areas, especially with adjacent edges, swamps, marshes, and wet meadows for hunting	Observed. There is suitable nesting and foraging habitat on site.
Cathartes aura	turkey vulture	None/None/Covered	Group 1	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting, and resting throughout most of California during breeding season	Observed foraging throughout the site.
Circus hudsonius (nesting)	northern harrier	None/SSC/Covered	Group 1	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Observed adjacent to the site. While there is some potential nesting habitat in the meadow habitat along Tule Creek, this species has not been documented nesting in the region (Unitt 2004).
Eremophila alpestris actia	California horned lark	None/WL/Covered	Group 2	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	Observed. There is suitable nesting and foraging habitat on site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Falco columbarius (wintering)	merlin	None/WL/None	Group 2	Forages in semi-open areas, including coastline, grassland, agriculture, savanna, woodland, lakes, and wetlands	One merlin was observed flying over the site in October 2018. This winter visitor to San Diego County is not well-documented in southeast San Diego. Because only one merlin has been observed during the winter months (October – December), it likely is not regularly using the site for wintering. However, it could use the site occasionally for foraging.
Lanius ludovicianus (nesting)	loggerhead shrike	BCC/SSC/Covered	Group 1	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Observed adjacent to the site. There is suitable nesting and foraging habitat on site.
Oreoryx pictus	mountain quail	None/None/None	Group 2	Dense montane chaparral and brushy areas within coniferous forest, pinyon–juniper–yucca associations; uses shrubs, brush stands, and trees on steep slopes for cover	Moderate potential to occur. This species nests in chaparral and is known to occur in the vicinity (Unitt 2004; AECOM 2012).
Setophaga petechia (nesting)	yellow warbler	BCC/SSC/Covered	Group 2	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Observed. There is marginal riparian habitat on site. It was observed on the Campo Indian Reservation (AECOM 2012) and is known to nest in the vicinity (Unitt 2004).
Sialia mexicana	western bluebird	None/None/None	Group 2	Nests in old-growth red fir, mixed-conifer, and lodegpole pine habitats near wet meadows used for foraging	Observed. There is nesting and foraging habitat on site.
Tyto alba	barn owl	None/None/None	Group 2	Open habitats including grassland, chaparral, riparian, and other wetlands.	Observed. There is suitable nesting and foraging habitat on site.
Vireo vicinior (nesting)	gray vireo	BCC/SSC/Covered	Group 1	Nests and forages in pinyon–juniper woodland, oak, and chamise and redshank chaparral	Moderate potential to occur in the oak woodland and chaparral habitats on site. This species is known to occur south of the Laguna Mountains and north of I-8 (Unitt 2004).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Invertebrates					
Apodemia virgulti peninsularis	Peninsular metalmark	None/None/None	Group 1	Found in mountain meadows usually near the edges of woods, Great Basin sagebrush, and montane buckwheat scrub. Host plant is *Eriogonum wrightii* ssp. *membranaceum* (Faulkner and Klein 2012).	Potentially observed. Behr's metalmark was observed frequently on site which is very similar in appearance to *A.v. peninsularis*. The host plant, *Eriogonum wrightii* ssp. *membranaceum* occurs on site and therefore, this species could have been observed during the surveys. No specimens were collected to confirm its presence on site. This species is found in the San Jacinto, Palomar, and Laguna Mountains (Faulkner and Klein 2012; Butterflies of North America 2018) where its host plant occurs.
Euphydryas editha quino	Quino checkerspot butterfly	FE/None/Covered	Group 1	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, Antirrhinum coulterianum, and Plantago patagonica (Silverado Occurrence Complex)	Moderate potential to occur. Focused surveys in 2011 and 2018 were negative. Quino have been documented in the vicinity in past years (USFWS 2018; CDFW 2018; AECOM 2012). Specifically, Quino were documented in the Manzanita Reservation, less than one mile west of the project site in 2010, and Quino were documented on the Campo Indian Reservation south of I-8 in 2005, 2009, and 2010 (USFWS 2018). Based on past observations of this species in the region, there is potential for this species to occur within suitable habitat on the project site.
Mammals					
Antrozous pallidus	pallid bat	None/SSC/Covered	Group 2	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Moderate potential to roost on site. There is suitable shrubland, dry habitat, and rocky outcrops present and this species was detected during the 2011/2012 acoustical bat surveys on site as well as on the Campo Indian Reservation (AECOM 2012).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC/None	Group 2	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Moderate potential to occur. There is suitable scrub, chaparral, and open habitat present. The closest CNDDB occurrence overlaps the southern portion of the project area (CDFW 2018).
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC/Covered	Group 2	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Moderate potential to roost on site. There is some riparian forest present onsite. This species was detected during the 2011/2012 acoustical bat surveys on site as well as on the Campo Indian Reservation (AECOM 2012).
Eumops perotis californicus	western mastiff bat	None/SSC/None	Group 2	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Moderate potential to roost on site. There are some large trees and snags on site and this species was detected during the 2011/2012 acoustical bat surveys on site as well as on the Campo Indian Reservation (AECOM 2012).
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC/Covered	Group 2	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Observed regularly during surveys.
Macrotus californicus	Californian leaf-nosed bat	None/SSC/None	Group 2	Riparian woodlands, desert wash, desert scrub; roosts in mines and caves, occasionally buildings	Moderate potential to roost on site. There are no mines, caves, or buildings present, but some riparian woodland habitat. Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Myotis ciliolabrum	western small-footed myotis	None/None/None	Group 2	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	High potential to roost on site. There are no caves, crevices, mines, or buildings present; however, there are oak and riparian woodlands on site. This species was detected during the 2011/2012 acoustical bat surveys on site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Myotis evotis	long-eared myotis	None/None/None	Group 2	Brush, woodland, and forest habitats from sea level to 9,000 feet above MSL; prefers coniferous habitats; forages along habitat edges, in open habitats, and over water; roosts in buildings, crevices, under bark, and snags; uses caves as night roosts	Moderate potential to roost on site in tree snags or bark; there are no buildings or crevices present. Potential to forage on site. It was not detected during the 2011/2012 acoustical bat surveys, but it was recorded on the Campo Indian Reservation (AECOM 2012).
Myotis thysanodes	fringed myotis	None/None/None	Group 2	Drier woodlands (oak, pinyon–juniper, and ponderosa pine), desert scrub, mesic coniferous forest, grassland, and sage–grass steppe; sea level to 9,350 ft; roosts in buildings, mines, rocks, cliff faces, bridges, and large, decadent trees and snags	Moderate potential to roost on site. There are some large trees and snags on site and this species was detected on the Campo Indian Reservation (AECOM 2012). Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on site.
Neotoma lepida intermedia[1]	San Diego desert woodrat	None/SSC/None	Group 2	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Observed. Woodrat middens were observed on site. There is suitable desert scrub, chaparral, and rocky areas present.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC/None	Group 2	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Moderate potential to roost on site in the larger rock outcrops. This species was detected during the 2011/2012 acoustical bat surveys as well as on the Campo Indian Reservation (AECOM 2012).
Nyctinomops macrotis	big free-tailed bat	None/SSC/None	Group 2	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Moderate potential to roost on site. There are some rocky outcrops on site and this species was detected during the 2011/2012 acoustical bat surveys on site at a very low number of minutes (0.6%) as well as on the Campo Indian Reservation (AECOM 2012).

[1] The San Diego Mammal Atlas (Tremor et al. 2017) describes this species as *N. bryanti*, a distinct species from *N. lepida*, with *N. bryanti* occurring in Baja and SoCal west of Imperial and Coachella Valley. However, wildlife agencies still refer to this species as *N. l. intermedia* and therefore, this name is used for this report.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Odocoileus hemionus	mule deer	None/None/None	Group 2	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	Observed. Both individual deer and their sign was observed throughout the project site.
Onychomys torridus ramona	southern grasshopper mouse	None/SSC/Covered	Group 2	Grassland and sparse coastal scrub	Moderate potential to occur. There is suitable scrub vegetation present. The closest CNDDB occurrences overlap the project area in the northern and southern portions (CDFW 2018).
Perognathus longimembris internationalis	Jacumba pocket mouse	None/SSC/Covered	Group 2	Desert scrub and sparse sage scrub in areas with fine sandy soils	Moderate potential to occur. This species is recorded in McCain Valley, just east of the project site. There is suitable habitat in the scrub habitat on site.
Puma concolor	cougar	None/None/None	Group 2	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	High potential to occur. This species was detected on Campo Indian Reservation (AECOM 2012). There is suitable habitat throughout the project site.
Taxidea taxus	American badger	None/SSC/Covered	Group 2	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Moderate to high potential to occur. There is suitable open scrub vegetation and friable soils present.
			Reptiles		
Anniella stebbinsi	southern California legless lizard	None/SSC/None	Group 2	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Moderate potential to occur. There are no records of this species in the vicinity (CDFW 2018); however, this cryptic species could occur in some habitat along Tule Creek.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Arizona elegans occidentalis	California glossy snake	None/SSC/None	None	Commonly occurs in desert regions throughout southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas.	Moderate potential to occur. There is suitable sandy areas with scattered brush present. The closest known CNDDB occurrence is 1.3 miles east of the project area along McCain Valley Road (CDFW 2018).
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC/None	Group 2	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Observed. Suitable habitat throughout the project site.
Coleonyx variegatus abbotti	San Diego banded gecko	None/SSC/None	Group 1	Rocky areas within coastal scrub and chaparral	High potential to occur in the scrub and chaparral habitats where rocky outcrops are present.
Coluber fuliginosus	Baja California coachwhip	None/SSC/None	None	In California restricted to southern San Diego County, where it is known from grassland and coastal sage scrub. Open areas in grassland and coastal sage scrub.	Moderate potential to occur. This species' range is southern San Diego County and into Baja California (Nafis 2018; Stebbins 2003).
Crotalus ruber	red diamondback rattlesnake	None/SSC/Covered	Group 2	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Moderate potential to occur. There is suitable scrub and chaparral vegetation present.
Diadophis punctatus similis	San Diego ringneck snake	None/None/None	Group 2	Moist habitats including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed-conifer forest, and woodland habitats	High potential to occur in moister chaparral and woodland habitats on site.
Gambelia copeii	Cope's leopard lizard	None/SSC/Covered	None	Coastal sage scrub, chaparral, oak woodland; prefers flat areas with open space and avoids densely vegetated areas	Moderate potential to occur. This species' range is southern San Diego County and into Baja California (Nafis 2018; Stebbins 2003).
Lichanura trivirgata	rosy boa	None/None/None	Group 2	Desert and chaparral habitats with rocky soils in coastal canyons and hillsides, desert canyons, washes, and mountains	High potential to occur in the chaparral and woodland habitats on site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC/None	Group 2	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Observed several times during surveys.
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL/Covered	Group 2	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	High potential to occur on site. The project site is within this species' range (Nafis 2018) and there is suitable habitat on site.
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC/Covered	Group 2	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	High potential to occur on site. The project site is within this species' range (Nafis 2018) and there is suitable habitat on site.
Sceloporus graciosus vandenburgianus	southern sagebrush lizard	None/None/None	Group 2	Montane chaparral, hardwood and conifer forest, juniper, coastal scrub	Moderate potential to occur on site. This species is found in montane habitats, but the project site is within this species' range (Nafis 2018) and there is suitable habitat on site in open chaparral and scrub habitats where rocky areas are present.

Federal
BCC = Bird of Conservation Concern
FE = Federally Endangered
State
FP = Fully Protected
SSC = State Species of Concern
WL = Watch List

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ATTACHMENT H-2

Special-Status Wildlife Species Detected or Potentially Occurring in the Boulder Brush Corridor

APPENDIX H-2
Special-Status Wildlife Species Detected or Potentially Occurring in the Campo Corridor

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
			Amphibians		
Spea hammondii	western spadefoot	None/SSC/Covered	Group 2	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	This species was recorded on site (AECOM 2012).
			Birds		
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/None	Group 1	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Observed. This species was observed and likely nests on site.
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/PSE, SSC/Covered	Group 1	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	Moderate potential to nest on site. There is some suitable freshwater emergent wetland present and this species was recorded onsite (AECOM 2012). The closest CNDDB occurrence is 4.0 miles southeast of the project area east of Tule Lake.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL/Covered	Group 1	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Moderate potential to occur on site. This species has potential to occur on site in the coastal scrub and chaparral habitats. It was not documented during extensive wildlife surveys; however, it has been recorded in the vicinity (Unitt 2004).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Aquila chrysaetos (nesting and wintering)	golden eagle	BCC/FP, WL/Covered	Group 1	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Eight golden eagles have been observed to date flying over the study area during the 2018 eagle point count surveys. As of December 2018, eagles were observed on site for approximately 20 of 20,000 minutes during the 2018 avian point-count surveys, indicating that this species does not occur in the project site frequently. There are no suitable large trees and cliffs present for nesting; therefore, this species is not expected to nest on site. Data received from USFWS shows the closest nest approximately 7 miles east of the Project site in the Carrizo Gorge area of the Jacumba Mountains; it was noted as active in February 2012 (Dietsch 2018).
Artemisiospiza belli belli	Bell's sage sparrow	BCC/WL/Covered	Group 1	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	High potential to occur. This species nests in coastal scrub and chaparral and is known to occur in the vicinity (Unitt 2004; AECOM 2012).
Asio otus (nesting)	long-eared owl	None/SSC/Covered	Group 1	Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats	This species was documented nesting on site in 2011 (AECOM 2012). There is potential for this species to nest or winter in the oak woodland habitat on site.
Buteo lineatus	red-shouldered hawk	None/None/None	Group 1	Nests in dense riparian areas, especially with adjacent edges, swamps, marshes, and wet meadows for hunting	Observed. There is suitable nesting and foraging habitat on site.
Cathartes aura	turkey vulture	None/None/Covered	Group 1	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting, and resting throughout most of California during breeding season	Observed foraging throughout the site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Circus hudsonius (nesting)	northern harrier	None/SSC/Covered	Group 1	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Observed on site. While there is some potential nesting habitat in the meadow habitats onsite, this species has not been documented nesting in the region (Unitt 2004).
Eremophila alpestris actia	California horned lark	None/WL/Covered	Group 2	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	Observed. There is suitable nesting and foraging habitat on site.
Falco columbarius (wintering)	merlin	None/WL/None	Group 2	Forages in semi-open areas, including coastline, grassland, agriculture, savanna, woodland, lakes, and wetlands	Merlin was observed on site. This winter visitor to San Diego County is not well-documented in southeast San Diego. It could use the site occasionally for foraging.
Falco mexicanus (nesting)	prairie falcon	BCC/WL/None	Group 1	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	High potential to nest on site in the grassland and emergent as well as forage on site in the grassland and open scrub habitats. This species has been observed on site (CDFW 2018; AECOM 2012).
Lanius ludovicianus (nesting)	loggerhead shrike	BCC/SSC/Covered	Group 1	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Observed on site. There is suitable nesting and foraging habitat on site.
Oreoryx pictus	mountain quail	None/None/None	Group 2	Dense montane chaparral and brushy areas within coniferous forest, pinyon–juniper–yucca associations; uses shrubs, brush stands, and trees on steep slopes for cover	Moderate potential to occur. This species nests in chaparral and is known to occur in the vicinity (Unitt 2004; AECOM 2012).
Setophaga petechia (nesting)	yellow warbler	BCC/SSC/Covered	Group 2	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Observed. There is some suitable riparian and oak woodland habitat on site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Sialia mexicana	western bluebird	None/None/None	Group 2	Nests in old-growth red fir, mixed-conifer, and lodegpole pine habitats near wet meadows used for foraging	Observed. There is nesting and foraging habitat on site.
Tyto alba	barn owl	None/None/None	Group 2	Open habitats including grassland, chaparral, riparian, and other wetlands.	Observed. There is suitable nesting and foraging habitat on site.
Vireo vicinior (nesting)	gray vireo	BCC/SSC/Covered	Group 1	Nests and forages in pinyon–juniper woodland, oak, and chamise and redshank chaparral	Moderate potential to occur in the oak woodland and chaparral habitats on site. This species is known to occur south of the Laguna Mountains and north of I-8 (Unitt 2004).
Invertebrates					
Apodemia virgulti peninsularis	Peninsular metalmark	None/None/None	Group 1	Found in mountain meadows usually near the edges of woods, Great Basin sagebrush, and montane buckwheat scrub. Host plant is *Eriogonum wrightii* ssp. *membranaceum* (Faulkner and Klein 2012).	Potentially observed. Behr's metalmark was observed frequently on site which is very similar in appearance to *A.v. peninsularis*. The host plant, *Eriogonum wrightii* ssp. *membranaceum* occurs on site and therefore, this species could have been observed during the surveys. No specimens were collected to confirm its presence on site. This species is found in the San Jacinto, Palomar, and Laguna Mountains (Faulkner and Klein 2012; Butterflies of North America 2018) where its host plant occurs.
Euphydryas editha quino	Quino checkerspot butterfly	FE/None/Covered	Group 1	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, Antirrhinum coulterianum, and Plantago patagonica (Silverado Occurrence Complex)	Twenty-seven Quino observations were documented during 2010 USFWS protocol surveys. Approximately 3,803.1 acres (1,539.1 hectares) of suitable habitat was recorded. Observations were concentrated in the southern portion of the 2010 BSA (AECOM 2012). In 2018, updated surveys were conducted for the study Area. No occurrences of Quino were recorded during the focused surveys.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Mammals					
Antrozous pallidus	pallid bat	None/SSC/Covered	Group 2	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Moderate potential to roost on site. There is suitable shrubland, dry habitat, and rocky outcrops present and this species was detected on site (AECOM 2012).
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC/None	Group 2	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Moderate potential to occur. There is suitable scrub, chaparral, and open habitat present. The closest CNDDB occurrence overlaps the southern portion of the project area (CDFW 2018).
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC/Covered	Group 2	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Moderate potential to roost on site. There is some riparian forest present onsite. This species was detected on site (AECOM 2012).
Eumops perotis californicus	western mastiff bat	None/SSC/None	Group 2	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Moderate potential to roost on site. There are some large trees and snags on site and this species was detected during onsite (AECOM 2012).
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC/Covered	Group 2	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Observed regularly during surveys.
Macrotus californicus	Californian leaf-nosed bat	None/SSC/None	Group 2	Riparian woodlands, desert wash, desert scrub; roosts in mines and caves, occasionally buildings	Moderate potential to roost on site. There are no mines, caves, or buildings present, but some riparian woodland habitat. Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Myotis ciliolabrum	western small-footed myotis	None/None/None	Group 2	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	High potential to roost on site. There are no caves, crevices, mines, or buildings present; however, there are oak and riparian woodlands on site. This species was detected during the 2011/2012 acoustical bat surveys on site.
Myotis evotis	long-eared myotis	None/None/None	Group 2	Brush, woodland, and forest habitats from sea level to 9,000 feet above MSL; prefers coniferous habitats; forages along habitat edges, in open habitats, and over water; roosts in buildings, crevices, under bark, and snags; uses caves as night roosts	Moderate potential to roost on site in tree snags or bark; there are no buildings or crevices present. It was detected on site (AECOM 2012).
Myotis thysanodes	fringed myotis	None/None/None	Group 2	Drier woodlands (oak, pinyon–juniper, and ponderosa pine), desert scrub, mesic coniferous forest, grassland, and sage–grass steppe; sea level to 9,350 ft; roosts in buildings, mines, rocks, cliff faces, bridges, and large, decadent trees and snags	Moderate potential to roost on site. There are some large trees and snags on site and this species was detected onsite (AECOM 2012).
Neotoma lepida intermedia[1]	San Diego desert woodrat	None/SSC/None	Group 2	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Likely occurs. Woodrat middens were observed on site. There is suitable desert scrub, chaparral, and rocky areas present.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC/None	Group 2	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Moderate potential to roost on site in the larger rock outcrops. This species was detected on site (AECOM 2012).

[1] The San Diego Mammal Atlas (Tremor et al. 2017) describes this species as *N. bryanti*, a distinct species from *N. lepida*, with *N. bryanti* occurring in Baja and SoCal west of Imperial and Coachella Valley. However, wildlife agencies still refer to this species as *N. l. intermedia* and therefore, this name is used for this report.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Nyctinomops macrotis	big free-tailed bat	None/SSC/None	Group 2	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Moderate potential to roost on site. There are some rocky outcrops on site and this species was detected onsite (AECOM 2012).
Odocoileus hemionus	mule deer	None/None/None	Group 2	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	Observed. Both individual deer and their sign was observed throughout the project site.
Onychomys torridus ramona	southern grasshopper mouse	None/SSC/Covered	Group 2	Grassland and sparse coastal scrub	Moderate potential to occur. There is suitable scrub vegetation present. The closest CNDDB occurrences overlap the project area in the northern and southern portions (CDFW 2018).
Perognathus longimembris internationalis	Jacumba pocket mouse	None/SSC/Covered	Group 2	Desert scrub and sparse sage scrub in areas with fine sandy soils	Moderate potential to occur. This species is recorded in McCain Valley, east of the project site. There is suitable habitat in the scrub habitat on site.
Puma concolor	cougar	None/None/None	Group 2	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	This species was detected onsite (AECOM 2012). There is suitable habitat throughout the project site.
Taxidea taxus	American badger	None/SSC/Covered	Group 2	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Moderate to high potential to occur. There is suitable open scrub vegetation and friable soils present.
			Reptiles		
Anniella stebbinsi	southern California legless lizard	None/SSC/None	Group 2	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Moderate potential to occur. There are no records of this species in the vicinity (CDFW 2018); however, this cryptic species could occur in some habitat in the understory of the oak woodland and riparian habitat where leaf litter is present.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC/None	Group 2	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Observed. Suitable habitat throughout the project site.
Coleonyx variegatus abbotti	San Diego banded gecko	None/SSC/None	Group 1	Rocky areas within coastal scrub and chaparral	High potential to occur in the scrub and chaparral habitats where rocky outcrops are present.
Crotalus ruber	red diamondback rattlesnake	None/SSC/Covered	Group 2	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Moderate potential to occur. There is suitable scrub and chaparral vegetation present.
Diadophis punctatus similis	San Diego ringneck snake	None/None/None	Group 2	Moist habitats including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed-conifer forest, and woodland habitats	High potential to occur in moister chaparral and woodland habitats on site.
Gambelia copeii	Cope's leopard lizard	None/SSC/Covered	None	Coastal sage scrub, chaparral, oak woodland; prefers flat areas with open space and avoids densely vegetated areas	Moderate potential to occur. This species' range is southern San Diego County and into Baja California (Nafis 2018; Stebbins 2003).
Lichanura trivirgata	rosy boa	None/None/None	Group 2	Desert and chaparral habitats with rocky soils in coastal canyons and hillsides, desert canyons, washes, and mountains	High potential to occur in the chaparral and woodland habitats on site.
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC/None	Group 2	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Observed several times during surveys.
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL/Covered	Group 2	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	High potential to occur on site. The project site is within this species' range (Nafis 2018) and there is suitable habitat on site.
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC/Covered	Group 2	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	High potential to occur on site. The project site is within this species' range (Nafis 2018) and there is suitable habitat on site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Sceloporus graciosus vandenburgianus	southern sagebrush lizard	None/None/None	Group 2	Montane chaparral, hardwood and conifer forest, juniper, coastal scrub	Moderate potential to occur on site. This species is found in montane habitats, but the project site is within this species' range (Nafis 2018) and there is suitable habitat on site in open chaparral and scrub habitats where rocky areas are present.

Federal
BCC = Bird of Conservation Concern
FE = Federally Endangered
State
FP = Fully Protected
SSC = State Species of Concern
WL = Watch List

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ATTACHMENT I-1

Special-Status Wildlife Species with Low Potential or Not Expected to Occur in the Boulder Brush Corridor

ATTACHMENT I-1
Special-Status Wildlife Species with Low Potential or Not Expected to Occur in the Project Study Area

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
			Amphibians		
Anaxyrus californicus	arroyo toad	FE/SSC/Covered	Group 1	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Low potential to occur. There are no suitable perennial washes or stream channels for breeding present. The closest recorded occurrences are located in Cottonwood Creek, approximately 6.5 miles east of the project site (USFWS 2018). Surveys conducted for the Campo Indian Reservation south of the project site in 2010 were negative (AECOM 2010b).
Anaxyrus punctatus	red-spotted toad	None/None/Covered	None	Rocky desert streams, oases, pools in rocky arroyos, cattle tanks, grassland, oak woodland, scrubland, river floodplains	Not expected to occur. Does not occur in vicinity (CDFW 2018); outside of range.
Batrachoseps major aridus	desert slender salamander	FE/SE/Covered	Group 1	Barren, palm oasis, desert wash, and desert scrub	Not expected to occur. Does not occur in vicinity; the closest records are from the Santa Rosa Mountains to the north (CDFW 2018).
Ensatina klauberi	large-blotched salamander	None/WL/Covered	Group 1	Moist and shaded evergreen and deciduous woodlands	Low potential to occur. This species occurs in the Peninsular Ranges; however, there is no suitable moist evergreen and deciduous woodlands present.
Rana draytonii	California red-legged frog	FT/SSC/Covered	Group 1	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Not expected to occur. This species has not been documented in the vicinity (CDFW 2018) and there is no suitable habitat on site; outside of currently known range.
Rana muscosa	mountain yellow-legged frog	FE/SE, WL/Covered	Group 1	Lakes, ponds, meadow streams, isolated pools, and open riverbanks; rocky canyons in narrow canyons and in chaparral	Not expected to occur. Does not occur in vicinity; the closest record is in Doane Valley in Palomar Mountain in 1975 (CDFW 2018).
*Taricha torosa (*Monterey Co. south only*)*	California newt	None/SSC/Covered	Group 2	Wet forests, oak forests, chaparral, and rolling grassland	Not expected to occur. Does not occur in vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
			Birds		
Accipiter striatus (nesting)	sharp-shinned hawk	None/WL/None	Group 1	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	Sharp-shinned hawks do not nest in San Diego County (Unitt 2004). This species could occur during winter or migration and forage on site, and has been observed in the area (AECOM 2012).
Aechmophorus occidentalis	western grebe	None/None/None	Group 1	Winters in sheltered bays or estuaries on the coast and on large freshwater lakes, rarely on rivers.	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/PSE, SSC/Covered	Group 1	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	Low potential to occur. There is no suitable freshwater emergent wetland present. The closest CNDDB occurrence is 4.0 miles southeast of the project area east of Tule Lake; however, this species was recorded on the Campo Indian Reservation (AECOM 2012).
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC/Covered	Group 1	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Anas strepera	gadwall	None/None/None	Group 2	Interior valleys, wetlands, ponds, and streams. Feeds and rests in freshwater lacustrine and emergent habitats, and to a lesser extent, estuarine and saline emergent habitats, and nests in nearby herbaceous and cropland habitats. Common in Central Valley and less common in Coast Range foothills of central and Southern California. Locally common in Imperial Valley and along Colorado River, October to March. Breeds on northeastern plateau and east of Sierra Nevada.	Low potential to occur due to lack of suitable habitat on site.
Anser caerulescens	snow goose	None/None/None	Group 2	Fresh emergent wetlands, adjacent lacustrine waters, and nearby wet croplands, pastures, meadows, and grasslands. Occasionally found in saline (brackish) emergent wetlands and	Not expected to occur. Snow geese are a rare winter visitor to San Diego County and have not been recorded in the vicinity (Unitt 2004; CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				adjacent estuarine waters. Found primarily in Central Valley; less common southward in the interior but abundant in Imperial Valley and locally common along Colorado River. Found regularly only in Southern California along Coast Ranges and immediate coast from mid-November to February.	
Antigone canadensis canadensis (wintering)	lesser sandhill crane	None/SSC/None	Group 2	Winter foraging in cropland, grazed and mowed grassland, pasture, alfalfa fields, and shallow wetlands; roosting sites are flooded and support several inches of water	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Antigone canadensis tabida (nesting & wintering)	greater sandhill crane	None/ST, FP/None	Group 2	Winter foraging in cropland, grazed and mowed grassland, pasture, alfalfa fields, and shallow wetlands; roosting sites are flooded and support several inches of water	Not expected to occur. This species is rarely documented in San Diego County (Unitt 2004).
Ardea herodias (nesting colony)	great blue heron	None/None/None	Group 2	Nests in large trees or snags; forages in wetlands, water bodies, watercourses, and opportunistically in uplands, including pasture and croplands	Not expected to nest on site; the project site is located outside of known breeding areas in San Diego County (Unitt 2004); however, it could occur on site during winter.
Asio flammeus (nesting)	short-eared owl	None/SSC/None	Group 2	Grassland, prairies, dunes, meadows, irrigated lands, and saline and freshwater emergent wetlands	Not expected to occur. Short-eared owl primarily a winter visitor in San Diego County and has not been recorded in the vicinity (Unitt 2004).
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC/Covered	Group 1	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. Burrowing owl are not known to occur between the Jacumba Valley and Otay areas in San Diego County.
Aythya americana (nesting)	redhead	None/SSC/None	Group 2	Nests in deep (>3 ft) permanent or semi-permanent wetlands of at least 1 acre; 75% open water; emergent tules, Scirpus spp., and Typha spp. 3 feet in height; winters in coastal estuaries and large,	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				deep ponds, lakes, and reservoirs of the interior	
Branta canadensis	Canada goose	None/None/None	Group 2	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Bucephala islandica (nesting)	Barrow's goldeneye	None/SSC/None	Group 2	Winters in lagoons, bays, and estuaries in coastal areas, and riverine waters, lakes, and reservoirs in the interior	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Buteo regalis (wintering)	ferruginous hawk	BCC/WL/Covered	Group 1	Winters and forages in open, dry country, grasslands, open fields, agriculture	Low potential to occur during the winter. Ferruginous hawk is an uncommon winter visitor in San Diego County, but it has been observed in the Campo Indian Reservation area (AECOM 2012) and towards Jacumba Valley (Unitt 2004). There is suitable foraging habitat in the grassland and open scrub habitat.
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST/Covered	Group 1	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Low potential to occur. Swainson's hawks are uncommon in San Diego County; however, two Swainson's hawks were detected during bird count surveys on the Campo Indian Reservation (AECOM 2012). Due to lack of additional observations in the area (Unitt 2004; CDFW 2018), this species has low potential to occur on site during migration.
Butorides virescens	green heron	None/None/None	Group 2	Nests and roosts in valley foothill and desert riparian habitats; feeds in fresh emergent wetland, lacustrine, slow-moving riverine habitats. Resident in foothills and lowlands throughout California; common August to March in southern coastal ranges, in summer along the Colorado River, and found all year at the Salton Sea.	Low potential to occur. There is no suitable habitat on site and this species has not been confirmed nesting in the vicinity (Unitt 2004).
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	BCC/SSC/ Covered	Group 1	Southern cactus scrub patches	Not expected to occur. San Diego cactus wren rely on cactus thickets at elevations below 1,500 feet and the species in the Boulevard area are considered the

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
(San Diego & Orange Counties only)					desert subspecies (Unitt 2004). The site is above this elevation range and there are no large patches of *Cylindropuntia* spp. or *Opuntia* spp. on site; however, there are scattered cacti throughout the scrub and chaparral. *C. brunneicapillus* (desert subspecies) was documented on site and on the Campo Indian Reservation (AECOM 2012).
Cerorhinca monocerata (nesting colony)	rhinoceros auklet	None/WL/None	Group 2	Marine pelagic and subtidal habitats	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Charadrius alexandrinus nivosus (*nesting)	western snowy plover	FT, BCC/SSC/None	Group 1	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Charadrius montanus (wintering)	mountain plover	BCC/SSC/None	Group 2	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Chlidonias niger (*nesting colony)	black tern	None/SSC/None	Group 2	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT, BCC/SE/Covered	Group 1	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there are no dense wide riparian areas on site.
Contopus cooperi (nesting)	olive-sided flycatcher	BCC/SSC/None	Group 2	Nests in mixed-conifer, montane hardwood–conifer, Douglas-fir, redwood, red fir, and lodgepole pine habitats; usually close to water	Not expected to nest on site due to lack of suitable nesting habitat. This species was observed on the Campo Indian Reservation (AECOM 2012).
Cypseloides niger (nesting)	black swift	BCC/SSC/None	Group 2	Nests in moist crevices, caves, and cliffs behind or adjacent to waterfalls in deep canyons; forages over a wide range of habitats	Not expected to nest on site due to lack of suitable nesting habitat. This species was observed on the Campo Indian Reservation (AECOM 2012).

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Dendrocygna bicolor (nesting)	fulvous whistling-duck	None/SSC/None	Group 2	Nests in freshwater wetlands, especially shallow impoundments managed for rice production and temporarily flooded grasslands; also nests in pastures, haylands, and small grain fields adjacent to rice fields	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Egretta rufescens	reddish egret	None/None/None	Group 2	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Elanus leucurus (nesting)	white-tailed kite	None/FP/Covered	Group 1	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Low potential to occur. This species is more commonly found along the coastal slope in San Diego County, and has not been documented nesting in the vicinity (Unitt 2004; CDFW 2018). This species may occur during migration or winter, and was observed in McCain Valley in the winter (Unitt 2004) and documented on the Campo Indian Reservation (AECOM 2012).
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE/Covered	Group 1	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. Does not occur in vicinity (CDFW 2018), and focused protocol surveys conducted in 2018 for this species were negative. There is marginal riparian habitat for this species, which prefers habitat along perennial streams and rivers.
Falco mexicanus (nesting)	prairie falcon	BCC/WL/None	Group 1	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Low potential to nest on site due to lack of nesting habitat. Prairie falcon could forage on site in the grassland and open scrub habitats. This species has been observed in the vicinity (CDFW 2018; AECOM 2012).
Falco peregrinus anatum (nesting)	American peregrine falcon	FDL, BCC/SDL, FP/None	Group 1	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Not expected to occur. Peregrine falcons are not known to occur in the vicinity; they are documented along the coast in San Diego County (CDFW 2018; Unitt 2004).
Fratercula cirrhata	tufted puffin	None/SSC/None	Group 2	Nests on offshore rocks and islands free	Not expected to occur. Does not occur in vicinity

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
(nesting colony)				of mammalian predators, either in earthen burrows or crevices on steep rocky slopes	(CDFW 2018).
Gavia immer (nesting)	common loon	None/SSC/None	Group 2	Extirpated as a breeder from California; winters in coastal waters such as bays, channels, coves, and inlets; also winters inland at large, deep lakes and reservoirs	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Gymnogyps californianus	California condor	FE/SE, FP/None	None	Forages on open terrain, foothill grassland, and oak savannah; nests in cavities on steep rocks or burned hallos of old-growth conifers and giant sequoia trees	Low potential to forage and not expected to nest. There is potential foraging habitat, however no suitable nesting vegetation present.
Haliaeetus leucocephalus (nesting & wintering)	bald eagle	FDL, BCC/SE, FP/None	Group 1	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Not expected to occur. Wintering individuals have been recorded west of the project site (Unitt 2004); however, there are no bodies of water to support foraging habitat for this species.
Icteria virens (nesting)	yellow-breasted chat	None/SSC/None	Group 1	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Low potential to occur. There is no suitable dense riparian woodland present and there are limited records of this species in southeastern San Diego County (Unitt 2004).
Ixobrychus exilis (nesting)	least bittern	BCC/SSC/Covered	Group 2	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Junco hyemalis caniceps (nesting)	gray-headed junco	None/WL/None	Group 2	Nests and forages in pine and juniper–pine forests	Not expected to occur. This species is not documented in vicinity (CDFW 2018; Unitt 2004). Gray-headed junco is rare along the coast and rare to uncommon in the mountains (Unitt 2004).
Larus californicus (nesting colony)	California gull	None/WL/None	Group 2	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during non-nesting period	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Laterallus jamaicensis coturniculus	California black rail	BCC/ST, FP/None	Group 2	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site. The last known nesting black rail in San Diego County was in 1954 (Unitt 2004).

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				Nevada foothill populations	
Leucophaeus atricilla (nesting colony)	laughing gull	None/WL/None	Group 2	Coastal saltmarsh, bays, and estuaries	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Melanerpes lewis (nesting)	Lewis's woodpecker	BCC/None/None	Group 1	Winters in open oak woodland and savanna; nests in open ponderosa pine forest and logged or burned pine forest	Lewis' woodpecker does not nest in San Diego County, but is a winter visitor (Unitt 2004). There is potential for this species to forage on site during the winter, although none have been observed during wildlife surveys.
Mycteria americana	wood stork	None/SSC/None	Group 2	Nests in freshwater and marine-estuarine forested habitats; forages in natural and artificial wetlands; roosts in trees, usually over water	Not expected to occur. This species is a very rare visitor to San Diego County (Unitt 2004); and the site does not support ponded water to support foraging.
*Myiarchus tyrannulus (*nesting)	brown-crested flycatcher	None/WL/Covered	None	Desert riparian habitat along Colorado River and other desert oases; riparian thickets, trees, snags, and shrubs used as perches; nests in woodpecker-excavated cavities	Low potential to nest on site. This species nests in riparian woodland habitat, and has only been documented nesting in San Diego County since 2000; it has not been recorded in the vicinity (CDFW 2018; Unitt 2004).
*Numenius americanus (*nesting)	long-billed curlew	BCC/WL/None	Group 2	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	Not expected to occur. Long-billed curlews are winter visitors in San Diego County, and the closest migration record is Lake Morena, southwest of the project site (Unitt 2004; CDFW 2018).
*Oceanodroma furcata (*nesting colony)	fork-tailed storm-petrel	None/SSC/None	Group 2	Offshore islands with restricted access and free of mammalian predators; nesting habitat varies across islands from natural crevices in talus slopes to earthen burrows dug by themselves or other species	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Oceanodroma homochroa (*nesting colony)	ashy storm-petrel	BCC/SSC/None	Group 2	Nests on rocky offshore islands on talus slopes, rock walls, sea caves, cliffs, and under piles of driftwood; they do not excavate their own nesting burrows	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Oceanodroma melania (*nesting	black storm-petrel	None/SSC/None	Group 2	Nests on small rocky islands or talus slopes of larger islands free of	Not expected to occur. Does not occur in vicinity (CDFW 2018).

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colony)				mammalian predators; occurs on land only to breed	
Oreothlypis luciae (nesting)	Lucy's warbler	BCC/SSC/ Covered	Group 1	Nests and forages in desert wash and desert riparian habitats, especially dominated by mesquite, but also in other shrubs and tamarisk	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004). Breeding has only been documented in the Borrego Valley (Unitt 2004).
Pandion haliaetus (nesting)	osprey	None/WL/None	Group 1	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Not expected to occur on site due to lack of suitable habitat (i.e., bodies of water). It has been documented as presumed migrants in the vicinity (Unitt 2004), and was recorded on the Campo Indian Reservation (AECOM 2012).
Passerculus sandwichensis beldingi	Belding's savannah sparrow	None/SE/None	Group 1	Nests and forages in coastal saltmarsh dominated by pickleweed (Salicornia spp.)	Not expected to nest on site. Does not occur in vicinity as nesting is documented only along the coast in San Diego County (CDFW 2018; Unitt 2004).
Passerculus sandwichensis rostratus (wintering)	large-billed savannah sparrow	None/SSC/None	Group 2	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	Low potential to occur in the marsh habitat in portions of Tule Creek. It is a rare winter visitor in San Diego County (Unitt 2004).
*Pelecanus erythrorhynchos (*nesting colony)	American white pelican	None/SSC/None	Group 2	Nests colonially on sandy, earthen, or rocky substrates on isolated islands in freshwater lakes; minimal disturbance from predators; access to foraging areas on inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Pelecanus occidentalis californicus (nesting colonies & communal roosts)	California brown pelican	FDL/SDL, FP/None	Group 2	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Phalacrocorax auritus (*nesting colony)	double-crested cormorant	None/WL/None	Group 2	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.

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				coastlines; winter habitat includes lakes, rivers, and coastal areas	
Piranga rubra (nesting)	summer tanager	None/SSC/ Covered	Group 2	Nests and forages in mature desert riparian habitats dominated by cottonwoods and willows	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Plegadis chihi (nesting colony)	white-faced ibis	None/WL/None	Group 1	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Polioptila californica californica	coastal California gnatcatcher	FT/SSC/Covered	Group 1	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Not expected to occur. Outside of range; this species has not been documented in San Diego at elevations higher than 2,400 feet (Unitt 2004).
Progne subis (nesting)	purple martin	None/SSC/ Covered	Group 1	Nests and forages in woodland habitats including riparian, coniferous, and valley foothill and montane woodlands; in the Sacramento region often nests in weep holes under elevated freeways	Not expected to occur. Its distribution in San Diego County is limited to the mountains and European starlings have taken over much of their nesting habitat (Unitt 2004).
*Pyrocephalus rubinus (*nesting)	vermilion flycatcher	None/SSC/ Covered	Group 1	Nests in riparian woodlands, riparian scrub, and freshwater marshes; typical desert riparian with cottonwood, willow, mesquite adjacent to irrigated fields, ditches, or pastures	Low potential to occur. Only a single male has been recorded in the vicinity (McCain Valley); no nesting has been documented in the area (Unitt 2004).
Rallus obsoletus levipes	Ridgway's rail	FE/SE, FP/None	Group 1	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not expected to occur. Does not occur in vicinity and there is no suitable habitat (CDFW 2018).
Riparia riparia (nesting)	bank swallow	None/ST/None	Group 1	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	No potential to nest on site due lack of nesting habitat and there are currently no known nesting colonies in San Diego County (Unitt 2004). This species was recorded on the Campo Indian Reservation (AECOM 2012) and has potential to

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					forage on site during migration.
Rynchops niger (nesting colony)	black skimmer	BCC/SSC/None	Group 1	Nests on barrier beaches, shell banks, spoil islands, and saltmarsh; forages over open water; roosts on sandy beaches and gravel bars	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Sternula antillarum browni (nesting colony)	California least tern	FE/SE, FP/None	Group 1	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Not expected to occur. Does not occur in vicinity and there is no suitable habitat (CDFW 2018).
Strix occidentalis occidentalis	California spotted owl	BCC/SSC/ Covered	Group 1	Nests and forages in dense, old-growth, multi-layered mixed-conifer, redwood, and Douglas-fir habitats	Not expected to occur. This species typically nests at elevations above 2,500 feet where oak woodlands are dusky-footed woodrats are common (Unitt 2004). The closest known breeding location is in the Laguna Mountains, approximately, 7 miles northwest of the project site (Unitt 2004).
Synthliboramphus scrippsi (nesting colony)	Scripps's murrelet	FC, BCC/ST/None	Group 2	Nests on steep sea slopes, canyons, and cliffs with sparse vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Thalasseus elegans (nesting colony)	elegant tern	None/WL/None	Group 1	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Toxostoma bendirei	Bendire's thrasher	BCC/SSC/None	Group 2	Nests and forages in desert succulent shrub and Joshua tree habitat in Mojave Desert; nests in yucca, cholla, and other thorny scrubs or small trees	Not expected to occur. Outside of range; this species is largely restricted to the Mojave Desert and records in San Diego County are limited (Unitt 2004).
Toxostoma crissale	Crissal thrasher	None/SSC/ Covered	Group 1	Nests and forages in desert riparian and desert wash; dense thickets of sagebrush and other shrubs such as mesquite, iron catclaw acacia, and arrowweed willow within juniper and pinyon–juniper woodlands	Not expected to occur. Does not occur in vicinity (CDFW 2018); this species occurs in the Borrego Valley (Unitt 2004).
Toxostoma lecontei	LeConte's thrasher	BCC/SSC/ Covered	Group 2	Nests and forages in desert wash, desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus	Not expected to occur. Does not occur in vicinity (CDFW 2018).

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*Vireo bellii pusillus (*nesting)	least Bell's vireo	FE/SE/Covered	Group 1	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Low potential to occur. There is no suitable dense riparian thickets along water present and focused protocol surveys conducted in 2018 for this species were negative. Surveys conducted for the Campo Indian Reservation south of the project site in 2010 were negative (AECOM 2010a).
*Xanthocephalus xanthocephalus (*nesting)	yellow-headed blackbird	None/SSC/ Covered	None	Nests in marshes with tall emergent vegetation, often along borders of lakes and ponds; forages in emergent wetlands, open areas, croplands, and muddy shores of lacustrine habitat	Not expected to occur. Does not occur in vicinity (CDFW 2018).
			Fishes		
Cyprinodon macularius	desert pupfish	FE/SE/None	Group 2	Desert springs, small streams, and marshes below 1,515 meters (5,000 feet) above mean sea level; tolerates high salinities, high water temperatures, and low dissolved-oxygen concentrations	Not expected to occur. There are no perennial water sources on the project site that could support this species.
Eucyclogobius newberryi	tidewater goby	FE/SSC/None	Group 1	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there are no perennial water sources on the project site that could support this species.
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	FE/SE, FP/None	Group 2	Slow-moving and backwater areas	Not expected to occur. There are no perennial water sources on the project site that could support this species, and it is not documented in the vicinity (CDFW 2018).
Gila orcuttii	arroyo chub	None/SSC/None	Group 1	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Oncorhynchus mykiss irideus	southern steelhead - southern California DPS	FE/None/None	Group 1	Clean, clear, cool, well-oxygenated streams; needs relatively deep pools in migration and gravelly substrate to spawn	Not expected to occur. There are no perennial water sources on the project site that could support this species, and it is not documented in the vicinity (CDFW 2018).

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			Invertebrates		
Ariolimax columbianus stramineus	Palomar banana slug	None/None/Covered	Group 2	Moist forests; dark, damp habitats, such as under logs or other decomposing material	Not expected to occur. Does not occur in vicinity (CDFW 2018); the closest population is located in the Palomar Mountains.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None/None	Group 1	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. Does not occur in vicinity; this species' range is much further west in San Diego County (USFWS 2018; CDFW 2018).
Brennania belkini	Belkin's dune tabanid fly	None/None/None	Group 2	Inhabits coastal sand dunes of Southern California	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Callophrys thornei	Thorne's hairstreak	None/None/None	Group 1	Interior cypress woodland dominated by host plant *Hesperocyparis forbesii* (Tecate cypress)	Not expected to occur. No Tecate cypress were observed on site.
Cicindela gabbii	western tidal-flat tiger beetle	None/None/None	Group 2	Inhabits estuaries and mudflats along the coast of Southern California	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela hirticollis gravida	sandy beach tiger beetle	None/None/None	Group 2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela latesignata latesignata	western beach tiger beetle	None/None/None	Group 2	Mudflats and beaches in coastal Southern California	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela senilis frosti	senile tiger beetle	None/None/None	Group 2	Inhabits marine shoreline, from Central California coast south to saltmarshes of San Diego; also found at Lake Elsinore	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela trifasciata sigmoidea	Mudflat tiger beetle	None/None/None	Group 2	Marshes along coast and edges of marshes and rivers.	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cincindela latesignata obliviosa	Oblivious tiger beetle	None/None/None	Group 2	Inhabited the Southern California coastline, from La Jolla north to the Orange County line. Occupied saline mudflats and moist sandy spots in estuaries of small streams in the lower zone. Has not been observed in 20 years. The oblivious tiger beetle (C. l. obliviosa) is no longer the accepted	Not expected to occur. Does not occur in vicinity (CDFW 2018).

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				name for this species (ITIS 2016).	
Coelus globosus	globose dune beetle	None/None/None	Group 1	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Euphyes vestris harbisoni	Harbison dun skipper	None/None/Covered	Group 1	Oak riparian drainages and adjacent seeps supporting host plant Carex spissa	Not expected to occur. This species has a very limited distribution and it is unlikely to occur based on estimated range of this species (Marschalek and Deutschman 2015).
Helminthoglypta traski coelata	Peninsular Range shoulderband snail	None/None/Covered	Group 2	Wet habitats	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Linderiella occidentalis	California linderiella	None/None/None	Group 1	Cool soft-water vernal pools in grasslands below 1,000 feet above mean sea level	Not expected to occur. Does not occur at elevations above 1,000 feet.
Lycaena hermes	Hermes copper	FC/None/Covered	Group 1	Mixed woodlands, chaparral, and coastal scrub	Not expected to occur. Known ranges for this species are further west towards Descanso, Jamul, and Potrero (CDFW 2018). Additionally, no *Rhamnus crocea*, this species' host plant, were observed on site.
Megathymus yuccae harbisoni	Coastal giant skipper	None/None/None	Group 2	Coastal dunes, open yucca flats, desert canyons, open woodland, grassland, and old fields. Host plant is Yucca schidigera. Record from eastern San Diego County near Scissors Crossing, Anza-Borrego Desert State Park.	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Panoquina errans	wandering skipper	None/None/None	Group 1	Saltmarsh	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Papilio multicaudata	Two-tailed swallowtail	None/None/None	Group 1	Foothill slopes and canyons, moist valleys, streamsides, woodlands, parks, roadsides, and urban settings. Host plants include Fraxinus, Ptelea, and Prunus species (Butterflies and Moths of North America 2016).	Low potential to occur. There are *Prunus* spp. recorded on site.; however, this conspicuous species was not observed during protocol butterfly species. Flight season for two-tailed swallowtail is March through September (Shiraiwa 2009), and focused butterfly surveys were conducted

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					between March and June 2018.
Phobetus robinsoni	Robinson's rain beetle	None/None/None	Group 2	Known from two locations in Orange County and only known from Scissors Crossing in San Diego County (43 FR 35636 35643).	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Plebejus saepiolus hilda	Hilda greenish blue	None/None/None	Group 1	At species level: bogs, stream edges, open fields, meadows, open forests, and roadsides. Host plants include species of Trifolium (Butterflies and Moths of North America 2016).	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Pseudocopaeodes eunus eunus	alkali skipper	None/None/ Covered	Group 1	Grassy spots on alkali flats; playa/salt flats	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Pyrgus ruralis lagunae	Laguna Mountains skipper	FE/None/Covered	Group 1	Restricted to montane meadows of Laguna Mountains and Mount Palomar	Not expected to occur. This species' range is restricted to the Laguna Mountains and Mount Palomar. The closest recorded occurrence is approximately 10 miles northeast of the project site (CDFW 2018; USFWS 2018).
Streptocephalus woottoni	Riverside fairy shrimp	FE/None/None	Group 1	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. Does not occur in vicinity; this species' range is much further west in San Diego County (USFWS 2018; CDFW 2018).
Trigonoscuta blaisdelli	Blaisdell trigonoscuta weevil	None/None/None	Group 2	Trigonoscuta sp.: Coastal, desert, or inland sand dunes; wide variety of plant types used; the larvae feed on the roots and the adults on the leaves.	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None/None/None	Group 2	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County	Not expected to occur. Does not occur in vicinity (CDFW 2018).
			Mammals		
Bassariscus astutus	ringtail	None/FP/Covered	Group 2	Mixed forests and shrublands near rocky areas or riparian habitats; forages near water and is seldom found more than 1 kilometer (0.62 mile) from a water source	Low potential to occur. Does not occur in vicinity (CDFW 2018) and there is marginal habitat for this species on site.
Chaetodipus fallax fallax	northwestern San Diego	None/SSC/None	Group 2	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub,	Low potential to occur. There are limited records for this species in southeast San Diego County

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	pocket mouse			desert succulent shrub, pinyon–juniper, and annual grassland	(Tremor et al. 2017).
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None/SSC/None	Group 2	Desert wash, desert scrub, desert succulent scrub, and pinyon–juniper woodland	Not expected to occur. No suitable vegetation present.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC/None	Group 2	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. This species occurs further west along the coast and immediately inland (Tremor et al., 2017; CDFW 2018). It was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Dipodomys merriami collinus	Earthquake Merriam's kangaroo rat	None/None/ Covered	None	Riversidean sage scrub, chaparral, and non-native grassland; associated with sandy loam soils	Not expected to occur. Outside of range; this species occurs in the desert (Tremor et al. 2017). No known occurrences within 5 miles of the project area.
Dipodomys merriami trinidadensis	Merriam's kangaroo rat	None/None/ Covered	None	Occurs in the Jacumba and Mountain Springs area	Not expected to occur. Outside of range; this species occurs in the desert (Tremor et al. 2017).
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST/Covered	Group 1	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	Not expected to occur. Does not occur in vicinity; this species has been documented occurring further northwest near Lake Henshaw and the Ramona area (Tremor et al., 2017; USFWS 2018; CDFW 2018).
Euderma maculatum	spotted bat	None/SSC/None	Group 2	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not expected to occur. Records for this species are very limited in San Diego County (Tremor et al., 2017). It was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Lasiurus blossevillii	western red bat	None/SSC/None	Group 2	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Low potential to roost on site. There is oak and riparian woodland habitat on site. Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Lasiurus cinereus	hoary bat	None/None/None	None	Forest, woodland riparian, and wetland habitats; also juniper scrub, riparian	Low potential to roost on site. There are some large willows on site and this species was

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	detected during the 2011/2012 acoustical bat surveys on site as well as on the Campo Indian Reservation (AECOM 2012).
Lasiurus xanthinus	western yellow bat	None/SSC/None	None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Low potential to roost on site. This species was detected during the 2011/2012 acoustical bat surveys on site at a very low acoustical activity index. This species occurs in desert habitat (Tremor et al. 2017) and likely occurs on site only as an occasional migrant.
Myotis volans	long-legged myotis	None/None/None	Group 2	Primarily coniferous forests, but also seasonally in riparian and desert habitats; roosts in crevices in cliffs, caves, mines, buildings, exfoliating tree bark, and snags	Low potential to roost on site. There are no mines, caves, or buildings present, but some riparian woodland habitat. Records for this species are further north in the Laguna Mountains (Tremor et al. 2017). Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Myotis yumanensis	Yuma myotis	None/None/None	Group 2	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Low potential to roost on site. There are no mines, caves, or buildings present, but some riparian woodland habitat. No ponded water or lakes present and this species is a water and moth specialist. This species is more commonly found along the coast, but there are records in eastern San Diego County (Tremor et al. 2017) and it was detected during the 2011/2012 acoustical bat surveys on site.
Ovis canadensis nelsoni	Nelson's bighorn sheep	None/FP/None	Group 1	Steep slopes and cliffs, rough and rocky topography, sparse vegetation; also canyons, washes, and alluvial fans	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Ovis canadensis nelsoni pop. 2 DPS	Peninsular bighorn sheep DPS	FE/ST, FP/Covered	None	Dry, rocky, low-elevation desert slopes, canyons, and washes; females near water during lambing season	Low potential to occur. This species would have been observed during surveys. The closest CNDDB occurrence is 1.3 miles northeast of the project area within the Jacumba and In-Ko-Pah Mountains in more suitable habitat (CDFW 2018). Habitat on site is too densely vegetated. Scat

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
					surveys conducted in July 2018 focused on detection of bighorn sheep scat and were negative. No sign of this species has been observed on site.
Perognathus longimembris bangsi	Palm Springs pocket mouse	None/SSC/ Covered	None	Creosote scrub, desert scrub, and grasslands; sparse to moderately dense vegetative cover	Not expected to occur. This subspecies inhabits the lower elevations of Anza-Borrego Desert up to 450 meters (1,476 feet) in elevation (Tremor et al., 2017).
Perognathus longimembris brevinasus	Los Angeles pocket mouse	None/SSC/ Covered	Group 2	Lower-elevation grassland, alluvial sage scrub, and coastal scrub	Not expected to occur. There are no records of this subspecies in southeast San Diego County (Tremor et al. 2017).
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC/None	Group 1	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. This species occurs along the coast (Tremor et al. 2017).
Puma concolor	cougar	None/None/None	Group 2	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	High potential to occur. This species was detected on Campo Indian Reservation (AECOM 2012). There is suitable habitat throughout the project site.
Spermophilus (Xerospermophilus) tereticaudus chlorus	Palm Springs round-tailed ground squirrel	None/SSC/ Covered	None	Sandy arid regions of Lower Sonoran Life Zone including creosote bush scrub and creosote–palo verde	Not expected to occur. This species occurs in the desert east of the project site (Tremor et al. 2017).
			Reptiles		
Actinemys marmorata	western pond turtle	None/SSC/ Covered	Group 1	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Anniella pulchra	northern California legless lizard	None/SSC/ Covered	None	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose,	Not expected to occur. *A. pulchra* does not occur in San Diego.

Scientific Name	Common Name	Status (Federal/State/San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				loamy soils	
Aspidoscelis hyperythra	orange-throated whiptail	None/WL/Covered	Group 2	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Low potential to occur. There is suitable scrub and chaparral vegetation present. No known CNDDB occurrences within 5 miles of the project area.
Coleonyx switaki	Switak's banded gecko	None/ST/Covered	Group 2	Rocklands, especially massive rocks and rock formations at the heads of canyons	Not expected to occur. This species occurs near Borrego Springs and south to Baja California (Nafis 2018).
Lampropeltis zonata (pulchra)	California mountain kingsnake (San Diego population)	None/WL/Covered	Group 2	Habitat generalist found in habitats including conifer forest, oak–pine woodlands, riparian woodland, chaparral, manzanita, and coastal scrub, but mostly linked to mountains.	Low potential to occur. There is marginally suitable oak, chaparral, and scrub vegetation present, but the main range for this species is in the more montane areas to the north.
Phrynosoma mcallii	flat-tailed horned lizard	None/SSC/ Covered	Group 1	Desert washes and flats with sparse low-diversity vegetation cover and sandy soils	Not expected to occur. No suitable vegetation present. The closest known CNDDB occurrence is 3.3 miles northeast of the project area between the Jacumba and In-Ko-Pah Mountains (CDFW 2018).
Sauromalus ater	common chuckwalla	None/None/ Covered	Group 2	Rock-dwelling, sheltering in rock crevices or under rocks; inhabits rocky flats and hillsides in the Mojave and Colorado Deserts; found in creosote bush habitats; sea level to 1,800 meters (5,900 feet) above mean sea level	Not expected to occur. This species occurs in desert habitats further east and northeast in the Mojave and Colorado deserts (Nafis 2018).
Thamnophis hammondii	two-striped gartersnake	None/SSC/ Covered	Group 1	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur due to lack of perennial streams or other water sources where this species is found.
Thamnophis sirtalis ssp. (Coastal plain from Ventura Co. to San Diego Co., from sea level to about 850 m.)	south coast garter snake	None/SSC/None	Group 2	Marsh and upland habitats near permanent water and riparian vegetation	Not expected to occur. This subspecies occurs from sea level to approximately 850 meters (2,788 feet) and the project site is above 3,600 feet.

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Uma notata	Colorado Desert fringe-toed lizard	None/SSC/ Covered	Group 1	Wind-blown sand dunes, dry lakebeds, sandy beaches, riverbanks, desert washes, and sparse desert scrub	Not expected to occur. This species occurs in the Colorado Desert in desert dune habitat further east from the project site (Nafis 2018).

Federal
BCC = Bird of Conservation Concern
FE = Federally Endangered
State
FP = Fully Protected
SSC = State Species of Concern
WL = Watch List

ATTACHMENT I-2

Special-Status Wildlife Species with Low Potential or Not Expected to Occur in the Campo Corridor

APPENDIX I-2
Special-Status Wildlife Species with Low Potential or Not Expected to Occur in the Campo Corridor

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
			Amphibians		
Anaxyrus californicus	arroyo toad	FE/SSC/Covered	Group 1	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Low potential to occur. There are no suitable perennial washes or stream channels for breeding present. The closest known arroyo toad occurrences are located approximately 5.5 miles west of the study area in the Cottonwood Creek area (USFWS 2018), a different watershed. There are no records of arroyo toad east of this location (USFWS 2018; CDFW 2018a). Surveys conducted for the 2010 BSA were negative (AECOM 2012).
Batrachoseps major aridus	desert slender salamander	FE/SE/Covered	Group 1	Barren, palm oasis, desert wash, and desert scrub	Not expected to occur. Does not occur in vicinity; the closest records are from the Santa Rosa Mountains to the north (CDFW 2018).
Ensatina klauberi	large-blotched salamander	None/WL/ Covered	Group 1	Moist and shaded evergreen and deciduous woodlands	Low potential to occur. This species occurs in the Peninsular Ranges; however, there is no suitable moist evergreen and deciduous woodlands present.
Rana draytonii	California red-legged frog	FT/SSC/Covered	Group 1	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Not expected to occur. This species has not been documented in the vicinity (CDFW 2018) and there is no suitable habitat on site; outside of currently known range.
Rana muscosa	mountain yellow-legged frog	FE/SE, WL/Covered	Group 1	Lakes, ponds, meadow streams, isolated pools, and open riverbanks; rocky canyons in narrow canyons and in chaparral	Not expected to occur. Does not occur in vicinity; the closest record is in Doane Valley in Palomar Mountain in 1975 (CDFW 2018).
Taricha torosa (Monterey Co. south only)	California newt	None/SSC/ Covered	Group 2	Wet forests, oak forests, chaparral, and rolling grassland	Not expected to occur. Does not occur in vicinity (CDFW 2018).
			Birds		
Accipiter striatus (nesting)	sharp-shinned hawk	None/WL/None	Group 1	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous,	Sharp-shinned hawks do not nest in San Diego County (Unitt 2004). This species could occur

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				mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	during winter or migration and forage on site, and has been observed on site (AECOM 2012) and by Dudek in 2017.
Aechmophorus occidentalis	western grebe	None/None/None	Group 1	Winters in sheltered bays or estuaries on the coast and on large freshwater lakes, rarely on rivers.	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC/ Covered	Group 1	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Anas strepera	gadwall	None/None/None	Group 2	Interior valleys, wetlands, ponds, and streams. Feeds and rests in freshwater lacustrine and emergent habitats, and to a lesser extent, estuarine and saline emergent habitats, and nests in nearby herbaceous and cropland habitats. Common in Central Valley and less common in Coast Range foothills of central and Southern California. Locally common in Imperial Valley and along Colorado River, October to March. Breeds on northeastern plateau and east of Sierra Nevada.	Low potential to occur due to lack of suitable habitat on site.
Anser caerulescens	snow goose	None/None/None	Group 2	Fresh emergent wetlands, adjacent lacustrine waters, and nearby wet croplands, pastures, meadows, and grasslands. Occasionally found in saline (brackish) emergent wetlands and adjacent estuarine waters. Found primarily in Central Valley; less common southward in the interior but abundant in Imperial Valley and locally common along Colorado River. Found regularly only in Southern California along Coast	Not expected to occur. Snow geese are a rare winter visitor to San Diego County and have not been recorded in the vicinity (Unitt 2004; CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				Ranges and immediate coast from mid-November to February.	
Antigone canadensis canadensis (wintering)	lesser sandhill crane	None/SSC/None	Group 2	Winter foraging in cropland, grazed and mowed grassland, pasture, alfalfa fields, and shallow wetlands; roosting sites are flooded and support several inches of water	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Antigone canadensis tabida (nesting & wintering)	greater sandhill crane	None/ST, FP/None	Group 2	Winter foraging in cropland, grazed and mowed grassland, pasture, alfalfa fields, and shallow wetlands; roosting sites are flooded and support several inches of water	Not expected to occur. This species is rarely documented in San Diego County (Unitt 2004).
Ardea herodias (nesting colony)	great blue heron	None/None/None	Group 2	Nests in large trees or snags; forages in wetlands, water bodies, watercourses, and opportunistically in uplands, including pasture and croplands	Not expected to nest on site; the project site is located outside of known breeding areas in San Diego County (Unitt 2004); however, it was observed on site.
Asio flammeus (nesting)	short-eared owl	None/SSC/None	Group 2	Grassland, prairies, dunes, meadows, irrigated lands, and saline and freshwater emergent wetlands	Not expected to occur. Short-eared owl primarily a winter visitor in San Diego County and has not been recorded in the vicinity (Unitt 2004).
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC/ Covered	Group 1	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. Burrowing owl are not known to occur between the Jacumba Valley and Otay areas in San Diego County.
Aythya americana (nesting)	redhead	None/SSC/None	Group 2	Nests in deep (>3 ft) permanent or semi-permanent wetlands of at least 1 acre; 75% open water; emergent tules, Scirpus spp., and Typha spp. 3 feet in height; winters in coastal estuaries and large, deep ponds, lakes, and reservoirs of the interior	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Branta bernicla (wintering & staging)	brant	None/SSC	None	Nesting habitat includes the edges of saltmarshes in the low Arctic region; migratory habitats include shallow marine lakes; winter range includes	Not expected to nest on site. Observed flying over site (AECOM 2012).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				intertidal mudflats in shallow marine waters with abundant eelgrass and/or green algae	
Branta canadensis	Canada goose	None/None/None	Group 2	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Bucephala islandica (nesting)	Barrow's goldeneye	None/SSC/None	Group 2	Winters in lagoons, bays, and estuaries in coastal areas, and riverine waters, lakes, and reservoirs in the interior	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Buteo regalis (wintering)	ferruginous hawk	BCC/WL/Covered	Group 1	Winters and forages in open, dry country, grasslands, open fields, agriculture	Low potential to occur during the winter. Ferruginous hawk is an uncommon winter visitor in San Diego County, but it has been on site (AECOM 2012) and towards Jacumba Valley (Unitt 2004). There is suitable foraging habitat in the grassland and open scrub habitat.
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST/Covered	Group 1	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Low potential to nest. Swainson's hawks are uncommon in San Diego County; however, two Swainson's hawks were detected during bird count surveys (AECOM 2012). Due to lack of additional observations in the area (Unitt 2004; CDFW 2018), this species has low potential to nest on site.
Butorides virescens	green heron	None/None/None	Group 2	Nests and roosts in valley foothill and desert riparian habitats; feeds in fresh emergent wetland, lacustrine, slow-moving riverine habitats. Resident in foothills and lowlands throughout California; common August to March in southern coastal ranges, in summer along the Colorado River, and found all year at the Salton Sea.	Low potential to occur. There is no suitable habitat on site and this species has not been confirmed nesting in the vicinity (Unitt 2004).
Campylorhynchus brunneicapillus sandiegensis (San	coastal cactus wren	BCC/SSC/ Covered	Group 1	Southern cactus scrub patches	Not expected to occur. San Diego cactus wren rely on cactus thickets at elevations below 1,500 feet and the species in the Boulevard area are considered the

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Diego & Orange Counties only)					desert subspecies (Unitt 2004). The site is above this elevation range and there are no large patches of *Cylindropuntia* spp. or *Opuntia* spp. on site; however, there are scattered cacti throughout the scrub and chaparral. *C. brunneicapillus* (desert subspecies) was documented on site and on the Campo Indian Reservation (AECOM 2012).
Cerorhinca monocerata (nesting colony)	rhinoceros auklet	None/WL/None	Group 2	Marine pelagic and subtidal habitats	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Chaetura vauxi (nesting)	Vaux's swift	None/SSC	None	Late-stage conifer forest and mixed-conifer/deciduous forest; nests in redwood (*Sequoia sempervirens*), Douglas-fir (*Pseudotsuga* spp.), and other conifers, and occasionally buildings and chimneys	Not expected to nest on site due to lack of suitable habitat. Observed flying over site (AECOM 2012).
*Charadrius alexandrinus nivosus (*nesting)	western snowy plover	FT, BCC/SSC/None	Group 1	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Charadrius montanus (wintering)	mountain plover	BCC/SSC/None	Group 2	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Chlidonias niger (*nesting colony)	black tern	None/SSC/None	Group 2	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT, BCC/SE/Covered	Group 1	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there are no dense wide riparian areas on site.

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Contopus cooperi (nesting)	olive-sided flycatcher	BCC/SSC/None	Group 2	Nests in mixed-conifer, montane hardwood–conifer, Douglas-fir, redwood, red fir, and lodgepole pine habitats; usually close to water	This species was observed flying over the site (AECOM 2012).
Cypseloides niger (nesting)	black swift	BCC/SSC/None	Group 2	Nests in moist crevices, caves, and cliffs behind or adjacent to waterfalls in deep canyons; forages over a wide range of habitats	Not expected to nest on site due to lack of suitable nesting habitat. This species was observed flying over the site (AECOM 2012).
Dendrocygna bicolor (nesting)	fulvous whistling-duck	None/SSC/None	Group 2	Nests in freshwater wetlands, especially shallow impoundments managed for rice production and temporarily flooded grasslands; also nests in pastures, haylands, and small grain fields adjacent to rice fields	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Egretta rufescens	reddish egret	None/None/None	Group 2	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Elanus leucurus (nesting)	white-tailed kite	None/FP/Covered	Group 1	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Low potential to nest on site. It was documented on site (AECOM 2012). This species likely occurs during migration or winter. This species is more commonly found along the coastal slope in San Diego County, and has not been documented nesting in the vicinity (Unitt 2004; CDFW 2018). It was observed in McCain Valley in the winter (Unitt 2004).
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE/Covered	Group 1	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Does not occur in vicinity (CDFW 2018a), and focused protocol surveys conducted in 2010 for this species were negative. The closest known CNDDB occurrence is 27.8 miles northwest of the project site (CDFW 2018a). There is marginal riparian habitat for this species, which prefers habitat along perennial streams and rivers.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Falco peregrinus anatum (nesting)	American peregrine falcon	FDL, BCC/SDL, FP/None	Group 1	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Not expected to nest. Peregrine falcons are not known to nest in the vicinity; they are documented along the coast in San Diego County (CDFW 2018; Unitt 2004). This species was observed flying over the site.
Fratercula cirrhata (nesting colony)	tufted puffin	None/SSC/None	Group 2	Nests on offshore rocks and islands free of mammalian predators, either in earthen burrows or crevices on steep rocky slopes	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Gavia immer (nesting)	common loon	None/SSC/None	Group 2	Extirpated as a breeder from California; winters in coastal waters such as bays, channels, coves, and inlets; also winters inland at large, deep lakes and reservoirs	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Gymnogyps californianus	California condor	FE/SE, FP/None	None	Forages on open terrain, foothill grassland, and oak savannah; nests in cavities on steep rocks or burned hallos of old-growth conifers and giant sequoia trees	Very Low potential to forage and not expected to nest. There is potential foraging habitat; however, no suitable nesting vegetation present and the only records are at least 15 miles away from the site from 2017 (other years are further from the site) (USFWS 2018).
Icteria virens (nesting)	yellow-breasted chat	None/SSC/None	Group 1	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Low potential to occur. There is no suitable dense riparian woodland present and there are limited records of this species in southeastern San Diego County (Unitt 2004).
Ixobrychus exilis (nesting)	least bittern	BCC/SSC/ Covered	Group 2	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Junco hyemalis caniceps (nesting)	gray-headed junco	None/WL/None	Group 2	Nests and forages in pine and juniper–pine forests	Not expected to occur. This species is not documented in vicinity (CDFW 2018; Unitt 2004). Gray-headed junco is rare along the coast and rare to uncommon in the mountains (Unitt 2004).
Larus californicus (nesting colony)	California gull	None/WL/None	Group 2	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during non-nesting period	Not expected to nest. There are no nesting colonies in the vicinity (CDFW 2018; Unitt 2004). It was observed on site (AECOM 2012).

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Laterallus jamaicensis coturniculus	California black rail	BCC/ST, FP/None	Group 2	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site. The last known nesting black rail in San Diego County was in 1954 (Unitt 2004).
Leucophaeus atricilla (nesting colony)	laughing gull	None/WL/None	Group 2	Coastal saltmarsh, bays, and estuaries	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Melanerpes lewis (nesting)	Lewis's woodpecker	BCC/None/None	Group 1	Winters in open oak woodland and savanna; nests in open ponderosa pine forest and logged or burned pine forest	Lewis' woodpecker does not nest in San Diego County, but is a winter visitor (Unitt 2004). This species was observed on site.
Mycteria americana	wood stork	None/SSC/None	Group 2	Nests in freshwater and marine-estuarine forested habitats; forages in natural and artificial wetlands; roosts in trees, usually over water	Not expected to occur. This species is a very rare visitor to San Diego County (Unitt 2004); and the site does not support ponded water to support foraging.
*Numenius americanus (*nesting)	long-billed curlew	BCC/WL/None	Group 2	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	Not expected to occur. Long-billed curlews are winter visitors in San Diego County, and the closest migration record is Lake Morena, southwest of the project site (Unitt 2004; CDFW 2018).
*Oceanodroma furcata (*nesting colony)	fork-tailed storm-petrel	None/SSC/None	Group 2	Offshore islands with restricted access and free of mammalian predators; nesting habitat varies across islands from natural crevices in talus slopes to earthen burrows dug by themselves or other species	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Oceanodroma homochroa (*nesting colony)	ashy storm-petrel	BCC/SSC/None	Group 2	Nests on rocky offshore islands on talus slopes, rock walls, sea caves, cliffs, and under piles of driftwood; they do not excavate their own nesting burrows	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Oceanodroma melania (*nesting colony)	black storm-petrel	None/SSC/None	Group 2	Nests on small rocky islands or talus slopes of larger islands free of mammalian predators; occurs on land only to breed	Not expected to occur. Does not occur in vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Oreothlypis luciae (nesting)	Lucy's warbler	BCC/SSC/ Covered	Group 1	Nests and forages in desert wash and desert riparian habitats, especially dominated by mesquite, but also in other shrubs and tamarisk	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004). Breeding has only been documented in the Borrego Valley (Unitt 2004).
Pandion haliaetus (nesting)	osprey	None/WL/None	Group 1	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Not expected to nest on site due to lack of suitable habitat (i.e., bodies of water). It has been documented as presumed migrants in the vicinity (Unitt 2004), and was recorded onsite (AECOM 2012).
Passerculus sandwichensis beldingi	Belding's savannah sparrow	None/SE/None	Group 1	Nests and forages in coastal saltmarsh dominated by pickleweed (Salicornia spp.)	Not expected to nest on site. Does not occur in vicinity as nesting is documented only along the coast in San Diego County (CDFW 2018; Unitt 2004).
Passerculus sandwichensis rostratus (wintering)	large-billed savannah sparrow	None/SSC/None	Group 2	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	Low potential to occur in the marsh habitat in portions of Tule Creek. It is a rare winter visitor in San Diego County (Unitt 2004).
*Pelecanus erythrorhynchos (*nesting colony)	American white pelican	None/SSC/None	Group 2	Nests colonially on sandy, earthen, or rocky substrates on isolated islands in freshwater lakes; minimal disturbance from predators; access to foraging areas on inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Pelecanus occidentalis californicus (nesting colonies & communal roosts)	California brown pelican	FDL/SDL, FP/None	Group 2	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Phalacrocorax auritus (*nesting colony)	double-crested cormorant	None/WL/None	Group 2	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Piranga rubra (nesting)	summer tanager	None/SSC/ Covered	Group 2	Nests and forages in mature desert riparian habitats dominated by cottonwoods and willows	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Plegadis chihi (nesting colony)	white-faced ibis	None/WL/None	Group 1	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Not expected to occur. Does not occur in vicinity (CDFW 2018; Unitt 2004).
Polioptila californica californica	coastal California gnatcatcher	FT/SSC/Covered	Group 1	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Not expected to occur. Outside of range; this species has not been documented in San Diego at elevations higher than 2,400 feet (Unitt 2004).
Progne subis (nesting)	purple martin	None/SSC/ Covered	Group 1	Nests and forages in woodland habitats including riparian, coniferous, and valley foothill and montane woodlands; in the Sacramento region often nests in weep holes under elevated freeways	Not expected to occur. Its distribution in San Diego County is limited to the mountains and European starlings have taken over much of their nesting habitat (Unitt 2004).
Pyrocephalus rubinus (nesting)	vermilion flycatcher	None/SSC/ Covered	Group 1	Nests in riparian woodlands, riparian scrub, and freshwater marshes; typical desert riparian with cottonwood, willow, mesquite adjacent to irrigated fields, ditches, or pastures	Low potential to occur. Only a single male has been recorded in the vicinity (McCain Valley); no nesting has been documented in the area (Unitt 2004).
Rallus obsoletus levipes	Ridgway's rail	FE/SE, FP/None	Group 1	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not expected to occur. Does not occur in vicinity and there is no suitable habitat (CDFW 2018).
Riparia riparia (nesting)	bank swallow	None/ST/None	Group 1	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	No potential to nest on site due lack of nesting habitat and there are currently no known nesting colonies in San Diego County (Unitt 2004). This species was recorded onsite (AECOM 2012) and has potential to forage on site during migration.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Rynchops niger (nesting colony)	black skimmer	BCC/SSC/None	Group 1	Nests on barrier beaches, shell banks, spoil islands, and saltmarsh; forages over open water; roosts on sandy beaches and gravel bars	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Sternula antillarum browni (*nesting colony)	California least tern	FE/SE, FP/None	Group 1	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Not expected to occur. Does not occur in vicinity and there is no suitable habitat (CDFW 2018).
Strix occidentalis occidentalis	California spotted owl	BCC/SSC/ Covered	Group 1	Nests and forages in dense, old-growth, multi-layered mixed-conifer, redwood, and Douglas-fir habitats	Not expected to occur. This species typically nests at elevations above 2,500 feet where oak woodlands are dusky-footed woodrats are common (Unitt 2004). The closest known breeding location is in the Laguna Mountains, approximately, 7 miles northwest of the project site (Unitt 2004).
Synthliboramphus scrippsi (nesting colony)	Scripps's murrelet	FC, BCC/ST/None	Group 2	Nests on steep sea slopes, canyons, and cliffs with sparse vegetation	Not expected to occur. Does not occur in vicinity (CDFW 2018).
*Thalasseus elegans (*nesting colony)	elegant tern	None/WL/None	Group 1	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Toxostoma bendirei	Bendire's thrasher	BCC/SSC/None	Group 2	Nests and forages in desert succulent shrub and Joshua tree habitat in Mojave Desert; nests in yucca, cholla, and other thorny scrubs or small trees	Not expected to occur. Outside of range; this species is largely restricted to the Mojave Desert and records in San Diego County are limited (Unitt 2004).
Toxostoma crissale	Crissal thrasher	None/SSC/ Covered	Group 1	Nests and forages in desert riparian and desert wash; dense thickets of sagebrush and other shrubs such as mesquite, iron catclaw acacia, and arrowweed willow within juniper and pinyon–juniper woodlands	Not expected to occur. Does not occur in vicinity (CDFW 2018); this species occurs in the Borrego Valley (Unitt 2004).
Toxostoma lecontei	LeConte's thrasher	BCC/SSC/ Covered	Group 2	Nests and forages in desert wash, desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus	Not expected to occur. Does not occur in vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE/Covered	Group 1	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Focused protocol surveys conducted in 2010 for this species were negative. The closest known CNDDB occurrence is 6 miles west of the project site (CDFW 2018a). There is marginal riparian habitat for this species, which prefers habitat along perennial streams and rivers.
			Fishes		
Cyprinodon macularius	desert pupfish	FE/SE/None	Group 2	Desert springs, small streams, and marshes below 1,515 meters (5,000 feet) above mean sea level; tolerates high salinities, high water temperatures, and low dissolved-oxygen concentrations	Not expected to occur. There are no perennial water sources on the project site that could support this species.
Eucyclogobius newberryi	tidewater goby	FE/SSC/None	Group 1	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there are no perennial water sources on the project site that could support this species.
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	FE/SE, FP/None	Group 2	Slow-moving and backwater areas	Not expected to occur. There are no perennial water sources on the project site that could support this species, and it is not documented in the vicinity (CDFW 2018).
Gila orcuttii	arroyo chub	None/SSC/None	Group 1	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Oncorhynchus mykiss irideus	southern steelhead - southern California DPS	FE/None/None	Group 1	Clean, clear, cool, well-oxygenated streams; needs relatively deep pools in migration and gravelly substrate to spawn	Not expected to occur. There are no perennial water sources on the project site that could support this species, and it is not documented in the vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Invertebrates					
Ariolimax columbianus stramineus	Palomar banana slug	None/None/ Covered	Group 2	Moist forests; dark, damp habitats, such as under logs or other decomposing material	Not expected to occur. Does not occur in vicinity (CDFW 2018); the closest population is located in the Palomar Mountains.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None/None	Group 1	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. Does not occur in vicinity; this species' range is much further west in San Diego County (USFWS 2018; CDFW 2018).
Brennania belkini	Belkin's dune tabanid fly	None/None/None	Group 2	Inhabits coastal sand dunes of Southern California	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Callophrys thornei	Thorne's hairstreak	None/None/None	Group 1	Interior cypress woodland dominated by host plant *Hesperocyparis forbesii* (Tecate cypress)	Not expected to occur. No Tecate cypress were observed on site.
Cicindela gabbii	western tidal-flat tiger beetle	None/None/None	Group 2	Inhabits estuaries and mudflats along the coast of Southern California	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela hirticollis gravida	sandy beach tiger beetle	None/None/None	Group 2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela latesignata latesignata	western beach tiger beetle	None/None/None	Group 2	Mudflats and beaches in coastal Southern California	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela senilis frosti	senile tiger beetle	None/None/None	Group 2	Inhabits marine shoreline, from Central California coast south to saltmarshes of San Diego; also found at Lake Elsinore	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cicindela trifasciata sigmoidea	Mudflat tiger beetle	None/None/None	Group 2	Marshes along coast and edges of marshes and rivers.	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Cincindela latesignata obliviosa	Oblivious tiger beetle	None/None/None	Group 2	Inhabited the Southern California coastline, from La Jolla north to the Orange County line. Occupied saline mudflats and moist sandy spots in estuaries of small streams in the lower zone. Has not been observed in 20 years. The oblivious tiger beetle (C. l.	Not expected to occur. Does not occur in vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
				obliviosa) is no longer the accepted name for this species (ITIS 2016).	
Coelus globosus	globose dune beetle	None/None/None	Group 1	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Danaus plexippus	monarch	None/None/None	Group 2	Wind-protected tree groves with nectar sources and nearby water sources	Low potential to occur. This species was not observed during focused surveys for Quino checkerspot butterfly. Not suitable colonial roosting areas present within the Project site.
Euphyes vestris harbisoni	Harbison dun skipper	None/None/ Covered	Group 1	Oak riparian drainages and adjacent seeps supporting host plant Carex spissa	Not expected to occur. This species has a very limited distribution and it is unlikely to occur based on estimated range of this species (Marschalek and Deutschman 2015).
Helminthoglypta traski coelata	Peninsular Range shoulderband snail	None/None/ Covered	Group 2	Wet habitats	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Linderiella occidentalis	California linderiella	None/None/None	Group 1	Cool soft-water vernal pools in grasslands below 1,000 feet above mean sea level	Not expected to occur. Does not occur at elevations above 1,000 feet.
Lycaena hermes	Hermes copper	FC/None/Covered	Group 1	Mixed woodlands, chaparral, and coastal scrub	Not expected to occur. Known ranges for this species are further west towards Descanso, Jamul, and Potrero (CDFW 2018). Additionally, no *Rhamnus crocea*, this species' host plant, were observed on site.
Megathymus yuccae harbisoni	Coastal giant skipper	None/None/None	Group 2	Coastal dunes, open yucca flats, desert canyons, open woodland, grassland, and old fields. Host plant is Yucca schidigera. Record from eastern San Diego County near Scissors Crossing, Anza-Borrego Desert State Park.	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Panoquina errans	wandering skipper	None/None/None	Group 1	Saltmarsh	Not expected to occur. Does not occur in vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Papilio multiculdata	Two-tailed swallowtail	None/None/None	Group 1	Foothill slopes and canyons, moist valleys, streamsides, woodlands, parks, roadsides, and urban settings. Host plants include Fraxinus, Ptelea, and Prunus species (Butterflies and Moths of North America 2016).	Low potential to occur. There are *Prunus* spp. recorded on site.; however, this conspicuous species was not observed during protocol butterfly species. Flight season for two-tailed swallowtail is March through September (Shiraiwa 2009), and focused butterfly surveys were conducted between March and June 2018.
Phobetus robinsoni	Robinson's rain beetle	None/None/None	Group 2	Known from two locations in Orange County and only known from Scissors Crossing in San Diego County (43 FR 35636 35643).	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Plebejus saepiolus hilda	Hilda greenish blue	None/None/None	Group 1	At species level: bogs, stream edges, open fields, meadows, open forests, and roadsides. Host plants include species of Trifolium (Butterflies and Moths of North America 2016).	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Pseudocopaeodes eunus eunus	alkali skipper	None/None/ Covered	Group 1	Grassy spots on alkali flats; playa/salt flats	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Pyrgus ruralis lagunae	Laguna Mountains skipper	FE/None/Covered	Group 1	Restricted to montane meadows of Laguna Mountains and Mount Palomar	Not expected to occur. This species' range is restricted to the Laguna Mountains and Mount Palomar. The closest recorded occurrence is approximately 10 miles northeast of the project site (CDFW 2018; USFWS 2018).
Streptocephalus woottoni	Riverside fairy shrimp	FE/None/None	Group 1	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. Does not occur in vicinity; this species' range is much further west in San Diego County (USFWS 2018; CDFW 2018).
Trigonoscuta blaisdelli	Blaisdell trigonoscuta weevil	None/None/None	Group 2	Trigonoscuta sp.: Coastal, desert, or inland sand dunes; wide variety of plant types used; the larvae feed on the roots and the adults on the leaves.	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None/None/None	Group 2	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County	Not expected to occur. Does not occur in vicinity (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
			Mammals		
Bassariscus astutus	ringtail	None/FP/Covered	Group 2	Mixed forests and shrublands near rocky areas or riparian habitats; forages near water and is seldom found more than 1 kilometer (0.62 mile) from a water source	Low potential to occur. Does not occur in vicinity (CDFW 2018) and there is marginal habitat for this species on site.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC/None	Group 2	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	Low potential to occur. There are limited records for this species in southeast San Diego County (Tremor et al. 2017).
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None/SSC/None	Group 2	Desert wash, desert scrub, desert succulent scrub, and pinyon–juniper woodland	Not expected to occur. No suitable vegetation present.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC/None	Group 2	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. This species occurs further west along the coast and immediately inland (Tremor et al., 2017; CDFW 2018). It was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST/Covered	Group 1	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	Not expected to occur. Does not occur in vicinity; this species has been documented occurring further northwest near Lake Henshaw and the Ramona area (Tremor et al., 2017; USFWS 2018; CDFW 2018).
Euderma maculatum	spotted bat	None/SSC/None	Group 2	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not expected to occur. Records for this species are very limited in San Diego County (Tremor et al., 2017). It was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Lasiurus blossevillii	western red bat	None/SSC/None	Group 2	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Low potential to roost on site. There is oak and riparian woodland habitat on site. Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
					site or on the Campo Indian Reservation (AECOM 2012).
Myotis volans	long-legged myotis	None/None/None	Group 2	Primarily coniferous forests, but also seasonally in riparian and desert habitats; roosts in crevices in cliffs, caves, mines, buildings, exfoliating tree bark, and snags	Low potential to roost on site. There are no mines, caves, or buildings present, but some riparian woodland habitat. Records for this species are further north in the Laguna Mountains (Tremor et al. 2017). Potential to forage on site; however, it was not detected during the 2011/2012 acoustical bat surveys on site or on the Campo Indian Reservation (AECOM 2012).
Myotis yumanensis	Yuma myotis	None/None/None	Group 2	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Low potential to roost on site. There are no mines, caves, or buildings present, but some riparian woodland habitat. No ponded water or lakes present and this species is a water and moth specialist. This species is more commonly found along the coast, but there are records in eastern San Diego County (Tremor et al. 2017) and it was detected during the 2011/2012 acoustical bat surveys on site.
Ovis canadensis nelsoni	Nelson's bighorn sheep	None/FP/None	Group 1	Steep slopes and cliffs, rough and rocky topography, sparse vegetation; also canyons, washes, and alluvial fans	Not expected to occur. Does not occur in vicinity (CDFW 2018).
Ovis canadensis nelsoni pop. 2 DPS	Peninsular bighorn sheep DPS	FE/ST, FP/Covered	None	Dry, rocky, low-elevation desert slopes, canyons, and washes; females near water during lambing season	Not expected to occur. The Reservation is located in the inner-montane zone of San Diego County, west of the desert slopes occupied by this species and approximately 6 miles (9.6 kilometers) from the western edge of the species' known range (CDFW 2018e). The closest CNDDB occurrence is 3.6 miles northeast of the project site within the Jacumba and In-Ko-Pah Mountains in more-suitable habitat (CDFW 2018a). The Reservation lacks the dry, rocky desert habitat preferred by this species.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Perognathus longimembris brevinasus	Los Angeles pocket mouse	None/SSC/ Covered	Group 2	Lower-elevation grassland, alluvial sage scrub, and coastal scrub	Not expected to occur. There are no records of this subspecies in southeast San Diego County (Tremor et al. 2017).
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC/None	Group 1	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. This species occurs along the coast (Tremor et al. 2017).
Puma concolor	cougar	None/None/None	Group 2	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	High potential to occur. This species was detected on Campo Indian Reservation (AECOM 2012). There is suitable habitat throughout the project site.
Reptiles					
Actinemys marmorata	western pond turtle	None/SSC/ Covered	Group 1	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. Does not occur in vicinity (CDFW 2018) and there is no suitable habitat on site.
Aspidoscelis hyperythra	orange-throated whiptail	None/WL/Covered	Group 2	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Low potential to occur. There is suitable scrub and chaparral vegetation present. No known CNDDB occurrences within 5 miles of the project area.
Coleonyx switaki	Switak's banded gecko	None/ST/Covered	Group 2	Rocklands, especially massive rocks and rock formations at the heads of canyons	Not expected to occur. This species occurs near Borrego Springs and south to Baja California (Nafis 2018).
Lampropeltis zonata (pulchra)	California mountain kingsnake (San Diego population)	None/WL/Covered	Group 2	Habitat generalist found in habitats including conifer forest, oak–pine woodlands, riparian woodland, chaparral, manzanita, and coastal scrub, but mostly linked to mountains.	Low potential to occur. There is marginally suitable oak, chaparral, and scrub vegetation present, but the main range for this species is in the more montane areas to the north.
Phrynosoma mcallii	flat-tailed horned lizard	None/SSC/ Covered	Group 1	Desert washes and flats with sparse low-diversity vegetation cover and sandy soils	Not expected to occur. No suitable vegetation present. The closest known CNDDB occurrence is 3.3 miles northeast of the project area between the Jacumba and In-Ko-Pah Mountains (CDFW 2018).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP East County (Draft))	San Diego County	Habitat	Potential to Occur
Sauromalus ater	common chuckwalla	None/None/ Covered	Group 2	Rock-dwelling, sheltering in rock crevices or under rocks; inhabits rocky flats and hillsides in the Mojave and Colorado Deserts; found in creosote bush habitats; sea level to 1,800 meters (5,900 feet) above mean sea level	Not expected to occur. This species occurs in desert habitats further east and northeast in the Mojave and Colorado deserts (Nafis 2018).
Thamnophis hammondii	two-striped gartersnake	None/SSC/ Covered	Group 1	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur due to lack of perennial streams or other water sources where this species is found.
Thamnophis sirtalis ssp. (Coastal plain from Ventura Co. to San Diego Co., from sea level to about 850 m.)	south coast garter snake	None/SSC/None	Group 2	Marsh and upland habitats near permanent water and riparian vegetation	Not expected to occur. This subspecies occurs from sea level to approximately 850 meters (2,788 feet) and the project site is above 3,600 feet.
Uma notata	Colorado Desert fringe-toed lizard	None/SSC/ Covered	Group 1	Wind-blown sand dunes, dry lakebeds, sandy beaches, riverbanks, desert washes, and sparse desert scrub	Not expected to occur. This species occurs in the Colorado Desert in desert dune habitat further east from the project site (Nafis 2018).

Federal
BCC = Bird of Conservation Concern
FE = Federally Endangered
State
FP = Fully Protected
SSC = State Species of Concern
WL = Watch List

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ATTACHMENT J

2015 and 2016 Golden Eagle Biotelemetry Data

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2015 Golden Eagle Biotelemetry Data (Tracey et al. 2016)

Bird Identification	Date	Clock	Latitude	Longitude
F004	2/14/2015	2:36:38 PM	32.864899	-116.39624
		2:52:09 PM	32.864864	-116.396233
		3:07:40 PM	32.86512	-116.395607
		3:23:10 PM	32.868351	-116.382576
		3:38:40 PM	32.868351	-116.382607
		3:54:09 PM	32.868336	-116.382622
		4:09:39 PM	32.868343	-116.382607
		4:25:09 PM	32.868347	-116.382599
		4:40:39 PM	32.86834	-116.382599
		4:56:09 PM	32.868336	-116.382591
		5:11:39 PM	32.868347	-116.382591
		5:27:09 PM	32.864162	-116.379036
		5:42:39 PM	32.82626	-116.38607
		5:58:09 PM	32.797173	-116.410294
		6:13:38 PM	32.73526	-116.467026
	3/30/2015	6:22:39 PM	32.841648	-116.360703
		6:37:28 PM	32.84161	-116.360703
		6:53:09 PM	32.841621	-116.360695
		7:08:57 PM	32.841652	-116.360703
		7:24:39 PM	32.841667	-116.348396
	4/6/2015	6:17:56 PM	32.896698	-116.37014
	4/10/2015	10:07:08 PM	32.668621	-116.432083
		10:22:57 PM	32.737885	-116.34108
		10:38:38 PM	32.797161	-116.377739
		10:54:27 PM	32.798298	-116.35862
		11:10:34 PM	32.792271	-116.368813
		11:25:09 PM	32.795395	-116.374725
		11:40:58 PM	32.795361	-116.374718
		11:56:39 PM	32.795383	-116.37471
	4/11/2015	1:14:09 AM	32.795403	-116.37471
		1:26:38 PM	32.795395	-116.374786
		1:29:39 AM	32.795395	-116.37468
		1:42:09 PM	32.795376	-116.374779
		1:45:09 AM	32.795391	-116.37471
		1:57:39 PM	32.795395	-116.374718
		12:12:09 AM	32.79538	-116.37471
		12:27:39 AM	32.795399	-116.374702
		12:43:09 AM	32.795406	-116.374702
		12:58:39 AM	32.795391	-116.374695
		2:01:08 AM	32.795345	-116.374718
		2:28:39 PM	32.79541	-116.374725
		2:44:08 PM	32.795383	-116.374733

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2015 Golden Eagle Biotelemetry Data (Tracey et al. 2016)

Bird Identification	Date	Clock	Latitude	Longitude
		2:59:38 PM	32.795406	-116.374733
		3:15:10 PM	32.795376	-116.374741
		3:30:40 PM	32.790874	-116.376724
		3:46:10 PM	32.790852	-116.376717
		4:01:40 PM	32.790852	-116.376724
		4:17:09 PM	32.790867	-116.376724
		4:32:39 PM	32.790859	-116.376686
		4:48:09 PM	32.790886	-116.376762
		5:03:39 PM	32.79089	-116.376717
		5:19:09 PM	32.790894	-116.376709
		5:34:39 PM	32.790886	-116.376701
		5:50:09 PM	32.764271	-116.36657
		6:05:57 PM	32.736256	-116.318871
		6:21:39 PM	32.724575	-116.297981
		6:37:09 PM	32.717834	-116.285248
		6:52:39 PM	32.76894	-116.264862
		7:08:09 PM	32.807827	-116.304443
		7:23:39 PM	32.837688	-116.293671
	4/22/2015	10:54:09 PM	32.894703	-116.345406
		11:09:58 PM	32.802437	-116.374374
		11:25:39 PM	32.769058	-116.402634
		11:41:56 PM	32.756115	-116.442207
		11:56:39 PM	32.772503	-116.459991
	4/23/2015	1:15:27 AM	32.772564	-116.459976
		1:31:09 AM	32.772575	-116.459976
		12:12:28 AM	32.772552	-116.460022
		12:28:08 AM	32.772533	-116.460014
		12:43:57 AM	32.772552	-116.460007
		12:59:39 AM	32.772545	-116.459999
		6:42:39 PM	32.7584	-116.470245
		7:29:57 PM	32.764591	-116.475143
	7/25/2015	5:55:10 PM	32.879414	-116.401237
		6:10:39 PM	32.840878	-116.360184
		6:26:08 PM	32.844173	-116.358887
	9/19/2015	6:02:39 PM	32.879086	-116.401077
		6:18:27 PM	32.840038	-116.354454
		6:34:09 PM	32.75507	-116.420555
		6:49:39 PM	32.704708	-116.432091
	9/23/2015	7:25:39 PM	32.864456	-116.39756
		7:41:28 PM	32.864426	-116.397545
		7:57:09 PM	32.869812	-116.383415
	9/30/2015	7:29:39 PM	32.837685	-116.323318

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2015 Golden Eagle Biotelemetry Data (Tracey et al. 2016)

Bird Identification	Date	Clock	Latitude	Longitude
	10/10/2015	11:28:09 PM	32.871986	-116.375023
		11:43:39 PM	32.875893	-116.370659
		9:55:10 PM	32.865482	-116.378052
	10/10/2015	9:39:40 PM	32.865479	-116.37809
	10/22/2015	10:07:39 PM	32.648518	-116.398903
		7:30:09 PM	32.836559	-116.392059
		7:45:58 PM	32.735413	-116.426216
		9:36:09 PM	32.58606	-116.352211
		9:51:58 PM	32.622292	-116.362183
F006	5/14/2015	9:45:09 PM	32.75016	-116.458083
	6/5/2015	6:09:52 PM	32.858805	-116.380892
		6:25:13 PM	32.858813	-116.38086
		6:40:38 PM	32.858828	-116.380877
		6:56:05 PM	32.853693	-116.375652
		7:11:31 PM	32.845738	-116.369982
		7:27:11 PM	32.845718	-116.369983
		7:43:38 PM	32.845733	-116.36999
		7:59:09 PM	32.84573	-116.369997
		8:15:49 PM	32.845723	-116.369995
		8:32:29 PM	32.845738	-116.369993
F007	11/8/2015	10:05:39 PM	32.585312	-116.36087
		10:37:08 PM	32.577011	-116.318748
		10:52:57 PM	32.57122	-116.297905
		11:40:08 PM	32.569599	-116.296799
		11:55:57 PM	32.612724	-116.333282
		8:46:58 PM	32.6092	-116.370697
		9:02:39 PM	32.611473	-116.306496
		9:18:28 PM	32.598381	-116.364082
	11/9/2015	12:11:39 AM	32.626381	-116.386841
		12:28:47 AM	32.619396	-116.388191
		12:42:39 AM	32.619698	-116.386269
		12:47:34 AM	32.619904	-116.386147
		2:16:57 PM	32.619961	-116.386177
		2:32:08 PM	32.619949	-116.386139
		2:47:57 PM	32.619957	-116.386192
		3:04:04 PM	32.619968	-116.386879
		3:18:37 PM	32.6199	-116.386131
		3:34:27 PM	32.621365	-116.38649
		3:50:09 PM	32.621361	-116.386482
		4:05:58 PM	32.621361	-116.38649
		4:21:39 PM	32.621368	-116.386482
		4:37:28 PM	32.621353	-116.386497

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2015 Golden Eagle Biotelemetry Data (Tracey et al. 2016)

Bird Identification	Date	Clock	Latitude	Longitude
		4:53:09 PM	32.621735	-116.387718
		5:08:58 PM	32.633469	-116.388924
		5:24:39 PM	32.608452	-116.404068
		5:56:33 PM	32.591091	-116.385201
		6:26:58 PM	32.582191	-116.321426
	11/14/2015	10:38:27 PM	32.600838	-116.413086
		10:54:09 PM	32.616207	-116.379837
	11/15/2015	10:26:39 PM	32.587463	-116.381096
	11/23/2015	8:14:58 PM	32.585957	-116.35038
		8:30:39 PM	32.604206	-116.340813
		8:46:28 PM	32.58889	-116.390617
	11/24/2015	7:13:55 PM	32.654655	-116.419487
		7:29:39 PM	32.742271	-116.462181
	12/6/2015	11:04:09 PM	32.708763	-116.456802
		11:19:58 PM	32.769684	-116.463554
	12/18/2015	10:06:58 PM	32.770451	-116.457687
		10:22:38 PM	32.770458	-116.457687
		10:38:27 PM	32.770451	-116.457718
		10:54:09 PM	32.770439	-116.457718
		11:09:58 PM	32.77047	-116.457718
		11:25:39 PM	32.770458	-116.457718
		11:41:26 PM	32.770439	-116.457703
		11:57:09 PM	32.770428	-116.457672
		8:48:39 PM	32.772396	-116.47216
		9:04:58 PM	32.753853	-116.454407
		9:19:39 PM	32.770466	-116.45771
		9:35:28 PM	32.770443	-116.457703
		9:51:08 PM	32.770191	-116.457405
	12/19/2015	12:12:59 AM	32.770515	-116.457703
		12:28:40 AM	32.770439	-116.457703
		12:39:09 AM	32.770447	-116.457695
		2:48:39 PM	32.770439	-116.457703
		3:04:09 PM	32.770428	-116.457695
		3:19:40 PM	32.77042	-116.457687
		3:35:09 PM	32.770447	-116.45771
		3:50:40 PM	32.770424	-116.457695
		4:06:10 PM	32.77042	-116.457687
		4:21:40 PM	32.770439	-116.457695
		4:37:10 PM	32.770405	-116.457695
		4:52:40 PM	32.770416	-116.457695
		5:08:10 PM	32.772282	-116.454224
	12/21/2015	8:05:09 PM	32.610806	-116.423882

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2015 Golden Eagle Biotelemetry Data (Tracey et al. 2016)

Bird Identification	Date	Clock	Latitude	Longitude
	12/23/2015	10:08:39 PM	32.763695	-116.428673
		9:21:33 PM	32.666386	-116.396713
		9:37:10 PM	32.665474	-116.367241
		9:52:58 PM	32.735767	-116.387474
	12/24/2015	7:19:57 PM	32.66991	-116.447548
		7:35:38 PM	32.621361	-116.422119
	12/25/2015	11:46:33 PM	32.650948	-116.441261
	12/26/2015	2:52:40 PM	32.608986	-116.422096
		3:08:32 PM	32.608997	-116.422112
		3:24:09 PM	32.608978	-116.422119
		3:39:39 PM	32.608986	-116.422096
		3:55:09 PM	32.60899	-116.422104
		4:10:39 PM	32.608978	-116.422119
		4:26:09 PM	32.608986	-116.422104
M005	10/1/2015	10:07:09 PM	32.584064	-116.273712
M007	12/14/2015	2:40:29 PM	32.610119	-116.423996
	12/15/2015	12:40:44 AM	32.607689	-116.418533
		2:41:34 PM	32.6101	-116.421539
		2:56:59 PM	32.610104	-116.421555
		3:12:23 PM	32.610123	-116.421547
		3:27:47 PM	32.611332	-116.423019
		4:13:59 PM	32.619171	-116.426918
		4:29:23 PM	32.62043	-116.427544
		4:44:47 PM	32.620438	-116.427551
		5:15:32 PM	32.620468	-116.427544
		5:30:54 PM	32.620411	-116.427528
		6:02:04 PM	32.620438	-116.427551
		6:17:31 PM	32.620453	-116.427559
	12/19/2015	7:37:30 PM	32.688057	-116.454384
		9:10:22 PM	32.649323	-116.446838
		9:25:47 PM	32.649487	-116.446228
		9:41:11 PM	32.682022	-116.445183

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
F007	1/9/2016	7:49:39 PM	32.599373	-116.397797
		8:05:09 PM	32.652779	-116.432549
		8:20:39 PM	32.697327	-116.443794
		9:37:57 PM	32.678211	-116.447922
	2/19/2016	10:06:27 PM	32.590431	-116.354156

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		10:22:09 PM	32.611717	-116.407608
		9:50:40 PM	32.582455	-116.339775
	3/18/2016	3:04:00 PM	32.587822	-116.323593
		3:20:00 PM	32.60183	-116.414658
	4/2/2016	6:20:00 PM	32.621685	-116.408638
		6:35:00 PM	32.627701	-116.387245
		6:51:00 PM	32.618973	-116.384727
		7:03:00 PM	32.618904	-116.384552
	4/3/2016	12:05:00 PM	32.5975	-116.370659
		6:36:00 AM	32.62347	-116.385551
		6:52:00 AM	32.623466	-116.385551
		7:08:00 AM	32.623482	-116.385551
		7:24:00 AM	32.621254	-116.386566
		7:39:00 AM	32.620625	-116.386154
		7:55:00 AM	32.620613	-116.386147
		8:11:00 AM	32.620632	-116.386131
		8:27:00 AM	32.62064	-116.386147
		8:42:00 AM	32.620655	-116.386147
		8:58:00 AM	32.620647	-116.386154
		9:14:00 AM	32.62064	-116.386169
		9:30:00 AM	32.61631	-116.406219
	4/13/2016	3:48:00 PM	32.604103	-116.390953
	6/19/2016	12:16:00 PM	32.667297	-116.446785
	6/29/2016	1:37:00 PM	32.633625	-116.397972
		1:52:00 PM	32.74469	-116.44281
	7/2/2016	2:06:00 PM	32.668156	-116.455055
		2:20:00 PM	32.706051	-116.447472
		2:36:00 PM	32.709019	-116.482887
		3:08:00 PM	32.75647	-116.472137
	7/7/2016	1:10:00 PM	32.88131	-116.39669
		12:07:00 PM	32.660995	-116.445038
		12:23:00 PM	32.701931	-116.427689
		12:39:00 PM	32.773869	-116.408585
		12:55:00 PM	32.809612	-116.340172
	7/8/2016	12:23:00 PM	32.710072	-116.424858
		12:38:00 PM	32.759827	-116.364571
		12:54:00 PM	32.8382	-116.371315
	7/15/2016	12:12:00 PM	32.599014	-116.401581
		12:28:00 PM	32.656647	-116.367165
		12:43:00 PM	32.720085	-116.367455
		12:59:00 PM	32.797356	-116.369873
	7/19/2016	12:14:00 PM	32.653767	-116.434761

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		12:30:00 PM	32.739441	-116.451073
	7/21/2016	1:04:00 PM	32.629585	-116.437073
		1:20:00 PM	32.700642	-116.456398
	7/27/2016	12:03:00 PM	32.656124	-116.423973
		12:19:00 PM	32.718246	-116.38942
		12:35:00 PM	32.797749	-116.408623
	8/1/2016	1:09:00 PM	32.66481	-116.454453
		1:24:00 PM	32.725754	-116.417557
		1:40:00 PM	32.81284	-116.361565
	8/10/2016	12:26:00 PM	32.642136	-116.35881
		12:42:00 PM	32.719856	-116.373749
		12:58:00 PM	32.767117	-116.413368
	8/12/2016	2:29:00 PM	32.652275	-116.39045
		2:44:00 PM	32.720451	-116.4095
		5:53:00 PM	32.863651	-116.383766
		6:08:00 PM	32.863655	-116.383766
		6:24:00 PM	32.863651	-116.383797
		6:39:00 PM	32.822083	-116.371078
		6:55:00 PM	32.822086	-116.371094
		7:10:00 PM	32.822075	-116.371117
		7:26:00 PM	32.822075	-116.371101
		7:29:00 PM	32.822071	-116.371117
	8/13/2016	10:06:00 AM	32.795166	-116.399246
		10:21:00 AM	32.693108	-116.380356
		10:37:00 AM	32.604717	-116.388618
		2:44:00 PM	32.686935	-116.428894
		3:00:00 PM	32.719692	-116.384155
		3:15:00 PM	32.79694	-116.441261
		3:31:00 PM	32.837578	-116.397568
		6:12:00 AM	32.822083	-116.371109
		6:28:00 AM	32.822071	-116.371117
		6:43:00 AM	32.822067	-116.371117
		6:59:00 AM	32.82206	-116.371124
		7:14:00 AM	32.822083	-116.371117
		7:30:00 AM	32.822079	-116.371094
		7:45:00 AM	32.822075	-116.371094
		8:01:00 AM	32.822086	-116.371086
		8:16:00 AM	32.822186	-116.370476
		8:32:00 AM	32.822182	-116.370468
		8:47:00 AM	32.822174	-116.370483
		9:03:00 AM	32.819191	-116.373688
		9:19:00 AM	32.819172	-116.37368

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		9:34:00 AM	32.805084	-116.388039
		9:50:00 AM	32.805096	-116.388008
	8/14/2016	12:03:00 PM	32.743996	-116.431725
		12:19:00 PM	32.632179	-116.405304
	8/25/2016	1:44:00 PM	32.662731	-116.453201
	9/22/2016	11:23:00 AM	32.731213	-116.381042
		11:39:00 AM	32.658821	-116.394516
		11:55:00 AM	32.608189	-116.41761
	9/30/2016	1:00:00 PM	32.66259	-116.349854
		12:44:00 PM	32.689548	-116.284882
	10/9/2016	12:48:00 PM	32.623055	-116.420067
	10/13/2016	1:41:00 PM	32.662895	-116.46328
		1:57:00 PM	32.74633	-116.468994
		11:20:00 AM	32.595108	-116.396599
	10/14/2016	11:36:00 AM	32.597401	-116.292389
		11:52:00 AM	32.594265	-116.341095
	10/15/2016	11:49:00 AM	32.668903	-116.401939
		12:04:00 PM	32.666622	-116.361694
		12:20:00 PM	32.614441	-116.37944
	10/23/2016	11:44:00 AM	32.639065	-116.400429
		12:00:00 PM	32.711334	-116.394135
		12:16:00 PM	32.77166	-116.399933
		12:31:00 PM	32.806438	-116.424133
		12:47:00 PM	32.820305	-116.444016
	10/25/2016	1:06:00 PM	32.879288	-116.391693
		1:22:00 PM	32.812061	-116.397774
		1:37:00 PM	32.759018	-116.402992
		1:53:00 PM	32.678822	-116.401588
	10/26/2016	1:06:00 PM	32.759197	-116.439941
		1:22:00 PM	32.843861	-116.414818
		12:50:00 PM	32.67577	-116.438622
	10/27/2016	1:37:00 PM	32.78146	-116.386307
		1:54:00 PM	32.711121	-116.385826
		2:08:00 PM	32.659935	-116.437538
	10/30/2016	3:12:00 PM	32.873318	-116.388832
		3:28:00 PM	32.873337	-116.38884
		3:44:00 PM	32.874004	-116.389717
		4:00:00 PM	32.873337	-116.388824
		4:15:00 PM	32.873337	-116.388824
		4:31:00 PM	32.873322	-116.388832
		4:47:00 PM	32.873322	-116.388809
		5:03:00 PM	32.873318	-116.388817

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		5:18:00 PM	32.872944	-116.391968
		5:34:00 PM	32.871567	-116.394821
		5:50:00 PM	32.87159	-116.394859
		5:54:00 PM	32.871567	-116.394867
	10/31/2016	10:00:00 AM	32.805115	-116.403252
		10:14:00 AM	32.871567	-116.394859
		10:29:00 AM	32.871605	-116.394875
		10:45:00 AM	32.87059	-116.394684
		11:01:00 AM	32.86953	-116.394615
		11:16:00 AM	32.871517	-116.394859
		11:32:00 AM	32.864037	-116.395699
		11:48:00 AM	32.871578	-116.394859
		12:04:00 PM	32.884151	-116.392868
		4:47:00 PM	32.890347	-116.35865
		5:20:00 PM	32.865299	-116.38694
		5:34:00 PM	32.894375	-116.354965
		5:50:00 PM	32.898251	-116.354973
		5:52:00 PM	32.89827	-116.354935
		7:08:00 AM	32.871593	-116.394852
		7:24:00 AM	32.871601	-116.394852
		7:40:00 AM	32.868698	-116.394905
		7:56:00 AM	32.871429	-116.394836
		8:12:00 AM	32.871567	-116.394859
		8:27:00 AM	32.871555	-116.394859
		8:42:00 AM	32.871552	-116.394867
		8:58:00 AM	32.870338	-116.395142
		9:14:00 AM	32.864658	-116.397308
		9:29:00 AM	32.861279	-116.399261
		9:45:00 AM	32.854492	-116.401283
	11/1/2016	11:20:00 AM	32.885429	-116.360458
		11:36:00 AM	32.785477	-116.378189
		11:51:00 AM	32.758011	-116.382668
		12:07:00 PM	32.67976	-116.399445
		7:08:00 AM	32.898281	-116.354965
		7:24:00 AM	32.898308	-116.354935
		7:39:00 AM	32.898296	-116.354942
		7:55:00 AM	32.898289	-116.354942
		8:11:00 AM	32.898289	-116.354927
		8:27:00 AM	32.898361	-116.354881
	11/2/2016	2:12:00 PM	32.66473	-116.470093
		2:28:00 PM	32.767803	-116.428612
		2:44:00 PM	32.850689	-116.376518

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
	11/3/2016	11:06:00 AM	32.810593	-116.408081
		11:22:00 AM	32.711857	-116.434822
	11/19/2016	11:20:00 AM	32.649303	-116.418228
		11:36:00 AM	32.702557	-116.403732
		11:51:00 AM	32.748734	-116.383354
		12:07:00 PM	32.815113	-116.356812
		12:22:00 PM	32.873569	-116.363937
	11/22/2016	1:01:00 PM	32.858494	-116.381477
		1:17:00 PM	32.786602	-116.403015
		1:33:00 PM	32.772888	-116.422729
		1:48:00 PM	32.773319	-116.423637
		2:04:00 PM	32.77282	-116.422676
		2:20:00 PM	32.772869	-116.422684
		2:35:00 PM	32.7729	-116.422661
		2:51:00 PM	32.772869	-116.422745
		3:06:00 PM	32.772713	-116.423561
		3:22:00 PM	32.772877	-116.422707
		3:38:00 PM	32.772888	-116.422699
		3:54:00 PM	32.772877	-116.422569
		4:09:00 PM	32.772884	-116.422729
		4:25:00 PM	32.77211	-116.422798
		4:37:00 PM	32.772797	-116.424461
	11/23/2016	10:08:00 AM	32.695084	-116.425819
		10:24:00 AM	32.638302	-116.408455
		6:28:00 AM	32.772888	-116.422737
		6:44:00 AM	32.772892	-116.422722
		6:59:00 AM	32.772884	-116.422722
		7:15:00 AM	32.772884	-116.422722
		7:31:00 AM	32.772881	-116.422722
		7:47:00 AM	32.772881	-116.422668
		8:02:00 AM	32.772888	-116.422684
		8:18:00 AM	32.772888	-116.422722
		8:34:00 AM	32.772873	-116.422722
		8:50:00 AM	32.772884	-116.422737
		9:05:00 AM	32.772861	-116.422737
		9:21:00 AM	32.770885	-116.423492
		9:37:00 AM	32.770893	-116.42347
		9:53:00 AM	32.752365	-116.446289
	11/26/2016	11:57:00 AM	32.660461	-116.413963
		12:13:00 PM	32.779549	-116.385445
	12/15/2016	11:45:00 AM	32.664768	-116.447762
		12:01:00 PM	32.708542	-116.409752

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		12:17:00 PM	32.803261	-116.371895
F013	8/29/2016	12:25:29 PM	32.811249	-116.358147
		12:40:59 PM	32.70517	-116.331505
		12:56:44 PM	32.58313	-116.298706
F014	3/7/2016	4:12:22 PM	32.873943	-116.277237
		4:27:59 PM	32.839287	-116.239647
		4:43:35 PM	32.814896	-116.232231
		4:59:11 PM	32.814903	-116.232239
		5:14:46 PM	32.81488	-116.232224
		5:30:16 PM	32.814915	-116.232193
		5:45:46 PM	32.815845	-116.185699
		6:01:17 PM	32.8452	-116.170868
		6:16:53 PM	32.845188	-116.170876
		6:32:29 PM	32.845222	-116.17086
		6:48:04 PM	32.845245	-116.170853
		6:56:10 PM	32.845203	-116.170822
	3/8/2016	10:09:09 AM	32.853359	-116.155373
		10:23:38 AM	32.822899	-116.2052
		10:39:11 AM	32.822613	-116.210182
		10:54:41 AM	32.822754	-116.212891
		11:10:11 AM	32.822746	-116.21286
		11:25:41 AM	32.818642	-116.229446
		11:41:11 AM	32.763306	-116.261078
		11:56:46 AM	32.727379	-116.347054
		12:12:16 PM	32.643055	-116.434402
		4:59:30 AM	32.845161	-116.170883
		5:13:05 AM	32.845257	-116.170891
		5:28:40 AM	32.845257	-116.170868
		5:44:11 AM	32.845249	-116.170868
		5:59:46 AM	32.845276	-116.170891
		6:15:16 AM	32.845264	-116.170914
		6:30:46 AM	32.845249	-116.170891
		6:46:17 AM	32.845242	-116.170868
		7:01:48 AM	32.84523	-116.170868
		7:17:23 AM	32.845238	-116.170868
		7:33:14 AM	32.845249	-116.170883
		7:48:46 AM	32.845268	-116.170868
		8:04:16 AM	32.845222	-116.170883
		8:19:46 AM	32.845242	-116.170883
		8:35:16 AM	32.845444	-116.170891
		8:50:46 AM	32.845173	-116.166496
		9:06:16 AM	32.84565	-116.164215

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		9:21:46 AM	32.845638	-116.164253
		9:37:17 AM	32.845612	-116.164124
		9:52:46 AM	32.848969	-116.167877
	3/21/2016	1:13:54 PM	32.62373	-116.280136
		1:29:29 PM	32.717449	-116.238251
		1:45:10 PM	32.817837	-116.205307
		12:58:18 PM	32.599426	-116.318649
		2:00:41 PM	32.882149	-116.285942
	3/22/2016	11:39:28 AM	32.721088	-116.259048
		11:55:05 AM	32.707909	-116.257568
		12:10:39 PM	32.666378	-116.233025
		12:26:09 PM	32.623882	-116.1651
F016	6/19/2016	1:17:34 PM	32.706085	-116.41172
	8/6/2016	4:18:44 PM	32.754837	-116.407051
		4:33:45 PM	32.807667	-116.37941
M007	1/10/2016	11:04:42 PM	32.654705	-116.445755
	1/11/2016	3:51:01 PM	32.708641	-116.478561
		4:21:54 PM	32.651794	-116.448097
		4:37:25 PM	32.648273	-116.448517
		4:53:05 PM	32.647621	-116.448624
		5:08:29 PM	32.647575	-116.448639
		6:25:55 PM	32.64748	-116.448929
		6:41:35 PM	32.647587	-116.44857
		6:57:00 PM	32.647568	-116.448593
		7:12:26 PM	32.647587	-116.448555
	1/14/2016	6:57:04 PM	32.591492	-116.386414
		7:12:29 PM	32.59697	-116.360352
		7:27:55 PM	32.60191	-116.378586
		7:43:24 PM	32.611385	-116.387184
		7:58:49 PM	32.64439	-116.402977
		8:14:24 PM	32.672459	-116.428879
		8:29:54 PM	32.671608	-116.422859
		8:45:53 PM	32.674782	-116.428215
	1/16/2016	10:34:34 PM	32.637806	-116.410332
	1/17/2016	1:04:21 AM	32.676472	-116.447914
		12:23:18 AM	32.675495	-116.447174
		12:38:43 AM	32.676456	-116.447807
		12:54:13 AM	32.676525	-116.447884
		2:49:34 PM	32.673309	-116.448822
		3:04:59 PM	32.670662	-116.447723
		3:20:24 PM	32.670631	-116.447739
		3:35:49 PM	32.67065	-116.447746

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		3:51:18 PM	32.662735	-116.443382
		4:06:43 PM	32.662792	-116.443428
		4:22:13 PM	32.662743	-116.443367
		4:37:42 PM	32.662727	-116.443367
		4:53:07 PM	32.662773	-116.443405
		6:10:34 PM	32.647503	-116.448471
		6:25:59 PM	32.654625	-116.438576
		6:41:24 PM	32.661564	-116.429939
		6:56:49 PM	32.651775	-116.413551
		7:12:19 PM	32.631142	-116.373497
		7:27:48 PM	32.611938	-116.366249
		7:43:13 PM	32.661259	-116.42939
		7:58:43 PM	32.668903	-116.419777
		8:14:08 PM	32.661964	-116.449974
		8:29:58 PM	32.710487	-116.475449
		8:45:29 PM	32.710419	-116.475388
		9:00:55 PM	32.710457	-116.47538
		9:16:18 PM	32.710461	-116.47538
		9:31:54 PM	32.710442	-116.475395
		9:47:18 PM	32.710426	-116.47554
	4/20/2016	4:00:48 PM	32.634705	-116.431381
		4:16:13 PM	32.727356	-116.468346
	4/29/2016	1:46:49 PM	32.656212	-116.462402
		2:02:19 PM	32.631714	-116.400032
		2:17:49 PM	32.705814	-116.40596
		2:33:34 PM	32.686756	-116.47464
	5/13/2016	1:02:20 PM	32.67466	-116.46685
		12:46:54 PM	32.615643	-116.372185
	5/23/2016	1:12:42 PM	32.760387	-116.393486
		12:41:48 PM	32.591827	-116.315262
		12:57:14 PM	32.655685	-116.372383
	6/19/2016	12:24:24 PM	32.583134	-116.364838
		12:39:49 PM	32.742741	-116.441849
	6/29/2016	1:11:48 PM	32.739769	-116.468826
		12:56:24 PM	32.627796	-116.399017
	7/9/2016	10:24:42 AM	32.655685	-116.436722
		10:40:06 AM	32.676899	-116.474541
	7/20/2016	12:50:48 PM	32.644814	-116.437485
	7/21/2016	3:42:31 PM	32.617855	-116.434212
		7:03:49 PM	32.607433	-116.41803
		7:19:13 PM	32.607445	-116.418098
		7:34:42 PM	32.607418	-116.418243

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		7:50:28 PM	32.60762	-116.418602
		7:52:35 PM	32.607616	-116.418564
	7/22/2016	10:03:17 AM	32.638142	-116.447182
		10:18:42 AM	32.679729	-116.461174
		10:34:05 AM	32.757923	-116.452271
		11:35:18 AM	32.661465	-116.4459
	7/23/2016	10:49:34 AM	32.73785	-116.476692
	7/24/2016	1:27:36 PM	32.656132	-116.43956
		1:42:59 PM	32.636887	-116.399796
	7/25/2016	1:11:30 PM	32.637669	-116.394958
		1:26:54 PM	32.736221	-116.398193
		1:42:18 PM	32.75058	-116.395576
		1:57:42 PM	32.774685	-116.294861
		12:56:04 PM	32.614262	-116.408859
		2:13:36 PM	32.816326	-116.329453
		2:29:00 PM	32.88868	-116.374565
	7/27/2016	2:11:17 PM	32.613407	-116.422981
	7/28/2016	11:38:24 AM	32.62014	-116.423058
		11:53:47 AM	32.688705	-116.388947
		12:09:35 PM	32.784836	-116.374283
	7/29/2016	6:37:32 PM	32.646904	-116.460815
		7:08:35 PM	32.652645	-116.449455
		7:24:05 PM	32.652596	-116.449486
		7:39:34 PM	32.652351	-116.44944
		7:46:33 PM	32.65234	-116.449562
	7/30/2016	10:08:34 AM	32.647491	-116.448471
		10:22:59 AM	32.64954	-116.452789
		10:38:34 AM	32.647522	-116.448479
		10:53:59 AM	32.64753	-116.448463
		11:09:34 AM	32.647556	-116.448524
		11:25:22 AM	32.647522	-116.44841
		11:40:50 AM	32.646107	-116.449554
		4:21:54 PM	32.639595	-116.436539
		4:37:35 PM	32.671783	-116.44545
		4:53:29 PM	32.671768	-116.445419
		5:08:54 PM	32.671768	-116.445427
		5:24:17 PM	32.671757	-116.445374
		5:39:41 PM	32.671783	-116.445396
		5:55:05 PM	32.671772	-116.445381
		5:59:35 AM	32.652176	-116.450172
		6:10:29 PM	32.671764	-116.445366
		6:14:59 AM	32.652195	-116.45015

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		6:25:53 PM	32.671768	-116.445374
		6:30:23 AM	32.652195	-116.450142
		6:41:17 PM	32.671761	-116.445435
		6:45:48 AM	32.652195	-116.450188
		6:56:41 PM	32.671818	-116.445656
		7:01:14 AM	32.647518	-116.448502
		7:12:35 PM	32.671768	-116.445427
		7:16:44 AM	32.647484	-116.448273
		7:28:00 PM	32.671768	-116.445419
		7:32:12 AM	32.647461	-116.448303
		7:43:35 PM	32.67012	-116.446991
		7:46:19 PM	32.670155	-116.446999
		7:47:36 AM	32.647511	-116.448463
		8:03:00 AM	32.647507	-116.448494
		8:18:25 AM	32.647552	-116.448402
		8:34:04 AM	32.647507	-116.448463
		8:49:29 AM	32.647488	-116.448448
		9:04:54 AM	32.647495	-116.448517
		9:20:52 AM	32.647545	-116.448486
		9:36:17 AM	32.647533	-116.448471
		9:51:51 AM	32.647575	-116.448502
	7/31/2016	1:15:57 PM	32.647018	-116.448433
		1:30:17 PM	32.626579	-116.438995
		1:45:42 PM	32.620621	-116.439156
		10:08:41 AM	32.646988	-116.448463
		10:23:28 AM	32.647057	-116.448364
		10:39:02 AM	32.647022	-116.448425
		10:54:38 AM	32.647026	-116.448387
		11:26:33 AM	32.647339	-116.448631
		11:41:29 AM	32.647038	-116.448364
		11:57:33 AM	32.646931	-116.448326
		12:30:25 PM	32.645905	-116.446655
		12:43:51 PM	32.647041	-116.44841
		2:01:06 PM	32.652969	-116.433029
		3:02:28 PM	32.652855	-116.449631
		3:34:37 PM	32.652409	-116.449715
		4:35:12 PM	32.652275	-116.449799
		5:22:58 PM	32.647469	-116.449493
		6:00:28 AM	32.671329	-116.445564
		6:08:36 PM	32.652641	-116.449715
		6:15:53 AM	32.670609	-116.446579
		6:31:18 AM	32.670631	-116.446571

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		6:37:43 PM	32.651875	-116.449707
		6:46:42 AM	32.670639	-116.446548
		6:54:07 PM	32.652763	-116.44973
		7:02:06 AM	32.670605	-116.446556
		7:10:19 PM	32.654766	-116.450813
		7:17:30 AM	32.652489	-116.45192
		7:32:55 AM	32.652458	-116.451866
		7:48:19 AM	32.652447	-116.451851
		8:03:41 AM	32.65247	-116.451927
		8:19:05 AM	32.652431	-116.45182
		8:34:53 AM	32.652435	-116.451874
		8:50:18 AM	32.65242	-116.451881
		9:21:27 AM	32.647018	-116.448349
		9:36:57 AM	32.647053	-116.448349
		9:52:31 AM	32.644909	-116.4422
	8/1/2016	1:14:29 PM	32.708084	-116.354195
		1:29:53 PM	32.781898	-116.37278
		12:59:04 PM	32.631969	-116.394028
		5:59:34 AM	32.652405	-116.451454
		6:14:59 AM	32.652424	-116.451408
		6:30:24 AM	32.652405	-116.4515
		6:45:48 AM	32.652409	-116.451431
		7:01:12 AM	32.652405	-116.451401
		7:16:37 AM	32.65242	-116.451416
		7:32:22 AM	32.65242	-116.451447
		7:47:47 AM	32.652401	-116.451454
		8:03:35 AM	32.647442	-116.449608
	8/24/2016	3:18:41 PM	32.620804	-116.38208
		3:34:07 PM	32.678276	-116.369835
		3:50:00 PM	32.676647	-116.380905
		4:05:51 PM	32.672894	-116.377083
		4:22:20 PM	32.677074	-116.381462
		4:37:07 PM	32.677013	-116.38147
		5:08:12 PM	32.676987	-116.381432
		5:25:25 PM	32.677933	-116.380592
		5:38:48 PM	32.676842	-116.381615
		5:54:17 PM	32.676666	-116.381805
		6:09:48 PM	32.676929	-116.381493
		6:25:12 PM	32.67712	-116.381912
		6:40:36 PM	32.676903	-116.381386
		6:56:22 PM	32.676926	-116.381371
		7:11:48 PM	32.680157	-116.385674

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		7:24:01 PM	32.677933	-116.389381
	8/25/2016	1:14:34 PM	32.659386	-116.402809
		1:29:59 PM	32.659313	-116.403091
		1:45:23 PM	32.659286	-116.402924
		10:08:41 AM	32.659248	-116.403076
		10:24:05 AM	32.659039	-116.403046
		10:39:53 AM	32.659275	-116.403053
		10:55:17 AM	32.659195	-116.403084
		11:10:41 AM	32.659237	-116.403061
		11:26:05 AM	32.659267	-116.40313
		11:41:35 AM	32.65929	-116.40313
		11:57:02 AM	32.659302	-116.403099
		12:12:30 PM	32.659306	-116.403076
		12:28:04 PM	32.659264	-116.403015
		12:43:30 PM	32.659271	-116.403038
		12:58:55 PM	32.659286	-116.403008
		2:00:48 PM	32.65926	-116.40303
		2:16:12 PM	32.659245	-116.403145
		2:31:58 PM	32.659256	-116.403038
		2:47:25 PM	32.65921	-116.402893
		3:02:48 PM	32.659412	-116.4039
		3:18:12 PM	32.679974	-116.386879
		3:33:59 PM	32.679958	-116.385689
		3:49:24 PM	32.629597	-116.389954
		4:04:48 PM	32.623196	-116.401047
		4:20:12 PM	32.623131	-116.401115
		4:35:36 PM	32.623192	-116.402557
		4:51:01 PM	32.654663	-116.403786
		5:06:37 PM	32.656631	-116.403717
		5:22:15 PM	32.656696	-116.403503
		5:37:44 PM	32.656708	-116.403458
		5:53:13 PM	32.656712	-116.403511
		6:08:38 PM	32.667088	-116.394485
		6:16:30 AM	32.677559	-116.389656
		6:24:28 PM	32.67791	-116.389328
		6:31:54 AM	32.677574	-116.389633
		6:39:59 PM	32.677914	-116.389366
		6:47:19 AM	32.677521	-116.389664
		6:55:24 PM	32.677872	-116.389343
		7:02:42 AM	32.677567	-116.389626
		7:10:48 PM	32.678116	-116.389351
		7:18:05 AM	32.677555	-116.389664

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		7:19:54 PM	32.677975	-116.389351
		7:33:29 AM	32.665771	-116.414589
		7:48:54 AM	32.665668	-116.414963
		8:04:18 AM	32.665802	-116.415413
		8:19:42 AM	32.665817	-116.415337
		8:35:21 AM	32.665188	-116.414894
		8:50:47 AM	32.664944	-116.41494
		9:06:35 AM	32.665134	-116.414917
		9:22:07 AM	32.669044	-116.410866
		9:37:47 AM	32.664131	-116.408997
		9:53:11 AM	32.659763	-116.407158
	8/26/2016	1:13:57 PM	32.672096	-116.411354
		1:29:35 PM	32.672104	-116.411362
		1:45:05 PM	32.672112	-116.4114
		10:08:29 AM	32.674107	-116.407715
		10:23:53 AM	32.674129	-116.407707
		10:39:17 AM	32.674122	-116.407722
		10:54:42 AM	32.674149	-116.407745
		11:10:06 AM	32.674145	-116.407707
		11:25:30 AM	32.674156	-116.407715
		11:40:59 AM	32.674191	-116.40773
		11:56:27 AM	32.674164	-116.407806
		12:12:06 PM	32.674168	-116.407639
		12:27:31 PM	32.672775	-116.411758
		12:42:55 PM	32.672745	-116.41172
		12:58:24 PM	32.672058	-116.41124
		2:00:36 PM	32.672089	-116.411453
		2:16:07 PM	32.692631	-116.406891
		2:31:31 PM	32.762405	-116.436226
		6:16:53 AM	32.675415	-116.388313
		6:32:18 AM	32.675434	-116.388329
		6:47:42 AM	32.668697	-116.396255
		7:03:06 AM	32.668705	-116.396233
		7:18:30 AM	32.668655	-116.396194
		7:33:55 AM	32.668652	-116.396217
		7:49:24 AM	32.668655	-116.39621
		8:04:48 AM	32.668598	-116.396164
		8:20:12 AM	32.668694	-116.396233
		8:35:36 AM	32.668663	-116.396133
		8:51:00 AM	32.668663	-116.396141
		9:06:35 AM	32.675426	-116.415955
		9:22:00 AM	32.676285	-116.40316

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		9:37:24 AM	32.674492	-116.406967
		9:53:04 AM	32.674118	-116.407722
	8/27/2016	1:01:49 PM	32.661491	-116.404198
		1:16:13 PM	32.661533	-116.40406
		1:32:00 PM	32.661484	-116.404198
		1:47:29 PM	32.659279	-116.403015
		12:29:24 PM	32.6777	-116.38916
		12:45:08 PM	32.661461	-116.40435
		2:02:55 PM	32.65926	-116.403053
		2:18:27 PM	32.659248	-116.402214
		2:33:53 PM	32.659119	-116.398651
		2:49:21 PM	32.659374	-116.402435
		3:04:49 PM	32.659527	-116.402382
		3:20:34 PM	32.659321	-116.40303
		3:36:26 PM	32.659245	-116.403053
		3:52:22 PM	32.659279	-116.403053
		4:08:05 PM	32.659279	-116.403038
		4:23:59 PM	32.659267	-116.403046
		4:39:53 PM	32.659222	-116.403046
		5:11:20 PM	32.659317	-116.403061
		5:27:05 PM	32.659245	-116.403053
		5:42:30 PM	32.659245	-116.403053
		5:57:54 PM	32.676765	-116.389381
		6:13:19 PM	32.677246	-116.390198
		6:28:42 PM	32.677265	-116.390205
		6:44:06 PM	32.67725	-116.390213
		6:59:30 PM	32.677967	-116.389275
		7:14:55 PM	32.677895	-116.389351
		7:17:35 PM	32.677948	-116.389397
	8/28/2016	10:09:48 AM	32.666153	-116.415482
		10:25:12 AM	32.708931	-116.435211
		10:40:37 AM	32.77335	-116.454941
		6:17:36 AM	32.677567	-116.389801
		6:33:00 AM	32.677544	-116.389793
		6:48:25 AM	32.67754	-116.389786
		7:03:48 AM	32.677586	-116.389374
		7:19:12 AM	32.668724	-116.395706
		7:34:36 AM	32.668716	-116.395699
		7:50:01 AM	32.668709	-116.395737
		8:05:24 AM	32.66872	-116.395699
		8:20:49 AM	32.668701	-116.395699
		8:36:13 AM	32.668747	-116.39576

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		8:51:43 AM	32.669022	-116.396072
		9:07:34 AM	32.682018	-116.411255
		9:23:00 AM	32.682018	-116.411263
		9:38:24 AM	32.68203	-116.411263
		9:53:48 AM	32.68169	-116.410133
	9/6/2016	2:10:25 PM	32.647957	-116.448479
		2:26:05 PM	32.648026	-116.448883
		2:41:30 PM	32.647964	-116.448715
		2:56:54 PM	32.648064	-116.44854
		3:12:53 PM	32.647877	-116.449005
		3:28:18 PM	32.666973	-116.421997
		3:44:05 PM	32.671906	-116.421883
		3:59:30 PM	32.671921	-116.421875
		4:14:54 PM	32.671902	-116.421906
		4:30:18 PM	32.671879	-116.421844
		4:45:42 PM	32.671787	-116.421188
		5:01:06 PM	32.671841	-116.421234
		5:16:30 PM	32.671799	-116.421318
		5:31:55 PM	32.671822	-116.421257
		5:47:34 PM	32.671818	-116.421272
		6:02:59 PM	32.671776	-116.421295
		6:18:23 PM	32.671818	-116.421318
		6:33:48 PM	32.671844	-116.42128
		6:49:11 PM	32.671867	-116.421249
		7:04:35 PM	32.677399	-116.404648
		7:08:19 PM	32.677349	-116.404594
	9/7/2016	1:08:12 PM	32.673004	-116.411301
		1:23:35 PM	32.672993	-116.411293
		1:38:59 PM	32.673019	-116.411331
		1:54:23 PM	32.672997	-116.411308
		10:02:43 AM	32.673805	-116.415085
		10:18:12 AM	32.673779	-116.415016
		10:33:36 AM	32.673058	-116.411186
		10:49:00 AM	32.673073	-116.411362
		11:04:25 AM	32.67305	-116.411407
		11:19:49 AM	32.673031	-116.411346
		11:35:14 AM	32.67308	-116.411377
		11:50:37 AM	32.673012	-116.411278
		12:06:11 PM	32.673061	-116.4114
		12:21:59 PM	32.673023	-116.411278
		12:37:23 PM	32.672993	-116.411316
		12:52:47 PM	32.673019	-116.41124

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		2:09:47 PM	32.673077	-116.411362
		2:25:17 PM	32.673088	-116.411362
		2:41:01 PM	32.672546	-116.411621
		2:56:30 PM	32.672558	-116.411682
		3:12:04 PM	32.672588	-116.411736
		3:27:29 PM	32.672558	-116.411774
		3:42:53 PM	32.672497	-116.411758
		3:58:17 PM	32.672543	-116.411781
		4:13:41 PM	32.67247	-116.411758
		4:29:05 PM	32.6735	-116.407837
		4:44:30 PM	32.66016	-116.416466
		6:25:05 AM	32.674572	-116.40834
		6:40:29 AM	32.674545	-116.408318
		6:55:55 AM	32.67458	-116.40844
		7:11:24 AM	32.678883	-116.413498
		7:27:07 AM	32.675583	-116.40934
		7:42:36 AM	32.671803	-116.415627
		7:58:01 AM	32.672318	-116.41497
		8:13:24 AM	32.671898	-116.416008
		8:28:49 AM	32.671696	-116.415466
		8:44:13 AM	32.672863	-116.415665
		8:59:37 AM	32.674305	-116.415787
		9:15:23 AM	32.673801	-116.415077
		9:30:48 AM	32.67382	-116.415169
		9:46:13 AM	32.673931	-116.415169
	9/8/2016	10:02:53 AM	32.651901	-116.414093
		10:18:34 AM	32.658783	-116.437355
		10:33:59 AM	32.718285	-116.481804
		2:26:25 PM	32.676506	-116.464745
		5:01:13 PM	32.6493	-116.425583
		5:16:59 PM	32.676434	-116.432945
		5:32:25 PM	32.676395	-116.433006
		5:47:49 PM	32.676422	-116.432991
		6:03:19 PM	32.676388	-116.432983
		6:19:04 PM	32.676426	-116.432938
		6:34:30 PM	32.676617	-116.433128
		6:49:55 PM	32.677002	-116.433777
		7:02:12 PM	32.678612	-116.436295
	9/9/2016	1:23:25 PM	32.623241	-116.401176
		1:39:04 PM	32.623154	-116.401123
		1:54:29 PM	32.623169	-116.4011
		10:02:47 AM	32.67107	-116.413368

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		10:18:12 AM	32.669975	-116.415527
		10:33:39 AM	32.670025	-116.415565
		10:49:07 AM	32.66996	-116.415466
		11:05:00 AM	32.669941	-116.415474
		11:20:24 AM	32.67038	-116.415543
		11:35:48 AM	32.636879	-116.429947
		11:51:12 AM	32.626434	-116.35215
		12:06:36 PM	32.595219	-116.339043
		12:22:00 PM	32.630787	-116.367485
		12:37:25 PM	32.623112	-116.401146
		12:53:00 PM	32.623131	-116.401123
		2:09:58 PM	32.623566	-116.401154
		2:25:24 PM	32.65731	-116.405571
		2:40:49 PM	32.67654	-116.433701
		2:56:23 PM	32.676498	-116.43367
		3:11:47 PM	32.67646	-116.433762
		3:27:11 PM	32.66584	-116.413353
		4:13:48 PM	32.655544	-116.414116
		4:29:35 PM	32.652191	-116.403984
		4:45:24 PM	32.65926	-116.415794
		5:00:48 PM	32.648197	-116.411606
		5:16:13 PM	32.660103	-116.404427
		5:31:36 PM	32.674171	-116.422493
		5:47:06 PM	32.674149	-116.422508
		6:02:52 PM	32.674107	-116.422539
		6:18:17 PM	32.671295	-116.401131
		6:25:34 AM	32.674171	-116.409813
		6:33:40 PM	32.671196	-116.401176
		6:40:59 AM	32.67416	-116.409775
		6:49:12 PM	32.671288	-116.401215
		6:56:24 AM	32.674164	-116.40979
		7:00:25 PM	32.675961	-116.401566
		7:11:48 AM	32.674156	-116.409805
		7:27:13 AM	32.673962	-116.413872
		7:42:36 AM	32.67395	-116.413895
		7:57:59 AM	32.673988	-116.414093
		8:13:23 AM	32.670959	-116.41523
		8:28:47 AM	32.672932	-116.415825
		8:44:13 AM	32.672638	-116.411781
		8:59:36 AM	32.672642	-116.411758
		9:15:22 AM	32.672688	-116.411804
		9:30:50 AM	32.672287	-116.411842

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		9:46:19 AM	32.670757	-116.413551
	9/10/2016	1:08:36 PM	32.674225	-116.407639
		1:24:06 PM	32.67424	-116.407684
		1:39:30 PM	32.707973	-116.391167
		1:54:54 PM	32.648418	-116.421379
		10:03:19 AM	32.674221	-116.407677
		10:18:43 AM	32.674213	-116.407654
		10:34:07 AM	32.674221	-116.407646
		10:49:36 AM	32.674248	-116.407715
		11:05:00 AM	32.674194	-116.407646
		11:20:25 AM	32.674225	-116.407623
		11:35:58 AM	32.674358	-116.407852
		11:51:36 AM	32.674217	-116.407654
		12:06:59 PM	32.674248	-116.407623
		12:22:24 PM	32.674198	-116.407608
		12:37:48 PM	32.674194	-116.4076
		12:53:12 PM	32.674187	-116.407585
		2:10:18 PM	32.671867	-116.421165
		2:25:51 PM	32.671883	-116.421188
		2:41:34 PM	32.671871	-116.421204
		2:56:59 PM	32.671852	-116.421181
		3:12:23 PM	32.671833	-116.421265
		3:27:47 PM	32.671864	-116.421196
		3:43:11 PM	32.671833	-116.421158
		3:58:36 PM	32.67186	-116.421211
		4:14:00 PM	32.671852	-116.421211
		4:29:23 PM	32.671841	-116.421196
		4:44:48 PM	32.671822	-116.421066
		5:00:34 PM	32.671844	-116.421196
		5:16:01 PM	32.671825	-116.421211
		5:31:30 PM	32.671844	-116.421181
		5:46:54 PM	32.672462	-116.416458
		6:02:18 PM	32.672523	-116.416573
		6:17:42 PM	32.672646	-116.416679
		6:26:05 AM	32.674213	-116.406784
		6:33:05 PM	32.672539	-116.416641
		6:41:30 AM	32.673988	-116.408043
		6:48:32 PM	32.670788	-116.413948
		6:56:55 AM	32.673943	-116.407967
		6:58:44 PM	32.674145	-116.409775
		7:12:25 AM	32.673992	-116.408035
		7:27:49 AM	32.67395	-116.408005

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		7:43:12 AM	32.67392	-116.408035
		7:58:36 AM	32.673977	-116.408028
		8:14:01 AM	32.674175	-116.407669
		8:29:24 AM	32.674149	-116.407715
		8:44:48 AM	32.674129	-116.407639
		9:00:34 AM	32.674202	-116.407654
		9:15:59 AM	32.67424	-116.407669
		9:31:24 AM	32.674221	-116.4077
		9:46:48 AM	32.674213	-116.407692
	9/11/2016	10:05:05 AM	32.6721	-116.40097
		10:20:29 AM	32.636215	-116.431793
		11:37:53 AM	32.6371	-116.446922
		11:53:18 AM	32.741505	-116.399025
		12:08:42 PM	32.773209	-116.43309
		12:24:06 PM	32.676624	-116.452835
		12:39:30 PM	32.672966	-116.409698
		2:27:35 PM	32.669128	-116.455368
		2:42:59 PM	32.720257	-116.480339
		2:58:23 PM	32.66161	-116.343735
		3:13:48 PM	32.696125	-116.339462
		3:29:34 PM	32.792431	-116.29287
		3:45:00 PM	32.84951	-116.333405
		4:00:24 PM	32.887669	-116.384537
		6:27:29 AM	32.656761	-116.406006
		6:42:53 AM	32.656757	-116.405991
		6:58:18 AM	32.656796	-116.406013
		7:13:43 AM	32.656765	-116.405998
		7:29:06 AM	32.657295	-116.405441
		7:44:31 AM	32.663029	-116.406883
		7:59:59 AM	32.663074	-116.406937
		8:16:30 AM	32.672638	-116.41188
		8:32:02 AM	32.67263	-116.411774
		8:47:31 AM	32.6726	-116.411812
		9:03:01 AM	32.675163	-116.416016
		9:18:52 AM	32.673042	-116.411217
		9:34:19 AM	32.672619	-116.411758
		9:49:42 AM	32.672638	-116.411804
	9/23/2016	1:04:02 PM	32.672302	-116.421913
		1:19:31 PM	32.672138	-116.421822
		1:35:01 PM	32.665897	-116.422417
	9/24/2016	1:03:59 PM	32.647526	-116.448593
		1:19:24 PM	32.647545	-116.448463

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		1:35:16 PM	32.64756	-116.448425
		1:50:46 PM	32.647442	-116.448654
		10:13:08 AM	32.64753	-116.448654
		10:29:04 AM	32.647526	-116.448631
		10:44:40 AM	32.647812	-116.448051
		11:01:56 AM	32.647575	-116.448502
		11:15:23 AM	32.647614	-116.44857
		11:31:00 AM	32.647526	-116.44812
		11:46:31 AM	32.647541	-116.448631
		12:02:35 PM	32.647724	-116.448502
		12:17:12 PM	32.647533	-116.448639
		12:32:52 PM	32.64764	-116.448479
		12:48:34 PM	32.647541	-116.448494
		2:06:13 PM	32.647533	-116.448669
		2:21:45 PM	32.647522	-116.448555
		9:57:36 AM	32.647556	-116.448677
	9/25/2016	1:04:56 PM	32.647579	-116.448502
		1:20:35 PM	32.647572	-116.448547
		1:36:30 PM	32.647652	-116.448257
		1:51:57 PM	32.647545	-116.448677
		10:14:00 AM	32.647617	-116.448563
		10:29:24 AM	32.647614	-116.448601
		10:44:49 AM	32.647587	-116.448547
		11:01:54 AM	32.647625	-116.448502
		11:16:17 AM	32.647625	-116.448502
		11:31:43 AM	32.647621	-116.448502
		11:47:12 AM	32.647614	-116.448524
		12:02:37 PM	32.647598	-116.448494
		12:18:22 PM	32.647591	-116.448532
		12:35:01 PM	32.647594	-116.448456
		12:49:26 PM	32.647556	-116.448784
		5:29:17 PM	32.607635	-116.418419
		5:44:42 PM	32.607666	-116.418442
		6:00:13 PM	32.607632	-116.418449
		6:15:42 PM	32.607635	-116.418411
		6:31:07 PM	32.607502	-116.418381
		6:40:14 PM	32.607864	-116.418533
		8:56:24 AM	32.652042	-116.449562
		9:11:54 AM	32.653957	-116.444061
		9:27:25 AM	32.653954	-116.444046
		9:42:54 AM	32.653965	-116.444069
		9:58:34 AM	32.653973	-116.444054

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
	9/26/2016	10:14:54 AM	32.662308	-116.437408
		10:30:19 AM	32.709614	-116.478699
		6:37:28 AM	32.607594	-116.418427
		6:52:53 AM	32.607567	-116.418411
		7:08:19 AM	32.607643	-116.418442
		7:23:48 AM	32.608658	-116.416786
		7:39:13 AM	32.608688	-116.416763
		7:54:43 AM	32.608234	-116.419357
		8:10:34 AM	32.608658	-116.416908
		8:26:00 AM	32.608658	-116.416794
		8:41:24 AM	32.608685	-116.416786
		8:56:49 AM	32.608696	-116.416817
		9:12:13 AM	32.643635	-116.440628
		9:27:52 AM	32.647793	-116.448792
		9:43:36 AM	32.647518	-116.44857
		9:59:25 AM	32.647587	-116.44841
	9/29/2016	12:07:00 PM	32.658691	-116.44474
	9/30/2016	12:22:01 PM	32.654202	-116.421555
	10/1/2016	10:02:31 AM	32.687778	-116.471123
		10:18:00 AM	32.665489	-116.466522
	10/2/2016	10:49:59 AM	32.654121	-116.402885
		11:05:24 AM	32.695423	-116.331024
		11:20:54 AM	32.737717	-116.315681
		11:36:18 AM	32.833153	-116.282326
		11:51:43 AM	32.870972	-116.348694
M010	2/17/2016	10:13:34 PM	32.578594	-116.292938
		10:29:10 PM	32.579941	-116.276733
		10:44:46 PM	32.593178	-116.291618
		8:08:28 PM	32.687885	-116.472397
		8:24:03 PM	32.672066	-116.400383
		8:55:17 PM	32.609077	-116.293663
		9:10:51 PM	32.583141	-116.298546
		9:26:45 PM	32.57859	-116.292923
		9:42:22 PM	32.578575	-116.292923
	2/18/2016	1:19:44 PM	32.573704	-116.289467
		1:35:22 PM	32.573681	-116.289444
		1:37:00 AM	32.569733	-116.286438
		1:50:59 PM	32.573738	-116.289459
		1:52:40 AM	32.57616	-116.289734
		2:06:35 PM	32.57373	-116.289528
		2:08:39 AM	32.573704	-116.289444
		2:22:17 PM	32.576275	-116.288574

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		2:24:15 AM	32.573711	-116.289413
		2:37:52 PM	32.577656	-116.285454
		2:39:51 AM	32.573669	-116.289383
		2:41:40 AM	32.5737	-116.289421
		2:53:28 PM	32.578678	-116.284691
		3:09:05 PM	32.574566	-116.287766
		3:24:41 PM	32.573883	-116.288147
		3:40:16 PM	32.573975	-116.288124
		3:55:52 PM	32.573956	-116.288101
		4:11:28 PM	32.573925	-116.288139
		4:27:04 PM	32.573917	-116.288132
		4:42:40 PM	32.574429	-116.287636
	2/27/2016	12:41:40 PM	32.582161	-116.348175
	3/1/2016	1:56:34 PM	32.576984	-116.277992
		2:12:10 PM	32.570763	-116.27121
		2:27:45 PM	32.577229	-116.282059
		2:43:27 PM	32.577244	-116.282082
		2:59:14 PM	32.577354	-116.282455
	3/10/2016	2:51:28 PM	32.597839	-116.219406
		3:22:46 PM	32.590744	-116.242622
	3/16/2016	12:49:04 PM	32.597694	-116.388367
	3/17/2016	3:38:34 PM	32.586903	-116.288696
	3/18/2016	2:20:10 PM	32.575325	-116.249718
	3/19/2016	1:47:05 PM	32.618046	-116.242584
		2:02:41 PM	32.60207	-116.249031
		2:18:17 PM	32.580978	-116.256187
	3/20/2016	12:43:22 PM	32.577003	-116.23938
	3/22/2016	1:43:05 PM	32.604984	-116.193176
		1:58:46 PM	32.617233	-116.174164
		4:03:52 PM	32.620102	-116.163513
	3/25/2016	1:07:53 PM	32.582497	-116.231773
		1:23:28 PM	32.582733	-116.231018
		1:39:03 PM	32.587872	-116.224442
		12:36:28 PM	32.579338	-116.242928
		12:52:14 PM	32.582127	-116.235138
		3:12:52 PM	32.576111	-116.27961
M011	1/24/2016	11:46:23 PM	32.653034	-116.449097
	1/25/2016	1:04:17 AM	32.691753	-116.402122
		1:19:53 AM	32.691811	-116.402199
		1:35:44 AM	32.691845	-116.402214
		1:38:38 PM	32.69175	-116.402206
		1:51:16 AM	32.691837	-116.402153

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		1:54:10 PM	32.691772	-116.402176
		12:01:58 AM	32.665878	-116.388489
		12:17:34 AM	32.680359	-116.385925
		12:33:10 AM	32.695347	-116.40255
		12:48:41 AM	32.691753	-116.402153
		2:06:47 AM	32.691799	-116.402176
		2:09:41 PM	32.691772	-116.402206
		2:20:15 AM	32.691795	-116.402214
		2:25:17 PM	32.691765	-116.402191
		2:40:53 PM	32.691772	-116.40226
		2:56:29 PM	32.691772	-116.402222
		3:12:06 PM	32.69178	-116.402237
		3:27:41 PM	32.691769	-116.402229
		3:43:11 PM	32.693474	-116.402191
		3:58:42 PM	32.676273	-116.409584
		4:14:17 PM	32.675125	-116.408676
		4:29:52 PM	32.674603	-116.408371
		4:45:31 PM	32.679302	-116.409683
		5:01:15 PM	32.657955	-116.426018
		5:16:46 PM	32.672081	-116.422104
		5:32:17 PM	32.67017	-116.41832
		5:47:53 PM	32.674881	-116.420662
		6:03:29 PM	32.635399	-116.404343
		6:19:05 PM	32.613945	-116.361488
		6:34:41 PM	32.622261	-116.355713
		6:50:17 PM	32.616417	-116.361931
	7/6/2016	2:38:16 PM	32.826824	-116.162399
		2:53:43 PM	32.837917	-116.244888
		3:09:17 PM	32.819263	-116.301025
		3:25:09 PM	32.813671	-116.371826
		3:40:41 PM	32.813675	-116.371849
		3:56:09 PM	32.78717	-116.399857
		4:11:41 PM	32.787167	-116.399841
		4:27:12 PM	32.787178	-116.399834
		4:43:08 PM	32.787159	-116.399849
		4:59:01 PM	32.786579	-116.402229
		5:14:33 PM	32.786545	-116.402229
		5:30:02 PM	32.78656	-116.402222
		5:45:34 PM	32.782543	-116.405014
		6:01:04 PM	32.782524	-116.404968
		6:16:34 PM	32.782547	-116.404976
		6:32:04 PM	32.782524	-116.404976

ATTACHMENT J-1
Golden Eagle Biotelemetry Data

2016 Golden Eagle Biotelemetry Data (Tracey et al. 2016, 2017)

Bird Identification	Date	Clock	Latitude	Longitude
		6:47:34 PM	32.782536	-116.404968
		7:03:04 PM	32.776512	-116.403702
		7:18:34 PM	32.776524	-116.403725
		7:34:04 PM	32.776512	-116.403709
		7:49:34 PM	32.776524	-116.403687
		8:05:04 PM	32.776508	-116.403717
		8:20:34 PM	32.776508	-116.403679
		8:36:14 PM	32.776535	-116.403702
		8:52:09 PM	32.77652	-116.403709
		9:08:04 PM	32.776531	-116.403725
		9:09:53 PM	32.776524	-116.403702
	7/7/2016	4:31:45 AM	32.776562	-116.403702
		4:45:11 AM	32.776546	-116.403694
		5:01:02 AM	32.77652	-116.40374
		5:16:33 AM	32.776524	-116.403725
		5:32:03 AM	32.77652	-116.40374
		5:47:33 AM	32.776508	-116.403732

ATTACHMENT K

Data Station Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Torrey Wind Project City/County: Boulevard/San Diego Sampling Date: 7/3/2018

Applicant/Owner: State: CA Sampling Point: 1

Investigator(s): C. Amoaku, P. Schuyler, L. Mobley, J. Marcon Section, Township, Range:

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	5	Yes	FACW
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1. *Tamarix ramosissima (T. chinensis)*	10	Yes	FAC
2. *Baccharis salicifolia*	2	No	FAC
3. *Artemisia tridentata*	10	Yes	Not Listed
4.			
5.			
Total Cover:	22 %		
Herb Stratum			
1. *Bromus tectorum*	40	Yes	Not Listed
2. *Hirschfeldia incana*	3	No	Not Listed
3. *Ambrosia psilostachya*	1	No	FACU
4. *Heliotropium curassavicum*	1	No	Not Listed
5.			
6.			
7.			
8.			
Total Cover:	45 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 50 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	5	x 2 =	10
FAC species	12	x 3 =	36
FACU species	1	x 4 =	4
UPL species	54	x 5 =	270
Column Totals:	72 (A)		320 (B)

Prevalence Index = B/A = 4.44

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	10YR 3/1	100					sandy loam	
2-12	10YR 3/3	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This point is within Tule Creek, and is a feature in the National Wetland Inventory.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Torrey Wind Project City/County: Boulevard/San Diego Sampling Date: 7/3/2018

Applicant/Owner: State: CA Sampling Point: 2A

Investigator(s): C. Amoaku, P. Schuyler, L. Mobley, J. Marcon Section, Township, Range:

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	50	Yes	FACW
2.			
3.			
4.			
Total Cover:	50 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	25	Yes	FAC
2. *Artemisia tridentata*	7	No	Not Listed
3. *Baccharis sarothroides*	5	No	Not Listed
4. *Quercus agrifolia*	1	No	Not Listed
5.			
Total Cover:	38 %		
Herb Stratum			
1. *Juncus mexicanus*	98	Yes	FACW
2. *Gutierrezia sarothrae*	1	No	Not Listed
3. *Ambrosia psilostachya*	1	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 50 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	148	x 2 =	296
FAC species	25	x 3 =	75
FACU species	1	x 4 =	4
UPL species	14	x 5 =	70
Column Totals:	188 (A)		445 (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	10YR 2/2	100					sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Hardpan

Depth (inches): 6"+

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This point is within Tule Creek, and is a feature in the National Wetland Inventory.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Torrey Wind Project City/County: Boulevard/San Diego Sampling Date: 7/3/2018

Applicant/Owner: State: CA Sampling Point: 2B

Investigator(s): C. Amoaku, P. Schuyler, L. Mobley, J. Marcon Section, Township, Range:

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	30	Yes	FACW
2.			
3.			
4.			
Total Cover:	30 %		
Sapling/Shrub Stratum			
1. *Artemisia tridentata*	20	Yes	Not Listed
2. *Baccharis salicifolia*	10	No	FAC
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1. *Bromus diandrus*	50	Yes	Not Listed
2. *Bromus tectorum*	10	No	Not Listed
3. *Ambrosia psilostachya*	5	No	FACU
4. *Urtica dioica*	5	No	FAC
5. *Anemopsis californica*	3	No	OBL
6. *Avena barbata*	2	No	Not Listed
7. *Artemisia dracunculus*	2	No	Not Listed
8. *Juncus mexicanus*	1	No	FACW
Total Cover:	78 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	31	x 2 =	62
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	84	x 5 =	420
Column Totals:	138 (A)		550 (B)

Prevalence Index = B/A = 3.99

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

SOIL

Sampling Point: 2B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	2.5Y 4/2	100					sandy clay loam	
4-10	2.5Y 2.5/1	100					sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Hardpan

Depth (inches): 10"+

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This point is within Tule Creek, and is a feature in the National Wetland Inventory. Minor bed and bank indicator observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Torrey Wind Project City/County: Boulevard/San Diego Sampling Date: 7/3/2018

Applicant/Owner: State: CA Sampling Point: 2C

Investigator(s): C. Amoaku, P. Schuyler, L. Mobley, J. Marcon Section, Township, Range:

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Artemisia tridentata*	10	Yes	Not Listed
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Erodium cicutarium*	10	Yes	Not Listed
2. *Hirschfeldia incana*	5	Yes	Not Listed
3. *Gutierrezia sarothrae*	3	No	Not Listed
4. *Bromus tectorum*	1	No	Not Listed
5. *Corethrogyne filaginifolia*	1	No	Not Listed
6. *Heliotropium curassavicum*	1	No	Not Listed
7.			
8.			
Total Cover:	21 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 69 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	31	x 5 =	155
Column Totals:	31 (A)		155 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 2C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No soil pit dug because this data station is an upland point for 2A and 2B, which did not have hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Torrey Wind Project | City/County: Boulevard/San Diego | Sampling Date: 9/6/2018

Applicant/Owner: | State: CA | Sampling Point: 3

Investigator(s): Erin Bergman | Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): None | Slope (%): 1.5

Subregion (LRR): C - Mediterranean California | Lat: 32.71070585 | Long: -116.29355287 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: Field Data Point is a non-wetland confirmation point. Point of investigation taken within underdeveloped channel that has supported the southern willow riparian forest intermixed with big sagebush. Understory is composed of upland shrub and herbaceous species. Extent of federal jurisdiction remains within the OHWM of ephemeral drainage feature.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	40	Yes	FACW
2.			
3.			
4.			
Total Cover:	40 %		
Sapling/Shrub Stratum			
1. *Artemesia tridentata*	20	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Bromus tectorum*	25	Yes	UPL
2. *Heliotropium curassavicum*	15	No	FACU
3. *Ambrosia psilostachya*	10	No	FACU
4. *Sisymbrium altissimum*	5	No	UPL
5.			
6.			
7.			
8.			
Total Cover:	55 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 25 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	40	x 2 =	80
FAC species		x 3 =	0
FACU species	25	x 4 =	100
UPL species	50	x 5 =	250
Column Totals:	115 (A)		430 (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks: Transitional southern willow scrub with upland understory strata. Understory of the riparian community is more indicative of annual conditions. (which are non-wetland) Willows germinated during wetter conditions.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	N/A	N/A				Loamy Sand	Fluvial sediments

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Soil unit mapped at the point of investigation is Riverwash which is listed as hydric by the NRCS and is an Entisol (a recently deposited fluvial sediment). Entisols/fluvial sediments rarely present hydric field indicators. Guidance for soil lacking hydric indicators is found in the 2008 Supplement Chapter 3, page 27 and states that 'a soil that meets the definition of a hydric soil is hydric whether or not it exhibits indicators'

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ◉ No ○ Depth (inches): Unknown

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This point is within a small underdeveloped ephemeral channel and is a feature in the National Wetland Inventory.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Boulder Brush Gen-Tie | City/County: Boulevard/San Diego | Sampling Date: 7/23/2018

Applicant/Owner: | State: CA | Sampling Point: 4a

Investigator(s): Callie Amoaku, Mackenzie Forgey | Section, Township, Range:

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Sample point on top of bank from willows in channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Juncus mexicanus*	80	Yes	FACW
2. *Anemopsis californica*	40	Yes	OBL
3. *Ambrosia psilostachya*	20	Yes	FACU
4. *Bromus diandrus*	5	No	UPL
5. *Distichlis spicata*	5	No	FAC
6.			
7.			
8.			
Total Cover:	150%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	80	x 2 =	160
FAC species	5	x 3 =	15
FACU species	20	x 4 =	80
UPL species	5	x 5 =	25
Column Totals:	150 (A)		320 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 4a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5YR 2.5/1	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Boulder Brush Gen-Tie | City/County: Boulevard/San Diego | Sampling Date: 7/23/2018

Applicant/Owner: | State: CA | Sampling Point: 1b

Investigator(s): Callie Amoaku, Mackenzie Forgey | Section, Township, Range:

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Upland sample point associated with DS 1a.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	5	Yes	UPL
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1. *Artemisia tridentata*	10	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Bromus tectorum*	50	Yes	UPL
2. *Bromus diandrus*	5	No	UPL
3. *Heliotropium curassavicum*	5	No	FACU
4. *Juncus mexicanus*	5	No	FACW
5. *Anemopsis californica*	5	No	OBL
6. *Ambrosia psilostachya*	2	No	FACU
7.			
8.			
Total Cover:	72 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	5	x 2 =	10
FAC species		x 3 =	0
FACU species	7	x 4 =	28
UPL species	70	x 5 =	350
Column Totals:	87 (A)		393 (B)

Prevalence Index = B/A = 4.52

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 1b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5YR 2.5/1	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Boulder Brush Gen-Tie | City/County: Boulevard/San Diego | Sampling Date: 7/23/2018

Applicant/Owner: | State: CA | Sampling Point: 4c

Investigator(s): Callie Amoaku, Mackenzie Forgey | Section, Township, Range:

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	60	Yes	FACW
2.			
3.			
4.			
Total Cover:	60 %		
Sapling/Shrub Stratum			
1. *Artemisia tridentata*	5	Yes	UPL
2. *Quercus agrifolia (sapling)*	1	No	UPL
3.			
4.			
5.			
Total Cover:	6 %		
Herb Stratum			
1. *Ambrosia psilostachya*	40	Yes	FACU
2. *Anemopsis californica*	5	No	OBL
3. *Juncus mexicanus*	5	No	FACW
4. *Apium graveolens*	1	No	UPL
5. *Artemisia dracunculus*	1	No	UPL
6.			
7.			
8.			
Total Cover:	52 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	65	x 2 =	130
FAC species		x 3 =	0
FACU species	40	x 4 =	160
UPL species	8	x 5 =	40
Column Totals:	118 (A)		335 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 4c

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	10YR 2/2	99	2.5YR 3/6	1	C	PL	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Oxidized rhizospheres along dead roots only.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Boulder Brush Gen-Tie | City/County: Boulevard/San Diego | Sampling Date: 7/23/2018

Applicant/Owner: | State: CA | Sampling Point: 4d

Investigator(s): Callie Amoaku, Mackenzie Forgey | Section, Township, Range:

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Artemisia tridentata*	5	Yes	UPL
2. *Baccharis salicifolia*	1	No	FAC
3.			
4.			
5.			
Total Cover:	6 %		
Herb Stratum			
1. *Juncus mexicanus*	80	Yes	FACW
2. *Distichlis spicata*	80	Yes	FAC
3. *Ambrosia psilostachya*	10	No	FACU
4. *Anemopsis californica*	5	No	OBL
5.			
6.			
7.			
8.			
Total Cover:	175 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	80	x 2 =	160
FAC species	81	x 3 =	243
FACU species	10	x 4 =	40
UPL species	5	x 5 =	25
Column Totals:	181 (A)		473 (B)

Prevalence Index = B/A = 2.61

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 4d

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5YR 2.5/1	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Tule Creek floodplain

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Boulder Brush Gen-Tie | City/County: Boulevard/San Diego | Sampling Date: 7/23/2018

Applicant/Owner: | State: CA | Sampling Point: 4e

Investigator(s): Callie Amoaku, Mackenzie Forgey | Section, Township, Range:

Landform (hillslope, terrace, etc.): floodplain | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *none*			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Salix laevigata*	5	Yes	FACW
2. *Artemisia tridentata*	5	Yes	UPL
3. *Baccharis pilularis*	3	No	UPL
4. *Baccharis salicifolia*	1	No	FAC
5.			
Total Cover:	14 %		
Herb Stratum			
1. *Asclepias fascicularis*	1	No	FAC
2. *Ambrosia psilostachya*	8	No	FACU
3. *Bromus diandrus*	5	No	UPL
4. *Distichlis spicata*	50	Yes	FAC
5. *Hirschfeldia incana*	1	No	UPL
6. *Anemopsis californica*	2	No	OBL
7. *Juncus mexicanus*	10	No	FACW
8. *Heliotropium curassavicum var. oculatum*	2	No	UPL
Total Cover:	79 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	15	x 2 =	30
FAC species	52	x 3 =	156
FACU species	8	x 4 =	32
UPL species	16	x 5 =	80
Column Totals:	93 (A)		300 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 4e

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10 YR 2/2	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Tule Creek floodplain

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Boulder Brush Gen-Tie | City/County: Boulevard/San Diego | Sampling Date: 7/23/2018

Applicant/Owner: | State: CA | Sampling Point: 4f

Investigator(s): Callie Amoaku, Mackenzie Forgey | Section, Township, Range:

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Upland point for DS 1e.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Tamarix rammossissima (T. chinensis)*	3	No	FAC
2.			
3.			
4.			
5.			
Total Cover:	3 %		
Herb Stratum			
1. *Bromus tectorum*	30	Yes	UPL
2. *Heliotropium curassavicum*	25	Yes	FACU
3. *Distichlis spicata*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	60 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	8	x 3 =	24
FACU species	25	x 4 =	100
UPL species	30	x 5 =	150
Column Totals:	63 (A)		274 (B)

Prevalence Index = B/A = 4.35

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 4f

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	10YR 2/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
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- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
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Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: