

APPENDIX B-1

*2010 45-Day Summary Report of Focused Surveys
for Quino Checkerspot Butterfly for the Campo
Wind Energy Project*

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).

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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,

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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

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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.

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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

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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 Lohstroh, 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 McMorrان	#TE-820658 (supervised)
Margie Mulligan	#TE-233291
Ken Osborne	#TE-837760
Andrew Pigniolo	#TE-053020
Dale Powell	#TE-006559
Steve Rink	#TE-797999

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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, Pignuolo, 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, Pignuolo, 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.

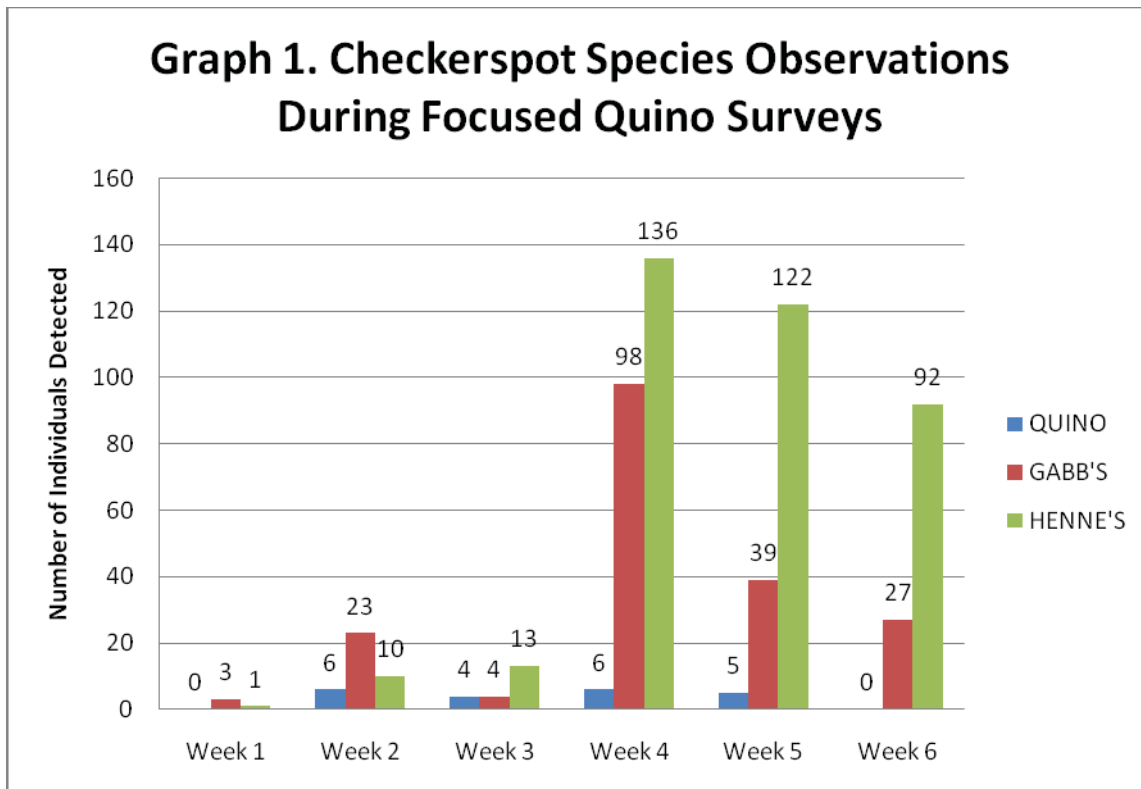
Results

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).

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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 gabbii*), and Henne's chalcidon 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.



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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 checkerspot 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.

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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

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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

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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



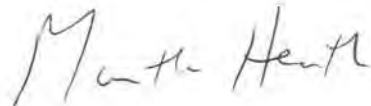
Gretchen Cummings
Subcontracted Quino Surveyor



Frank Dittmer
Subcontracted Quino Surveyor



David Faulkner
Subcontracted Quino Surveyor



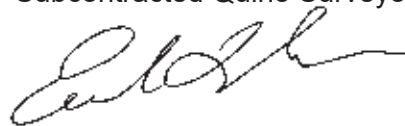
Martha Heath
Subcontracted Quino Surveyor



Steve Rink
Subcontracted Quino Surveyor



Diana Jensen
Subcontracted Quino Surveyor



Erik LaCoste
Subcontracted Quino Surveyor

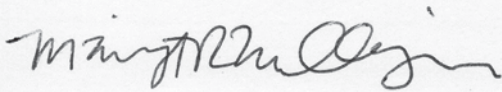
Ms. Sandy Marquez
Carlsbad Fish and Wildlife Office
July 5, 2010
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Brian Lohstroh
Subcontracted Quino Surveyor



Viviane Marquez
Subcontracted Quino Surveyor



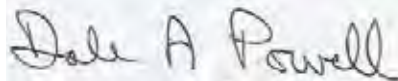
Margie Mulligan
Subcontracted Quino Surveyor



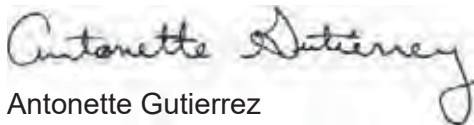
Ken Osborne
Subcontracted Quino Surveyor



Andrew Pignolo
Subcontracted Quino Surveyor



Dale Powell
Subcontracted Quino Surveyor



Antonette Gutierrez
Subcontracted Quino Surveyor



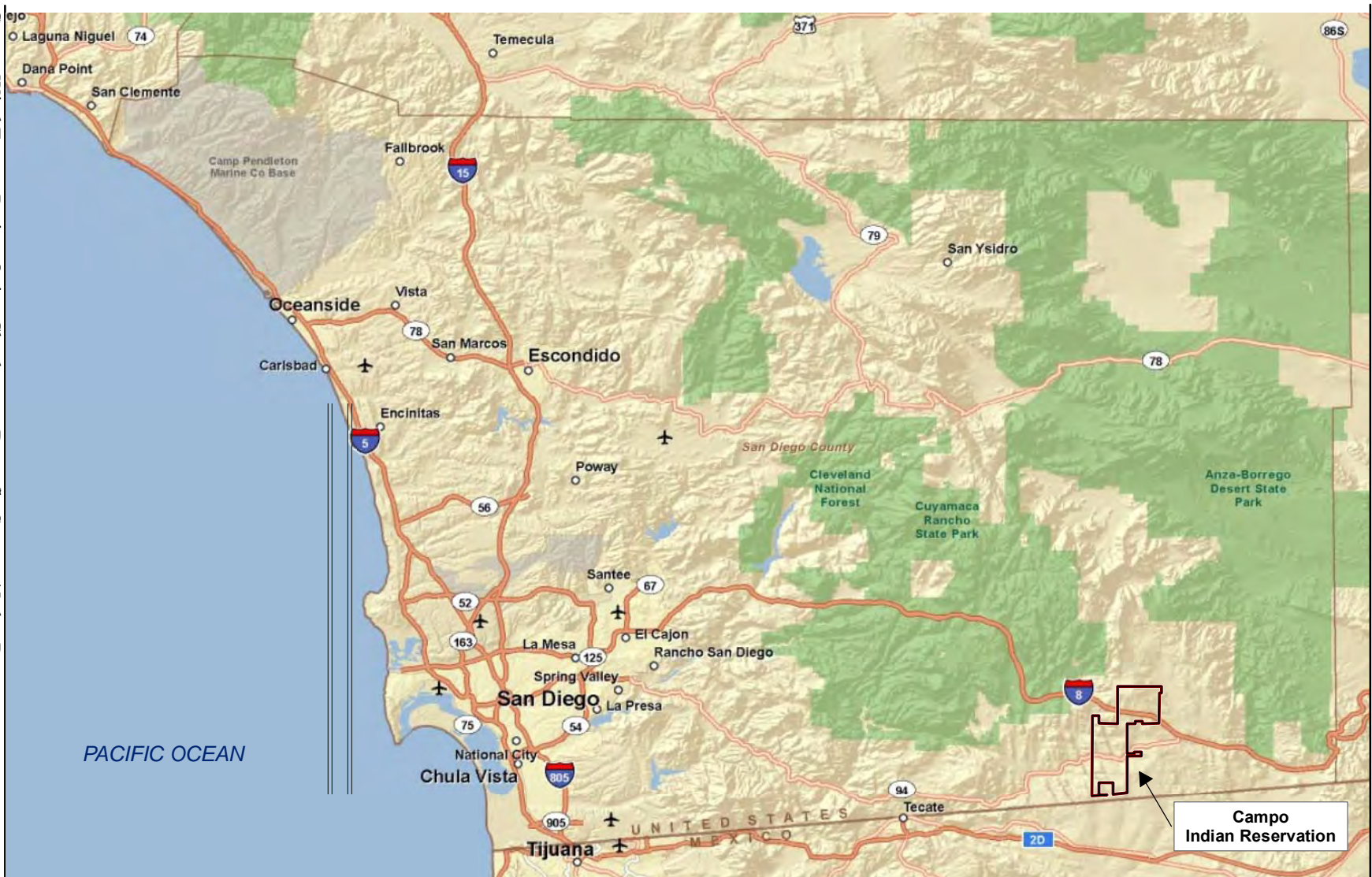
David Flietner
Subcontracted Quino Surveyor

Ms. Sandy Marquez
Carlsbad Fish and Wildlife Office
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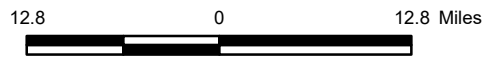
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FIGURES

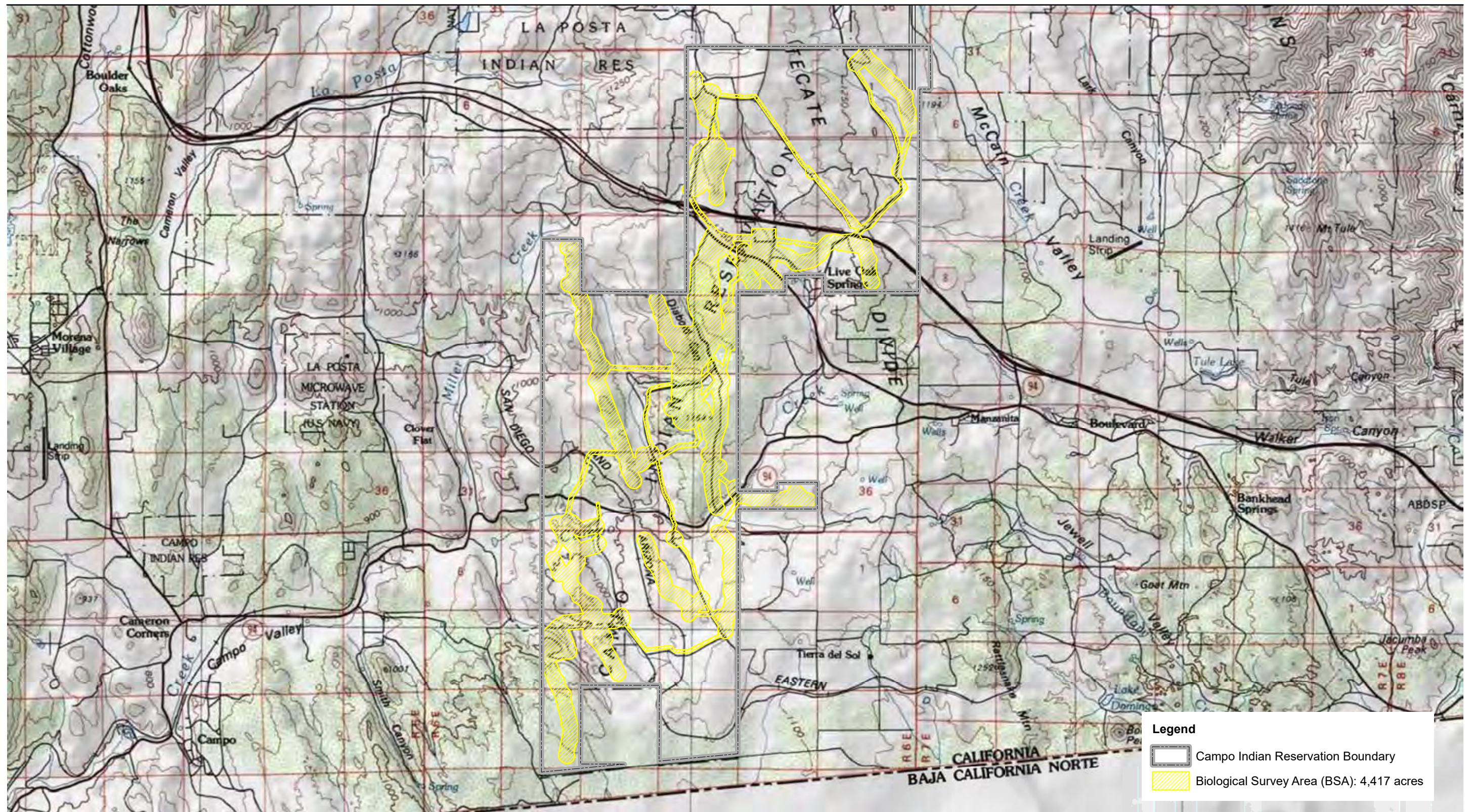


Source: ESRI 2009



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

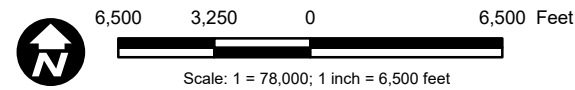
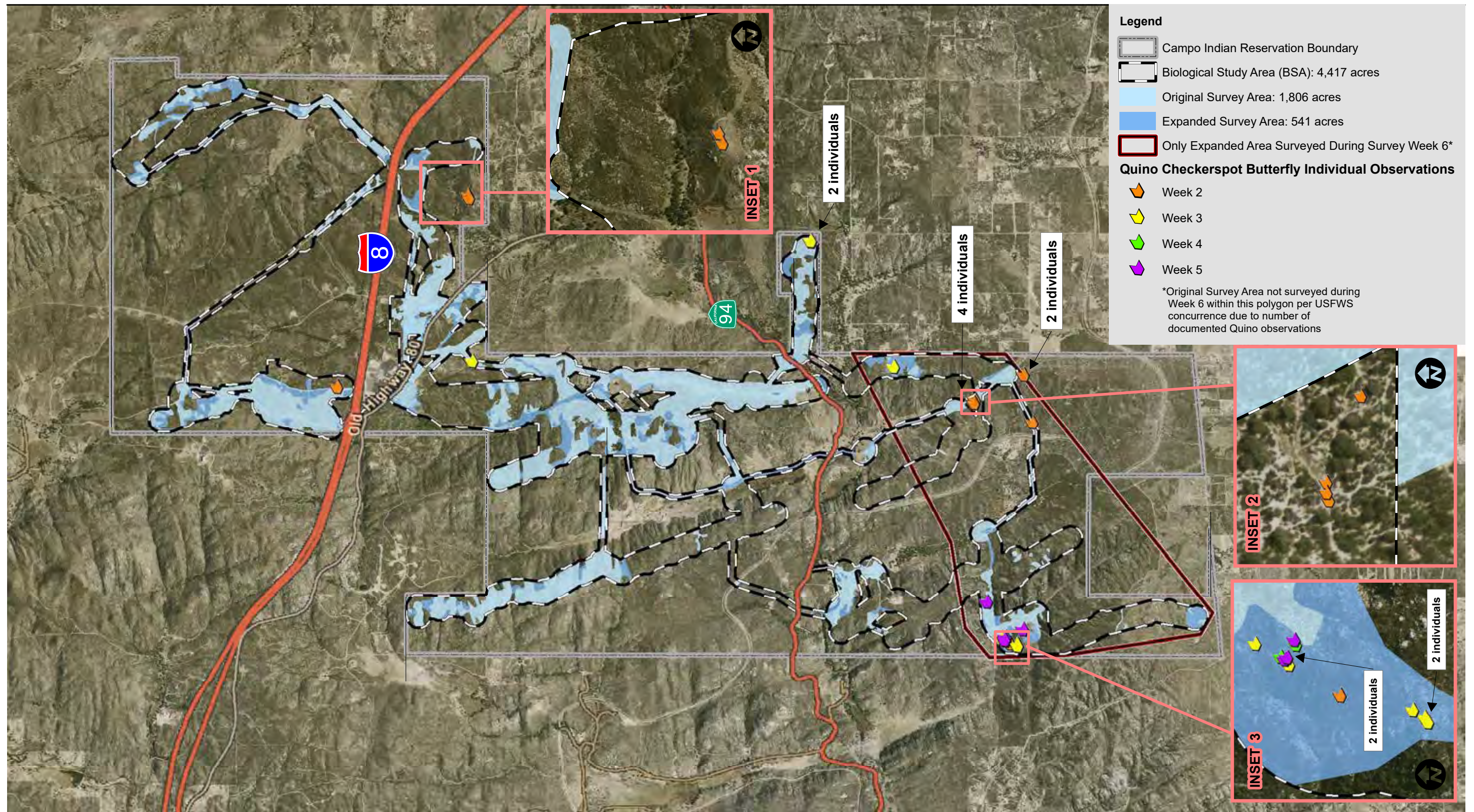


Figure 2
Vicinity Map



Source: DigitalGlobe 2008; Invenery 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

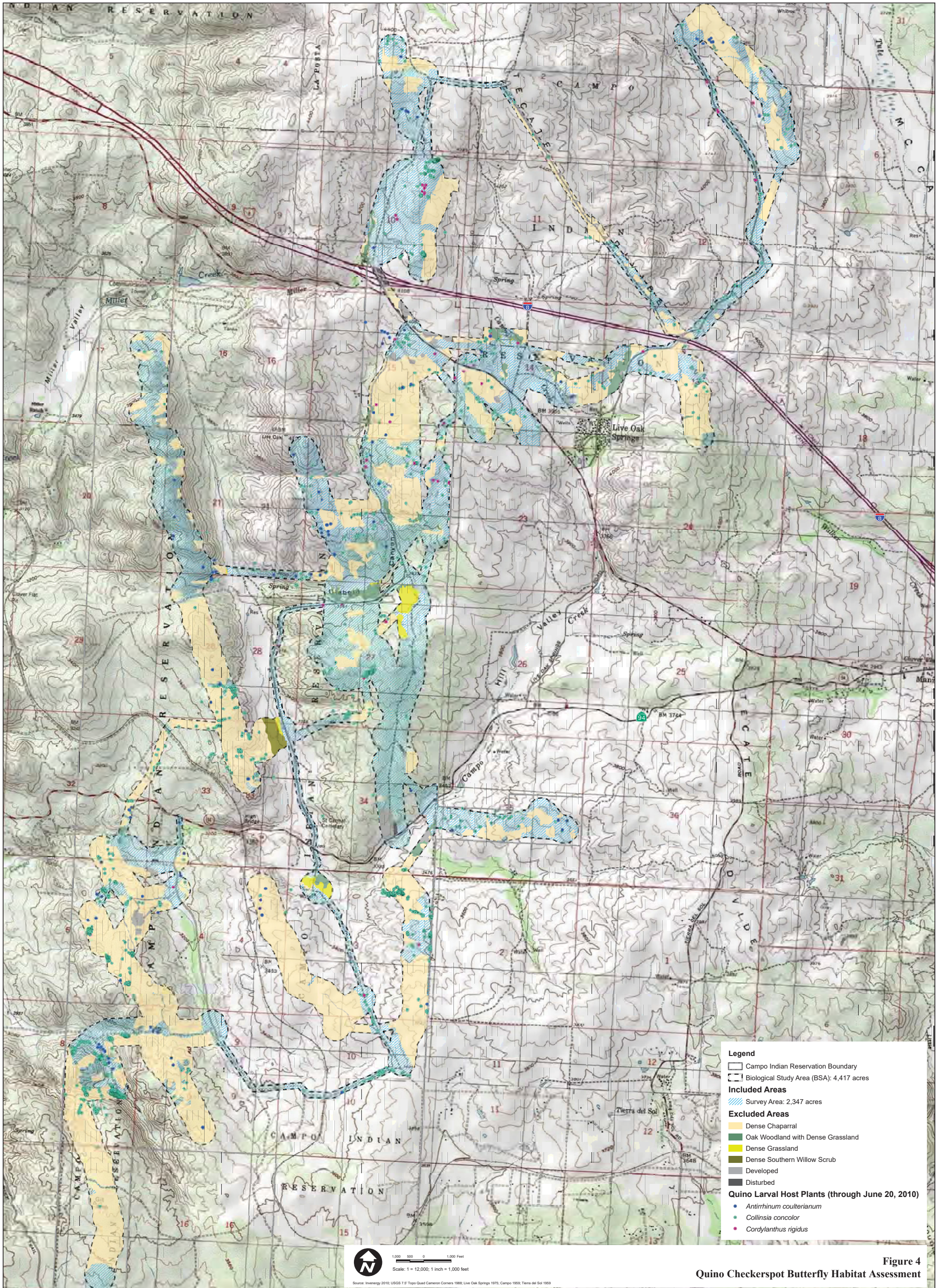
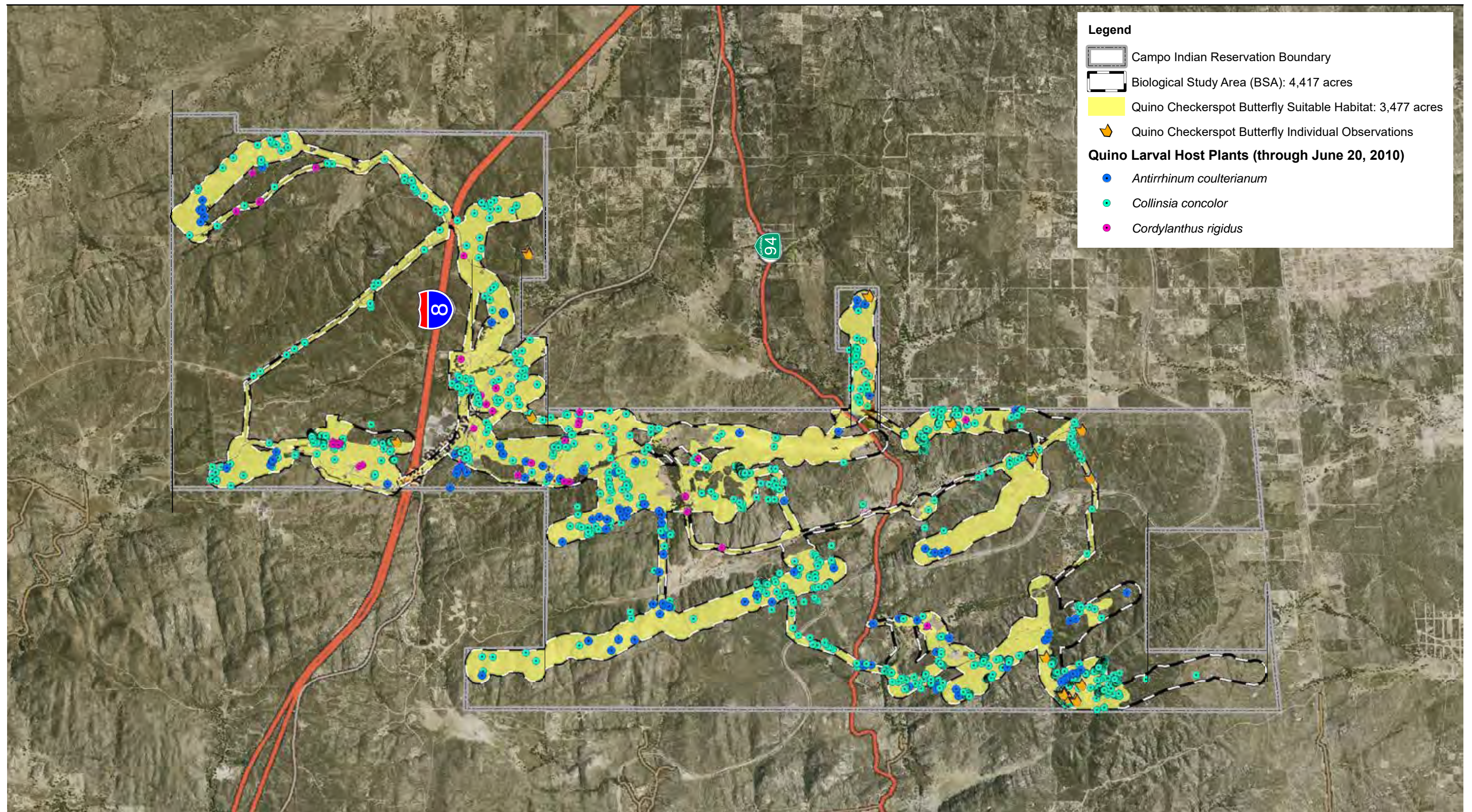


Figure 4
Quino Checkerspot Butterfly Habitat Assessment



Source: DigitalGlobe 2008; Invernergy 2010

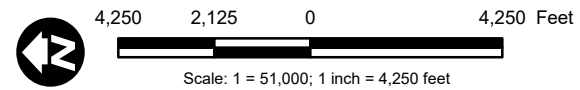


Figure 5
Quino Larval Host Plants and Suitable Habitat

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	McMorrان/Brodie	1315	66	2/4	90	overcast
3/22/2010	1	McMorrان/Brodie	1415	64	8/12	90-100	overcast
3/22/2010	1	McMorrان/Brodie	1015	68	2/6	10	clear
3/22/2010	1	McMorrان/Brodie	1100	66	8/12	30-40	patchy
3/22/2010	1	McMorrان/Brodie	1220	68	4/10	70-80	patchy
3/22/2010	1	McMorrان/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	Pignuolo/Fisher	915	60	0	0	clear
3/29/2010	1	Pignuolo/Fisher	1015	60	0	0	clear
3/29/2010	1	Pignuolo/Fisher	1115	76	0/5	0	clear
3/29/2010	1	Pignuolo/Fisher	1215	78	0/6	20	patchy
3/29/2010	1	Pignuolo/Fisher	1315	79	0/6	40	patchy
3/29/2010	1	Pignuolo/Fisher	1415	81	2/7	10	clear
3/29/2010	1	Pignuolo/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	Pignuolo	1300	74	0/2	0	clear
5/3/2010	4	Pignuolo	1400	76	0/2	0	clear
5/3/2010	4	Pignuolo	1530	77	0/2	0	clear
5/3/2010	4	Pignuolo	915	60	2/6	0	clear
5/3/2010	4	Pignuolo	1015	66	2/6	0	clear
5/3/2010	4	Pignuolo	1115	69	2/6	0	clear
5/3/2010	4	Pignuolo	1215	69	2/4	0	clear
5/3/2010	4	Pignuolo	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

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum (mph)	Cloud Cover (%)	General Sky Condition
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/McMorrان	1215	79	4/11	0	clear
5/8/2010	5	Couffer/McMorrان	1300	77	2/6	0	clear
5/8/2010	5	Couffer/McMorrان	1400	78	4/14	0	clear
5/8/2010	5	Couffer/McMorrان	1500	79	4/9	0	clear
5/8/2010	5	Couffer/McMorrان	1520	78	2/7	0	clear
5/8/2010	5	Couffer/McMorrان	845	66	0/3	0	clear
5/8/2010	5	Couffer/McMorrان	900	71	0/3	0	clear
5/8/2010	5	Couffer/McMorrان	1000	72	1/4	0	clear
5/8/2010	5	Couffer/McMorrان	1100	72	1/4	0	clear
5/8/2010	5	Couffer/McMorrان	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	0/1	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

original at and off site

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	11:21	72	1.0/7	0	clear	patchy	overcast	drizzle	shower
11:21	11:40	72	2.8/5		clear	patchy	overcast	drizzle	shower
12:15		60	6.7/10	✓	clear	patchy	overcast	drizzle	shower
1:40		59	1.0/1.7		clear	patchy	overcast	drizzle	shower
4:10		61	1.7/4		clear	patchy	overcast	drizzle	shower
END					clear	patchy	overcast	drizzle	shower

not used

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

Butterfly Species	Tally	Total
<i>C. proterea</i> (Calliope)	7 XXX	~32
<i>V. caedon</i> (Vanessa)	2 IIII	9
<i>B. britus</i> (Erynnis)	1 IIII	6
<i>A. mormo</i> (Apodemia)	1 IIII	6
<i>E. bayensis</i> (Euchloe)	10 IIII III	10
<i>A. sara</i> (Anthracaris)	11 II	5
<i>Gymnophotis californica</i>	1	1
<i>Papilio eurymedon</i>	1111	4
<i>Calastrius ladan</i>	11	2
<i>Lucisalia agestus</i>	11	2
Moths:		
<i>Euprosopius pluectus</i>		
<i>Litocla saxigata</i>		
<i>Leptarcia</i>		
<i>Alypia riedgeri</i>		

Quino Checkerspot Butterfly Protocol Survey
 Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		<i>Auctostephylos</i> common on N end of Map 14. (a nectar source)
		<i>Eradium cicutaevium</i> (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 Pignolo 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	<u>patchy</u>	overcast	drizzle	shower
1130	51	2-6	60	clear	patchy	<u>overcast</u>	drizzle	shower
1230 1230	63	2-6	85	clear	patchy	<u>overcast</u>	drizzle	shower
1330	57	2-8	95	clear	patchy	<u>overcast</u>	drizzle	shower
1430				clear	patchy	overcast	drizzle	shower
1530				clear	patchy	overcast	drizzle	shower
END 1600	40	58	2-6	100	clear	patchy	<u>overcast</u>	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
Sava Orangetip		8
Spring White		10
Perplexing Hairstreak		12
southern blue		3
Duskywing skipper		7
Tortoise Shell		1
		42

**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	0.6/1.6	60	clear	patchy	overcast	drizzle	shower
1:00	65.5	4.7/8.7	100%	clear	patchy	overcast	drizzle	shower
2:00	63.9	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 Orange tip		13
Checkered White		7
Perplexing hairstreak		5
Lady sp.		7
Funeral 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 POLYGONS 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: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: M. Heath Add'l Person: Joshua Paiqa 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
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
San OT Orange Tip	11	2
Blue species	11	2
Common Blue	1	1

LOOK.
DATA
ON
BACK!

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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 jkr
		Goldfields? few
	Mexican	Mangrove flowering - not good host though
		Duck brush flowering
		Nine's lettuce flowering

TOTAL NUMBER OF QCB DETECTED: 0 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	70	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 tp		8
common white		3
Funereal Duskywing		3
Perplexing Hairstroke		4
Southern blue		2
Cal. tortoiseshell		4
Brown elfin		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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 DBO1	Desert Beauty	Desert beauty Lignanthus
		Gopher Snake
		Auk
		WCSP
		CALT
		ORJU
		HuVi
		SPTO
BLCP01	Campo Pea?	Campo pea, need to verify when blooming, photos
BLTR01	SD BT Jackrabbit	2 indiv cotton tail

TOTAL NUMBER OF QCB DETECTED: φ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Recorder: DAVID K. FRANKNER Add'l Person: Eugene Pabbe 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
<u>A. Sara</u>	<u> 1</u>	<u>11</u>
<u>S. perplexa</u>	<u> </u>	<u>2</u>
<u>N. California</u>	<u> </u>	<u>3</u>
<u>V. caducei (worm)</u>	<u> </u>	<u>1</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ST 10 DCHO1	1 pt.	<u>Collensia</u> sp. - Common

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Jimmy McMORRAN

Recorder: Natalie Brodie 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	70-100%	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 EARLY DUE TO WEATHER

Butterfly Species	Tally	Total
unidentified Ind.	1	1

NO DATA ON BACK

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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

Jimmy McMorran

Recorder: Natalie Brodie Add'l Person: David Dyche Date: 22 Mar 2010

Project: Campo Wind Energy Project Map #: 10 Survey Sn: 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	40%	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
Jara orangetip	III II	7
Perplexing Hairstreak	III	3
Pale Swallowtail	I	1
Unidentified lady (probably Painted)	I	1
Acmon blue	I	1
Humeral Duskywing	I	1
Southern blue	I	1

DATA
on
BACK !!

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NBAR01	Point	Ant Cou. on slight hillside, few individuals scattered up slope
	FROM back of map	CATH
		COKA
		OATI
		BEWR
		WEST
		DEJU
		RTHA
		striped viceroy
		ROWR
		SPTD
		NUWD
		ANTU
		BTSP

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Recorder: M. Mulligan Add'l Person: S. Innecken, P ^{Papa} ~~Wanna~~ 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	<u>clear</u>	patchy	overcast	drizzle	shower
	1305	68	3-5	20	clear	<u>patchy</u>	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 ORANGE TIP		2
? DUSKY WING		4
COMMON WHITE		3
COMMON BLUE		2
BROWN ELFIN		2
BOHR'S METALMARK		3
PORPLEXING HAIRSTREAK		4

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

map 11/10/01

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCS01	sensitive weave plant	Caulanthus simulans 250 plants
MMHLO1	Sensitive reptile	Horn Lizard
MMHLO2	Sensitive reptile	Horn Lizard
MMCS02	sensitive plant	Caulanthus simulans ~25 plants
	nectar plant	Cryptantha sp.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**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 Snr: _____

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	IIII IIII	10
Blue species	I	1
Dusky wing	I	1
Green hair streak	IIII IIII	8
Sara Orange Tip	IIII IIII I	16
Spring white Spring white	I	1
White sp?	II	2
Behr's metalmark	IIII IIII	8
Common Blue	IIII IIII	5
Wrights Metalmark?	I	1

40 sq km
2.5, 1,000

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium - many flowers
		Goldfields - flowers
		SCJA, CAQU, ACWO, AMCO, CATD, NOFL
		Pink G, Pocket Gopher
		Audubon's Cottontail rabbit II
		Buckbrush flowering/bees
		Mexican Marigold pink/white flowers
		Baby blueeye
		Cult Poppy
		Ground 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: 2/24/10

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	8	<u>clear</u>	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	<u>clear</u>	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
<u>Painted Lady</u>	<u> </u>	<u>35</u>
<u>Duskywing sp</u>	<u> </u>	<u>1</u>
<u>Perplexing hairstreak</u>	<u> </u>	<u>6</u>
<u>checkered white</u>	<u> </u>	<u>1</u>
<u>CALIFORNIA MARBLE</u>	<u> </u>	<u>2</u>
<u>SARA ORANGE TIP</u>	<u> </u>	<u>5</u>
<u>Acmon BLUE</u>	<u> </u>	<u>2</u>
<u>SPRING AZURE</u>	<u> </u>	<u>1</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

01/19/15

4/10/15 4:00

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Goldfields (Lasthenia .)
		Salicaceae (Erodium sp)
		Baby Blue eyes
		Cryptantha
ELNLO1	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
	1520	75	2.0/2.2	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
<i>Callophrys affinis</i> (Green Hairstreak)		7
<i>Vanessa cardui</i> (Painted Lady)		22
Sphingid moth		4
<i>Nymphalis californica</i> (California Tortoiseshell)		1
<i>Erynnis pectorius</i>		2
<i>Anthocharis sara</i> (Sara's Orange-tip)		17
<i>Pontia</i> sp.		1
<i>Colias</i> sp.		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
GCNLI	Woodrat nest	San Diego Desert Woodrat nest in Yucca WEST III Plagiobothrys sp.
GCBJ1	Jackrabbit ^{fresh} pellets	Black-tailed Jackrabbit pellets fresh Arctostaphylos sp. Amsinckia menziesii menziesii CORA III
GCBJ2	Jackrabbit	Jackrabbit between shrubs startled out Pectocarya BUSH II Thomomys bottae burrows CATH I Uta stansburiana II Sylvilagus auduboni II Spermophilus beecheyi II HOWR I Sceloporus orcutti III Neotoma fuscipes nest under Oak Lathenia sp. (Goldfields) Sceloporus occidentalis III LEGO II OATI II SPTO I
GCNLI2	Woodrat Nest	GCNLI 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. P. P. 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- 2	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	HHH	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 POLYGONS 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 area 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
END	1600	70	3.4/8.2		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
GCEPI	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	9.9/17.2	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
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
Painted Lady		3
Santa Orange Tip		1
Blue sp		1
Copperlet or Spanglet		1
Behr's Metal Mark		3
Painted Lady		2
Green Hairstreak		1
Woolly bear caterpillars		5
I saw many dark butterflies flying - probably greenhairstreak		

Plot 12
Plot 13

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Map 12		Buckbrush flowering Ramona Lilac flowering Mexican Marigold " Erodium " Arabis perennans (Nevada Rock Cress) pr Popcorn flower
		Baby blue eyes SESA, ANHU, RTHA Adulak CT, CAGS, Point Gopher / Woodrat holes Mineis lettuce flower Grand lotus " Yellow flower weed (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. FRANKLIN Add'l Person: Eugene Pablo Date: 25 March 2010

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

GPS Unit: R7 QCB Protocol Survey # 1 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	1300	63°	7 W	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	1400	60	9 W	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
<i>C. peiploca</i>		2
A. SARA		12
<i>J. caduei</i>		2
<i>N. californica</i>		1
<i>C. harrfordii</i>		1
<i>E. lutea</i>		#3
<i>C. augustina</i>		2
<i>S. melanes</i>		1
<i>G. l. australis</i>		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

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

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 #: 24 Survey Sxn: _____

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

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	1400	60°	9 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	1600	59°	8 W	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
<u>N. californica</u>		<u>2</u>
<u>c. parplexa</u>		<u>3</u>
<u>A. sara</u>		<u>8</u>
<u>A. virgulata</u>		<u>4</u>

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
# 24		Nectar: Lupines
		Poppies
		Cryptanthus } Few animals 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 Pardo 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	0	clear	patchy	overcast	drizzle	shower
	1200	61	6 W	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	63	7	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
<i>C. perplexa</i>		6
<i>V. cardui</i>		3
A. SARA		15
<i>N. californicus</i>		2
<i>P. sisybrii</i>		2
<i>C. augustana</i>		3
<i>Phetor sphinx</i>		LOTS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: David Flietner 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 <u>1130</u>	<u>63</u>	<u>4-8</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower
<u>12</u>				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
END <u>1200</u>	<u>63</u>	<u>4-8</u>	<u>0</u>	<u>clear</u>	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
<u>Acmon blue</u>	<u>6</u>	<u>6</u>
<u>Duskywing</u>	<u>1</u>	<u>1</u>
<u>Bramble hairstreak</u>	<u>1</u>	<u>1</u>

Handwritten scribbles and notes at bottom left.

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: David Flietner 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	
Skipper	2	
Achilles blue	1	
Bramble hairygrace	2	
Behrs metalmark	2	

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: David Fliether 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	Sky				
START	1410	72	2-4 3-4	0	slight haze				
					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
Behr's metalmark	•	1
Bramble hair stream	••	4

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
DFLV01	pt	Lathyrus vestitus
DFCS01	pt	Coarctanthus simulans ~20
		Memph menz Platyphrys sp Cryptantha (small) deet sign Cunissenia

TOTAL NUMBER OF QCB DETECTED: 0 **INDIVIDUALS**

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAVE FLIGHT Add'l Person: SHIRLEY WINECKE 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
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 orange tip	13	13
Bramble Hairstreak	5	5
Bphos metalmark	6	6
Funereal duskywing	1	1
Common white	5	5
Painted lady	1	1
Alman blue	6	6

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha/ Plagio
		Commissioner's list
		annual Lotus
		Esch minut
		Claytonia perfoliata
		Nemop monz
DFCHOI ²	point - 002 10559967, 3616193	Collinsia seedlings (not a positive 10)
DFHLOI	point	Horned lizard Sheep cantanthus heter
		granite spring lizard
DFWRGI	point	A woodrat nest Amsinck monz
DFEPOI	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 / 3.4	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	I	1
Green hairstreak	IIII I	21
Painted Lady	IIII II	7
Acan Blue	IIII I	6
Sans Orange Tip	IIII IIII IIII IIII IIII IIII	35
Blue sp	II	2
Brown Elfin	I	1
Behr's Metalmark	IIII	5
Duskywing	IIII	5
White sp	III	3
Spring White <i>2 mating</i>	IIII III	13

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Popcorn flower
		Erodium "
		Mexican Mangonita "
		Baby blue eyes "
		Audubon-cotton TAIL / POCKET GOPHER / WOODRAT NEST
		SCTA ARCO BUSHHITS CARU
		MIMI'S LETTUCE flower
		MUSTARD-SMALL "
		BLACK BRUSH Flower
		ANITHU
		GOLD FIELDS
		CHIFF POPPY
		DESERT WOOLY DAISY
		FIDDLENECK
		PEONY
		WHITE THORN CEANOTHUS
		YUCCA
		BTSP TUVA RITA
		WESTERN FENCE LIZARD
		TREE FROGS TADPOLES NEARBY / SP??
MHFP220	Map 13	Dense Chaparral

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: 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
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
<i>Gymnis funealis</i>		1
<i>A. sara</i>		5
<i>Eudise lotta</i>		4
<i>P. acmon</i>		1
<i>E. phastor</i> - sphinx		9
<i>E. c. chalciona</i>		1

**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	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
Aemon blue		3
Sara orangetip		5
Funereal Duskywing		5
Marble		11
Perplexing Hairstreak		2
Benn's Metalmark		3
Painted lady		2
Brown elfin		3
Unidentified sulfur		3
		37

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Natalie Brodic 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} noze	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		11
Acmon blue		10
Periplexus hairstreak		8
Brown elfin		2
Dani's Metaltmark		5
Finshead Duskywing		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NBAC01	point/host plant	Antennaria racemosa. + 3 ground buckwheat
NBC101	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+ Cordylanthus sprouts along road, goldfields

TOTAL NUMBER OF QCB DETECTED: 0 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
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
Scarce Orange Tip	 	27
Spring wt		9
Behr's metalmark		1
Green hairstreak	 	23
Blue sp		3
Dusky wing sp		1
Sulphur sp		1
Acadian Blue	 	18
Painted Lady	 	7
Mable		1
Gabb CS <u>potentilla!</u> Orange butterfly		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Eradium flower
		Mustard (small) "
	Map 18	Fiddleneck "
		Baby blue eyes "
		Popcorn "
		OTSP/SCJA/TURV/WOODPECKER sp? "
		Gold fields "
		Dyc's "
		Wild cucumber "
		Cream colored flowers "
		White thorn cecropias "
		Calif. Poppy "
MHPC01	Sensitive sp	Jewel flower yellow Payson's Cwd " " purple/pink same location Shelden Pond Map Tene
		many plants area of NE Map 18
MHHL02	Horned lizard	pocket gopher & coyote sign Large Map 8
		Mexica Monarda flowers
		Scrub oak flowering
MHHL03	" "	Small - Jvd Map 8 Purple lupine - fl. as leaves - ^{Peys da Lupine} Small Spring lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Date Powell Add'l Person: Ondr 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		41
Blue?		11
Peeplying Hairstreak		10
Behrs Metalmark		8
Acemon Blue		1
Tiger Swallow Tail		1
White?		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amaranthia
		Cryptantha
		Erodium
		Leptanthus
		Mustard?
		Lupinus
		Viola
		Ceanothus
		California Poppy
		Red Blue
		Manzanita
		Sagebrush

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Recorder: Andrew Pignolo 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 <u>0915</u>	<u>60</u>	<u>0</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower
<u>1015</u>	<u>60</u>	<u>0</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower
<u>1115</u>	<u>76</u>	<u>0-5</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower
<u>1215</u>	<u>78</u>	<u>0-6</u>	<u>20</u>	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower
<u>1315</u>	<u>79</u>	<u>0-6</u>	<u>40</u>	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower
<u>1415</u>	<u>81</u>	<u>5-7</u>	<u>10</u>	<u>clear</u>	patchy	overcast	drizzle	shower
END <u>1515</u>	<u>74</u>	<u>2-5</u>	<u>5</u>	<u>clear</u>	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	 	29
Painted Lady		5
Marble/Spring White	 	24
Funeral Duskywing	 	10
Sarah Orange Tip	 	24
Unio Dusk		5
Spring Azure		2
Pale Swallowtail		2
Common White		1
Brown Elf		5
Tortoise Shell		2
Garbbs?/Underwing moth?		2
Behrs Metalmark		4
Acmon Blue		4

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
APHLO1	Sensitive sp Point	Horned Lizard - juvenile
APHLO2	↓	" "
APHLO3		" "
APHLO4		" "
APBS01		Blacktailed Jackrabbit
		Ceanothus cuneatus blooming
		Arabis sp "
		Erodium cicutarium "
		Namophola menz "
		Cryptantha sp "
		Loasthenia sp. just starting
		Lathyrus sp " "
		Bird: HOLA, CORA, WERI, WEBL, BUSH, BTSP CALI, NOFI,
		Speckles Rattlesnake, Side-blotch Kenzie Lizard, Granite spring lizard

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: 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
<i>A. SARA</i>		25+
<i>A. Virgulti</i>		3
<i>C. perplexa</i>		7
<i>C. Augustinus (elfin)</i>		7
<i>Euclabe h. lotta</i>		8
<i>Erynnis brizo</i>		6
<i>P. sierrubian</i>		2
<i>N. californica</i>		1

MAP #23

General

DFNLOB

MARK 021
US 0560872
UTM 3610548

PLANTS.

Composites (goldfields)

Cryptantha

Gradium.

Baby blue eyes

Amsinckia

Howlizard

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: S 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
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
<u>Euclyps h. lotta</u>		<u>2</u>
<u>A. Sara</u>		<u>3</u>
<u>A. virgulti</u>		<u>1</u>
<u>C. perpleya</u>		<u>1</u>
<u>Echo blue</u>		<u>1</u>
<u>C. Augustinus</u>		<u>1</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

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

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: 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	∅	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	∅	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
<u>E. h. lotta</u>		<u>3</u>
<u>A. SARA</u>		<u>2</u>
<u>Erynnis sp. (brizo?)</u>		<u>11</u>

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

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

TOTAL NUMBER OF QCB DETECTED: 0 **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	73	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	TTTT IIII	9
Perplexing Hairstreak	TTT III	8
Sara's Orange Tip	TTT I	6
Common White	I	1
California Tortoiseshell	I	1
Pearly Marble	TTT I	5

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMS01	rare plant pt	<i>Caulanthus simulans</i> - scattered on top 250
MMTLO1	sensitive herb pt	Horn Lizard - 1
	Nectar sources	<i>Cryptantha</i> sp
		<i>Pectocarya linearis</i>
		<i>Amsinckia menziesii</i>
		<i>Cerrocarpus linearis betuloides</i>
		<i>Erodium cicutarium</i>
		<i>Escholtzia</i> spp.
		<i>Nemophila menziesii</i>
		<i>(Lasthenia</i> only in bud at site)
		<i>gracilis</i>
MMEPO1	polygon	should be excluded. Too dense w/ too
MMEPO2	polygon	small of an opening. Did survey for QCB#1.
		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 Pabio 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°	8/11	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
<u>Perplexing</u>	 	<u>11</u>
<u>Sara</u>	 	<u>9</u>
<u>Marble</u>		<u>4</u>
<u>Darkwing</u>		<u>2</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Baby Blues
		Erodium
		Mustard?
		Manzanita
		Calt Poppy
		Ammannia
		Cryptantha
DPBJ015		
DPBJ01	point	Black-tailed Jack Rabbit
DPBJ02	point	Black-tailed Jack Rabbit
DPBJ		

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	65.0	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
Orange tip - Sava	 	16
Painted Lady	 	7
Spring Wt	 	12
Green Hairstreak	 	37
Blue ♀		2
Duskywing		3
Aman Blue	 	17
White ♀		3

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Scrub oak flowers
		Baby blue eyes * - means flowers
		Proton * *
		Buck brush * *
		Sun cup *
		Fiddleneck *
		Popcorn *
		SCSA/CAQU/Am CR /
		Gold fields *
		Call Poppy *
MH4L04		Horned Lizard juvenile
05		" " "
06		" " "
		Blue Lupine shrub *
		Monte Mahogany
MHEP260	Excluded Poly	Dense Chaparral
1	" "	" "
2	" "	" "
3	" "	" "

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Eugene Padilla Date: 3/31/2010
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	61°	4/8	10	clear	clear <u>patchy</u>	overcast	drizzle	shower
	12:00	70°	8/10	0	<u>clear</u>	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
<u>Perplexing</u>	<u> </u> 1	<u>6</u>
<u>S. Arbia</u>	<u> </u>	<u>3</u>
<u>Sava</u>	<u> </u>	<u>2</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Baby Blue
		Creosote
		Melons?
		Eucalypt
		Pantomas
		Mangroves
		Cold Spring
		Amesbury
DPB103 ↗ DPBJ03 ↗		Black-tail Towhees

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: BRIAN LOHSTROTT 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	1010	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		18
Common White		12
Duskywing Skipper (sp.)		11
Brown elfin		3
Acmon Blue		10
Painted Lady		2
Behr's Metalmark		17
Funereal Duskywing		2
S. Orange tip		5
Southern Blue		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
420		HOLA
		CORA
		SCJA
		WEKI
		OAJI
		HOJI
		SAPH
		RTITA
		LA SP
		ANKU
		SPID
		WREN
		NUWO
		BC SP
		LEGO
		California mad fernae (likely)
		Side-blotched Lizard
		Granite Spring Lizard
		W. Fence Lizard
		Striped racer
		CA ground squirrel
		Cottontail
BLHLO1	Rare species	Coast horned Lizard
BLHLO2	"	Coast horned Lizard
BLPJ01	Rare plant	Payson's jewel flower 2 indiv.
BLPJ02	"	" 40 indiv
BLPJ03	"	" 10 indiv
		<u>Nectar Sources</u> : erodium, Senecio cal, Leathredia cal, Popcorn flower, Anisulca Nemophila, Beachura, carocarpus, desert dandelion ca poppy, comissonia, Manzanita

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAV. D.K. FAULKNER Add'l Person: Drew 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	0	(clear)	patchy	overcast	drizzle	shower
	1100	69	6	0	(clear)	patchy	overcast	drizzle	shower
	1200	72	7	0	(clear)	patchy	overcast	drizzle	shower
	1300	77	0	0	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	73	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
P. Acmon		6
A. Virgulti		25+
C. perplexa		15+
Erepanis sp.		6
Nymphalis californica		2
Euclyptus h. lotta		20+
U. cardui		4
A. Sara		3
P. eurymedon (Pale Swallow)		1
Southern blue		2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
15	GPS: MARK 1	Collensias
		caldfields
		Cryptanthus
		Composites
		Sugar bush
		Amsinckias
		Erodium
		Mustard
		blue dille

TOTAL NUMBER OF QCB DETECTED: 0 **INDIVIDUALS**

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAVID K. FAULKNER Add'l Person: Luis Comber Date: 13 APRIL 2010
 Project: Campo Wind Energy Project Map #: 25 Survey Sxn: CAMPOR
 GPS Unit: 9 QCB Protocol Survey # ?? of 5

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky					
START	1100	48°	3	∅	clear	patchy	overcast	drizzle	shower
	1200	55°	2	∅	clear	patchy	overcast	drizzle	shower
	1300	58°	2	>5%	clear	patchy	overcast	drizzle	shower
	1400	69°	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
<i>Eochloe h. lotte</i>		15+
<i>C. perplexa</i>		3
<i>A. Viquettei</i>		8
Arrowhead blue		1
<i>P. Acmon</i>		6
<i>P. sisymbrii</i>		2
<i>V. virginensis</i> (Am Lady)		1
<i>C. gabbi</i>		1
<i>Erymnis funeralis</i>		2
<i>E. brizo</i>		6

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Swiney McMorran Date: 4/3/10

Project: Campo Wind Energy Project Map #: 2,7 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
Duskywing	III	3
Sara	IIII	4
Purplewing	I	1
Lady?	IIII	4
Marble	II	2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAVID FLUETNER Add'l Person: LEWIS Date: 4/2/10

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo - 0

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
END	1635	66	2-5	10 ^{low}	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	☒E	17
Sara orange-tip	☒E:	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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Nemophylax menz
		Cryptantha int
		Amsinckia menz
		Camissonia sp.
		Plagiobotrys sp.
		Lesqueria cal
		annual lotus sp.
	point	Eschscholzia minut
DFU4G2	Collinsia hetera	~ 20 plants, ~ 3 ft ² ↑ (may have been entered as aachor)
		Note: GPS batteries died for a few minutes ~ noon, so some of survey not tracked

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Phillip Paipa Shirley Truesdell 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	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	13:00 60°	1/3	0	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	14:00 69°	4/8	0	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	15:00 65°	1	0	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	16:00 61°	1	0	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	17:00 59°	5/8	0	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
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	1	6
Common White		3
Bahia		50
Mauias		23
Lady?		1
Checkerspot?		1
Orange Butterfly		2
Tiger Swallow tail		2
Perplexing		22
Brown Elf		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha-micrantha
		Epodium
		Mustard?
		Lotus
		Unknown composite
		Pepperc
		Discovaria
		Caolanthos
		Plagia hostris
		Amsynkia
		Caanthus
		Diekstemma
		Arabis
		CAULANTHUS SIMILANS
SRCS01		CAULANTHUS SIMILANS <i>Caolanthus similans</i> <i>Pace</i>
SRCS02		"
SRCS03		"
Other Points		
Date 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
<i>Vanessa cardui cardui</i> (Painted Lady)	IHT II	7
<i>Euchloe hyantis</i> (Pearly Marble)	IHT	5
<i>Apodemia mormo virgulti</i> (Mormon's Metalmark)	IHT IHT II	12
<i>Erynnis</i> sp. (Duskywing)	III	3
<i>Icaricia acmon</i> (Acmon Blue)	I	1
<i>Pontia</i> cf. <i>sisymbrii</i> (Spring White)	II	2
<i>Colias h Hartfordii</i> (Hartford Sulphur)	I	1
<i>Pholisora cæstus</i> (Common Sootywing)	III	3
<i>Callophrys affinis</i> (Green Hairstreak)	III	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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
		SPTD
		WEST
		RSHA
		CAOU
		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	<u>clear</u>	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	<u>clear</u>	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
<i>Vanessa cardui</i> (Painted Lady)		2
<i>Collophrys affinis</i> (Green Harrostreak)		4
<i>Euchloe hyantis</i> (Pearly Marble)		7
<i>Apodemia mormo virgulti</i> (Mormon Metalmark)		30
<i>Erynnis</i> sp. (Duskywing)		2
<i>Pontia cf. sisymbrii</i> (Spring White)		1
<i>Anthocharis sara</i> (Sara Orange-tip)		15
<i>Erynnis funeralis</i>		1
<i>Collophrys augustinus</i> (Brown Eftin)		1
Sphingid moth		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Sceloporus orcutti 1
		ANHU
		CORA
		BUSH
		OATI
		Uta stansburiana 1
		Thomomys bottae holes
		Sylvilagus auduboni 11
		Plagiobothrys sp.
		Cryptantha sp.
		Lasthenia sp.
		Nemophila menzeisii
		Amsinckia menzeisii
		Tansy Mustard (Descurainia 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: 1

GPS Unit: 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	1600	67°	9 mph	∅	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	∅	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
<i>Anthracinus sara</i>		2
<i>Euclyptus h. lotta</i>		4
<i>C. perplaza</i> (Bramble)		1
<i>Vanessa cardui</i>		1

**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: CAMP 0

GPS Unit: 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	1300	68°	5 W	0	clear	patchy	overcast	drizzle	shower
	1400	69°	4 W	0	clear	patchy	overcast	drizzle	shower
	1500	69°	4 W	0	clear	patchy	overcast	drizzle	shower
	1600	67°	9 W	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
P. sisyphus (Spring White)		11
Venessa sp. (Lady)		1
V. cardui (Painted Lady)		2
A. digulsi (B. Metal)		3
A. sara (Sara Orange)		8
E. hyantis (Pearly)		6
C. augustina (B. Elfin)		3
E. funeralis (Fin 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
		cryptanth
		Poppies
		Lupines

TOTAL NUMBER OF QCB DETECTED: _____ *0* _____ INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

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

Project: Campo Wind Energy Project Map #: 26 Survey Sxn: Campo ②

GPS Unit: 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky	
START	1030	59°	3 mph W	∅	(clear) patchy overcast drizzle shower
	1100	66°	1 W	∅	(clear) patchy overcast drizzle shower
	1200	72°	∅ W	∅	(clear) patchy overcast drizzle shower
	1300	68°	5 W	∅	(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
<i>Euclyps hysantis</i>		7
<i>A. Sara</i>		11
<i>C. perplaxa</i>		7
<i>A. linguati</i>		4
<i>Erynnis brizo</i>		1
<i>C. Dracopeltis marmoratus (♀)</i>		1
<i>E. phueton</i>		20 ⁺
<i>Nymphalis californica</i>		1
<i>V. candida</i>		1

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	0	clear	patchy	overcast	drizzle	shower
	1420	63	5-8	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
<u>American Blue</u>		2
<u>Pearly Marble</u>		2
<u>Painted Lady</u>		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

3020790 2005-63710

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMAD01	sensitive plant pt	Astragalus douglasii var. perstrictus East side of Manzanita Rd. 9 ⁺ 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. at edge of w/ Eriogonum fasc. Quercus laevis, Ceanothus leucodermis. Edge of oak riparian. Disturbed area by road. 1/2 Artemisia tridentata
	Nectar sources:	Pectocarya sp. Cryptantha sp. Amsonia 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
	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		6
Proterops Dusky wing		2
Acmon Blue		5
Pearly Marble		1
Painted Lady		2

Quino Checkerspot Butterfly Protocol Survey
 Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar source:	<i>Lasthenia gracilis</i>
	Point	<i>Cryptantha micrantha</i>
		<i>Arrostia menziesii</i>
		<i>Nemophila menziesii</i>
		<i>Coreopsis californica</i>

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		2
Proterops Dusky wing		4
Brown Elfin		1
Pearly Marble		1
Sara's Orange-tip		1
Acmon Blue		1

**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	<u>66</u>	<u>57</u>	<u>7</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	<u>1100</u>	<u>57</u>	<u>7</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	<u>1200</u>	<u>63</u>	<u>7</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
END	<u>1330</u>	<u>61</u>	<u>13</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>

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

Butterfly Species	Tally	Total
<u>Euclyps h. lotta</u>		<u>2</u>
<u>E. angustina</u>		<u>1</u>
<u>E. perplexa</u>		<u>5</u>
<u>A. SARA</u>		<u>3</u>

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

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

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 #: 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	0	<u>(clear)</u>	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	0	<u>(clear)</u>	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
<u>A. Viguisti</u>		<u>8</u>
<u>A. Sara</u>		<u>2</u>
<u>E. h. Zitta</u>		<u>6</u>
<u>P. Acmon</u>		<u>3</u>
<u>E. brizo</u>		<u>2</u>

**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°):	MDH		% CC	Sky				
		Wind (avg/max)							
START 1000	60	5-8		Clear 0% ¹⁰	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		2
Perplexing Hairstreak	 	7
Pearly Marble		1
Dusky wing sp		4
Acmon Blue		3
Behr's Metalmark		3
Silvery Blue		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
CORA		CORA
		ScJa
		SPTD
		WCSP
BLPFO1	rare bird	PrFa (prairie falcon)
		LaSP
		Oati
		HoLA
		RTHa
		Weki
		Bush
BLCPO2	Rare plant	Campo Pea, (<i>Lathyrus splendens</i>) 5 individuals
BLCPO3	"	Campo pea 1 individual
BLCPO4	"	Campo pea 2 individuals
BLCPO1	"	Campo pea, ind (previously mapped?) confirmed.
BLCPO5	"	Campo pea, 4 individuals
		Jacumba milk vetch? not mapped, will be confirmed by botanists. (<i>S. inectum</i>)

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

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

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: CAMPO-1

GPS Unit: 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	1500	78	2	∅	(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	∅	(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
<i>A. Sero</i>		2
<i>Philosera catibella</i>		1
<i>Janessa carchuni</i>		2
<i>Euclyptus h. alta</i>		8

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: David K. Faulkner Add'l Person: Dan Mason | Erin Date: 8 APR 2010
 Project: Campo Wind Energy Project Map #: 18 Survey Sxn: Campo 6
 GPS Unit: 8 QCB Protocol Survey # 2 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	60°	7 mph	0	clear	patchy	overcast	drizzle	shower
	1000	68°	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
A. Sara		6
P. sisymbrii		1
E. briza		3
A. vinqueti		3

**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. Co-^{Partially}hts 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	<u>clear</u>	patchy	overcast	drizzle	shower
	14:35	75°	0/0	0	<u>clear</u>	patchy	overcast	drizzle	shower
	16:25	72°	4/6	0	<u>clear</u>	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 ?		5
Southern Blue	11	7
Dusky-wing	1	6
Blue ?		4
Lady ?		3
Behr's Metalmark		2
<u>OPEN POT</u>		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amsinckia
		Mustard?
		Erodium
		Lesthonia
		Layia
		Nemophila
		Caenothus
		Phacelia 2 species
		Arabis
		Erythronia
		Salvia columbiana
		Lupinus
		Erchscholzia
		Plagiobothrus
DPEP01	Excluded Polygon	Sage, Oak
DPEP02	"	"
DPIP01	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: Campo Manzanita 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	76°	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, hills, cliffs, rock outcrops, soil crusts, clay soils, old roads, various nectar-sources

Butterfly Species	Tally							Total
	I	II	III	IV	V	VI	VII	
Spray's Orange Tip							1	31
Chakadam								3
Perplexing Hairstreak								25
Marble								9
White?							1	11
Behrs Metalmark								13
Southern Blue							1	26
Blue?								14
Lady?								5
Painted Lady								2
Darkwing								2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Amsunetia
		Lupinus
		Erodium
		Eschscholzia
		Cryptantha
		Caenothus
		Layia
		Mustard?
		Dichlostema
		Phacelia 2 species
		Mimulus
		Salvia columbiana
		Castilleja
		Nemophila
DPC501		Caulanthus similis
		Arabis
		Pentstemon
		Monardella
		Plagiobothrus

TOTAL NUMBER OF QCB DETECTED: _____ ① _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

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

Project: Campo Wind Energy Project Map #: 4/12 (Camps 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
END 16 20	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	L	6
Common white	☒ ☒ ☒	30
Star lady sp.	☒	8
Eyes blue	::	3
Hemon blue	L	6
Sulphur	.	1
Brown elfin	::	3
Behr's metal mark	☒ ::	15
Sara orange tip	::	4
Proterpius (?) Dusky wing	.	1

**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 # 12 of 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	10 20	69	0	0	clear	patchy	overcast	drizzle	shower
END	12 35	73	0	0	clear	patchy	overcast	drizzle	shower
START	14 30	74	0-8	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	15 50	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
American blue	3	3
Proterius dusky wing	2	2
Sera orange tip	8	8
Painted lady	3	3
Behr's metal mark	12	12
cloudless ⁺ saltair	1	1
bright yellow butterfly		
Pierisid dusky wing	2	2
Porphyro pink hind street	1	1
Anise swallowtail	2	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		last cul
		erys cup
		Cornis sp
		Nemo menz
		esh cul
		crp int
DFHLO2	point DFHLO2	Physo bery →
		DFHLO2 (cut horned lizard &
		gilia sp.
		Salvia columbiana

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE CUFFER Add'l Person: Ø 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	3-75	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

Recorder: MIKE COUFFER Add'l Person: ~~0~~ 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	0 → 2	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	74	0 → 4	CLEAR	clear	patchy	overcast	drizzle	shower
	1100	72	0 → 5	CLEAR	clear	patchy	overcast	drizzle	shower
	1200	76	0 → 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
FUNERAL DUSKYWING	"	38
BEHR'S METALMARK	"	97
SARA ORANGETIP	"	2
PAINTED LADY	"	5
BROWN ELF	"	11
CALIFORNIA TORTOISESHELL	"	1
DESERT ORANGETIP	"	7

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: BRIAN LOITSTROTT 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	<u>clear</u>	patchy	overcast	drizzle	shower
1200	67	2-3	0	<u>clear</u>	patchy	overcast	drizzle	shower
1300	64	0-3	0	<u>clear</u>	patchy	overcast	drizzle	shower
1430	66	0-6	0	<u>clear</u>	patchy	overcast	drizzle	shower
1520	62	3-8	30	clear	<u>patchy</u>	overcast	drizzle	shower
1640	59	3-8	30	clear	<u>patchy</u>	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	IIIIIIIIII	17
Acan Blue	II	2
Duskywing	IIIIII	11
Behr's metal mark	IIIIIIIIIIIIIIIIIIII	32
Spring white	I	1
Brown EIFin	III	3
Gabbs checkerspot	I	1
Painted Lady	III	11
Pearly Marble	IIIIII	8
Southern Blue	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		BUSH
		WREN
		CAQU
		SPTO
		CORA
		AMCR
		ORJU
		BHGR
		ATFL
		CALT
		SCJA
		BGGN
		HOWR
		RTHA
		BEWR
		NOHA
BLGVO1		Gerardia viscida x 10 indiv.
BLCP01		Lathyrus splendens x 2
BLDB02		Linanthus bellus x 10
BLPJ01		Calceolaria simulans x 100
BLDB03		Linanthus bellus x 30
BLDB04		L. bellus x 100s
BLDB05		L. bellus x 10s
BLDB06		L. bellus x 100s
BLWHA1		Northern Harrier ♀
BLPS02		Calceolaria simulans x 30

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Doreen Mack 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°	2/4	25	<u>clear</u>	patchy	overcast	drizzle	shower
	14:40	61°	4/7	25°	<u>clear</u>	patchy	overcast	drizzle	shower
	15:50	58°	1/3	20°	<u>clear</u>	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	15:50				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 Mite Inmark						29
Blue ?						4
Marble						3
Painted Lady						4
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)
		<i>Cryptantha</i>
		<i>Pectinocarya</i>
		<i>Manzanita</i>
		<i>Erodium</i>
		<i>Nemophila</i>
		<i>Eschscholzia</i>
		<i>Viola</i>
		<i>Castanea</i>
		<i>Layia</i>
		<i>Lupinus</i>
		<i>Arabis</i>
		<i>Ericameria</i>

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^o Wind Speed (mph)/Direction: 0 %Cloud Cover: 15%

END Time: 12:10 Temperature: 60^o Wind Speed (mph)/Direction: 2/4 - %Cloud Cover: 30%

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS/GENERAL SPECIES LIST
		Aemen Blue III
		Blue IIII

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: PRIK Laloste Add'l Person: GEORGINA Date: 4/14/10
 Project: Campo ~~Manzanita~~ 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
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 Binocs - as I approached it, it flew off, effort to re-find were negative after 45 mins - No Pics - I would not report it yet - should maybe try to re-find center today + tomorrow -		1
Aconon Blue		4
Perplexus 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ELA QCB01	Point	QCB Sighting but no pics - recommend revisit
		Good for confirmation.
		<i>Lasthenia californica</i>
		<i>Eradium</i> sp.
		<i>Plagiobothrys</i> sp.
		<i>Ceanothus</i> sp.
		<i>Lupinus</i> sp.
		<i>Mimulus brevipes</i>
		<i>Layia glandulosa</i>
		<i>Amsinckia menziesii</i>
		<i>Escholzia californica</i>
		<i>Camissonia</i> sp.
		<i>Trogopogon polselii</i>
		<i>Anisocoma acutis</i>
		<i>Arabis</i> sp.
		Baby blue eyes.
		<i>Solanum parryii</i>
		<i>Sanicula arguta</i>
		Chico.

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: 6
 GPS Unit: 2 QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	clear	patchy	overcast	drizzle	shower
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
1345	70.0°F	2.6/3.9	40%	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
<i>Callophrys dumosa</i>		10
<i>Apodemia mormo virgulti</i>		17
<i>Erynnis</i> sp.		7
<i>Vanessa cardui</i>		4
<i>Papilio eurymedon</i>		1
<i>Euchloe hyantis</i>		4
<i>Anthocharis sara</i>		4
<i>Pontia sisymbrii</i>		2
Sphygid moth		2
<i>Icaricia acmon</i>		6
<i>Colias harrfordii</i>		1
<i>Celastrina ladon echo</i>		1

Map/GPS label/	Point/ Polygon Type	Comments / Species List
		Plasiobothrys sp.
		Spotted Towhee
		Cryptantha sp.
		California Thrasher
		Descurainia sp.
		Anna's Hummingbird
GCHLO1	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
		Bush-tit
		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	<u>patchy</u>	overcast	drizzle	shower
	1600	74°F	0.8/1.9	70% 50%	clear	<u>patchy</u>	overcast	drizzle	shower
					clear	<u>patchy</u>	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1645	69°F	1.3/2.1	70%	clear	<u>patchy</u>	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
<i>Pontia sisymbrii</i>		3
<i>Vanessa cardui</i>		1
<i>Apodemia mormo virgulti</i>		3
Sphingid moth		1
<i>Anthracaris sara</i>		1
<i>Euchloe hyantis</i>		6
Blue Un differentiated		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		<i>Amsinckia menziesii</i>
		Spotted Towhee
		<i>Cryptantha</i> sp.
		<i>Plagiobothrys</i>
		<i>Lupinus bicolor</i>
		<i>Lasthenia californica</i>
		<i>Descurainia</i> sp.
GCLA01	Sensitive Species Horned Lark	heard Horned Lark
		California Thrasher
		Lark Sparrow
		Anna's Hummingbird
		cf. <i>Ericameria pinifolia</i>
		<i>Arabis</i>
		<i>Phacelia</i> sp.
		<i>Trichostemma</i> sp.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Lois Connolly

Recorder: Dale Powell Add'l Person: Margie Mulligan Date: 4/14/10

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

GPS Unit: 5 + Margie's Personal QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	<u>10:15</u>	<u>63°</u>	<u>0/2</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower
	<u>12:05</u>	<u>64°</u>	<u>0/0</u>	<u>0</u>	<u>clear</u>	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
<u>Acmon Blue</u>	<u> </u>	<u>16</u>
<u>Behr's Metalmark</u>	<u> </u>	<u>14</u>
<u>Lady?</u>	<u>1</u>	<u>1</u>
<u>Perplexing Hairstreak</u>	<u>11</u>	<u>2</u>
<u>Southern Marble</u>	<u>11</u>	<u>2</u>
<u>Blue?</u>	<u>1</u>	<u>1</u>
<u>Funeral Duskywing</u>	<u>1</u>	<u>1</u>

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar sources:	<i>Caenotus leucodermis</i>
		<i>C. greggi</i> var. <i>perplexans</i>
		<i>Amsinckia medziessi</i>
		<i>Bescholtzia californica</i>
		<i>Lupinus coneinnus</i>
		<i>Erodium cicutarium</i>
		<i>Cryptantha micrantha</i>

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Louis Connolly

Recorder: Dale Powell Add'l Person: Maggie Mulligan 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
	15:30 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
Behvs Metalmark		58
MauWk		21
Sora Orange Tip		3
Dusky wing		9
Pale Swallowtail		2
Spring White		2
Perplexing Hairstreak		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Sources	Ph <i>Lasthenia gracilis</i> <i>Caulanthus similis</i>
		<i>Phacelia parryi</i>
		<i>Lupinus bicolor</i>
		<i>L. concinnus</i>
		<i>L. truncatus</i>
		<i>Cryptantha</i> sp.
		<i>Ceanothus leucodermis</i>
		<i>Layia glandulosa</i>
		<i>Escholtzia californica</i>
MMCS01	sensitive plant pt	<i>Caulanthus similis</i> ↓
MMCS02	"	
MMCS03	"	flowering along ridge 1000s of them
MMCS04	"	and some fruiting
MMCS05	"	
MMCS06	"	
MMCS07	"	
MMCS08	"	
MM6V01	"	<i>Geranium viscidum</i> - 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

Luis Connolly

Recorder: Dale Powell Add'l Person: Margie Mulligan Date: 4/14/10

Project: Campo Wind Energy Project Map #: 12 - S Survey Sn: _____


GPS Unit: S + Margie's Personal QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
				clear	patchy	overcast	drizzle	shower
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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lasthenia
		Erodium
		Manzanita
		Eschscholzia
		Descurainia
		Cryptantha
		Caenothus
		Lupinus
		Penstemon
		Phacelia
		Aralis
		Salvia columbiana
		Dechlorotum
		Viola
		Amorpha
		Mimulus
		Neurophila
DPHLO1	Point	San Diego Horned Lizard
DP501	Point	Cauleanthus simulans simulans
DPEPO1	Excluded Polygon	Closed Canopy Chaparral
DPEPO2	"	"
DPEPO3		"
DPINO1	Include Polygon	Resurveyed rough terrain
DPINO2	"	
DPINO3	"	
↑		
include		

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: David K. Faulkner Add'l Person: R. Connolly Date: 15 APRIL 2010

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

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

Butterfly Species	Tally	Total
<i>Vanessa cardui</i>		1
<i>V. virginensis</i>		1
<i>Erynnis species</i>		5
<i>Euclyptus h. alta</i>		2

**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 #: FILE 14 Survey Sxn: CAMPO-K
 GPS Unit: GARMIN G QCB Protocol Survey # 1 of 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	0900	67	1→5 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1000	68	1→8 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1100	71	Ø→7 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1200	71	Ø→8 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1300	70	2→6 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1400	71	Ø→3 MPH	50% COVER	clear	<u>patchy</u>	overcast	drizzle	shower
END	1500	70	1→4 MPH	90% COVER	clear	patchy	<u>overcast</u>	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
FUNERAL DUSKY WING	"	20
ACMON BLUE	"	9
SOUTHERN BLUE	"	11
DESERT ORANGESTIP	"	1
CALIFORNIA MARBLE	"	33
CALIFORNIA TORTOISESHELL	"	1
SPRING WHITE	"	5
PALE TIGER SWALLOWTAIL	"	5

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE COUFFER Add'l Person: Date: 16 APRIL, 2010
 Project: Campo Wind Energy Project Map #: FILE 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 METAMARK	IN FIELD NOTEBOOK	120
PERPLEXING HAIRSTREAK	"	25
PAINTED LADY	"	2
BROWN ELFİN	"	8
CALIFORNIA MARBLE	"	19
SPRING AZURE	"	2
GABB'S CHECKERSPOT	"	1
ARROWHEAD BLUE	"	33
ACMON BLUE	"	35
FUNERAL DUSKYWING	"	10
ALFAFA BUTTERFLY	"	2
GREAT PURPLE HAIRSTREAK	"	1
SPRING WHITE	"	2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Eugene Pablo Date: 4/16/10
 Project: Campo Manzanita 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
END				clear	patchy	overcast	drizzle	shower

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

Butterfly Species	Tally	Total
White?	I	1
Behrs Metalmark	HHI II	7
Blue?	II	2
Duskywing	HHI 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
DPHL 01	POINT	SAN DIEGO Horned Lizard
		Manzanita
		Lasthenia
		Erodium
		Layia
		Lupinus
		Cryptantha
		Caenothus
		Amsinckia
		Mimulus
		Eschscholzia
		Phacelia
		Arabis
		Descurainia
		Hirschfeldia
		Demophilis
		Platantheris
DATPOL DPEPOL	Polygon "	Open area along array arrays Closed Canopy Chaparral 4"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Eugene Pablo
Raymond Connolly

Recorder: Dale Powell Add'l Person: Bonnie Hendricks Date: 4/16/10

Project: Manzanita Wind Energy Project Map #: 24 R Camp 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	72°	5/8	0	clear	patchy	overcast	drizzle	shower
12:00	78°	10/13	0	clear	patchy	overcast	drizzle	shower
14:00	72°	5/8	0	clear	patchy	overcast	drizzle	shower
15:45	72°	3/5	0	clear	patchy	overcast	drizzle	shower
END				clear	patchy	overcast	drizzle	shower

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

Butterfly Species	Tally				Total
Jalisco Metalmark	III	III	III	II	22
Marble	III	III	III		14
Pale Swallowtail	III				3
Chalcedona	III	III	III	III	25
Saras Orange tip	III	III	III		14
Aemon Blue	III	II			7
Blue?	III	III			8
Gabb's	III	II			7
White?	III	I			6
Dusky wing	III	III			10
Perplexing Haircreek	I				1
Southern Blue	III				3
Painted Lady	II				2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Bonnie Hendricks Add'l Person: Raymond Escott 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°	1.7/4.2	0	clear	patchy	overcast	drizzle	shower
11:50	72.0°	1.2/2.5	0	clear	patchy	overcast	drizzle	shower
12:30	72.0°	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 61.3° 4.5/8.7 0 clear

Butterfly Species	Tally	Total
Duskywing (small black w/ white dots on forewing dorsal)	I	1
Duskywing (<i>E. anna fustularis</i> or <i>tristis</i>)	III	3
Chalcidon checkerspot	IIII II	7
Quino!	I	1
Gabb's Checkerspot	IIII IIII II	12
Acmon Blue	IIII I	6
Mottled White	IIII III	8
Southern Blue	II	2
Pygmy Blue	I	1
Sarah's Orangetip	I III IIII II	12
Persephone Hairstreak	III	3
Behr's Nectarhawk	IIII IIII IIII IIII IIII	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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BHEP01	Excluded Polygon	Closed Canopy Chaparral
BHIP01	Included Polygon	Open Chaparral
BHQBO1	Quino!	Seen nectaring on <i>Layia glandulosa</i>
	10:10	1 photo from far away.
	fresh	flew on other side of
	0557013	shrubs Mixed Chaparral
	3610034	lots of nectar, open holes
		within chaparral
		+ Adca, + Cerbe, Erfa
BHAR01	host plant	1 plant in bloom
	Nearby	<i>Antirrhinum</i> sp.
		photo
BHAR02	4 host plant	<i>Antirrhinum</i> 4 plant
BHNL01	mammal	Desert Woodrat Nest
		built in cactus* surrounding nest.
		Nectaring plants:
		<i>Layia glandulosa</i>
		<i>Lasthenia</i> sp.
		<i>Escholtzia</i> sp.
		<i>Cryptantha</i> sp.
		<i>Ceanothus</i> spp.
		<i>Amsinckia</i> 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 mahogany (*Arceuthobium betuloides*), and buckwheat (*Eriogonum fasciculatum*) with openings of bare soil and nectaring plants. One climbing snapdragon (*Antirrhinum kelloggii*) 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-C¹12-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	160%	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	7
Duskywing	### II	7
Dearly Marble	### ### ### ### II	22
Pale Swallowtail	###	4
Behr's Metalmark	### I	6
Sara's Orange tip	###	3
Acmon Blue	##	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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMGV01	Sensitive plant pt	Gerarea viscida - 3 vegetative plants
WED	Nectar Source	Ericameria linearifolia Erodium cicutarium Luzula gracilis Cryptantha micrantha Ceanothus greggi perplexus & C. leucodermis Marrubium macrocarpum macrocarpum Trichostema purshii 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 GUFFER 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	<u>overcast</u>	drizzle	shower
	1000	67	Ø → 2	100	clear	patchy	<u>overcast</u>	drizzle	shower
	1100	70	Ø → 3	100	clear	patchy	<u>overcast</u>	drizzle	shower
	1200	73	Ø → 4	100	clear	patchy	<u>overcast</u>	drizzle	shower
	1300	75	Ø → 5	100	clear	patchy	<u>overcast</u>	drizzle	shower
	1320	75	Ø → 5	100	clear	patchy	<u>overcast</u>	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
FUNERAL 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**

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	clear	patchy	overcast	drizzle	shower
START 0900	66°	9/11	90	clear	patchy	overcast	drizzle	shower
1010	72°	6/18	clearing 80%	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		2
Blue?		1
Sara's Orange tip		3
White?	1	6
Behr's Metalmark		1

* Can see hazy shadows

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Ceanothus
		Cryptantha
		Amstelkia
		Descurainia
		Neomphila
		Phacelia
		Manzanita
		Plagio heterpis
DPCS001	POINT	Coulanthus similis all along row
DPCS002	/	"
DPHL001	"	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: _____ ○ _____ INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: - Date: 4/17/10

Project: Campo Marzanita Wind Energy Project Map #: 7 Survey Sxn: Campo 11

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	56%	clear	patchy	overcast	drizzle	shower
	13:00 70°	6/9	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
Painted Lady	II	2
Lucywing	IIII	4
Blue	III	3
Pale Swallowtail	I	1
Bahia Metalmark	IIII III	9
Java's Orange Tip	IIII II III III	19
White?	IIII III III	13
Marble	IIII III III	14

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	<u>overcast</u>	drizzle	shower
	1600	80°	2-4	100	clear	patchy	<u>overcast</u>	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	#####	12
Behr's Metalmark	### ### ### ### ### ### ### ### ### ###	38
Funereal Duskywing		2
Checkered White		1
Sulphur sp.		1
Painted Lady		1
Acmion Blue	##### ### ###	22
Sara's Orange T.p		3

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
12	Nectar Sources:	<i>Cercocarpus betuloides</i>
		<i>Amsinckia menziesii</i>
		<i>Linanthus bellus</i>
		<i>Lupinus concinnus</i>
		<i>L. bicolor</i>
		<i>Caulanthus simulans</i>
		<i>Cryptantha micrantha</i>
		<i>Platichotrys</i> sp.
		<i>Lesqueria gracilis</i>
		<i>Senecio californica</i>
		<i>Anisocoma acutis</i>
		<i>Lotus sticticus</i>
		<i>Phacelia distans</i>
		<i>Salvia columbariae</i>
		<i>Nemophila menziesii</i>
		<i>Layia glandulosa</i> & <i>platyglossa</i>
		<i>Ceanothus leucodermis</i> & <i>greggii</i> <i>perplexans</i>
		<i>Ericameria linearifolia</i>
MMLB01-04	Sensitive plant pts	<i>Linanthus bellus</i> ≈ 1000 plants scattered throughout polygon
MMLB05	Sensitive plant pt	<i>Linanthus bellus</i> ≈ 30 plants
MMHL01	Sensitive lizard pt	Horn Lizard - 1
MMHL02	"	"
MMCS01	Sensitive plant pt	<i>Caulanthus simulans</i> - 1 plant
MMAD01	"	<i>Astragalus douglasii</i> ^{perstridus} ≈ 35 plants vegetative
MMDS01	"	<i>Delphinium parishii</i> ssp. <i>subglobosum</i> so double check 4 saw 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 → 9A	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
200	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
<i>Euchloe hayata</i>	XXXXXXXXXX 14	73
<i>Byronia propertius</i>	1	1
<i>Apodemia amaranthi</i>	31	31
<i>Byronia prizo</i>	12	12
<i>Byronia fresta</i>	1	1
<i>Phlogothys acmon</i>	10	10
<i>Vanessa cardui</i>	8	8
<i>A. sara</i>	4	4
<i>Calliphys proplema</i>	25	25
<i>Calisto echo</i>	3	3
<i>Euproserpius phaton</i>	17	17
<i>Haliothis belladonna</i>	3	3
<i>Drasteria tejonica</i>	3	3
<i>Drasteria edwardsi</i>	1	1
<i>Drasteria bifurcata</i>	1	1
Abundant <i>Corylanthus</i> (Quino host) found just off site as indicated on map B4.		

2 maps on one data sheet

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: KHO's ^{campo} Lorne Add'l Person: Carolina Date: 4/15/2010
 Project: Manzanita Wind Energy Project Map #: 8 Survey Sxn: 8
 GPS Unit: 9 QCB Protocol Survey # _____ of 5

8B
13F

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
START				clear patchy overcast drizzle shower
9:00	67	26-4		clear patchy overcast drizzle shower
10:30	66	3.9/2-1		clear patchy overcast drizzle shower
11:35				clear patchy overcast drizzle shower
2:00	72	2.4/0-6	haze 10%	clear patchy overcast drizzle shower
4:00	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
<i>P. acmon</i> 14		5
<i>E. tristis</i> 11		2
<i>G. propertius</i> 1111		4
<i>Euclyptus heyanthes</i> 1111		4
<i>A. marmo</i> 11111		24
<i>C. echa</i> 111		3
<i>C. perplexa</i> 11		2
<i>Papilio polyxenes</i> 1 (Blackswallow)		1
<i>A. sava</i> 1111		4
* <i>E. aditha</i> ♂ 3:48 pm 32° 41.494 116° 19.728 hill top off project		
♂ 4:2 3:57 pm 32° 41.487 116° 19.752 on walk back		
Photographs of ♀♀ and habitat		
<i>V. atalanta</i> 1		1
<i>V. cardui</i> 1111		4
<i>V. annabella</i> 1		1
<i>Phloxosoma catalinae</i> 1		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

20
4, 13
Mantle
8/4

Recorder: Antonio de Guzman Add'l Person: Phillip Paipa Date: 4/18/10
Project: Campo Manzanita 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
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		8
Behr's Metalmark	 	48
Amon Blue		5
Dusky wing		11
Perdido's Hairstreak		2
Gavin's Orange tip		6
Ca tortoise shell		1
Pale Swallowtail		1
Tiger Swallowtail		1
Southern blue		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
AGCH1	Chinese House	x 8 plants
		<i>Erodium cicutarium</i>
		<i>Eucryphia chrysantha</i> <i>tomifolia</i>
		<i>Coreopsis californica</i>
		<i>Malacothrix californica</i>
		<i>Malacothrix dewlandii</i>
		<i>Plagiobothrys collinus</i>
		<i>Phacelia</i>
		<i>Nemophila menziesii</i>
		<i>Eriogonum fasciculatum fasciculatum</i>

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Louis Connolly Date: 4/18/10
 Project: Campo Menziesite Wind Energy Project Map #: 26 Survey Sxn: Campo 9
 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	cloudy clear patchy overcast drizzle shower
10:00	77°	0/0	0	clear patchy overcast drizzle shower
11:30	85°	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
Pygmy Hairstub		2
Belted Nitehawk		70
Marble		12
White?		4
Federal Duskywing		3
Duskywing?		10
Jara's Orange-tip		13
Orange?		1
Yellow?		1
Blue?		4
Southern Blue		1
Acmon Blue		1
Pale Swallowtail		1

**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 #: 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	<u>clear</u>	patchy	overcast	drizzle	shower
13:30	78	4/7	0	<u>clear</u>	patchy	overcast	drizzle	shower
14:30	74°	4/7	0	<u>clear</u>	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
Bahr's Metalmark									43
Gabb's									1
Saras Orangetip									8
Asmon Blue									4
Blue?									4
Marbles									9
White's									7
Common White?									1
Yellow Yellow?									2
Painted Lady									1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Descurainia
		Lupinus
		Castilleja sp (Indian Paintbrush)
		Erodium
		Cryptantha
		Amorpha
		Arabis
		Dichostema
		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 COUFFER 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
FUNERAL DUCKY WING	"	48
CHALCEDON CHECKERSPOT	"	2
PALE TIGER SWALLOWTAIL	"	1
BROWN ELFİN	"	3
SPRING AZURE	"	6
GARR'S CHECKERSPOT	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCMORTARHOLES 2	POINT	3 MORTAR HOLES IN A LONG ROCK
MCWW01	POINT	
MCHLOB	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 ~~4~~ 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START 5:50	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
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
<u>Southern Blue</u>	<u>111</u>	<u>3</u>
<u>Sara's</u>	<u>11</u>	<u>2</u>
<u>Marble</u>	<u>11</u>	<u>2</u>
<u>Behr's Metalmark</u>	<u>1111</u>	<u>6</u>
<u>White ?</u>	<u>111</u>	<u>3</u>

**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: F

GPS Unit: 10 QCB Protocol Survey # _____ of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START 1040	64	2A/4max	30	clear	patchy	overcast	drizzle	shower
1215	62	5A/10M	5	clear	patchy	overcast	drizzle	shower
215	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		2
Sara orangetip		3
Behrs metalmark	200+	200+
Spring White		4
Painters lady		2
Pale swallowtail		3
Funereal Duskywing		5
Africanus Duskywing		2
California marble		2
Acmon Blue		4

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ELCOLHETO1	Point	Collinsia heterophylla - 100-200
ELCOLHETO2	Point	Collinsia heterophylla - 50-100 but there
		are thousands in the same drainage
		further east.
		Erodium sp.
		Cal Poppy
		Cream caps
		Playebrothys
		Lupine sp.
		Galium capitatum
		Chia
		Dichelostemma capitatum
		Senecio cal.
		Mimulus fremontii
		Anisacoma acutis
		Lactuca cal.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Natalie Brodic/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	 	23
unidentified white		1
unidentified blue		1
CA Marble	 	19
Southern blue		4
Perplexing hairstreak	 	6
Funereal Duskywing	 	5
Pale swallowtail		1
Acmon blue	 	12
Painted lady		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Fieldwork, Goldfields, Popcorn Flower
AS EBO102		Astragalus
EB01		Campo pea
EB01		Campo pea 2-6
BEBO1		Black tailed jackrabbit
EBHL01		Horned lizard
EBHL02		Horned lizard (big one!)
		Antirrhinum
EB01		Campo pea II
AS EBO1 03		Astragalus 3
AS EBO1 04		Astragalus 4
EB01 05		Astragalus 5
EB01 06		Astragalus 6
EB01 07		Astragalus 7
EB01 08		Astragalus 8
EB01 09		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	0	clear	patchy	overcast	drizzle	shower
	1300	72°	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	1330	74°	2/5	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
CA Marble	 	17
Sara orangetip		4
Funereal Duskywing	 	6
Southern blue		1
Acmon blue	 	24
Berks Metalmark	 	17
Repleting Hairbreak	 	12
unidentified sulfur		2
Gulf fritillary (?)		1
		84

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Philip Paipa Date: 4/14/10
 Project: Campo Wind Energy Project Map #: 23 Survey Sxn: Campo 1
 GPS Unit: 13 QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
START 10:45	69°	2/4	20	clouds 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		10
Sara's Oocyte Tip		3
White?	- 11	12
Marble		4
Blue?		4
Pale Swallowtail		4
Chalcedon		3
Painted Lady		2
Gabbs/Quino		1
Funeral Duskwing		12
Disky wing		18

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 20 Survey Sxn: CAMPO-P (NORTH)
 GPS Unit: GARMIN Z 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 MARZBLE	"	17
FUNERAL DUSKY WING	"	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

Recorder: David K. Faarikur Add'l Person: Eugene Pablo Date: 19 APRIL 2010

Project: Campo Wind Energy Project Map #: 15 i 16 Survey Sxn: CAMPQ-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	<u>clear</u>	patchy	overcast	drizzle	shower
	1130	71°	6	30	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower
	1200	73°	5	∅	<u>clear</u>	patchy	overcast	drizzle	shower
	1330	76°	3	∅	<u>clear</u>	patchy	overcast	drizzle	shower
	1400	76°	4	∅	<u>clear</u>	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. Augustinus		1
E. funealis		4
E. species		5
E. porphyra		6
Euchloe h. zotta		11
A. Sara		4
A. Vagueli		15+
Philosora sp.		2
[Hyles lineata]		1
Celias barfordii		1

**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 FILE 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→6 MPH	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
FUNERAL DUSKY WING	"	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**

Recorder: DAVID K. FAULKNER Add'l Person: Eugene Pardo 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	w.g. clouds	(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
<i>Erynnis species</i>		7
A. SARA		2
P. acmon		15+
A. virgulti		15+
V. cardui		1
C. perplexa		1
Philosora		1
[E. phastor]		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: B. LOHSTROTH 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
Behr's Metalmark		26
Funereal Duskywing		3
Grab's checkerspot		1
Pearley Marklet		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lego
		BUSH
		SPTD
		WCSP
		WTSW
		BCSP
		BEWR
		ScJa
		side blotched lizard, w. whiptail cottontail
		nectar sources
		Anisocoma acaulis, Beecroftia, Camissonia popcorn flower, erodium, CA poppy, Lathyrus californica, Cercocarpus luteus, Lotus strigosus, Amsinckia, Gilia, Phaceliasp, Nemophila, Mustards, Menziesia sp, ceanothus
		Layia glandulosa
BLAJO1	Rare plant	Caulanthus simulans 1 individual
BLCPO1	"	Lathyrus splendens 1 individual
BLGVO1	"	Gerea viscidia 7 individuals
BLGVO2	"	" 9 individuals
BLJRO1	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	<u>patchy</u>	overcast	drizzle	shower
	1200	65	4-8 (14)	30	clear	<u>patchy</u>	overcast	drizzle	shower
	1400	64	8-13 (15)	50	clear	<u>patchy</u>	overcast	drizzle	shower
	1600	66	4-10	50	clear	<u>patchy</u>	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 Duskwings		1
Sulphur (Cloudless?) ♀		1
Pale Swallowtail		1
Pearly Marble		2
Duskwings		4
Painted Lady		3

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Source:	Phacelia parryi & distans
		Gilia capitatum
		Cercocarpus betuloides
		Layia glandulosa
		Ceanothus leucodermis
		Streptanthus campestris
		Escholtzia californica
		Coreopsis californica
		Descurainia phaner
		Collinsia h
		Lotus stigosus
		Ericameria linearifolia
		Caulanthus simulans
		Lupinus bicolor & concinnus & truncatus
SIGE01	bird pt	OWL?
MMSCO1	sensitive plant pt	Streptanthus campestris - 5 plants
MMSCO2	"	" nrye
MMSCO3	"	"
MMSCO4	"	" - 1 plants
MMDS01	"	Delphinium parishii sp. 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: Campo Manzanita 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	12:30	66°	2/10	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
Funeval Dusky wing		1
Saras Orange tip		3
Blue?		2
White		2
Marble		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Salvia columbiana
		Menziesia
		Erodium
		Platanobatus
		Cryptantha
		Other

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 #: 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	<u>clear</u>	patchy	overcast	drizzle	shower
	10:45	66°	4/6	0	<u>clear</u>	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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lesqueria
		Plagiobothrys
		Cryptantha
		Others
DP#L01	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: Compa Manzanita Wind Energy Project Map #: 25 Survey Sxn: Compa 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
Funeral Duskywing		4
Saras Orange-tip	 	9
Blue?	 	8
White?	 	7
Marble	 	6
Pale Swallowtail		1
Southern Blue		1
Painted Lady		1
Yellow?		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Crypthantha
		Plagiobistys
		Nemaphilia
		Lasthenia
		Others
DPHLOJ ^{or}	Point	San Diego Horned Lizard
DPÉPOL	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 Connolly Date: 4/20/10
 Project: Manzanita 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
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
<u>Painted Lady</u>	<u>1</u>	<u>1</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Loasthenia
		Eradium
		Cryptantha
		Plagio betrys
		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 part
 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
Blue?		2
Pale Swallowtail		4
Behr's Metalmark		1
?		1
Chalcedon?		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
		Platichthys
		Cryptantha
		Lupinus
		Castanea
		Erythronium
		Eschscholzia
		Dichostema

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	0	<u>clear</u>	patchy	overcast	drizzle	shower
	1200	60	6	0	<u>clear</u>	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1300	61	9	0	<u>clear</u>	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
<i>Euchloe c. lotta</i>		1
<i>A. SARA</i>		1
<i>Erynnis sp.</i>		2
<i>Apodemia vigueta</i>		

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: David K. Faulkner Add'l Person: Josh Patpa 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	<u>clear</u>	patchy	overcast	drizzle	shower
	1400	62	5	10	clear	<u>patchy</u>	overcast	drizzle	shower
	1500	65	3	50	clear	<u>patchy</u>	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	<u>patchy</u>	overcast	drizzle	shower
END	1600	64	4	40	clear	<u>patchy</u>	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
<i>P. acmon</i>		10+
<i>A. virginii</i>		15+
<i>Erynnis</i> sp.		4
<i>V. virginensis</i>		1

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
# 18		Cryptantha Collinsia (in flower) goldfields baby blue eyes Composites (white/yellow) Buttercups Ceanothus

TOTAL NUMBER OF QCB DETECTED: 0 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
	BEND'S METALMARK	IN FIELD NOTEBOOK	2
	ACMON BLUE	"	12
	ARROWHEAD BLUE	"	37
	PAINTED LADY	"	3
	PERPLEYING HAIRSTREAK	"	1
	CALIFORNIA MARBLE	"	2

**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
1:20	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	4.0/15.1	10%	clear	patchy	overcast	drizzle	shower
END 4:15	57.2	4.2/8.1	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
Behr's Metalmark	 	8
Pers. Queen Hairstreak		1
Marbled White		1
Painted Lady		1
Duskywing (E. funeralis or Blue)		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Nectaring spp.
		Cryptantha spp.
		Psithyrus sp.
		Cercocarpus bet., Geopelia can.
		Lupine, Escholtzia, Amsonia
BHAR03-15	host plant	Antirrhinum kelloggi 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: Lewis Connolly Date: 4/24/10

Project: Campo Wind Energy Project Map #: 16 Survey Sxn: Comp II

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, hillsides, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Acmon Blue		7
Funeral Duskywing		6
Blue?		9
Pala Swallowtail		
Behr's Metaltail		65
Yellow?		1
Maxida		13
Seva's Orange-tip		10
Duskywing		7

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Louis Conolly Date: 4/29/10

Project: Campo Wind Energy Project Map #: 24 Survey Sxn: 1

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
Chalcadana		5
Saras Orange-tip		13
Dusty wing		4
White?		3
Blue?		7
Peopling Hairstreak		1
Funeral Dusky wing		2
Acmon Blue		12
Merbale		2
Orange? (Gabb's or Quino - Tooter Behr's away to ID)		5
Behr's Metalmark		8

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Lasthenia
		Layia
		Lupinus
		Eschscholzia
		Descurvicia
		Manzanita
		Phacelia
		Salvia columbiana
		Plagiobothrys
		Cryptantha
		Ceanothus
		Dichastemma
		Amsinckia
		Arabis
DR CH01	Point	Chinese Houses

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Mike Couffers Add'l Person: Ø Date: 24 APRIL 2010
 Project: Campo Wind Energy Project Map #: TILE 17J Survey Sxn: CAMPO 5
 GPS Unit: GARMIN Z QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START				clear	patchy	overcast	drizzle	shower
<u>1518</u>	<u>73</u>	<u>2-6 MPH</u>	<u>CLEAR</u>	<u>clear</u>	patchy	overcast	drizzle	shower
<u>1600</u>	<u>73</u>	<u>1-5 MPH</u>	<u>CLEAR</u>	<u>clear</u>	patchy	overcast	drizzle	shower
<u>1623</u>	<u>73</u>	<u>1-3 MPH</u>	<u>CLEAR</u>	<u>clear</u>	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 POLYGONS 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 70 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
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	"	6
FUNERAL DUSKYWING	"	5
QUINO CHECKERSPOT BUTTERFLY	"	1
PAINTED LADY	"	4
BROWN ELFIN	"	1
SARA ORANGETIP	"	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE GOUFFED Add'l Person: Ø Date: 24 APRIL, 2010

Project: Campo Wind Energy Project Map #: FILE 19 Survey Sxn: CAMP 0

GPS Unit: GARMIN Z 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 NOTEBOOKS	6
ACMON BLUE	"	7
PERPLEXING HAIRSTREAK	"	9
ARROWHEAD BLUE	"	2
BEND'S METALMARK	"	100
SOUTHERN BLUE	"	3
FUNERAL 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

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→4MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1200	80	Ø→4MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1300	85	Ø→1MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1400	78	Ø→4MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1500	75	3→7MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1515	75	3→7MPH	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
FUNERAL 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCLA NESTING	POINT	HORNBED LARK CHASING OFF OTHER BIRDS IN THE AREA.
MCLA OB	POINT	NEST ASSUMED TO BE IN THE VICINITY OF THIS POINT.
MCLA OX	POINT	

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE COUFFER Add'l Person: \emptyset Date: 25 APRIL 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	\emptyset	CLEAR	(clear)	patchy	overcast	drizzle	shower
0900	74	$\emptyset \rightarrow 1$ MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
1000	77	$\emptyset \rightarrow 1$ MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
1100	78	$\emptyset \rightarrow 3$ MPH	CLEAR	(clear)	patchy	overcast	drizzle	shower
1130	79	$\emptyset \rightarrow 2$ 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
CALIFORNIA MARBLE	IN FIELD NOTEBOOK	6
FUNERAL 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

Recorder: Dale Powell Add'l Person: Louis Cunnally Date: 4/25/10

Project: Campo Wind Energy Project Map #: 14 Survey Sxn: Campo K

GPS Unit: 10 QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	12:15	79°	3/5	0	clear	patchy	overcast	drizzle	shower
	14:10	77°	5/7	0	clear	patchy	overcast	drizzle	shower
	16:15	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	III	II	III	II		17
Pale Swallowtail	III	III		II		12
Aemon Blue	III	II				7
Blue?	III	I				6
Marble	III	III		I		11
Delus Metalmark	III	III	III	III	III	25
White?	III	III		II		12
Perplexing Hairstreak	III					5
Painted Lady	III	I				6
Orange?	III					3
Chacedan?	I					1
Common Hairstreak	I					1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lotus scoparius
		Phacelia (2 types)
		Eschscholzia
		Cryptantha
		Plagiobothrys
		Manzanita
		Ceanothus
		Dichlostemma
		Erigeron
		Layia
		Pentstemon
		Lupinus (3 types)
		Castilleja (Indian Paintbrush)
DPH601	Point	San Diego Horned Lizard
DPCS01	Point	Caulanthus similans
02	"	"
03	"	"

TOTAL NUMBER OF QCB DETECTED: @ 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 #: 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		5
Marble		2
White?		4
Blue?		6
Behr's Metalmark		19
Yellow?		1
Funeral Duskywing		1
Saved Orangetip		2

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 - N1

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	Ø	(clear)	patchy	overcast	drizzle	shower
	1030	72°	calm	Ø	(clear)	patchy	overcast	drizzle	shower
	1130	76°	2/4	Ø	(clear)	patchy	overcast	drizzle	shower
	1235	75°	calm	Ø	(clear)	patchy	overcast	drizzle	shower
	1340	76°	calm	Ø	(clear)	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1520	74°	calm	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	 	18
Perplexing Hairstreak	 	17
Bears Metalmark		55
Southern blue	I	1
Aconon blue		4
Brown elfin	I	1
Anise swallowtail		2
Sara orangetip	 	9
Painted lady		5
Funeral Duskywing		4
unidentified sulfur		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower, ground pink
NBHLO1	point	Horned Lizard
NBHLO2		Horned Lizard
NBCH01		Collinsia concolor, ~20 individuals 2x3 m area
NBCH02		Collinsia concolor, 20 individuals (100+)
NBCH03		Collinsia concolor, 100+ individuals 5x7m

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell 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				
				clear	patchy	overcast	drizzle	shower
START 8:30	74°	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, hills, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Butterfly Species	Tally	Total
Sara's Orange Tip	III IIII III III III	28
Behr's McAlmarr	I IIII IIII IIII IIII	56
Acmon Blue	IIII	4
Blue?	IIII III	9
Marble	IIII III	8
Painted Lady	IIII	4
?	I	1
Perplexing Hairstreak	II	2
Buckwing	IIII	4
Funeral Duskywing	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Eradium
		Lespedeza
		Lasthenia
		Lupinus
		Manisuris
		Penstemon
		Cryptantha
		Plagiodon
		Lotus
		Nemophila
		Dichostemma
		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	<u>patchy</u>	overcast	drizzle	shower
	1500	80°	6	5	clear	<u>patchy</u>	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	<u>patchy</u>	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
<i>(GPS died for the)</i>		
<i>A. vinquet</i>		11
<i>Euclyptus b. latta</i>		4
<i>C. harfordii</i>		1
<i>A. SARA</i>		1
<i>E. brizo</i>		1
<i>V. candui</i>		1
<i>P. Almon</i>		6

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
<i>V. cardui</i>		2
<i>A. Sara</i>		2
<i>E. propertius</i>		3
<i>A. Virgulti</i>		4
<i>So. blue</i>		1
<i>C. augustinus</i>		2
<i>E. chalcidoma</i> (Checker sp.)		2
<i>P. Acmon</i>		7
<i>C. perplexa</i>		2
<i>E. funeralis</i>		3
<i>Euclyptus h. lotta</i>		1
<i>Papilio eurymedon</i>		1

**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: CAMP0-11

GPS Unit: #9 QCB Protocol Survey # 3 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	1100	79°	4	Ø	<u>clear</u>	patchy	overcast	drizzle	shower
	1200	83°	Ø	Ø	clear	patchy	overcast	drizzle	shower
	1300	83°	Ø	5%	clear	<u>patchy</u>	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1400	87°	2	5%	clear	<u>patchy</u>	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
<u>A. Sans</u>		<u>2</u>
<u>C. perplexa</u>		<u>2</u>
<u>E. funeralis</u>		<u>2</u>
<u>V. cardui</u>		<u>5</u>
<u>V. virginensis</u>		<u>1</u>
<u>A. nigueli</u>		<u>25+</u>
<u>P. acmon</u>		<u>3</u>
<u>C. hufordii</u>		<u>1</u>
<u>Evilae L. Zitta</u>		<u>2</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
11		Collinsia
		Grassfields
		Aristida
		Ceanothus
		Baby blue eyes.

TOTAL NUMBER OF QCB DETECTED: 0 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→6 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
FUNERAL DUSKYWING	"	14
QUINO CHECKERSPOT BUTTERFLY	"	1
POSSIBLE 2ND QUINO, BUT DID NOT POSITIVELY IDENTIFY.		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE COUFFER Add'l Person: \emptyset 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	<u>clear</u>	patchy	overcast	drizzle	shower
0900	73	\emptyset -3	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1000	72	\emptyset -3	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1100	80	\emptyset -6	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1130	82	\emptyset -2 MPH	CLEAR	<u>clear</u>	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
FUNERAL 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

Recorder: S Rink

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 _____

TIME (24-hour)	Temp (F°):	Wind (avg/max)	% CC	Sky
START	<u>0912</u>	<u>~70</u>	<u>1-2/5</u>	<u>2-5</u>
	<u>1030</u>	<u>70</u>	<u>2-3/5</u>	<u>3-5</u>
	<u>1130</u>	<u>71</u>	<u>2-3/5</u>	<u>5-7</u>
	<u>1230</u>	<u>73</u>	<u>3-4/5</u>	<u>10-12</u>
END				

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

Butterfly Species	Tally	Total
<u>Lemon Blue</u>	<u>III</u>	<u>(5)</u>
<u>Behr's metalmark</u>	<u>III III III III III III III</u>	<u>(20)</u>
<u>Pontia sp.</u>	<u>III III</u>	<u>(8)</u>
<u>W.C. Gully</u>	<u>III III III</u>	<u>(13)</u>
<u>Larva Orangetip</u>	<u>II</u>	<u>(2)</u>
<u>Duckwing 1'</u>	<u>IIII</u>	<u>(4)</u>

**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 FILE 24 Survey Sxn: CAMPO-RJ
 GPS Unit: GARMIN 3 QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	1200	81	0 → 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	0 → 2 MPH	10%	clear	patchy	overcast	drizzle	shower
	1600	76	0 → 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
FUNERAL 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB09	POINT	UPPER LEFT WING TIP MISSING (NAD83) 115 0556986, 3609928
MCHL12	POINT	
MCQB10	POINT	BOTH WING TIPS INTACT. (NAD83) 115 0556995, 3609943
MCHL13	POINT	
MCQB11	POINT	(NAD83) 115 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 # 24 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
BEHR'S 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Costhema
		Layia
		Phacelia
		Ceanothus
		Erodium
		Manzanita
		Collinsia
		Penstemon
		Nemophila
		Cryptantha
		Playa botanica

TOTAL NUMBER OF QCB DETECTED: 1 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: Campo R
 GPS Unit: 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	11:40 13:45 15:00 15:55	74° 72° 78° 73°	5/7 6/9 5/8 7/10	0 0 0 0	clear clear clear clear	patchy patchy patchy patchy	overcast overcast overcast overcast	drizzle drizzle drizzle drizzle	shower shower shower 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
Bahus Metalmark		60
Saves Orange Tip		23
Marble		7
Chakoblong		7 (35)
Gabbs Checkerspot	1	41
Yellow ?		5
Dusky wing		25
Central Dusky wing		7
Perplexing	1	1
Amara Blue		5
Quino Checkerspot	1	1
1180557051, 3610098		
I caught the QCB flying near Collinsia and other nectaring plants. Andrew Fisher, Phillip Paipa, & Willy observed the QCB as I held the butterfly.		

**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^m 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)	111	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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	Nectar Plants	<i>Emmenanthe pendulifera</i>
		<i>Anisocoma acaulis</i>
		<i>Phacelia parryi</i>
		<i>Lotus scoparius brevipetalus</i>
		<i>Ceanothus leucodermis</i> & <i>gracilis perplexus</i>
		<i>Salvia columbiana</i>
		<i>Lupinus concinnus</i> & <i>bicolor</i>
		<i>Carlantus simulans</i> & <i>heterophyllus</i>
		<i>Streptanthus campestris</i>
		<i>Cryptantha</i> spp.
		<i>Gilia capitata</i>
		<i>Lotus argophyllus</i> var. <i>argophyllus</i>
		<i>Layia glandulosa</i>
		<i>Phacelia distans</i> &
MMD501		<i>Delphinium parryi</i> subglobosum
MMD502		"
MMSC01		<i>Streptanthus campestris</i>
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: CAMPD-L
 GPS Unit: #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	0900	65°	1	0	clear	patchy	overcast	drizzle	shower
	1000	73°	2	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1100	73°	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
<i>A. vinqueti</i>		25+
<i>A. SARA</i>		4
<i>P. Achmon</i>		3
<i>V. cardui</i>		1
<i>Erynnis brizo</i>		1
<i>Euchloe hyacinthe latta</i>		2
<i>C. Augustina</i>		5

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
IS-L		Cryptantha
		Goldfields
		Ceanothus
		Amsinckia
		Collinsia
		Baby blue eyes

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 APR 2010

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

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
<i>Apodemia virgata</i>		25+
<i>P. Acton</i>		8
<i>A. SARA</i>		3
<i>Vanessa</i> sp.		1
<i>Vanessa atalanta</i> (R. Admiral)		1
<i>Euchloe h. lotte</i>		2
<i>V. cardui</i>		3
[<i>Hemeris affinis</i>]		1
<i>Colophrys augustinus</i>		2

**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 #: FILE 24 Survey Sxn: CAMPO-R

GPS Unit: GARMIN 13 QCB Protocol Survey # 41 of 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	1300	62	2-7 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
<p>DALE AND I HIKE SOUTH ALONG THE CAMPO R1 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 POWELL'S DATA SHEET.</p>		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHLIS	POINT	HORNEO LIZARD ON ROAD
OTHER POINTS		REPRESENT COLLINSIA SP. LOCATIONS ALONG ROUTE.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Pinell Add'l Person: Mike Coulter Kevin Louis 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	66°	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
Funeral Duskywing		1
Gabb		1
Sara Orange Tip		1
White?		1
Pale Swallowtail		1
Painted Lady		1
Black Metalmark		2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Cryptantha
		Platycorymbus
		Collinsia (See Mike Cutler's Notes)
		Sarcobatus
		Layia
		Castilleja
		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 Cutler's notes) (Mike noted Collinsia - observed)
DP1P01	Exclude Polygon	Open area
DPH001	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. v. gutti		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
# 14	CAMPO-X	Blue dicks
		Cryptantha
		goldfields
		baby blue eyes
		yellow garrow
		<u>Collinsia</u> - only a few scattered plants.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Handsicks

4-30-10

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
EBASD001	Population/ Rare Plant	(1 plant)
EBAS1002	" "	1 plant
EBAS1003	" "	8 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 Corrigan 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	0	<u>clear</u>	patchy	overcast	drizzle	shower
	1605	65°	6/7	0	<u>clear</u>	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
<u>Orange ?</u>	1	1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dak 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	<u>clear</u> patchy overcast drizzle shower
	6	65°	5/7	0	<u>clear</u> patchy overcast drizzle shower
	1330	66°	6/9	0	<u>clear</u> patchy overcast drizzle shower
	1425	67°	6/8	0	<u>clear</u> 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
Saras Oroutip		25
Southern Blue	 	5
Blue		6
Lady?		5
West Coast lady		1
Belted Metalmark		10
Marble?		5
White?		10
Gabbs Checkerspot		5
Chabredon		15
Newer Blue		3
Funeral Duskywing		2
Duskywing		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		<i>Lessthenia</i>
		<i>Phycalia</i> 2 Types
		Loyid
		<i>Monarda</i>
		<i>Cryptantha</i>
		<i>Plagiobothrys</i>
		<i>Eriogonum</i>
		<i>Arabis</i>
		<i>Dicksonia</i>
		<i>Mimulus</i>
		Lotus
		<i>Lupinus</i>
		<i>Caenothus</i>
		<i>Amsinckia</i>
		<i>Escholtzia</i>
DPCH 01	Point	<i>Collinsia</i>
" 02	"	"
" 03	"	"
" 04	"	"
" 05	"	"
DPBJ 01	Point	Black-Tailed Jack Rabbit

TOTAL NUMBER OF QCB DETECTED: _____ 0 _____ INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE GOUFFER Add'l Person: ANDREW FISHER Date: 1 MAY, 2010

Project: Manzanita Wind Energy Project Map #: TILE 24 Survey Sxn: CAMPOR

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

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	0930	63	8-3 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1000	64	2-5	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
	1100	67	8-4	5%	<u>clear</u>	patchy	overcast	drizzle	shower
	1200	68	8-3	5%	<u>clear</u>	patchy	overcast	drizzle	shower
	1300	72	8-5	5%	<u>clear</u>	patchy	overcast	drizzle	shower
	1400	73	8-5	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
END	1500	68	2-5	CLEAR	<u>clear</u>	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
FONERAL 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCQB17J	POINT	(NAO 83) 11S 0557061, 360108 (3180 FT EL)
AFQB01	POINT	FIRST OBSERVED BY ANDREW FISHER (NAO 83) 11S 0557076, 3610089 (3192 FT ELEV.)
AFTUVUNESTO/	POINT	NEED TO BE CHECKED BY RAPTOR BIOLOGIST
NUMBERED COORDINATES REPRESENT COLINSIA 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
			3		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 Metalmark		23
Painted Lady		9
wet coast Lady		2
Sara's Orange-tip		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLSCO1	Rare plant point	Streptanthus campestris ~50 individuals
BLCHO1	Hot plant point	Chinese houses ~30 individuals
BLCHO2	"	" ~100s individuals
		Nectar sources: Mimulus aurantiacus, popcorn fl, eradium, Lotus kanzatus, CA poppy, cheanactis glabruscula, phacelia parrisi, distans Desert dandelion, Amsinckia, Penstemon parryi Ceanothus, Gilia capitatum, Cicerium occidentalis, commutaria, yucca whip, Emmenanthe pendula flora, Lotus scoparius Eriophyllum wallacei, Antirrhinum nuttallianum Senecio californica
		Cath
		Seja
		SPD
		BCSA
		BHGR
		Lazb
		wren
		WTSW
		CaQu
		Bush
		COPH
		No FL
		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: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Margie Mulligan Add'l Person: _____ Date: 5/16/2010

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 Orange tip		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		Ceanothus leucodermis & cuneatus Lasthenia gracilis Layia glandulosa Escholtzia californica Malacotrix californica Trichostema lanatum Eriophyllum walleyi Vriopappus lindleyi Phacelia distans Lupinus concinnus & L bicolor Leptosiphon lemmoni Aniscomnema acule
MMDS01	Sensitive plant pt	Delphinium parishii subglobosum 10 plants
MMLS01	"	Latyrus splendens 1 on shrub
MMCH01	Host plant pt	Collinsia heterophylla ≈ 10 plants
MMCH02	"	" ≈ 15 plants
MMCH03	"	" ≈ 10 plants
MMGV01	Green Sensitive plant pt	Geranium 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	<u>patchy</u>	overcast	drizzle	shower
	1530	67°F	6-8	25%	clear	<u>patchy</u>	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
<u>Acmon Blue</u>		<u>6</u>
<u>Behr's Metalmark</u>		<u>9</u>
<u>Pearly Marble</u>		<u>1</u>
<u>Painted lady</u>		<u>2</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		<i>Layia glandulosa</i>
		<i>Lasthenia gracilis</i>
		<i>Collinsia heterophylla</i>
		<i>Anisocoma acule</i>
		<i>Lupinus bicolor</i> & <i>L. concinns</i>
		<i>Lotus stigosus</i>
		<i>Ceanothus leucodermis</i>
		<i>Platystemon californicus</i>
		<i>Erysium capitatum capitatum</i>
		<i>Gilia capitatum capitatum</i>
		<i>Amsinckia menziesii</i>
		<i>Ceanothus leucodermis</i>
		<i>Phacelia distans</i>
		<i>Leptosiphon lemmonii</i>
		<i>Anisocoma acule</i>
MMDS02	sensitive plant pt	<i>Delphinium parishii subglobosum</i>
MMAD01	↓	<i>Astragalus douglasii perstrictus</i>
MMAD02	↓	"
MMAD03	↓	"
MMAD04	↓	"

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dak 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 12:30	67°	4/6	0	clear	patchy	overcast	drizzle	shower
1355	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	HT IIII	13
Marble ?	III	3
Behr's Metalmark	HT III	8
Blue ?	HT	5
Pale Swallowtail	I	1
Saras Orange Tip	HT II	7
Lady ?	II	2
West-Coast Lady	I	1
White ?	HT II	7

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Lasthenis
		Ceanothus
		Ereodion
		Manzanita
		Collinsia
		Dichlosterma
		Lupinus
DPH101	Point	San Diego Horned Lizard
DPC001	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	0 → 3 MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1100	66	0 → 3 MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1200	64	0 → 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
FUNERAL DUSKYWING	"	5

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE GOUFFER 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	0-7	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
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
FUNERAL 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

Recorder: DAVID K. FAULKNER Add'l Person: Lewis C. Date: 3 May 2010
 Project: Campo Wind Energy Project Map #: 11 Survey Sxn: CAMP04
 GPS Unit: #5 QCB Protocol Survey # 4 of 5

TIME (24-hour)		Temp (F°):	Wind (avg/max)	% CC	Sky				
START	0900	67°	5	0	<u>(clear)</u>	patchy	overcast	drizzle	shower
	1000	71°	4	0	<u>(clear)</u>	patchy	overcast	drizzle	shower
	1100	75°	2	0	<u>(clear)</u>	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1200	76°	3	0	<u>(clear)</u>	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
<i>P. lupini</i>		1
<i>A. virgata</i>		25+
<i>P. acmon</i>		6
<i>V. cardui</i>		2
<i>C. augustinus</i>		1
<i>A. sara</i>		3
<i>Erynnis sp.</i>		2
<i>Euchloe holothea</i>		1
<i>E. propertius</i>		2
<i>Leptotes marina</i>		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#10, H	Marked as #1.	NIS 0560117 - 100's of Plants Collinsia. UTM 3616770
		Composites
		Cryptantha
		CHIA

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAVID K. FAULKNER Add'l Person: L. Conneley 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
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
<u>P. acmon</u>		<u>25+</u>
<u>A. virgulti</u>		<u>25+</u>
<u>P. protodice</u>		<u>3</u>
<u>P. eurymedon</u>		<u>1</u>
<u>A. sara</u>		<u>12</u>
<u>Erynnis sp.</u>		<u>1</u>
<u>Colias hufschadleri</u>		<u>1</u>
<u>V. cardui</u>		<u>5</u>
<u>V. annabella</u>		<u>1</u>

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16	Marked as #3	Rare Mustard - 115 559957 20+ plants. Southern Jewell flower UTM 3616131
	Marked as #4	Collinsia 115 559968 10+ UTM 3616189
		Cresoteak
		goldfields

TOTAL NUMBER OF QCB DETECTED: _____ \emptyset _____ 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	0→3	CLEAR	clear	patchy	overcast	drizzle	shower
1300	80	0→4	CLEAR	clear	patchy	overcast	drizzle	shower
END 1400	81	0→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, 0→3 MPH, CLEAR

Butterfly Species	Tally	Total
ACMON BLUE	IN FIELD NOTEBOOK	18
BEHR'S METALMARK	"	225
FUNERAL DUSKY WING	"	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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL18 050310	POINT	
MC GARMIN 06	POINT	FOUND GARMIN # CO LOST BY OTHER BIOLOGIST APPROX.
		ONE MONTH AGO. UNIT TURNS ON AND IS IN GOOD CONDITION
ALL NUMBERED	POINTS REPRESENT	COWINSIA 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?	1	1
Behr's Metalmark	1/1 2/1	0
White?	1/1	3
Blue	1/1	4

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	clear	patchy	overcast	drizzle	shower
	11:15	75°	4/7	clear	patchy	overcast	drizzle	shower
	14:30	78°	5/8	clear	patchy	overcast	drizzle	shower
	16:01	81°	4/6	clear	patchy	overcast	drizzle	shower
	16:40	79°	7/11	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	IIII IIXI IIII IIII II	26
Acmon Blue	IIII III	9
Blue?	IIII IIII IIII III	16
Behrs Metalmark	IIII IIII IIII IIII IIII IIII	78
Saras Orange tip	IIII IIII IIII IIII	22
White?	IIII III	8
Marble	IIII	3
Orange? (Lod4)	IIII	4
Foueral Dusky wing	II	2
Dusky wing	IIII III	8
Orange? (checkerspot?)	I	1

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Recorder: BRIAN LOHSTROIT Add'l Person: BOE/Esca Date: 5/4/10
Project: Campo Wind Energy Project Map #: 11, 12, 16 Survey Sxn: 6
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
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 Orange tip		5
Painted lady		3
Acmon Blue		5
Spring Azure		2
Southern Blue		3
Chalcedon checkerspot		1
Common white		1
Hartbeards sulphur		3
Pearly marble		3
Perplexing hairstreak		2
Pale Pale Swallowtail		2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLHL01		Juv Horned Lizard
BLCH01		chinese hawes ~10 ind.
BLLB01		Linanthus bellus 100s ind.
BLCH02		chinese hawes ~5 ind.
BLCH03		" 5 ind.
BLLB02		Linanthus bellus 500 ind.
BLHL02		Juv Horned Lizard
BLLB03		Linanthus bellus 500 ind
BLCH04		chinese hawes 100 ind.
BLCH05		chinese hawes 100 ind.
BLLB06		Linanthus bellus 500 ind
BLLB07		Linanthus bellus 500 ind
BLCH06		chinese hawes 50 ind
BLCH07		chinese hawes 100 ind
BLHL03		Adult horned Lizard
BLLB08		Linanthus bellus 300 ind
BLCH09		chinese hawes 30 ind
BLCH10		chinese hawes 50 ind
BLHL 04		Juv horned Lizard
BLCH11		chinese hawes 30 ind
BLCH12		" 20 ind
BLCH08		chinese hawes 300 ind.

Calt, CAQU, Oati, Winda, AIFL, Eust, CORA
Soja, yewa, BC SP, COHU, Lasp SPD
Cath, BHGR, BEWR, Lego, WBB

Nectar Sources: CA poppy, erodium, ceanothus, comissouia, lasthenia, penstemon
chia Linanthus bellus, mustard, centranthifolia, spectabilis; Desert dandelion,
phacelia distans, parryii; popcorn flower, Linanthus sp, Lemmonii; Lupinus spp,
Layia glabrata Mimulus guttatus, Lotus harradus, mimulus fremontii,
Anisocoma acutis, senecio californica, trichostemma, Gilia capitatum, Eriophyllum spp.
Delphinium parryii ssp subglobulosum

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Dale Powell Add'l Person: Kristina Nave Date: 5/4/10
 Project: Manzanita Wind Energy Project Map #: 7 Survey Sxn: Camped
 GPS Unit: 6 QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START 8:50	68°	4/3	0	clear	patchy	overcast	drizzle	shower
10:20	71°	6/7	0	clear	patchy	overcast	drizzle	shower
END 11:15	78°	8/13	0	clear	patchy	overcast	drizzle	shower
START 11:55	75°	7/12	0	clear	patchy	overcast	drizzle	shower
STP 13:25	78°	5/9	0	clear	patchy	overcast	drizzle	shower
15:20	76°	2/3	0	clear	patchy	overcast	drizzle	shower
END 15:45	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	 / / / 	55
Sara's Orange Tip	 / 	9
White?	 	5
Foucault's Duskywing	 	3
Dusky wing		4
Blue?		1
Orange?		1
Lady?		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Lesqueria
		Lupinus
		Ericameria
		Arabis
		Plagiobothrys
		Cryptantha
		Descurainia
		Phacelia
		Dichostemum
		Neophilaix
		Anisocaulis
		Pentstemon
DPCN11	Point	Collinsia
↓	4	
030	9	

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: Menziesia 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		2
Funeral Duskywing		1
Pale Swallow Tail		1
Delroy Metalmark		8
Sulfur ?		1

**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: CAMP0 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°	6	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
<i>P. lupini</i>		2
<i>V. cecilia</i>		4
<i>P. acmon</i>		25+
<i>Erynnis propertius</i>		2
<i>C. perplexa</i>		1
<i>A. virgulti</i>		25+
<i>Philostrus catulla</i>		5
<i>Erynnis funeralis</i>		4
<i>A. Sara</i>		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
12E.	Mark #2	<u>Collinsia</u> , ~ 50 plants. 11S 0561218 UTM 3618090
12E	No Mark.	Horned-lizard : 11S 0561238 UTM 3617987
		nectar: Cryptantha Grass fields Ceanothus

TOTAL NUMBER OF QCB DETECTED: _____ ϕ _____ INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

BOSTICK

Recorder: DAVID FLIETNER Add'l Person: JOHN PICKNEY 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	○	clear	patchy	overcast	drizzle	shower
START 8:50	66	0-4	○	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	○	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
Aeman blue	II	4
Bohr's metalmark	II	4
Sara orange tip	II	4

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Last cal
		crypt int
		Codrus
		Phacelia dist
		Mulacothrix
		Lup com
		gilia
		Caminis calif
		Linanthus
		Sak cal
		Leyla stand
		Phacelia minor

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAVID FLIENER Add'l Person: JOHN BASTICK Date: 5/4/10

Project: Campo Wind Energy Project Map #: 30 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
Bohrs metalmark	XXXXXX - - -	200
Perjo hairstroke	..	30
Sara orange-tip	XXI	18
Painted lady	XX:	12
Aemon blue	L	6
Gubb's checkerspot	.	1
Pearly marble	..	3
fuchsia dusky wing	?	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Lucas cul
		Eesch cul
		Crypt mt
		Camis bist
		Sulu colum
		Gilia capit
DFCH01	point	100 Collinsia Lotus stri Amsinck menz Lepidus con Phacelia min Linanthus lemmonii
DFCH02	point	— 200 Collinsia Croom pulfr
DFCH03	"	
		Caul hetero
DFHL01	"	horal lizard Chaenactis club Pimulus (yellow) Emmenanthe pencil Linanthus sim
DFCS01	point	1 Caulanthus sinuatus Coreopsis caly
CH 3 → CH 12 points → polygon		1 GPS ed representative Collinsia locations — these should just be made into a polygon

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 #: VILE 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	0-6	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1400	81	3-8	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1500	81	0-5	CLEAR	(clear)	patchy	overcast	drizzle	shower
	1530	80	0-5	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
FUNERAL 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHLI9 050410	POINT	MEDIUM-SIZED HORNEO 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: MINE COUFFER Add'l Person: NONE Date: 4 MAY, 2010

Project: Campo Wind Energy Project Map #: FILE 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°	0 → 2	CLEAR	clear	patchy	overcast	drizzle	shower
	0900	69	0 → 2	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	73	0 → 3	CLEAR	clear	patchy	overcast	drizzle	shower
	1015	73° F	0 → 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
BEARS METALMARK	IN FIELD NOTEBOOK	95
ACMON BLUE	"	1
BROWN ELFIN	"	1
SPRING WHITE	"	1
CHECKERED (COMMON WHITE)	"	2
PAINTED LADY	"	5
FUNERAL DUSKYWING	"	7
SARA ORANGOTIP	"	1
CALIFORNIA MARBLE	"	1

**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
Sava orange tip		10
Berns metal mark		62
Acmon blue		8
CA Marble		5
Painted lady		4
Funeral Duskywing		3
Perplexing Hairstreak		3
unidentified sulfur		3
Striated Queen		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower, groundpink
NBCH01 NBCH01	NPCPO1	Map/PA/R please disregard - <u>not</u> campo pea
NBCH01		Collinsia sp. - 10+ individuals
NBCH02		Collinsia sp. 5+ plants
NBAR 01		Antirrhinum, 10+ individuals
NBCH03		Collinsia sp 5 individuals on road margin
NBCH04		Collinsia sp. 25+
NBCD 01		Cordylanthus 5+
NBCD 02		Cordylanthus 15+
NBHL 01		Horned lizard
NBCD 03		Cordylanthus 45+
NBCH05		Collinsia sp. 1+
NBCD 04		Cordylanthus 25+

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Aubrette 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	15/3	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	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
Amon blue		7
Behr's Metalmark		16
Common white		1
Painted Lady		3
Sara's Orange tip		2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
81/AGCH3	Chinese Houses	plant zone 50-100 hilltop
81/AGCH5	Chinese Houses	Chinese
FB/AGCH5	Chinese Houses	plant zone 10-50 road side
FB/AGCH6	" "	" " 50-100 roadside
FB/AGCH7	Chinese Houses	" " 10-50 road side
		Castanopsis Californica
		Cryptantha
		Ground pine
		Buckwheat
		Plagiobothrys
		Tidy tips
		Calistegia lemmingii
		Salvia columbica

Sample
#

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Margie Mulhgan 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	<u>1345</u>	<u>80</u>	<u>2-5</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	<u>1530</u>	<u>80</u>	<u>3-6</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					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
<u>Painted Lady</u>		<u>1</u>
<u>Sara's Orange tip</u>		<u>4</u>
<u>Pale Swallowtail</u>		<u>2</u>
<u>Pearly Marble</u>		<u>1</u>
<u>Behr's Metalmark</u>		<u>12</u>
<u>Dusky wing</u>		<u>2</u>
<u>Acmon Blue</u>		<u>1</u>
<u>Buckeye</u>		<u>1</u>

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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 parviflorus 1 plant
Nectar Source:		Dendromecon rigida
		Leptosiphon lemmonii
		Lestynia gracilis
		Salvia columbiana
		Escholtzia californica
		Coreopsis californica
		Lupinus glandulosus
		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	8	(clear)	patchy	overcast	drizzle	shower
	1200	62°	5/7	8	(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?	11	2
Lady?	11	2
Behr's Metalmark	11 14 11	15
Blue?	11	2
Dark?	1	1
Sara's Metalmark	1	1
Yellow?	1	1

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 Sn: _____


GPS Unit: B3 QCB Protocol Survey # 5 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START 0900	75°F	0-2	0	<u>clear</u>	patchy	overcast	drizzle	shower
1200	80°F	3-6	0	<u>clear</u>	patchy	overcast	drizzle	shower
1330	80°F	4-6	0	<u>clear</u>	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
Funeraral Duskywing		1
Duskywing		2
Sleepy Duskywing		1
Pearly Marble		2
Checkered White		2
Sava'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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCH01	Nectar pt	<i>Collinsia heterophylla</i>
MMCH02	Nectar pt	"
MMCH03	Nectar pt	"
MMCH04	"	"
MMCH05	"	"
MMAD01	Sensitive plant pt	<i>Astragalus douglassii parviflorus</i> 1 plant
MMAD02	"	" 1 plant
MMAD03	Sensitive plant pt	" 2 plants
MMAD04	"	" 30 plants
MMDS01	"	<i>Delphinium parishii subglobosum</i> 3 plants
MMDS02	"	" 50 plants
MMGV01	"	<i>Geraza viscida</i> 30 plants
MMGV02	"	" 3 plants
MMLB01	"	<i>Linanthus bellus</i> 50 plants
MMLB02	"	" 30 plants
		Delphinium <i>Delphinium</i> & <i>Linanthus</i> common along ridge
Nectar Source:		<i>Anisocoma acaule</i>
		<i>Eriogonum linearifolia</i>
		<i>Lasthenia gracilis</i>
		<i>Platystemon californicus</i>
		<i>Layia glandulosa</i>
		<i>Phacelia distans</i>
		<i>Leptosiphon lemmonii</i>
		<i>Lupinus concinnus</i> & <i>L. bicolor</i>
		<i>Delphinium parishii subglobosum</i>
		<i>Linanthus bellus</i>
		<i>Linanthus</i>
		<i>Collinsia heterophylla</i>
		<i>Malacotrix californica</i>
		<i>Salvia columbariae</i>

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Recorder: Annabelle Botcher Add'l Person: Lawrence Date: 4-5-10
 Project: Campo ~~Manzanita~~ Wind Energy Project Map #: Campo F Survey Sxn: ~~12~~ 13
 GPS Unit: 1 QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START 9:00	72	0	0	clear	patchy	overcast	drizzle	shower
10:00	76	0/2	0	clear	patchy	overcast	drizzle	shower
stop 11:00	78	2/5	0	clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
start 13:00	78	2.5/10	0	clear	patchy	overcast	drizzle	shower
END 15:00	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		35
Mourning Duskywing		1
Unid. blue		1
Unid. sulphur		1
Funereal Duskywing		1
Painted Lady		2
Sara's Orange tip		1
Common blue		4

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		SPTD, CATY, BFY, COBU, NOFL, WREN, CACU,
		Cryptantha WESS,
		gilia
		Egnypta
		False Dandelion
^{camp F} ABNL 1	Woodrat nest	In oak
ABNL 2	Woodrat nest	in dead chaparral
ACRATH 1	California Thrasher	In chaparral
AHZ 1	Horned Lark	in dead mscr chap
AGCH 1	Chinese Houses	plant pop ~50s 1000s on hilltop
ABNL 4	Woodrat nest	Rock coterop
AGCH 2	Chinese Houses	10-50

TOTAL NUMBER OF QCB DETECTED: _____ INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Bo Willey Date: 5/5/10
 Project: Manzanita Wind Energy Project Map #: 22-23 Survey Sxn: Campo
 GPS Unit: 6 QCB Protocol Survey # 4 Varies of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
START 1145	76°	4/7	0	clear	patchy	overcast	drizzle	shower
1400	78°	3/5	0	clear	patchy	overcast	drizzle	shower
1515	78°	3/5	0	clear	patchy	overcast	drizzle	shower
1615	78°	5/8	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
Saras Orange-tip		6
Behr's Metalmark		7
Pale Swallowtail		5
White?		4
Blue?		2
Orange? (checkerspot)		1
Brown Ethia		2
West Coast Lady?		1
Checkered White		1
Yellow?		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Eriodorum
		Collinsia
		Penstemon
		Astilbe
		Penstemon
		Leschenia
		Leyce
		Cryptantha
		Sisum
		Phacelia
		Delphinium
		Lotus
		Platanus
		Mimulus
DPHL01	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 #: FILE 21 Survey Sxn: CAMPON
 GPS Unit: GARMIN 12 QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	0900HRS	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
FUNERAL 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NUMBERED 1 → 385 FILE 23.	POINTS REPRESENT	COLINSIA SP. LOCATIONS. NUMBERS FOLLOW ALL LOGGED TRACKS ON THIS MAP AND CAMPO Q, MAP

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

Recorder: Natalie Bradic 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	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	1230	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
<u>Bears metalmark</u>	<u>11</u>	11
<u>Sara orangetip</u>	<u>11</u>	2
<u>Armen blue</u>	<u>1</u>	1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		goldfields, popcorn flower
NBCH10		Collinsia sp. 30+
NBCH11		Collinsia sp. 25+ on rock outcrop

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Natalie Buddie 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
END	1435	75°	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
Berns Metalmark	II	2
Sulfur	I	1
Painted lady	I	1
Pale Swallowtail		5
Sava Orange-tip		4
Propertus Duskywing	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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: 6 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	 	24
Painted Lady		4
Southern Blue	 	9
Funereal Duskywing		2
Cabbage white		1
Common white		2
Common Blue		2
Grey Hairstreak		1
Sulfur sp.		2
Buckeye, Common		1
Gabb's Checkerspot		1
Perplexing Hairstreak		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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 White Deer
		<i>Collinsia heterophylla</i>
		<i>Cryptantha</i> sp.
		<i>erodium acutatum</i>
		Scrub jay
		Crow
		<i>amsonia intermedia</i>
		Black-chinned Sparrow
		Spotted Towhee
		Goldfields ++++
		Chia
		Lupine sp.
		Annual Lotus
		Pepperglass sp.
		Nemophila
		(#5)
		Note: GPS + trackers may have been turned off in morning -

TOTAL NUMBER OF QCB DETECTED: φ 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	60°	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
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	II III III II	17
Sara orangtip	II	2
Funereal Duskywing	I	1
Proterops 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
NBCH01		gold fields, popcorn flower, Collinsia sp., 5+
NBCH02		Collinsia sp. 6+
NBCH03		Collinsia sp. 60+, scattered throughout
NBCH04		Collinsia sp. 100+
NBCH05		Collinsia sp. 200+ interspersed w/ gold fields
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: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Margie Mulligan Add'l Person: Shirley Lunneken 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	42-76°	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 Mara White		2
Sara's Orange tip		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		<i>Malacoternix clevelandii</i>
		<i>M. californica</i>
		<i>Escholtzia californica</i>
		<i>Anisocoma caule</i>
		<i>Mimulus aurantiacus</i>
		<i>Encarnia linearifolia</i>
		<i>Salvia columbanica</i>
		<i>Gilia capitatum c.</i>
		<i>Eriophyllum confertiflorum</i>
		<i>E. wallecei</i>
		<i>Phacelia distans</i>
		<i>Collinsia heterophylla</i>
		<i>Penstemon clevelandii</i>
		<i>Layia glandulosa</i>
		<i>Chaenactis glabrescens</i> ; <i>C. artemisiifolia</i>
		<i>Lupinus truncatus, concinnus, bicolor, hirsutissimus</i>
MMCH01-06	Nectar plant pt	<i>Collinsia heterophylla</i>
MMHLO1	Sensitive Lizard pt	Horn Lizard 1
MMDSO1	Sensitive plant pt	<i>Delphinium parishii subglobosum</i> 100 plants
MMDSO2	"	" 10 plants
MMDSO3		" 30 plants
MMDSO4		" 50 plants
MMSC01		<i>Streptanthus campestris</i> 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 Oshawa Add'l Person: Lewis Connally 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	0/0	0	<u>(clear)</u>	patchy	overcast	drizzle	shower
908				clear	patchy	overcast	drizzle	shower
1015	77	1.5/5.8	0	<u>(clear)</u>	patchy	overcast	drizzle	shower
140	72	8.5/14	0	<u>(clear)</u>	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
END 357	71	9.9/14.7	0	<u>(clear)</u>	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
<i>Platylabus acron</i>	II	2
<i>I. augustinus</i> (Brown & Linn)	I	2
<i>A. mexicana</i>	IIII XX	34
<i>A. hera</i>	IIII	5
<i>V. cardui</i>	II	2
<i>Hesperia juba</i>	I	1
<i>Glaucopsyche lygdamus</i>	I	1
<i>Erynnis brizo</i>	I	1
<i>Phidippa catalus</i>	IIII	4
<i>Platylabus lupini</i> I	IIII	4
<i>Erynnis funeralis</i>	I	1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
	<i>Cardylanthus</i>	0559005/361471 general area 30x30 m
	"	of abundant <i>Cardylanthus rigidus</i> .
	"	0559468/3615121 = hundreds <i>C. rigidus</i> .
	"	0559853/3615103 = ~ 50 <i>Collinsia</i>
#5	QCB host (thousands)	{ 0559496/3615156 to = <u>more than a thousand</u> <i>C. rigidus</i> 0559345/3615126
#6	# QCB host thousands	0559265/3615122 to = ~ one thousand <i>C. rigidus</i> 0559319/3615127 to
7	<i>Cardylanthus</i>	0558997/3614961 to = ~ 200 <i>C. rigidus</i> 0558995/3614903 to
	<i>Collinsia</i> } " " " "	0560010/3614979 ~ 100 <i>Collinsia</i> in 2 m ²
		0560002/3614963 ~ " " 1 m ²
		0559800/3614717 ~ " " 1 m ²
		0559850/3614653 ~ 200 " " in 10 m ²
		0559538/3614573 ~ 500 " " in 100 m ²

TOTAL NUMBER OF QCB DETECTED: 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 #: MAD TILE 23 Survey Sxn: CAMPO Q
 GPS Unit: GARMIN 170 QCB Protocol Survey # 45 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% low	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
FUNERAL 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MCHL 20	POINT	
MCHL 21	POINT	
NUMBERED POINTS REPRESENT		COLLINSIA SP. LOCATIONS. NUMBERS 1-385
FOLLOW ALL LOGGED TRACKS ON THIS MAP AND CAMPO N, MAP TILE 21		
MC CORIZANT SP. 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 Powell Add'l Person: Bo Wilby Date: 5/5/10
 Project: ^{Campo}~~Manzanita~~ 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
Sears Orange	11	2
Acanth Blue	11	1
Duskywing	11	2
Fumid Duskywing	11	3
Behrs Metalmark	11	1
White?	11	2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Erik LaCoste 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 8:45	64	3-6	0	clear patchy overcast drizzle shower
11:00	71	4-8	0	clear patchy overcast drizzle shower
1:30	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
Othello Checkerspot	VI 1	6
Acmon Blue	VI	5
Porp Hairstreak	II	2
Bohrs Metalmark	VI VI VI VI VI 100+	100+
Southern Blue	XII	5
Sara Orange tip	VI	5
Pale Swallowtail	XII VI	10
Dark Duskywings	I	1
Funereal Duskywings	VI III	8
Cal Marble	I	1
Brown Elf	I	1
Painted lady	II	3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAPI/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
ELCOHE01	P.	Collinsia 10-20 individuals.
ELCOHE02	P	Collinsia 300-400 individuals.
		eradum sp
		Plagiodorops sp
		Mustard sp.
		Lupine sp.
		AMSMEN
		Commersonia sp.
		LASCAL
		KETANT
		YUCWHI
		ERICON
		Phacelia sp
		SALCOL
		Charactis
		PHATAN
		ESCAL
		DICCAP
		MIMAJR
		URO LIN
		LAYGIA
		LOTARB
		PENCLE
		CASFOL
		DELHES
		Lupinus excubitas
		CAV 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: 41 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
<i>P. acmon</i>		3
<i>A. marano</i>	VIXXXXXX	68
<i>P. catalus</i>		1
<i>A. saoz</i>	 	9
<i>I.E. agestiva</i>		5
<i>C. perplexa</i>		2
<i>C. gabbii</i>	(2 2) photographed	3
<i>E. hizzo</i>		3
<i>P. eurymedian</i>	 	5
<i>V. cardui</i>		2
<i>P. lupini</i>		2
<i>E. lunivalis</i>		2
<i>B. tristis</i>		1
<i>P. protodice</i>		1
<i>C.Z. cesonia</i>		1
<i>E. bayantis</i> (pearly)		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
K0C0101	QCB Host Collinsia track around	@ 0559807/3613966 walked around ~500 M ² w/ 1000 plants
K0C0102	Collinsia	2 plants
K0C0103	..	~ 1000 Collinsia ~ 400M ²
K0C0104	..	~ 100 in 1 M ²
K0C0105	..	~ 200 in 50 M ²
K0C0106	..	~ 500 in 50 M ²
K0C0107	..	~ 5000 in 50 M ² N face slope

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: Sally Bostick Date: 5/6/10
 Project: Campo Marzanita Wind Energy Project Map #: 23 Survey Sxn: Campo
 GPS Unit: 6 QCB Protocol Survey # Vavira 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	73°	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
Baker's Metalmark		13
Sooty Blue		2
American 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Erodium
		Castilleja
		Logia
		Lupinus
		Erigeron
801 ↓ 805	a Point	Collins

TOTAL NUMBER OF QCB DETECTED: _____ 0 _____ INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: John Bostick Date: 5/6/10

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°	6/8	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
Jarvis Orange Tip	III III	10
Baker's Metalmark	IIII IIIII IIIII IIIII	20
Pale Swallowtail	II	2
Brown Elf	I	1
Lady?	III	3
Southern Blue	II	2
White?	III	3
Blue?	IIII IIIII IIIII	12
Common Blue	IIII I	6
Perplexing Hairstreak	I	1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Natalie Brodic Add'l Person: Phillip Date: 6 May 2010

Project: Campo Wind Energy Project Map #: 19 Survey Sxn: CAMPD - 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
END	1540	73°	3/7	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 Duskywing		6
Acmon blue		5
checkered white		1
unidentified skipper (common?)		1
Behrs metalmark		2
Painted lady		1
Spring azure		2

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	0	<u>clear</u>	patchy	overcast	drizzle	shower
	1100	73°	4/7	0	<u>clear</u>	patchy	overcast	drizzle	shower
	1230	75°	3/5	0	<u>clear</u>	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1315	75°	4/7	0	<u>clear</u>	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	 	42
Funereal duskywing		4
Printed lady		1
Acmon blue		2
unidentified white		1
Galbs checkerspot		2
Perplexing hairstreak		2
Sara orangetip		3
Sulfur		1

**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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar Source:		Cryptantha spp. Escholtzia californica Amsinckia menziesii Lathyrus gracilis Trichostema lanatum Lupinus bicolor L. concinnus Astragalus douglasii perstrictus Marrubium macrocarpum m.
MMOHO1	Hostplant pt	Collinsia cancolor
MMGV01	Sensitive plant pt	Geraea viscidiflora 30 plants
MMGV02	"	" 1 plant
MMAD01	"	Astragalus douglasii perstrictus 50 plants
MMAD02	"	" 40 plants
MMAD03	"	" 2 plants
MMAD04	"	" 1 plant
MMAD05	"	" 25 plants
MMAD06	"	" 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
Aemon Blue		11
Rearly 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
Nectar plants:		Cryptantha spp. Plagiobothrys spp. Salvia columbianae Mimulus aurantiacus Ceanothus leucodermis Uropappus lindleyi Leptosiphon lemanonii Lupinus concinnus Collinsia concolor Amsonia menziesii Layia glandulosa
MMCH01	Host plant pt	Collinsia
MMCH02		"
MMCH03		"
MMCH04		"
MMCH05		"
MMDS02		Delphinium parishii subglobosum 15 plants 20 plants
MMDS03		" 25 plants
MMDS04		35 plants
MMDS05		25 plants
MMDS06		20 plants
MMDS07		10 plants
MMDS08		25 plants 25 plants
MMDS09		25 plants
MMDS10		10 plants
MMSC01		Chrysothrix 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	<u>clear</u>	patchy	overcast	drizzle	shower
	1530	82°	2-5	0	<u>clear</u>	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
Chalcedon Chalcedon Checkerspot		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMCH06	Host plant pt	Collinsia
MMCH07		
MMCH08		
MMCH09		
MMCH10		
MMCH11		
MMCH12		
MMAD01	Sensitive plant pt ↓	Astragalus douglasii perstrictus 5 plants
MMAD02		" 10 plants
MMDP01		15 plants
MMDP02		10 plants
MMDP03		10 plants
Nectar Source:		Phacelia parryi Sulvia columbiana Chaenactis glabrescens 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 G
 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. virgata		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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16 "G"	115 0560572 UTM 3616257	Collinsia - 100+ plants
	115 0560562 UTM 3615515	Collinsia - 100+ plants
		Blue Dicks
		Cryptantha

TOTAL NUMBER OF QCB DETECTED: 0 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	0 → 7 MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	0900	73	0 → 8	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	75	0 → 8	CLEAR	clear	patchy	overcast	drizzle	shower
	1100	76	0 → 6	CLEAR	clear	patchy	overcast	drizzle	shower
	1200	83	0 → 4	CLEAR	clear	patchy	overcast	drizzle	shower
	1300	88	0 → 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
ACMOY 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
FUNERAL 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**

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) of 5 (MAP 7-F)

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 Orange tip		4
Funeral Dusky wing		1
Becker's White		1
Orange Sulfur		1
Pale Swallowtail		1
Common Satywing		3

Nectar plants;		
	<i>Phacelia brachyloba</i>	
	<i>Cryptantha</i> spp.	
	<i>Lesqueria gracilis</i>	
	<i>Eriophyllum confertiflorum</i>	
	<i>Sisymbrium altissimum</i>	
	<i>Salvia columbanae</i>	
	<i>Dendromecon rigida</i>	
	<i>Escholtzia californica</i>	
	<i>Emmenanthe pendulifera</i>	
	<i>Lotus stigosus</i>	
	<i>Phacelia distans</i>	
	<i>Ansicoma acule</i>	
	<i>Carya glandulosa</i>	
	<i>Chaenactis glaberrima</i>	

**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
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		4
Sara orangetip		1
Behr's metalmark	 	23
Acmon blue		4
Spring white	 	10
Proterius duskywing		1
CA Marble		1
Painted lady		2
Pale swallowtail		2
Tortoiseshell (?)		1

**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
Ellis meki/mark		16
Pale swallowtail		2
Brown elfin		1
Funereral Duskywing		1
Sara orangetip		2
Spring white		5
Lemon blue		6
Painted lady		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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
NBCH02		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 Brodie 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	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	69°	2/6	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
Acmon blue		6
Spring white		5
Behr's metalmark		4

Quino Checkerspot Butterfly Protocol Survey Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		gold fields. popcorn flower. groundpink

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: Viviane Marquez-Walker Add'l Person: John Date: 5/12/10
 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
12:40	76.3	1.6/4.6	0	clear	patchy	overcast	drizzle	shower
14:00	75.8	2.1/5.4	0	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 Orange-tip		5
Common 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 ^{to} map in field of 16		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
VMCH01	<i>Collinsia heterophylla</i>	5 plants
VMCH02	" "	≈ 15 plants
VMCH03	" "	≈ 100 plants
VMBJ01	Black-tailed Jackrabbit	one seen here
VMBJ02	"	two seen here
		<i>Cryptantha</i> sp.
		Gold fields
		wooly blue curls
		chia
		ground pink
		brassica sp.
		perstemon sp.
		Spotted towhee
		California towhee
		Black-chinned sparrow
		Raven
		California Thrasher
		Scrub jay
		hummingbird sp.
		red-tailed hawk
		Lazuli Bunting
		Lark Sparrow
		Horned Larks
		Turkey vulture

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

area surveyed
is marked on map 19M

Recorder: Viviane Marquez Add'l Person: John Date: 5/12/10
 Project: Campo Wind Energy Project Map #: 19 Survey Sxn: 0 + P
 GPS Unit: Garmin 12 QCB Protocol Survey # _____ of 5

↑
 partial (did in error) during survey for M

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	clear	patchy	overcast	drizzle	shower
START 8:35	65.3	0.5/1.2	∅	clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
9:45	69.0°	2.2/2.8	∅	clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
END 10:45	76.3°	2.3/5.4	∅	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
<u>Acmion Blue</u>	<u> 11</u>	<u>7</u>
<u>Marine Blue</u>	<u> </u>	<u>1</u>
<u>Behrs Metalmark</u>	<u> 11</u>	<u>7</u>
<u>Sura's Orange-tip</u>	<u> </u>	<u>1</u>
<u>Pale Swallowtail</u>	<u> </u>	<u>1</u>

Quino Checkerspot Butterfly Protocol Survey
 Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		American Crow
		Cryptantha sp.
		erodium sp
		California 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 Sn: 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	<u>clear</u>	patchy	overcast	drizzle	shower
1430	74	3-8	0	<u>clear</u>	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
END 1530	73	3-12	0	<u>clear</u>	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
Hartford's Sulpher		1
orange tip (Sara)		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLCH09	host plant patch	300+ ind
BLCH09	"	300+ ind
		Lago
		BCSP
		BEWR
		BCSP
		Webb
		Bush
		WBUH
		Lago
		2 bee swarms
		Nectar sources: cryptantha Dichlostemma
		lotus soperius, strogans Alacalia distans;
		Perryi, cheanactis spp Encameria
		Emmerantha, Erno phyllon wallacei
		tilia spp, chia Paintbrush Mimulus Aug
		Pleranthum, Mimulus lewisii Scroph col

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 #: 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
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	38	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 POLYGONS 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 BLCH09		700+ W 100+ W
BLH01	horned lizard	♀
BLH02	"	♀
		BCSP ACWD Bush
		CALT SCJA BewR
		CORA SPTO Wren
		ATHA B HGR
		coyote + pup + den
		cottontail CA ground squirrel
		Nectar sources: Cheamactis spp cryptantha
		Delphinium lobes strigos, Gilia, spp
		Laschenia Linanthus bellus gracilis
		lupinus spp, Layia, Senecio cal Lotus
		agrophyllus

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: MIKE GOUFFER Add'l Person: NONE Date: 12 MAY, 2010

Project: Campo Wind Energy Project Map #: FILE 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	0 → 1 MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	71	0 → 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
ALMON BLUE	"	28
FUNERAL 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**

Recorder: DR. 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 rectar sources

Butterfly Species	Tally	Total
<i>P. eurymedon</i>		5
<i>A. viquetti</i>		9
<i>P. Acmon</i>		16
<i>A. Sara</i>		1
<i>V. cardui</i>		2
<i>E. funealis</i>		2
<i>C. Augustinus</i>		2
<i>P. a. clona</i>		1
<i>C. gabbi</i>		1
<i>S. melinus</i>		1
<i>Echo blue</i>		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
414	8	horned lizard
	9-10	Ant-rochymus.
		nectar: Blue dicks.
		cryptantha
		Goldfields
		Collinsia
		yellow yarrow
		deer weed

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DK. 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	∅	clear	patchy	overcast	drizzle	shower
	1000	75	1	∅	clear	patchy	overcast	drizzle	shower
	1100	76	∅	∅	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
END	1200	79	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
<i>Erynnis faxonalis</i>		3
<i>P. acmon</i>		15+
<i>A. virgulti</i>		15+
<i>L. xanthoides</i>		1
<i>P. eurymedon</i>		2
<i>A. sara</i>		1
<i>P. protodice</i>		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Margie Mulligan Add'l Person: _____ Date: 5-13-2010

Project: ~~Marathon~~ 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%	<u>clear</u>	patchy	overcast	drizzle	shower
	1115	78	0-4	10%	<u>clear</u>	patchy	overcast	drizzle	shower
	1515	79	3-6 (8)	15%	<u>clear</u>	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 Orangekip		5
Western tailed-Blue		1
Pale Swallowtail		12
Behr's Metalmark		72
Gabb's Checkerspot		3
Painted Lady		3
Brown Efin		1
Sleepy Duskywing		1
Duskywing		3
Checkered White		3
Gray Hairstreak		1
Gordon Copper		1
Sulfur (Hartford's?)		1

**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	1400	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
<u>Behr's metalmark</u>	 	37
<u>Funereal duskywing</u>		5
<u>Sara orangetip</u>		1
<u>Acmon blue</u>	 	11
<u>Spring azure</u>		1
<u>Spring white</u>		2
<u>Brown elfin</u>		2
<u>Pale swallowtail</u>		2
<u>Hanford's sulfur</u>		1
<u>Painted lady</u>		2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLHLO1	point	Horned Lizard adult sunning on Branch
BLHLO2	"	Adult Horned Lizard
BLCH01	map Host plant patch	Colinsia patch 100+ individuals
BLCH02	"	" 300+ "
BLCH03	"	" 1000+ "
BLCH04	"	" 100+ "
BLCH05	"	" 100+ "
		Scja BHGR WREN Bewr Webb BGGW
		SPTO BTSP CALT RTHa COHa Welci
		HOFl CAQU
		W. Whiptail, Coast horned lizard, W. Fence lizard
		S. Pacific Rattle snake, CA Toad (dead)
		Cottontail, CA ground squirrel
		<u>Nectar Sources:</u>
		Erodium, Lupinus, pentstemon, cryptantha,
		Camissonia, trichostema, Blue dicks,
		Eriophyllum convertiflorum, chia Gilia spp,
		Lotus spp, mimulus lewisii, Pinus spp,
		Senecio California Leptosiphon sp.

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Natalia 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	<u>0850</u>	<u>60°</u>	<u>calm</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
	<u>1015</u>	<u>65°</u>	<u>calm</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
					<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
END	<u>1145</u>	<u>69°</u>	<u>2/6</u>	<u>10%</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>

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

Butterfly Species	Tally	Total
<u>Behrs metalmark</u>	<u> </u>	<u>54</u>
<u>Funereal Duskywing</u>	<u> </u>	<u>3</u>
<u>Azman blue</u>	<u> </u>	<u>7</u>
<u>Painted lady</u>	<u> </u>	<u>1</u>
<u>Spring white</u>	<u> </u>	<u>1</u>
<u>Properhus Duskywing</u>	<u> </u>	<u>1</u>
<u>Sara orangetip</u>	<u> </u>	<u>1</u>

**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 ~~10~~ 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
	1435	80°	5/7	5%	clear	patchy	overcast	drizzle	shower
	1530	75	6/9	10%	clear	patchy	overcast	drizzle	shower
	1600	80°	7/5	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
Jarvis Orange-tip		8
Behr's Metalmark		38
Aemon Blue		11
Blue?		13
White?		3
Dustywing		13
Furness' Dustywing		4
Gabb's		2
Orange?		1
Hartweg's Sulphur		2
Southern Blue		2

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Los Thunig
		Plagio berys
		Cryptantha
		Pteris Teman
		Delphinium
		Eschscholzia
		Salvia columbiana
		Chaenactis
		Cnicum
		Phacelia
006	Point	Callisida
↓	"	"
0025	"	"
DPH02	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 FILE 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
BEHR'S METALMARK	"	50
FUNERAL DUSKYWING	"	4
RED ADMIRAL	"	1
PERPLEXING HAIRSTREAK	"	3
SARA ORANGETIP	"	4
PALE TIGER SWALLOWTAIL	"	2
SPRING AZURE	"	2
SPRING WHITE	"	1

**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 #: TLE 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	<u>clear</u>	patchy	overcast	drizzle	shower
1400	73	Ø → 3 MPH	5%	<u>clear</u>	patchy	overcast	drizzle	shower
1500	75	Ø → 3 MPH	20%	<u>clear</u>	patchy	overcast	drizzle	shower
1600	75	Ø → 1 MPH	20%	<u>clear</u>	patchy	overcast	drizzle	shower
1621	77	Ø → 2 MPH	20%	<u>clear</u>	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
FUNERAL 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**

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 # 6 of 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
START	0851	75	0 → 2 MPH	CLEAR	clear	patchy	overcast	drizzle	shower
	0900	75	0	CLEAR	clear	patchy	overcast	drizzle	shower
	1000	81	0 → 2 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	7
BEARDS METALMARK	"	5
FUNERAL DUSKY WING	"	2
PAINTED LADY	"	1
SARA ORANGETIP	"	1

**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 Orange-tip		4
Spring Azure		7
Brown Elfin		1
Behr's Metalmark		28
Common White		2
Duskywing		4
Sulphur sp.		1
Nectar Plants:		
<i>Chaenactis artemisiifolia</i> & <i>C. glabriscula</i>		
<i>Salvia leucandria</i>		
<i>Eriogonum pendulifera</i>		
<i>Ceanothus californicus</i>		
<i>Escholtzia californica</i>		
<i>Cryptantha</i> spp.		
<i>Gilia capitata</i> c.		
<i>Lupinus</i> <i>concinus</i> , <i>L. truncatus</i> & <i>L. bicolor</i>		
<i>Stylidium</i>		
<i>Platystemon californicus</i>		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
MMAC01	Host plant pt	<i>Antirrhinum coulterianum</i> 8 plants
02	"	10 plants
03	"	3 plants
MMCH01	Sensitive plant pt	<i>Collinsia cancolor</i> 25 plants
02	"	10 plants
03	"	40 plants
04	"	100 plants
05	"	30 plants
06	"	20 plants
MMDPS01 MMDPS01	"	<i>Delphinium ^{parishii} subglobosum</i>
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

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

07 15 plants
 08 20 plants
 09 5 plants

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Recorder: B. Lohstroff 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
1430				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 orange tip		7
Hartford's sulfur		5
Painted lady		3
Becker's 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
BLB301	Host plant patch	cordylanthus 300+ individuals
BLCH01	"	colinsia concolor 50+ "
BLCH02	"	100+ "
BLCH03	"	200+ "
BLCH04	"	100+ "
		Birds: BGGN CATH BCSP SPTD 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, Lathyrus
		Leptosiphon spp, Lycopodium, colinsia, Cryptantha
		Delphinium, Lotus agrophyllus, Amsinckia
		Linanthus, Lupinus spp, Phacelia parryi, distans,
		Gilia spp, Mustards, hypocaris glab,
		Camissonia spp, chia, trichostemma,
		Senecio CAL; Eriophyllum convert, wallisei;
		Cirsium occidentale, cheanactis spp,
		Anisocoma acutis, Dichlostemma capitatum
		CA Poppy

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
16 H	Mark: 19	Collinsia
	20	" 100's
	21	Antirrhinum 15+
	22	Collinsia
	23	" + Jewel flower (S. laevis?)
	24	"
	25	Antirrhinum
	26	Collinsia 100+

TOTAL NUMBER OF QCB DETECTED: 6 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
#11 H	MARK #1	Horn Lizard (ADULT)
	2	Horn Lizard (ADULT)
	3	Collinsia 100+
	4	"
	5	"
	6	"
	7,8,9,10	" 1000's
	11	" 100's
	12	"
	13	"
	14	"
	15	Cordylanthus
	16	Collinsia
	17	" 100+
	18	"
		Compositae
		cryptantha
		Blue dicks
		yellow yarrow

TOTAL NUMBER OF QCB DETECTED: _____ ϕ _____ INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: John Bestick Mike Coulter Date: 5/14/10
 Project: Campo Wind Energy Project Map #: 19 Survey Sxn: Campo N/O, P
 GPS Unit: 11 QCB Protocol Survey # 6 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky					
START	875	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
<u>Harold's Sulfur</u>		1
<u>Behr's Metalmark</u>		32
<u>Aemon Blue</u>		10
<u>Pale Swallowtail</u>		1
<u>Blue?</u>		15
<u>Sava's Orangetip</u>		17
<u>White?</u>		3
<u>Duskywing</u>		5
<u>Funeral Duskywing</u>		3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Esch calif
		Lup cank
		crypt int
		Malocotrix
		Plagiobotrys
		- Phacelia imbricata ssp patula (not flowering, but of note)
		Lupinus succ
		Lincanthus lemmanii
		Delphinium sp.
		Layia glandulosa
		Laslenia calif
DF6C01	point	1 Castilleja serpenta
DFCH01	point	10 Collinsia
		Gilia sp.
DFCH03	point	50 ⁵⁰ collinsia
DFH203	point	, hoed horned lizard

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

Dave Flietner

Recorder: DWF, J 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(?) orange blue	:::	4
Fun dusky wing	☒	8
Acmon blue	☒::	14
Painted lady	.	1
Proterius dusky wing	:::	3
Blue Pale swallowtail	.	1
Common sootywing	.	1
Lupine blue	.	2

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		cyp int
		Walo cothrix
		Cam bist
		Dich gap
		Lup trume
		Lotus str
		Penstemon (purple)
		Saw column
		Leotheriacali/splendens
DF CP01	point	1 Lathyrus in Quac
DF CP02	point	9 " " "
DF CP03	"	~ 18 " " "
DF CP04	"	- 3 " " "
DF CH01	"	~ 9 Collinsia
		Lihanthus
		Gilia capitatum
DF CP05	"	4 3 Lathyrus in Quac
DF CP06	"	3 " " "
		Mimulus brev
		Azorella menz
		Caulanthus heterophylla

TOTAL NUMBER OF QCB DETECTED: 0 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Leyia
		Lothenia
		Cryptantha
		Peritoma
		Plagiobothrys
		Eradium
012 ↓ 020	Point 4 11	Collinsia " "

TOTAL NUMBER OF QCB DETECTED: 3 INDIVIDUALS

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dele Powell Add'l Person: Bo Wiley 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 7 10:10 11:35 11:45	72° 7 71 76°	6/8 7/12 7/9	0 0 0	<u>clear</u>	patchy	overcast	drizzle	shower
					<u>clear</u>	patchy	overcast	drizzle	shower
					<u>clear</u>	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
Hanford's Sulphur Yellow?		1
Sara's Orange-tip White?		3
Checked White		2
Behr's Metalmark		35
Lady?		1
Acmon Blue?	M	2
Blue?		6
Southern Blue		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		Layia
		Leschenia
		Cryptantha
		Penstemon
		Plagianthus
		Eriogonum
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	<u>clear</u>	patchy	overcast	drizzle	shower
0900	74	3→9 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1000	78	0→4 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1100	80	0→5 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1200	76	0→6 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
1300	80	0→7 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower
END 1400	84	0→4 MPH	CLEAR	<u>clear</u>	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, mudflats, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources
1415HRS, 84°F, WIND=0→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
FUNERAL DUSTYWING	"	6
SPRING WHITE	"	4
HARFORD SULPHUR	"	2
PALE TIGER SWALLOWTAIL	"	2
GORGON COPPER	"	1
PERPLEXING HAIRSTREAK	"	1
SOUTHERN BLUE	"	1
		1

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS 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 Barback Date: 5/16/10

Project: Campo Monzónita 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
	16:10 81°	5/7	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
White 3	3	3
Southern Blue	1	1
African Blue	1	1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Dale Powell Add'l Person: John Bestick Date: 5/16/10
 Project: Campo Manzanita 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
END					clear	patchy	overcast	drizzle	shower

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

Butterfly Species	Tally						Total
	W	H	WT	WH	HT	HT	
Behrs Metalmark							30
Eady?							2
Pale Swallowtail							1
Blue?							7
Silver?							2
Jane's Orange Tip							2
White							3
Acanon Blue							3

Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet

MAP/GPS LABEL	POINT/POLYGON TYPE	COMMENTS FOR ALL MAPPED POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
DPHL01	Point	San Diego Horned Lizard

TOTAL NUMBER OF QCB DETECTED: ① 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	Ø	clear	patchy	overcast	drizzle	shower
	1000	75	5	Ø	clear	patchy	overcast	drizzle	shower
	1100	77	5	Ø	clear	patchy	overcast	drizzle	shower
	1200	75	7	Ø	clear	patchy	overcast	drizzle	shower
	1300	73	6	Ø	clear	patchy	overcast	drizzle	shower
	1400	81	3	Ø	clear	patchy	overcast	drizzle	shower
END	1500	80	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
 1600 77 8 Ø O

Butterfly Species	Tally	Total
<i>Plebejus Acmon</i>		25+
<i>Apodemia virgulti</i>		25+
<i>Anthochloa sara</i>		4
<i>Celastrina echo</i>		2
<i>Gynnis funeralis</i>		2
<i>Colias hufordii</i>		2
<i>Pontia protodice</i>		6
<i>Leptotes merina</i>		1
<i>Euphilotes benardino</i>		0
<i>Papilio eurymedon</i>		1
<i>Plebejus melissa</i>		1
* <i>Eurema nicippe</i>		1
<i>Vanessa cardui</i>		2
<i>Brephidium exilis</i>		1
<i>Euptoieta claudia</i> *		1
*UNUSUAL		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: DAVID FLETCHER Add'l Person: JOSH PAIPA 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
Marino 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 POLYGONS AND GPS POINTS/ SPECIES LIST (NECTAR SOURCES, GENERAL WILDLIFE LIST)
		last cal
		Crypt int
		Salv col
		Cem. bist
		Mimulus brevipes
		Esch calif
		Filago calif
CH → CH _x		popns of Collinsia - probably can ^{many} be _{used} to form polygon
DFHLO1	point	1 Horned lizard
		Chaenactis glab
		Erysimum sup
		Eriophyllum wallacei
		Zinnia dianel
		Dolphinium
		Eriastrum sup
		Lotus strig
		Camissonia campestris
		Phacelia moyer
		Larrea glandel
		C. ceceps calif? (10-12 vgs)

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				
				clear	patchy	overcast	drizzle	shower
START 1000	69	0 → 5 MPH	100	clear	patchy	overcast	drizzle	shower
1100	69	0 → 3 MPH	100	clear	patchy	overcast	drizzle	shower
1200	74	0 → 3 MPH	100	clear	patchy	overcast	drizzle	shower
1300	70	0 → 2 MPH	100	clear	patchy	overcast	drizzle	shower
1400	73	0 → 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
GARR'S CHECKERSPOT	"	6
CALIFORNIA SOOTYWING	"	2
BROWN ELFIN	"	10
MARINE BLUE	"	6
FUNERAL 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**

Recorder: Dale Powell Add'l Person: Lawrence Moore Date: 5/17/10

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

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	<u>overcast</u>	drizzle	shower
	12:10	65°	6/8	100	^{light} clear	patchy	<u>overcast</u>	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
Hayford's Sulphur	1	1
4 Monarch		
Too Cold		

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: Brian Lokstrom Add'l Person: Daniel Date: 5/19/10
 Project: ^{Campo}Manzanita Wind Energy Project 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
Duskywing sp.		1
Gabb's checkerspot		2
Funereal Duskywing		1
Gorham's Copper		1
Western tailed blue		1

**Quino Checkerspot Butterfly Protocol Survey
Field Data Sheet**

Recorder: MIKE COUFFER 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→4 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> shower
0900	73°	2→4 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> shower
1000	78°	2→6 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> shower
1100	77°	2→6 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> shower
1200	75°	1→5 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> shower
1300	80°	3→6 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> shower
END 1315	80°	3→5 MPH	CLEAR	<input type="radio"/> clear	<input type="radio"/> patchy	<input type="radio"/> overcast	<input type="radio"/> drizzle	<input type="radio"/> 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	33
CLOUDLESS SULPHUR	"	2
SPRING WHITE	"	4
ACMON BLUE	"	10
MARINE BLUE	"	23
GRAY HAIRSTREAK	"	1
PAINTED LADY	"	2
FUNERAL DUSKYWING	"	3
PALE TIGER SWALLOWTAIL	"	5
SPRING AZURE	"	9
BROWN ELFIN	"	3
ANISE SWALLOWTAIL	"	1

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						Total
		1	2	3	4	5	6	
Papilionidae								
Anise swallowtail	<i>Papilio zelicaon</i>	0	2	2	0	0	1	5
Western tiger swallowtail	<i>Papilio rutulus</i>	1	2	1	0	0	0	4
Pale swallowtail	<i>Papilio eurymedon</i>	8	18	36	85	50	68	265
Black swallowtail	<i>Papilio polyxenes</i>	0	1	0	0	0	0	1
Pieridae								
Cabbage white	<i>Pieris rapae</i>	0	47	0	0	1	0	48
Spring (California) white	<i>Pontia sisymbrii</i>	73	29	24	10	14	41	191
Checkered (common) white	<i>Pontia protodice</i>	39	7	9	20	21	22	118
Becker's white	<i>Pontia beckerii</i>	0	0	0	0	1	2	3
California (pearly) marble	<i>Euchloe hyantis</i>	47	411	201	49	13	4	725
Gray marble	<i>Euchloa lanceolata</i>	0	4	0	1	0	0	5
Desert (Felder's) orangetip	<i>Anthocharis cethura</i>	0	10	3	2	0	0	15
Sara orangetip	<i>Anthocharis sara sara</i>	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	<i>Colias eurytheme</i>	0	2	3	3	1	0	9
Harford's sulphur	<i>Colias harfordii</i>	1	0	7	6	5	27	46
California dogface	<i>Zerene eurydice</i>	0	0	1	0	1	0	2
Cloudless (senna) sulphur	<i>Phoebus sennae marcellina</i>	0	0	0	0	0	3	3
Sleepy orange	<i>Eurema nicippe</i>	0	0	0	0	0	1	1
Dainty sulphur	<i>Nathalis iole</i>	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	<i>Danaus gilippus</i>	0	0	0	1	0	0	1
Nymphalidae								
Quino checkerspot	<i>Euphydryas editha quino</i>	0	2	4	6	1	0	13
Henne's checkerspot	<i>Euphydryas chalcedona hennei</i>	1	10	12	136	122	92	373
Gabb's checkerspot	<i>Chlosyne gabbii</i>	3	23	4	98	39	27	194
Checkerspot species	Species unknown	0	1	2	0	0	0	3
Red admiral	<i>Vanessa atalanta</i>	0	0	1	3	0	2	6
Painted lady	<i>Vanessa cardui</i>	124	65	90	132	37	34	482
West coast lady	<i>Vanessa annabella</i>	0	2	4	24	5	2	37
American lady	<i>Vanessa virginiensis</i>	0	2	2	0	0	0	4
Lady species	<i>Vanessa species</i>	11	28	1	27	8	9	84
Common buckeye	<i>Junonia coenia</i>	0	0	0	3	2	0	5
California sister	<i>Adelpha bredowii californica</i>	0	0	0	0	0	1	1
California patch	<i>Chlosyne californica</i>	0	0	0	0	0	1	1
California tortoiseshell	<i>Nymphalis californica</i>	22	1	1	0	0	1	25
Gulf fritillary	<i>Agraulis vanillae</i>	0	0	1	0	0	0	1
Variegated fritillary	<i>Euptoieta claudia</i>	0	0	0	0	0	1	1
Lycaenidae								
Behr's/Mormon metalmark	<i>Apodemia mormo virgulti</i>	89	1226	2404	2206	1009	1074	8008
Great copper	<i>Lycaena xanthoides</i>	0	0	0	0	0	1	1

Common Name	Species Name	Survey Week						Total
		1	2	3	4	5	6	
Gorgon copper	<i>Lycaena gorgon</i>	0	0	0	0	5	16	21
Brown elfin	<i>Callophrys augustinus</i>	37	40	15	11	9	20	132
Perplexing (bramble) hairstreak	<i>Callophrys dumetorum</i>	297	351	205	47	34	8	942
Gray hairstreak	<i>Strymon melinus</i>	1	0	0	3	2	5	11
Great purple hairstreak	<i>Atlides halesus</i>	0	1	0	3	0	0	4
Hairstreak sp.	Species unknown	0	0	1	0	0	0	1
Southern (silvery) blue	<i>Glaucopsyche lygdamus australis</i>	9	55	41	51	29	28	213
Arrowhead blue	<i>Glaucopsyche piasus</i>	0	36	39	0	0	16	91
Melissa blue	<i>Lycaeides melissa</i>	0	0	0	0	0	16	16
Lupine blue	<i>Plebejus lupines</i>	0	0	0	3	6	3	12
Acmon blue	<i>Icaricia acmon acmon</i>	94	167	192	281	322	760	1816
Bernardino blue	<i>Euphilotes Bernardino</i>	0	0	0	0	0	7	7
Echo blue/Spring azure	<i>Celastrina ladon echo</i>	5	12	7	3	26	33	89
Western tailed blue	<i>Everes amyntula</i>	0	1	1	0	0	2	4
Marine blue	<i>Leptotes marina</i>	0	0	0	1	0	55	56
Ceraunus blue	<i>Hemiargus ceraunus</i>	0	0	0	0	0	1	1
Pygmy blue	<i>Brephidium exilis</i>	0	1	0	0	0	1	2
Blue species	Species unknown	22	49	64	48	46	79	308
Hesperiidae								
Funereal duskywing	<i>Erynnis funeralis</i>	31	127	199	103	72	109	641
Mournful duskywing	<i>Erynnis tristis</i>	0	3	0	1	1	0	5
Pacuvius duskywing	<i>Erynnis pacuvius</i>	1	0	0	0	0	0	1
Sleepy duskywing	<i>Erynnis brizo</i>	23	27	1	5	4	1	61
Propertius duskywing	<i>Erynnis propertius</i>	0	10	3	5	2	6	26
Afranius duskywing	<i>Erynnis afranius</i>	0	0	2	0	0	0	2
Duskywing species	<i>Erynnis species</i>	30	120	79	70	28	56	383
Small-checked skipper	<i>Pyrgus scriptura</i>	0	0	0	0	0	1	1
Northern white skipper	<i>Heliopetes ericetorum</i>	0	0	0	0	0	1	1
Common sootywing	<i>Philosora catalus</i>	0	0	5	13	16	11	45
Skipper species	Species unknown	2	2	0	1	1	0	6
Juba skipper	<i>Hesperia juba</i>	0	1	0	1	1	0	3
Sachem	<i>Atalopedes campestris</i>	0	0	0	0	0	1	1
Moth Species								
Sphyngid moth	Species unknown	4	4	0	0	0	0	8
	<i>Euproserpinus phaeton</i>	1	37	1	0	0	0	39
	<i>Litocola sexiqueta</i>	1	0	0	0	0	0	1
	<i>Leptarctia</i>	1	0	0	0	0	0	1
	<i>Alypia ridingsa</i>	1	0	0	0	0	0	1
	<i>E. Phaeton sphinx</i>	9	0	0	0	0	0	9
	<i>Heliothis belladonna</i>	0	3	0	0	0	0	3
	<i>Drasteria tejonica</i>	0	3	0	0	0	0	3
	<i>Drasteria edwardsi</i>	0	1	0	0	0	0	1
	<i>Drasteria biformata</i>	0	1	0	0	0	0	1
	<i>Hyles lunesta</i>	0	0	1	0	0	0	1
	<i>Hemoris affinis</i>	0	0	1	0	0	0	1
Moth species	<i>Adela species</i>	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
<i>Achillea millefolium</i>	common yarrow						x
<i>Adenostoma fasciculatum</i>	chamise	x	x	x	x	x	x
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rancher fiddleneck	x	x		x	x	
<i>Anisocoma acaulis</i>	scale-bud		x	x	x	x	x
<i>Antirrhinum coulterianum</i>	Coulter's snapdragon	x	x		x	x	x
<i>Antirrhinum nutallianum</i> ssp. <i>nutallianum</i>	snapdragon			x			
<i>Arabis pulchra</i> var. <i>pulchra</i>	beautiful rock-cress	x	x	x	x		
<i>Arctostaphylos</i> spp.	manzanita	x	x	x	x		
<i>Artemesia tridentata</i> ssp. <i>tridentata</i>	big sagebrush	x	x	x	x	x	x
<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba milkvetch		x		x	x	x
<i>Baccharis salicifolia</i>	mulefat		x				
<i>Camissonia</i> spp.	sun-cup	x		x	x	x	x
<i>Caulanthus heterophyllus</i> var. <i>heterophyllus</i>	San Diego jewelflower		x				x
<i>Caulanthus simulans</i>	Payson's jewelflower	x	x	x	x		
<i>Castilleja</i> ssp.	Indian paintbrush			x	x	x	
<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	buck brush	x		x	x		
<i>Ceanothus greggii</i> var. <i>perplexans</i>	cup-leaf-lilac		x		x		
<i>Ceanothus leucodermis</i>	chaparral whitethorn		x	x	x		
<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	birch-leaf mountain mahogany	x	x	x			
<i>Chaenactis artemisiifolia</i>	white pincushion					x	x
<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	yellow pincushion					x	x
<i>Cirsium occidentale</i> var. <i>californicum</i>	California thistle				x	x	x
<i>Claytonia parviflora</i> spp.	miner's-lettuce	x		x			
<i>Collinsia concolor</i>	Chinese houses	x	x	x	x	x	x
<i>Cordylanthus rigidus</i> ssp. <i>setigerus</i>	dark-tip bird's beak	x	x		x	x	x
<i>Coreopsis californica</i> var. <i>californica</i>	California coreopsis		x	x	x	x	x
<i>Cryptantha</i> spp.	cryptantha	x	x	x	x	x	x
<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	oceanblue larkspur		x	x	x	x	x

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
<i>Dendromecon rigida</i>	bush poppy		x			x	x
<i>Descurainia pinnata</i> ssp. <i>glabra</i>	tansy mustard	x	x	x	x	x	
<i>Dichelostemma capitatum</i>	blue dicks		x	x	x	x	x
<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	whispering bells				x	x	x
<i>Eriastrum</i> sp.	woolly star						x
<i>Ericameria linearifolia</i>	interior goldenbush		x	x		x	
<i>Ericameria</i> sp.	goldenbush		x	x	x	x	x
<i>Eriogonum fasciculatum</i>	buckwheat		x	x		x	
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	long-stem golden yarrow						x
<i>Eriophyllum wallacei</i>	Wallace's woolly daisy	x			x	x	x
<i>Erodium cicutarium</i>	filaree	x	x	x	x	x	x
<i>Erysimum capitatum</i> ssp. <i>capitatum</i>	western wallflower		x	x	x	x	x
<i>Eschscholzia californica</i>	California poppy	x	x	x	x	x	x
<i>Eucrypta chrysanthemifolia</i> var. <i>bipinnatifida</i>	spotted hideseed			x			
<i>Filago californica</i>	California filago						x
<i>Geraea viscid</i>	stickey geraea		x	x		x	x
<i>Gilia capitata</i>	ball gilia				x	x	x
<i>Gilia</i> spp.	gilia	x		x	x	x	x
<i>Hesperoyucca whipplei</i>	chaparral candle				x	x	
<i>Hirschfeldia incana</i>	short-pod mustard		x				
<i>Lasthenia gracilis</i>	common goldfields	x	x	x	x	x	x
<i>Lathyrus splendens</i>	Campo pea		x	x	x		x
<i>Layia glandulosa</i>	white layia		x	x	x	x	x
<i>Lepidium</i> spp.	pepperweed					x	
<i>Leptosiphon lemmonii</i>	Lemmon's linanthus				x	x	x
<i>Linanthus bellus</i>	desert beauty	x	x	x	x	x	x
<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	woolly fruit lomatium		x				
<i>Lotus agrophyllus</i> var. <i>agrophyllus</i>	silver-leaf lotus				x	x	x
<i>Lotus scoparius</i>	deer weed			x	x	x	x
<i>Lotus strigosus</i>	bishop's lotus		x	x	x	x	x
<i>Lotus</i> sp.	lotus	x	x		x	x	x
<i>Lupinus bicolor</i>	miniature lupine		x	x	x	x	x
<i>Lupinus concinnus</i>	bajada lupine		x	x	x	x	x
<i>Lupinus hirsutissimus</i>	stinging lupine					x	
<i>Lupinus truncatus</i>	collar lupine					x	x
<i>Lupinus</i> spp.	lupine	x	x	x	x	x	x

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
<i>Malacothrix clevelandii</i>	Cleveland's malacothrix			x		x	
<i>Malacothrix californica</i>	California dandelion	x	x	x	x	x	
<i>Malacothrix</i> spp.	dandelion			x	x		x
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	wild cucumber	x	x	x		x	
<i>Minuartia douglasii</i>	Douglas's sandwort					x	x
<i>Nemophila menziesii</i> var. <i>integrifolia</i>	baby blue eyes	x	x	x	x	x	
<i>Paeonia californica</i>	California peony	x	x				
<i>Pectocarya</i> spp.	combseed	x	x				
<i>Phacelia brachyloba</i>	short-lobe phacelia						x
<i>Phacelia distans</i>	white-heliotrope		x	x	x	x	x
<i>Phacelia parryi</i>	Parry's phacelia			x	x	x	x
<i>Phacelia</i> spp.	phacelia		x	x	x	x	x
<i>Plagiobothrys</i> spp.	popcornflower	x	x	x	x	x	x
<i>Platystemon californicus</i>	cream cups		x	x	x	x	x
<i>Rhus ovata</i>	sugar bush		x	x			
<i>Rhus trilobata</i>	basket bush		x				
<i>Quercus x acutidens</i>	hybrid Engelmann's scrub oak	x	x				
<i>Salvia apiana</i>	white sage						x
<i>Salvia columbariae</i>	chia	x	x	x	x	x	x
<i>Senecio californicus</i>	California butterweed	x	x	x	x	x	x
<i>Sisymbrium altissimum</i>	tumble mustard						x
<i>Sisyrinchium bellum</i>	blue-eyed grass	x					
<i>Streptanthus campestris</i>	southern jewelflower			x	x	x	x
<i>Trichostemma parishii</i>	mountain blue curls		x		x	x	x
<i>Uropappas lindleyi</i>	silver puffs				x	x	
<i>Viola purpurea</i> ssp. <i>quercetorum</i>	oak yellow violet	x	x				
<i>Yucca schidigera</i>	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	
<i>Bufo boreas halophilus</i>	western toad
Family Hylidae	
<i>Pseudactis cadaverina</i>	California chorus frog
Family Pelobatidae	
<i>Spea hammondii</i>	western spade-foot toad
<i>Bufo boreas</i>	California toad
Order Squamata	Lizards and Snakes
Family Colubridae	
<i>Diadophis punctatus similis</i>	ring-necked snake
<i>Lampropeltis getula californiae</i>	California king snake
<i>Masticophis taeniatus</i>	striped whipsnake
<i>Pituophis catenifer</i>	gopher snake
Family Phrynosomatidae	
<i>Aspidoscelis tigris</i>	western whiptail lizard
<i>Phrynosoma coronatum blainvillii</i>	coast horned lizard
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Sceloporus orcutti</i>	granite spiny lizard
<i>Uta stansburiana</i>	side blotched lizard
Family Viperidae	
<i>Crotalus mitchellii</i>	speckled rattlesnake
<i>Crotalus helleri</i>	southern Pacific rattlesnake
Family Xantusidae	
<i>Xantusia henshawi</i>	granite night lizard
BIRDS	
Order Apodiformes	Hummingbirds and Swifts
Family Apodidae	
<i>Aeronautes saxatalis</i>	white-throated swift
Family Trochilidae	
<i>Calypte anna</i>	Anna's hummingbird
Order Ciconiiformes	Eagles, Hawks, and Kites
Family Accipitridae	
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Circus cyaneus</i>	northern harrier
Family Cathartidae	
<i>Cathartes aura</i>	turkey vulture
Family Falconidae	
<i>Falco mexicanus</i>	prairie falcon
Order Columbiformes	Pigeons and Doves

Scientific Name		Common Name
Family Columbidae		
	<i>Columba livia</i>	rock pigeon
	<i>Zenaida macroura</i>	mourning dove
Order Gruiformes		
Family Rallidae		
	<i>Fulica americana</i>	American coot
Order Passeriformes		Song Birds
Family Alaudidae		
	<i>Eremophila alpestris actia</i>	California horned lark
Family Aegithalidae		
	<i>Psaltriparis minimus</i>	bushtit
Family Cardinalidae		
	<i>Melanocephalus pheucticus</i>	black-headed grosbeak
	<i>Passerina amoena</i>	lazuli bunting
Family Corvidae		
	<i>Aphelocoma californica</i>	western scrub jay
	<i>Corvus brachyrhynchos</i>	American crow
	<i>Corvus corax</i>	common raven
Family Cuculidae		
	<i>Geococcyx californianus</i>	roadrunner
Family Emberizidae		
	<i>Aimophila ruficeps</i>	rufous-crowned sparrow
	<i>Amphispiza bilineata</i>	black-throated sparrow
	<i>Chondestes grammacus</i>	lark sparrow
	<i>Junco hyemalis</i>	dark-eyed junco
	<i>Passerculus sandwichensis</i>	savannah sparrow
	<i>Pipilo crissalis</i>	California towhee
	<i>Pipilo maculates</i>	spotted towhee
	<i>Spizella atrogularis</i>	black-chinned sparrow
	<i>Zonotrichia leucophrys</i>	white crowned sparrow
Family Fringillidae		
	<i>Carpodacus mexicanus</i>	house finch
	<i>Carduelis lawrencei</i>	Lawrence's goldfinch
	<i>Carduelis psaltria</i>	lesser goldfinch
Family Hirundinidae		
	<i>Petrochelidon pyrrhonota</i>	cliff swallow
Family Icteridae		
	<i>Molothrus ater</i>	brown-headed cowbird
	<i>Sturnella neglecta</i>	western meadowlark
Family Mimidae		
	<i>Toxostoma redivivum</i>	California thrasher
Family Odontophoridae		
	<i>Callipepla californica</i>	California quail
Family Paridae		
	<i>Baeolophis inornatus</i>	oak titmouse
Family Parulidae		
	<i>Dendroica coronata</i>	yellow-rumped warbler

Scientific Name		Common Name
	<i>Wilsonia pusilla</i>	Wilson's warbler
	Family Picidae	
	<i>Colaptes auratus</i>	northern flicker
	<i>Picoides nuttallii</i>	Nuttall's woodpecker
	<i>Melanerpes formicivores</i>	acorn woodpecker
	Family Sittidae	
	<i>Sitta carolinensis</i>	white-breasted nuthatch
	Family Stumidae	
	<i>Stumas vulgaris</i>	European starling
	Family Sylviidae	
	<i>Chamaea fasciata</i>	wrenit
	<i>Polioptila caerulea</i>	blue-gray gnatcatcher
	Family Turidae	
	<i>Sialia mexicana</i>	western bluebird
	Family Trochilidae	
	<i>Calypte anna</i>	Anna's hummingbird
	Family Troglodytidae	
	<i>Thryomanes bewickii</i>	Bewick's wren
	<i>Troglodytes aedon</i>	house wren
	Family Tyrannidae	
	<i>Empidonax difficilis</i>	Pacific slope flycatcher
	<i>Myiarchus cinerascens</i>	ash-throated flycatcher
	<i>Sayornis nigricans</i>	black phoebe
	<i>Tyrannus verticulis</i>	western kingbird
	Family Vireoniidae	
	<i>Vireo gilvus</i>	warbling vireo
	<i>Vireo huttoni</i>	Hutton's vireo
MAMMALS		
	Order Carnivora	Carnivores
	Family Canidae	
	<i>Canis latrans</i>	coyote
	Family Felidae	
	<i>Puma concolor</i>	mountain lion
	<i>Lynx rufus</i>	bobcat
	Family Cervidae	
	<i>Odocoileus hemionus</i>	mule deer
	Order Lagomorpha	Rabbits, Hares, and Pikas
	Family Leporidae	
	<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit
	<i>Sylvilagus audubonii</i>	cottontail
	Family Sciuridae	Squirrels, Rats, Mice, and Relatives
	<i>Spermophilus beecheyi</i>	California ground squirrel
	Family Geomyidae	
	<i>Thomomys bottae</i>	Botta's pocket gopher
	Family Muridae	
	<i>Neotoma fuscipes</i>	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

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,

A handwritten signature in black ink, appearing to read 'Barbra Calantas', written in a cursive style.

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



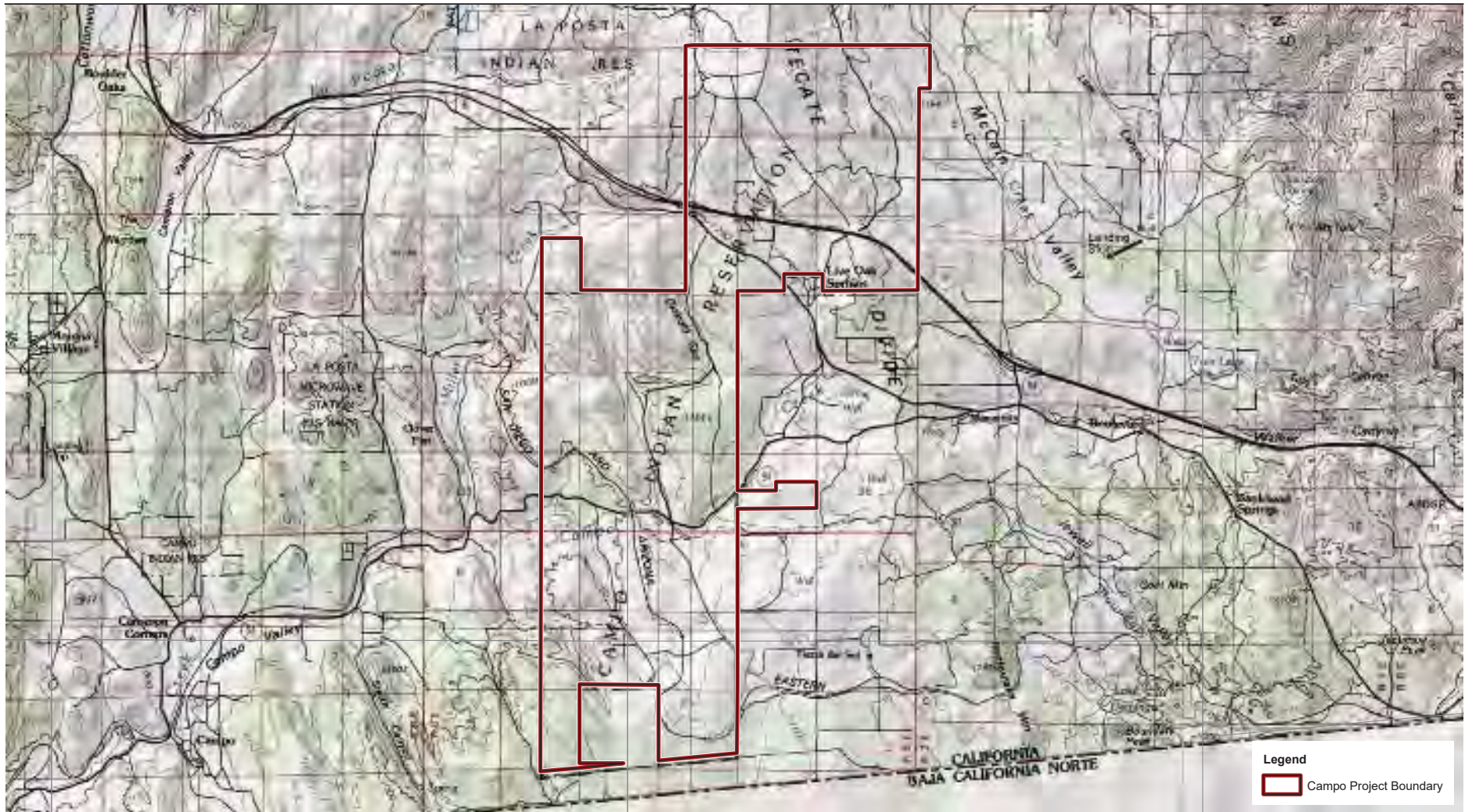


Source: ESRI 2009



Scale: 1 = 805,493.1; 1 inch = 12.7 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

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09\08\183_Campo_wind\6.0 GIS\6.3 Layout\BIO\USFWS_24hrQCBNotificationFig2\vicinity.mxd, 04/08/10, Sha652

Figure 2
Vicinity Map

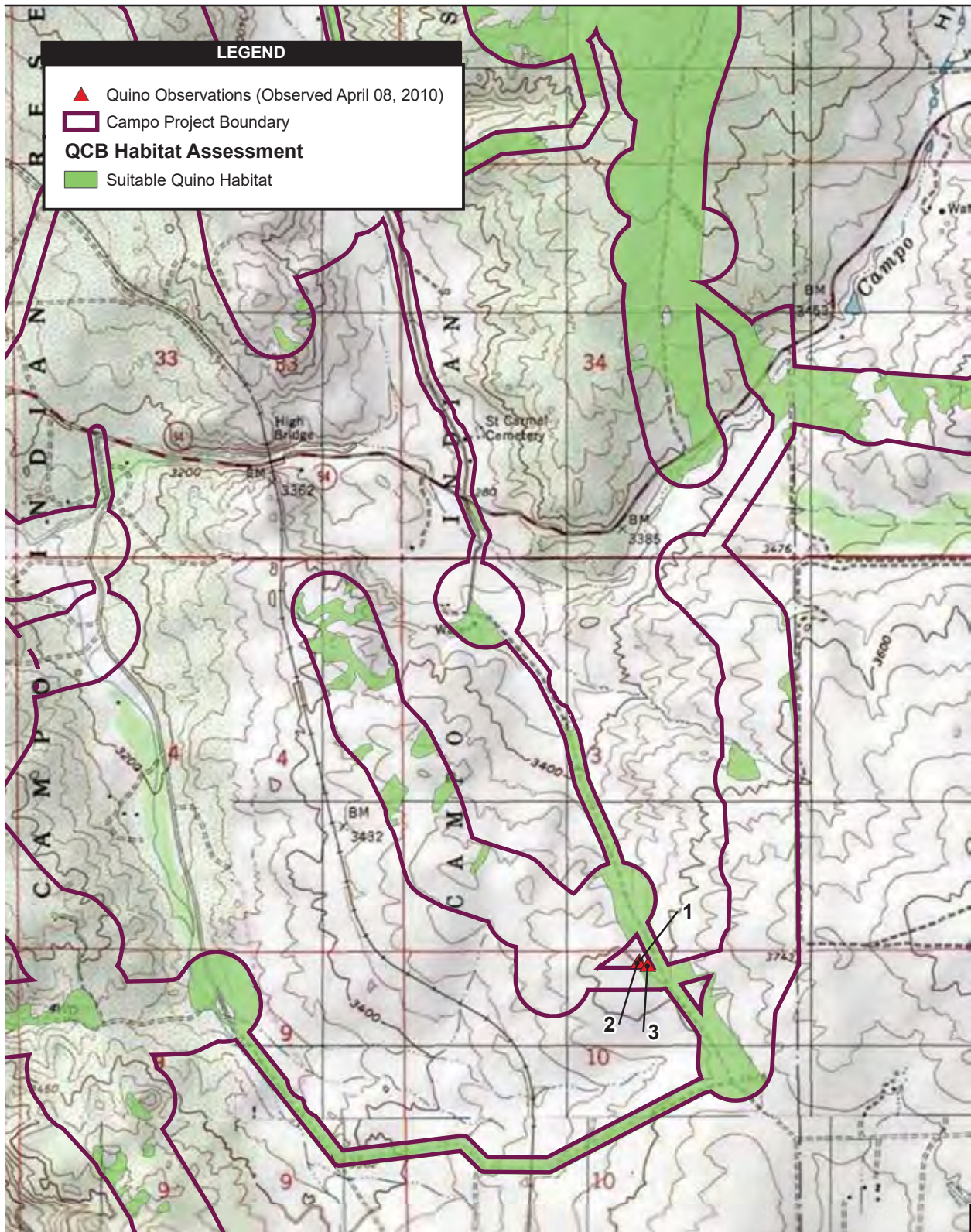


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

APPENDIX F.2
04/09/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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 fasciculatum* 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,

A handwritten signature in black ink, appearing to read 'Barbra Calantas', written in a cursive style.

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

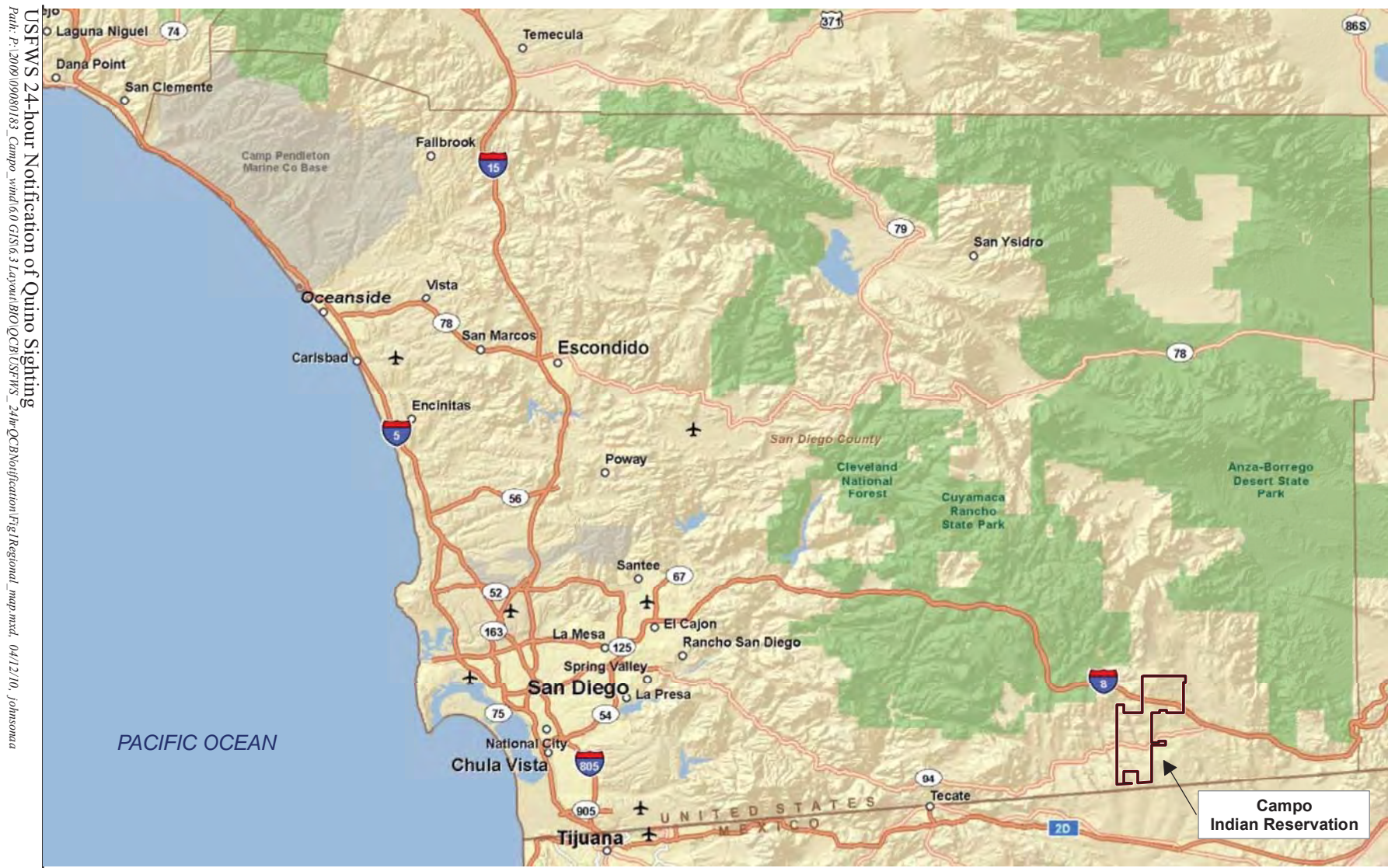


Photo 2



Photo 3





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60 GIS\6.3 Layout\BIO\OC\B\USFWS_24hr\OC\B\notification\Fig\Regional_map.mxd, 04/12/10, Johnsonma

Source: ESRI 2009

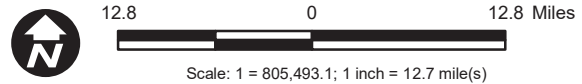
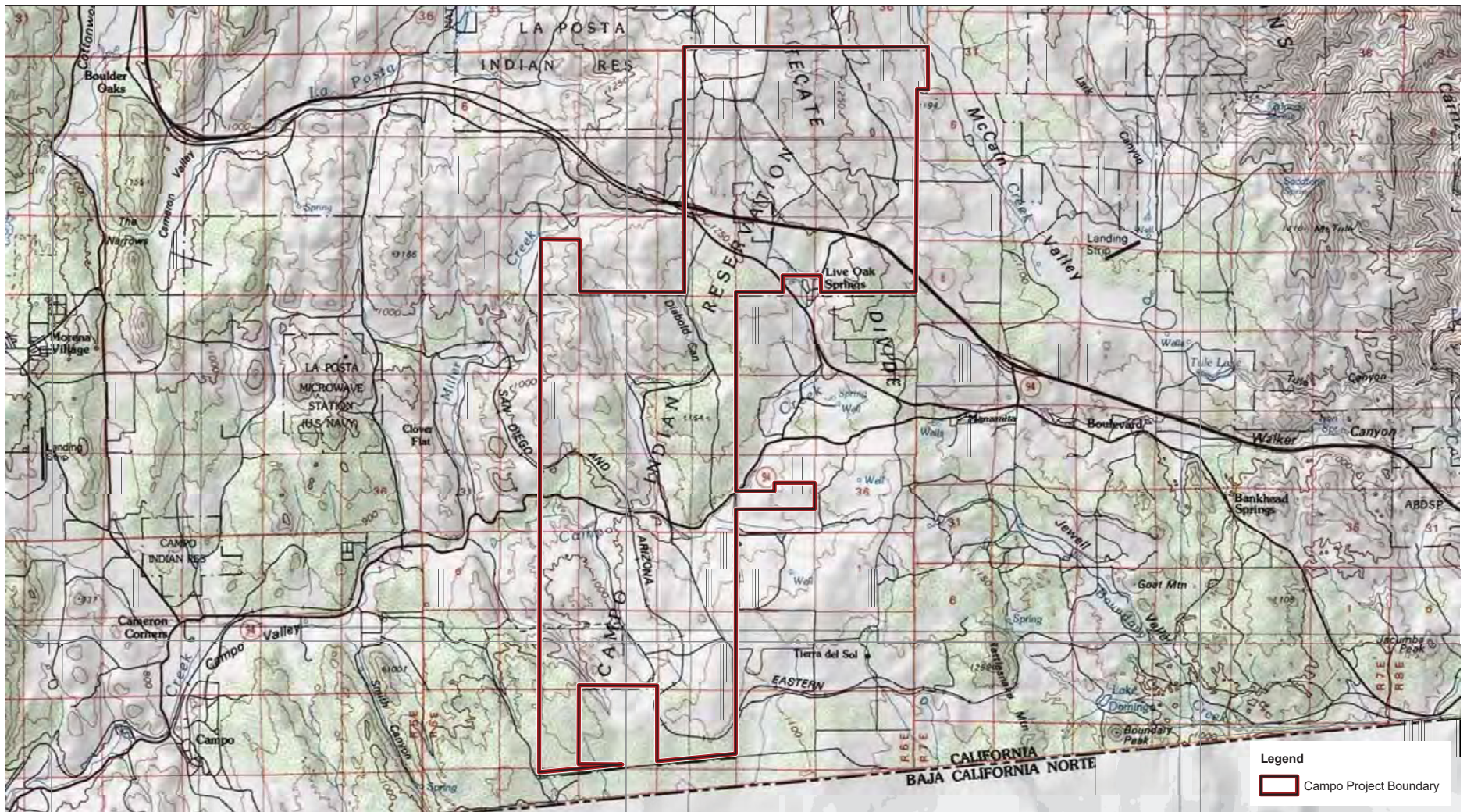


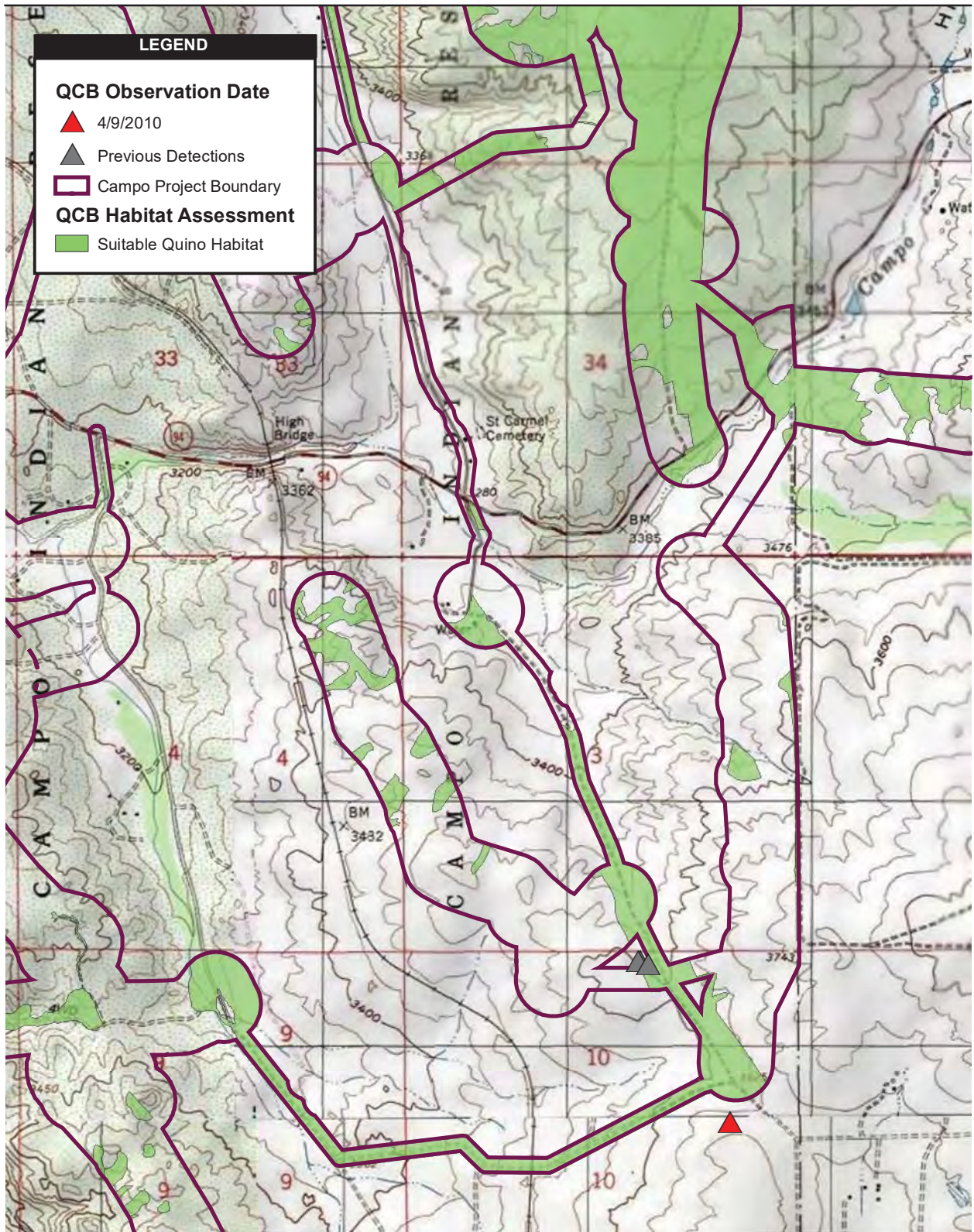
Figure 1
Regional Map



Legend
 Campo Project Boundary

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



Source: DigitalGlobe 2008; SDG&E 2010

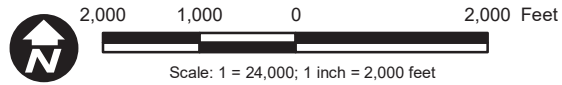


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation2_20100408.mxd, 04/12/10, johnsonaa

APPENDIX F.3
04/13/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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

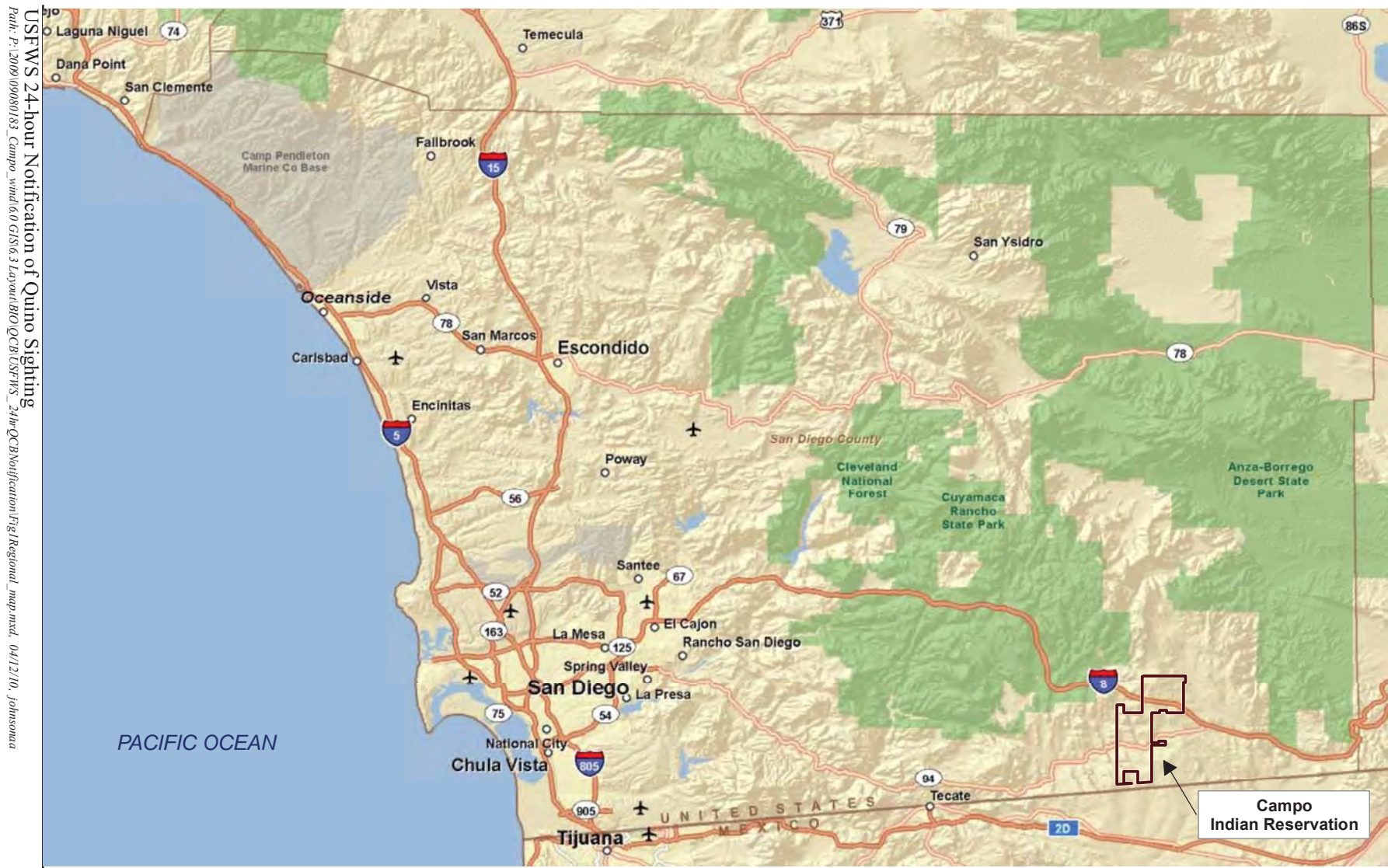
cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2





USFWS 24-hour Notification of Quirio Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60 GIS\6.3 Layout\BRO\OCB\USFWS_24hr\OCBNotificationFig\Regional_map.mxd, 04/12/10, Johnsonma

Source: ESRI 2009

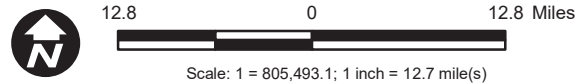
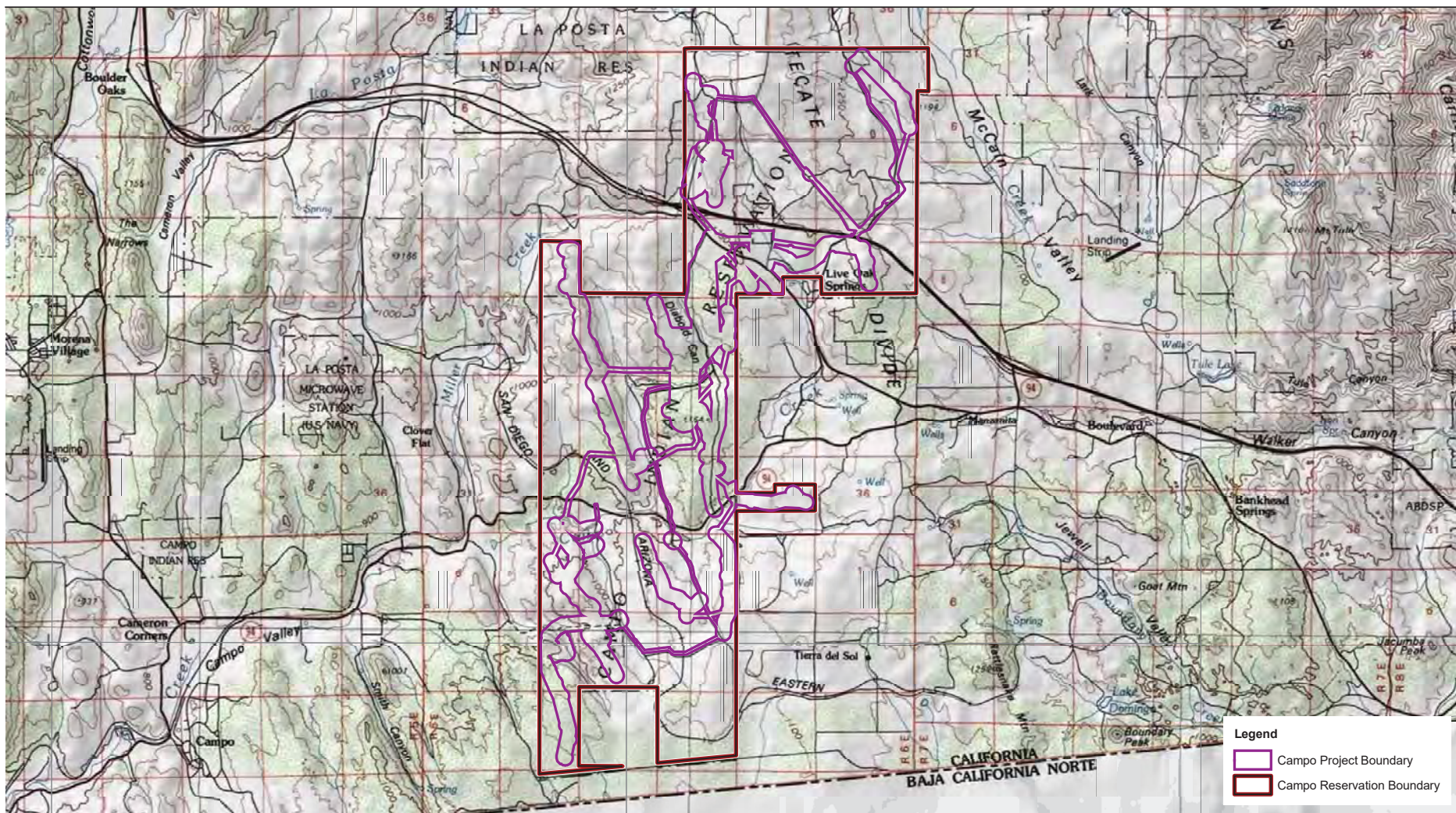


Figure 1
Regional Map



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

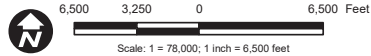
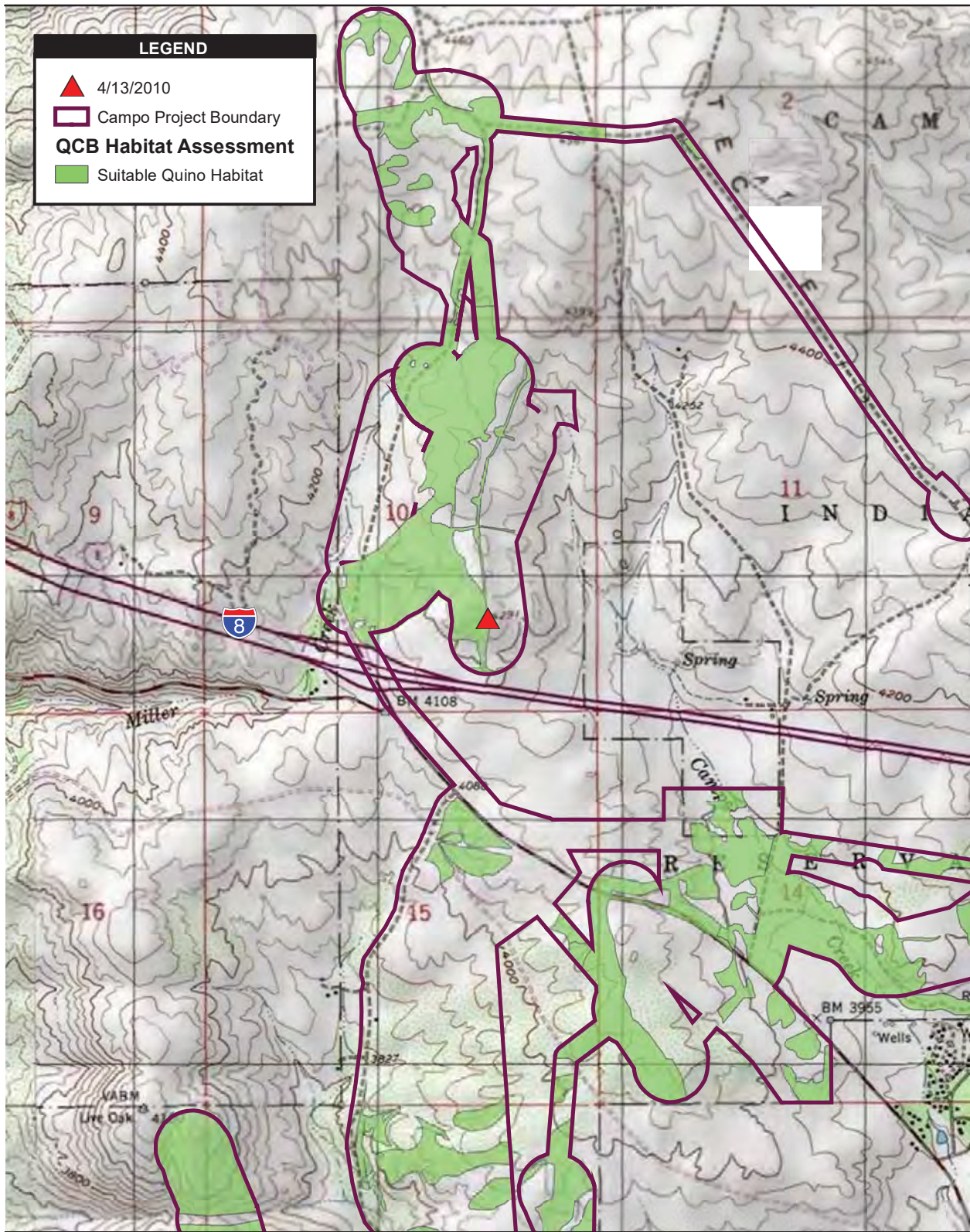


Figure 2
Vicinity Map

USFWS 24-hour Notification of Quino Sighting

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Source: DigitalGlobe 2008; SDG&E 2010

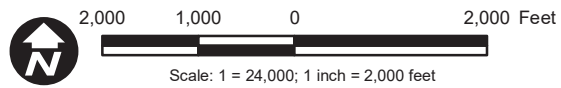


Figure 3
Quino Detection Location Map

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

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 McMorrان (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 been 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. McMorrان 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 cardui* 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

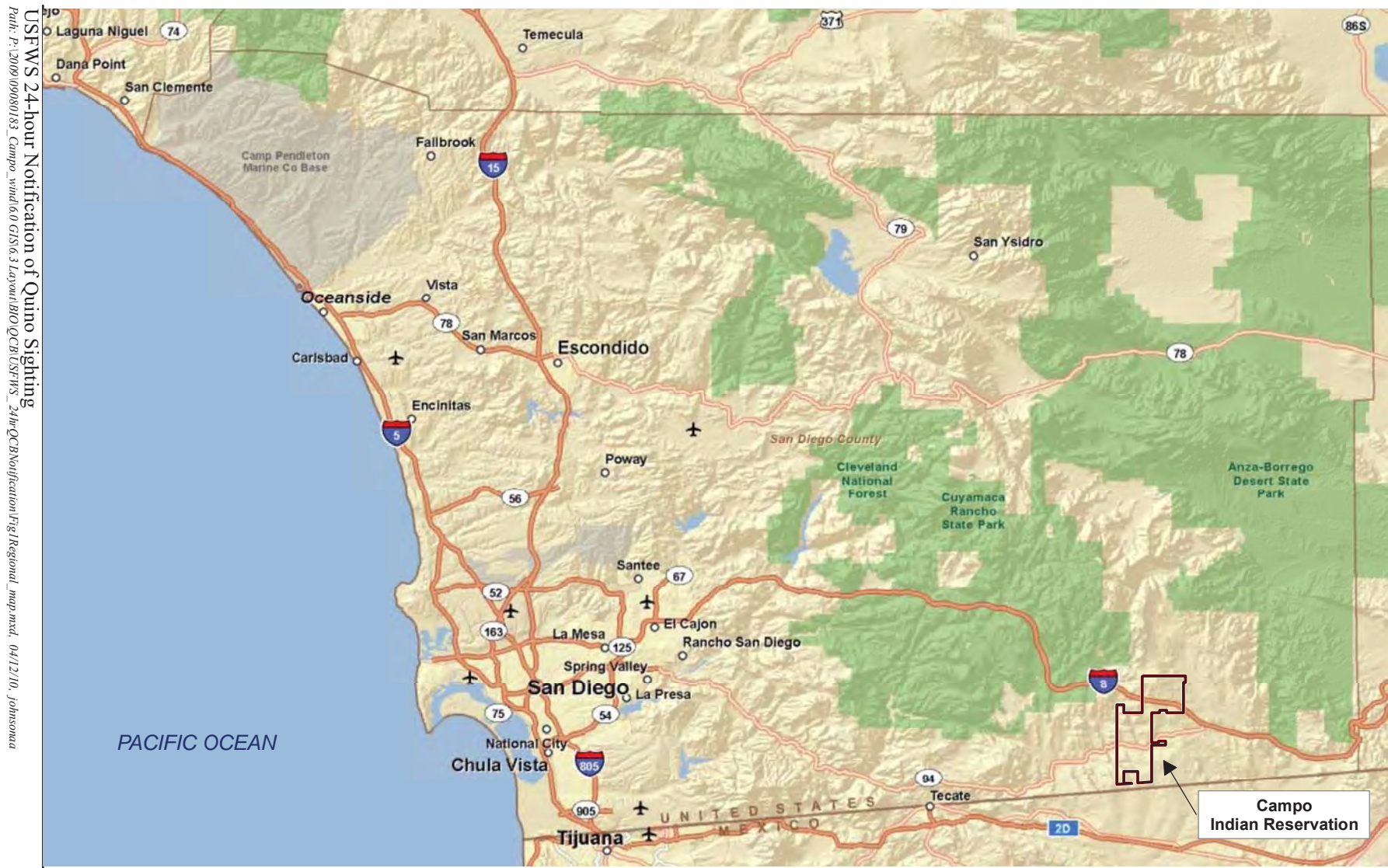
cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\183_Campo_mind\60\GIS\6.3\Layout\BRO\OCB\USFWS_24hr\OCB\notification\Fig1\Regional_map.mxd, 04/12/10, johnsona

Source: ESRI 2009

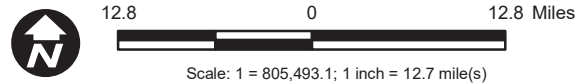


Figure 1
Regional Map

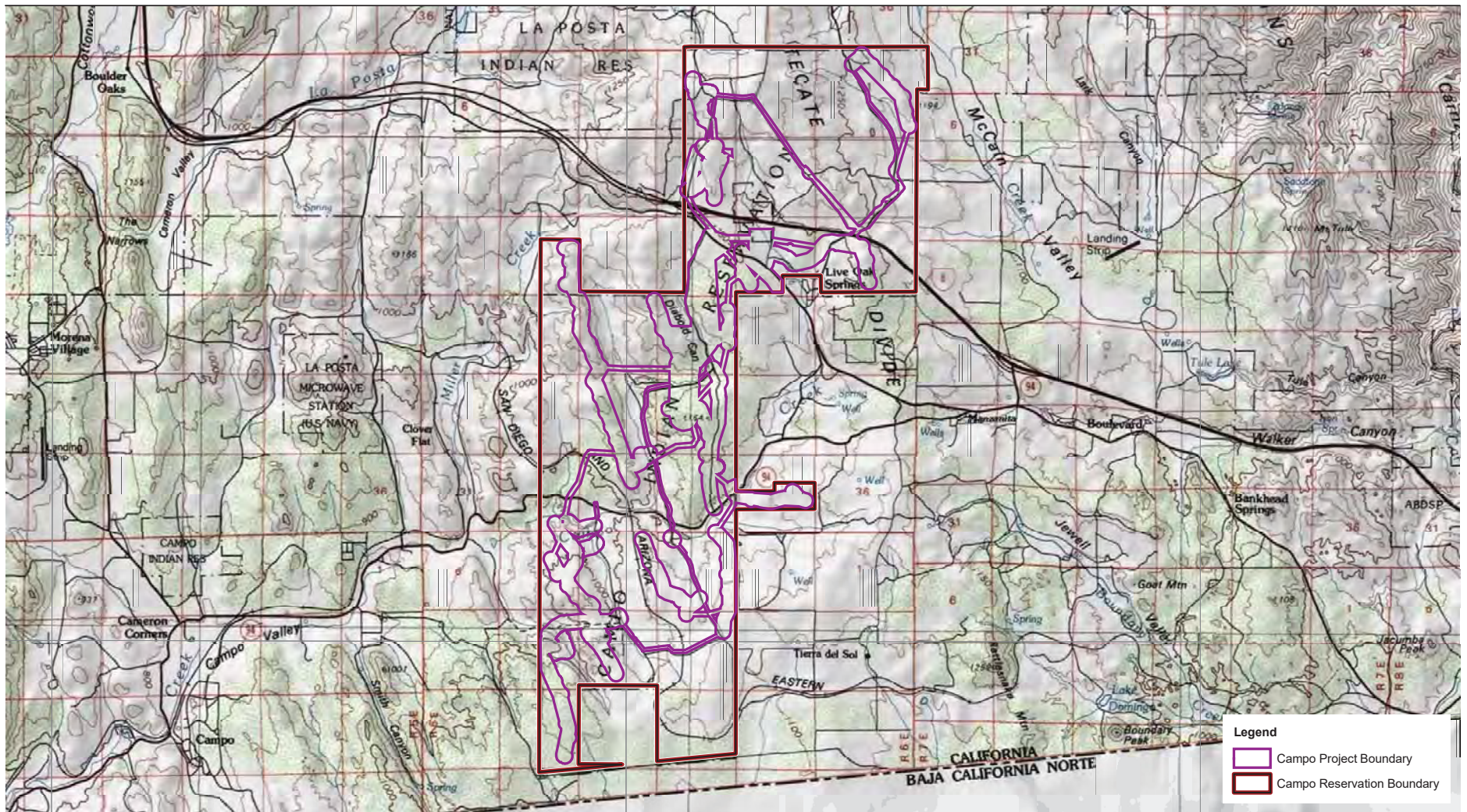


Figure 2
Vicinity Map

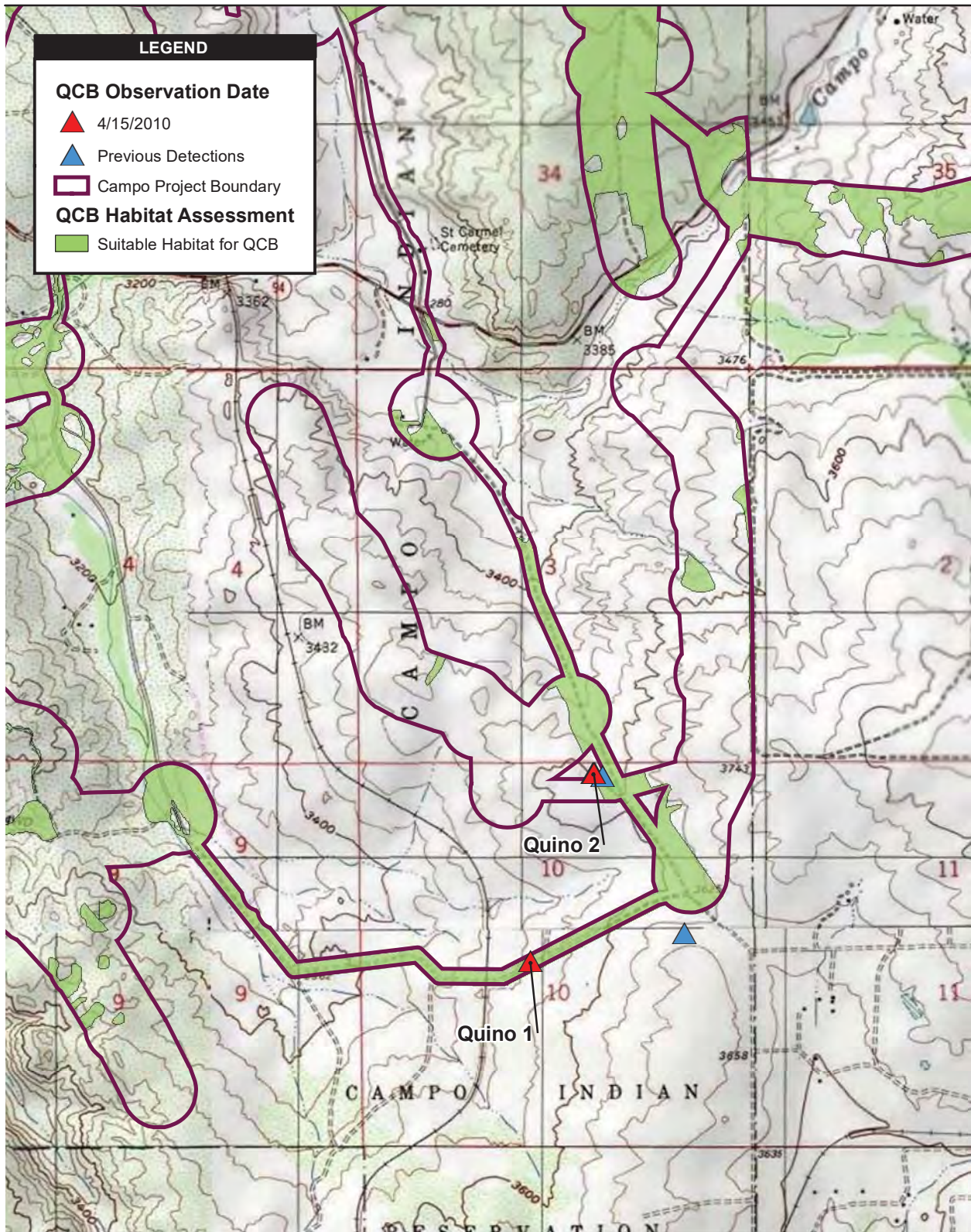
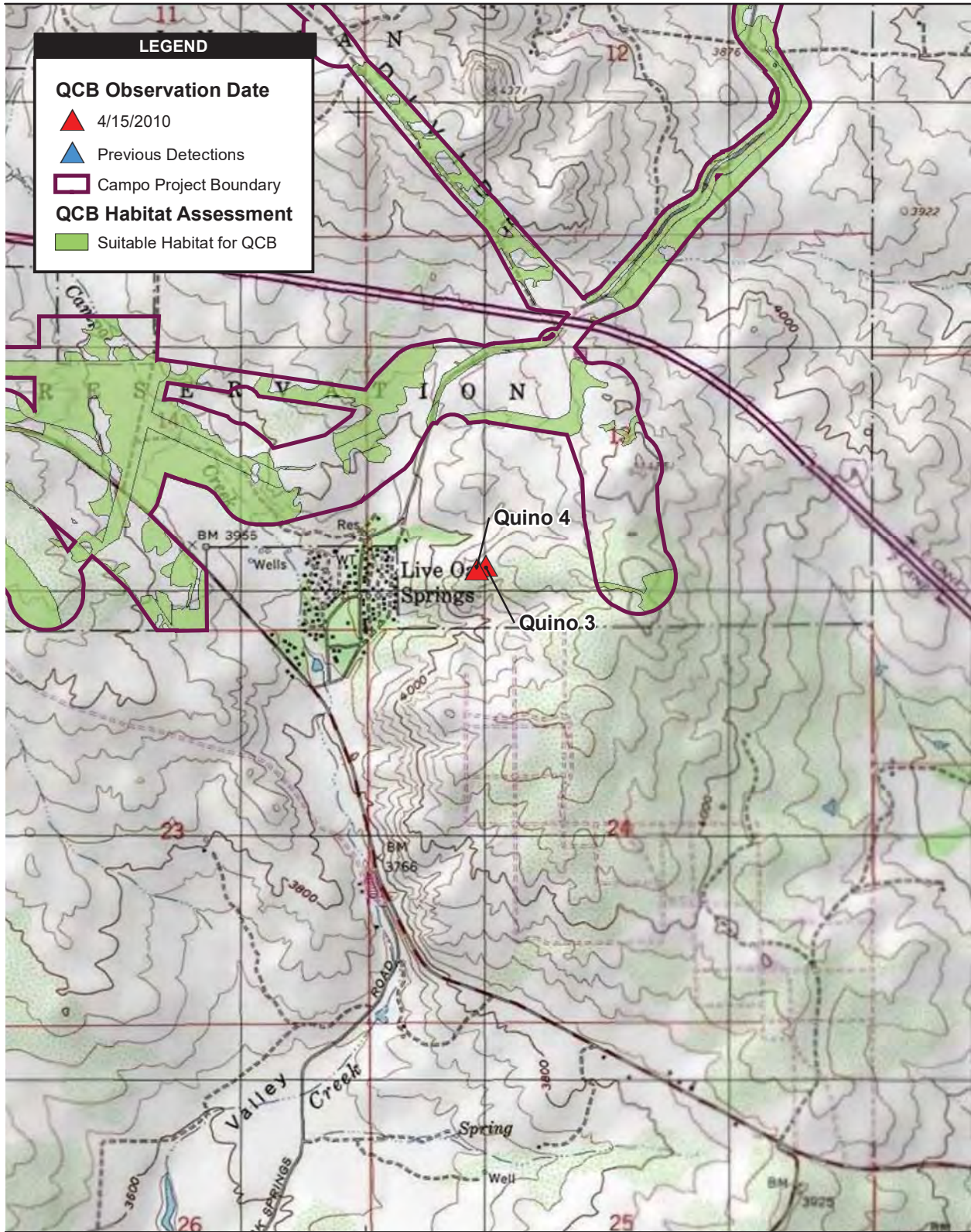


Figure 3a
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation4-1_20100415.mxd, 04/16/10, johnsona



Source: DigitalGlobe 2008; SDG&E 2010

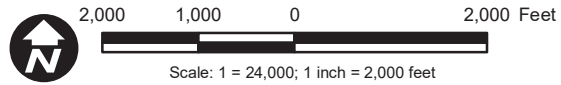
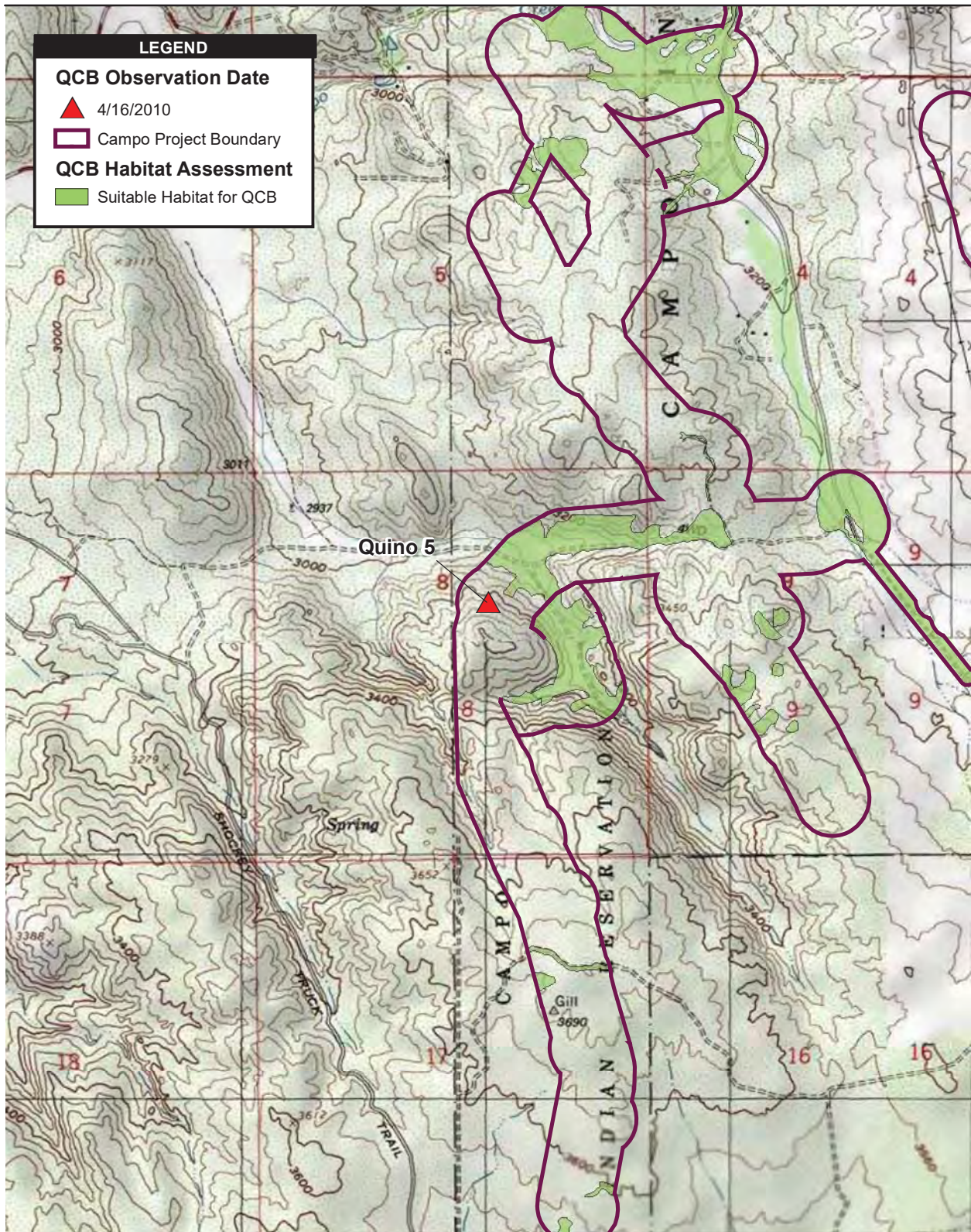


Figure 3b
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

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Source: DigitalGlobe 2008; SDG&E 2010

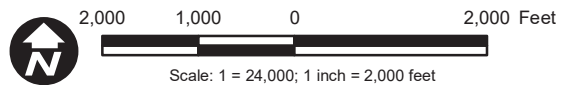


Figure 3c
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

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APPENDIX F.5
04/19/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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

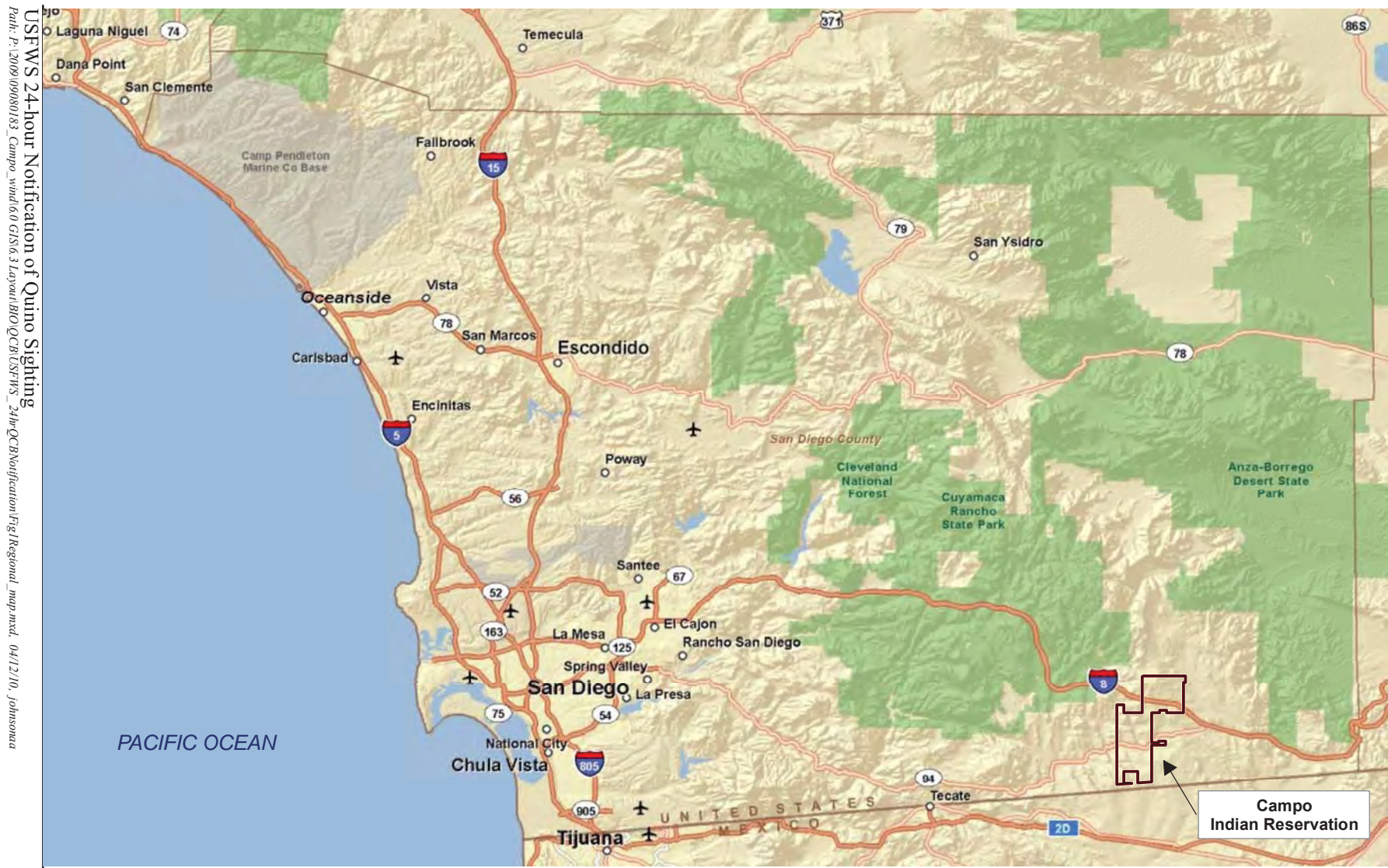
cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60\GIS\6.3\Layout\BRO\OCB\USFWS_24hr\OCB\notification\Fig1\Regional_map.mxd, 04/12/10, johnsona

Source: ESRI 2009

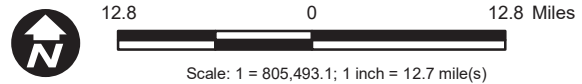
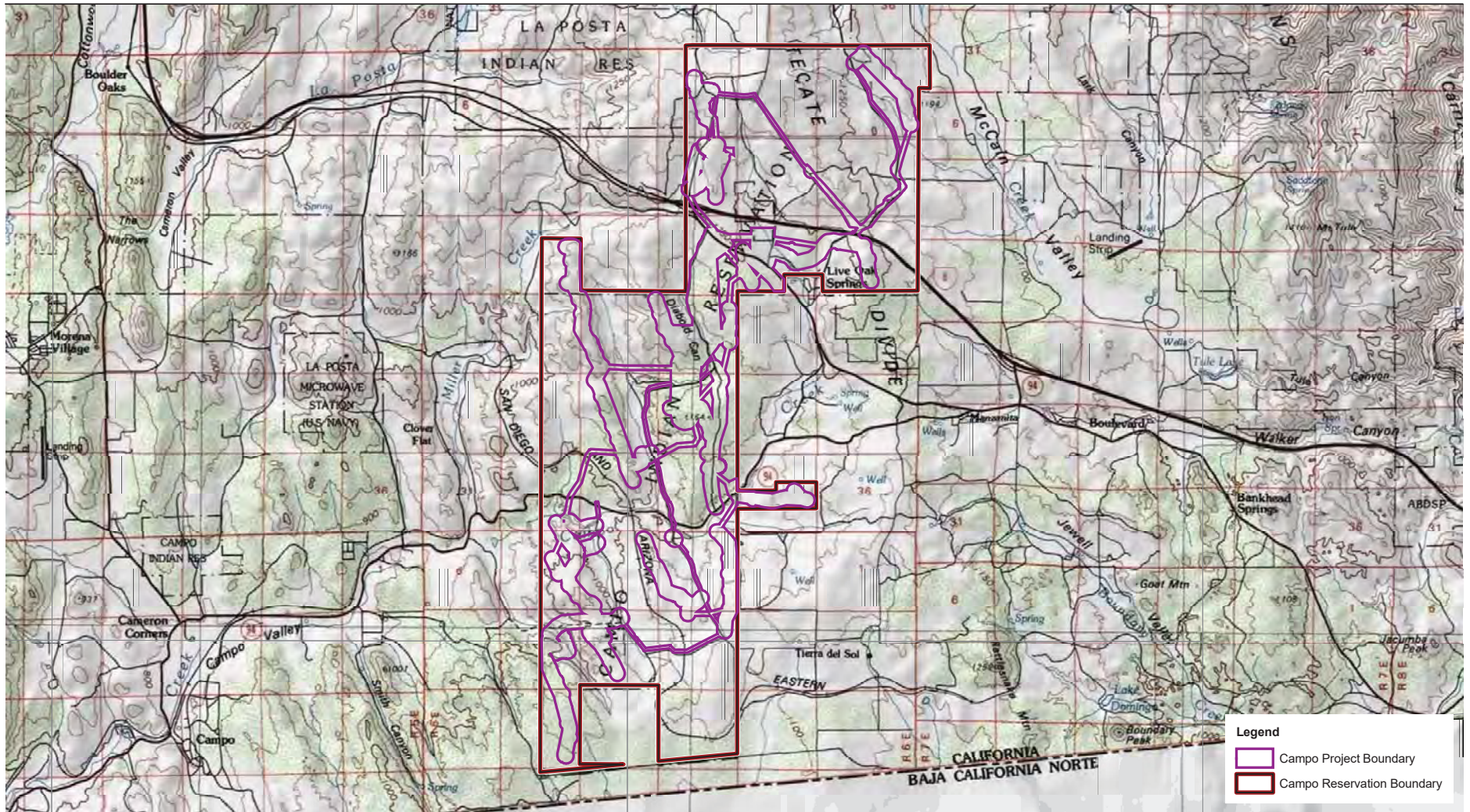


Figure 1
Regional Map



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

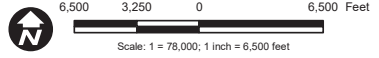
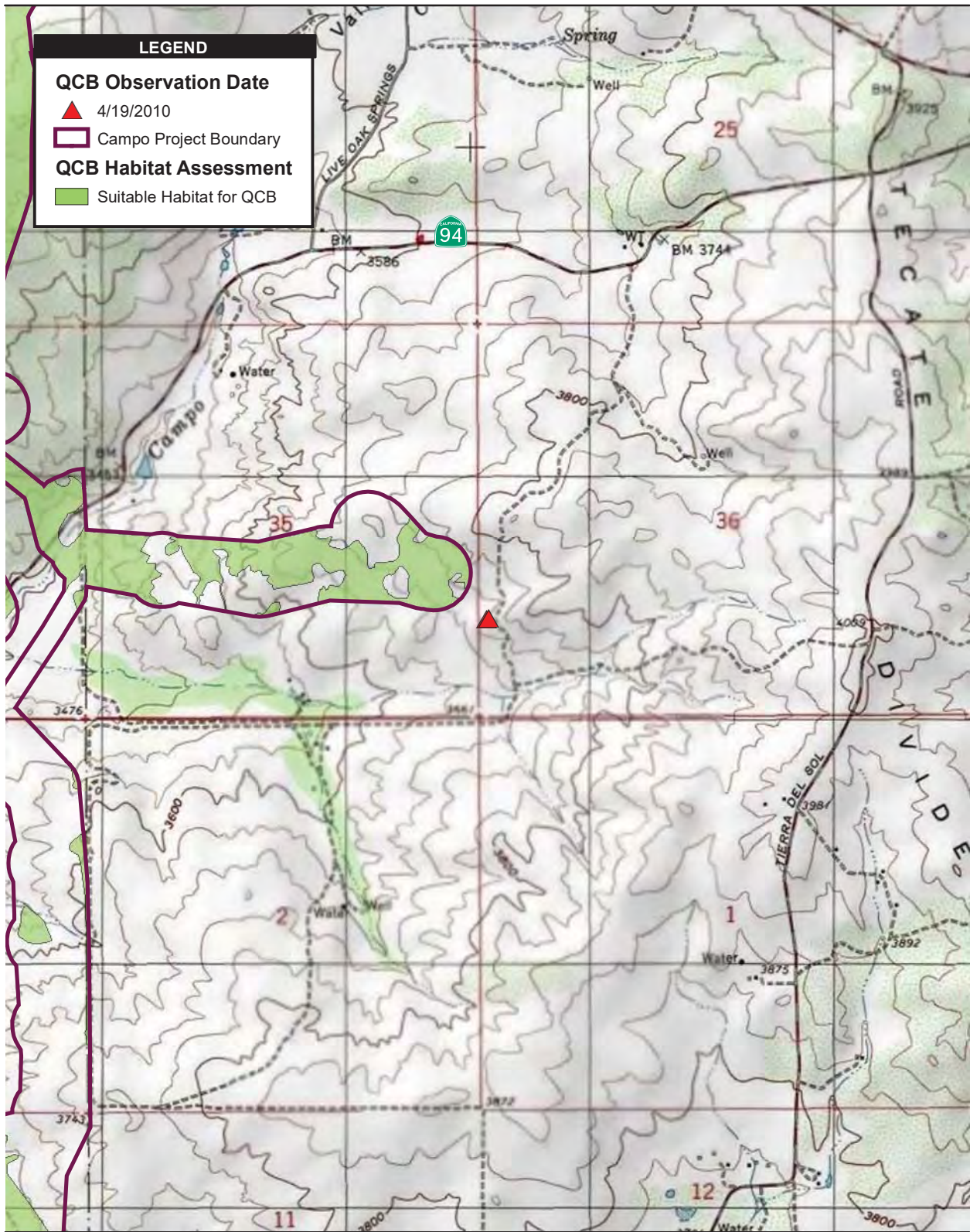


Figure 2
Vicinity Map



Source: DigitalGlobe 2008; SDG&E 2010

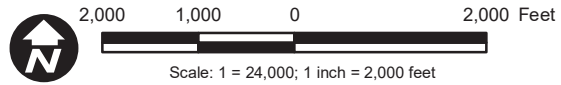


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation7_20100419.mxd, 04/20/10, johnsonaa

APPENDIX F.6
04/24/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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

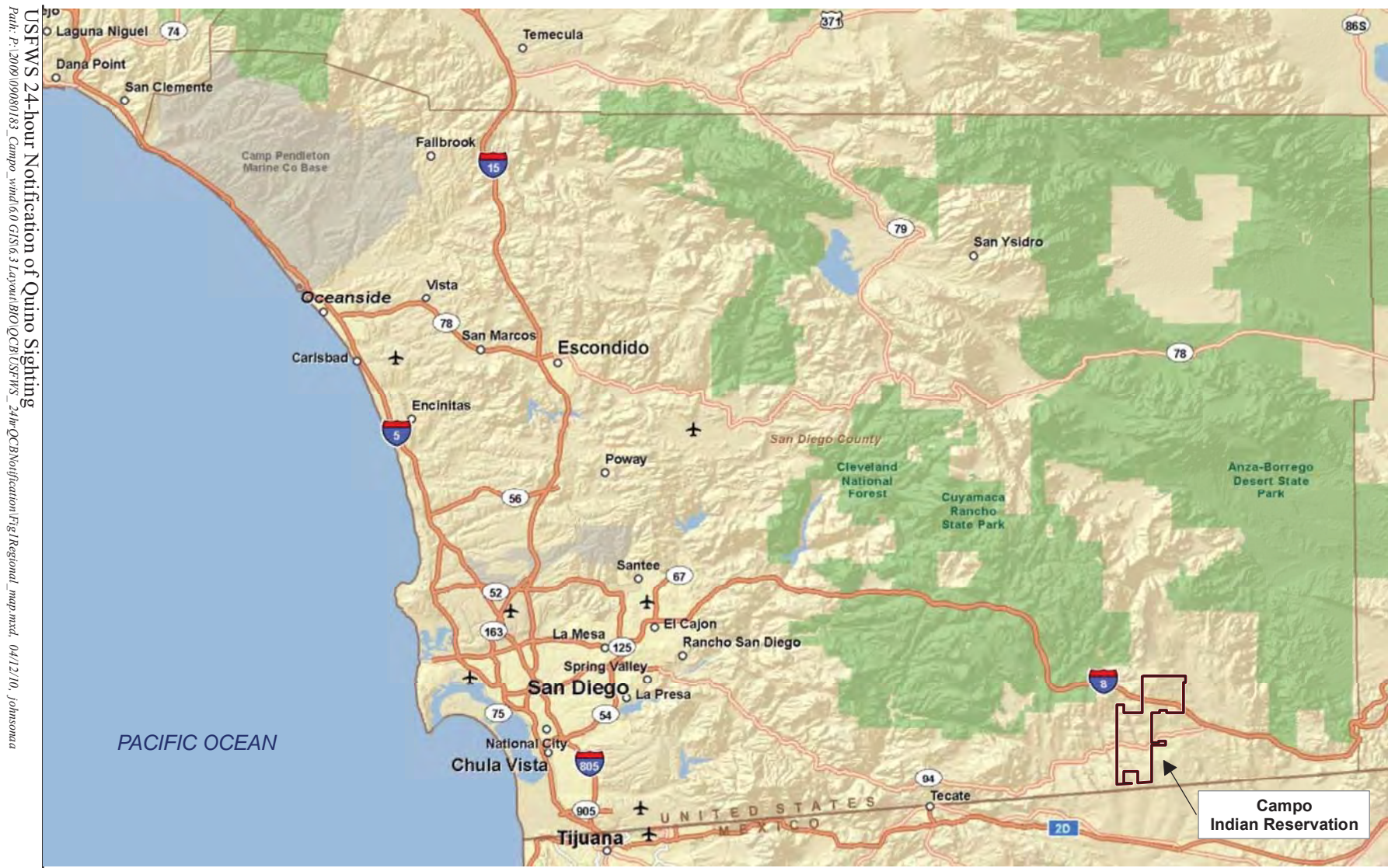
cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60 GIS\6.3 Layout\BRO\OCB\USFWS_24hr\OCBNotificationFig\Regional_map.mxd, 04/12/10, Johnsonma

Source: ESRI 2009

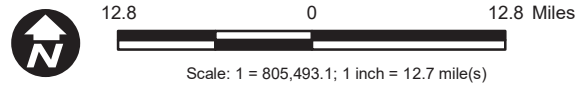
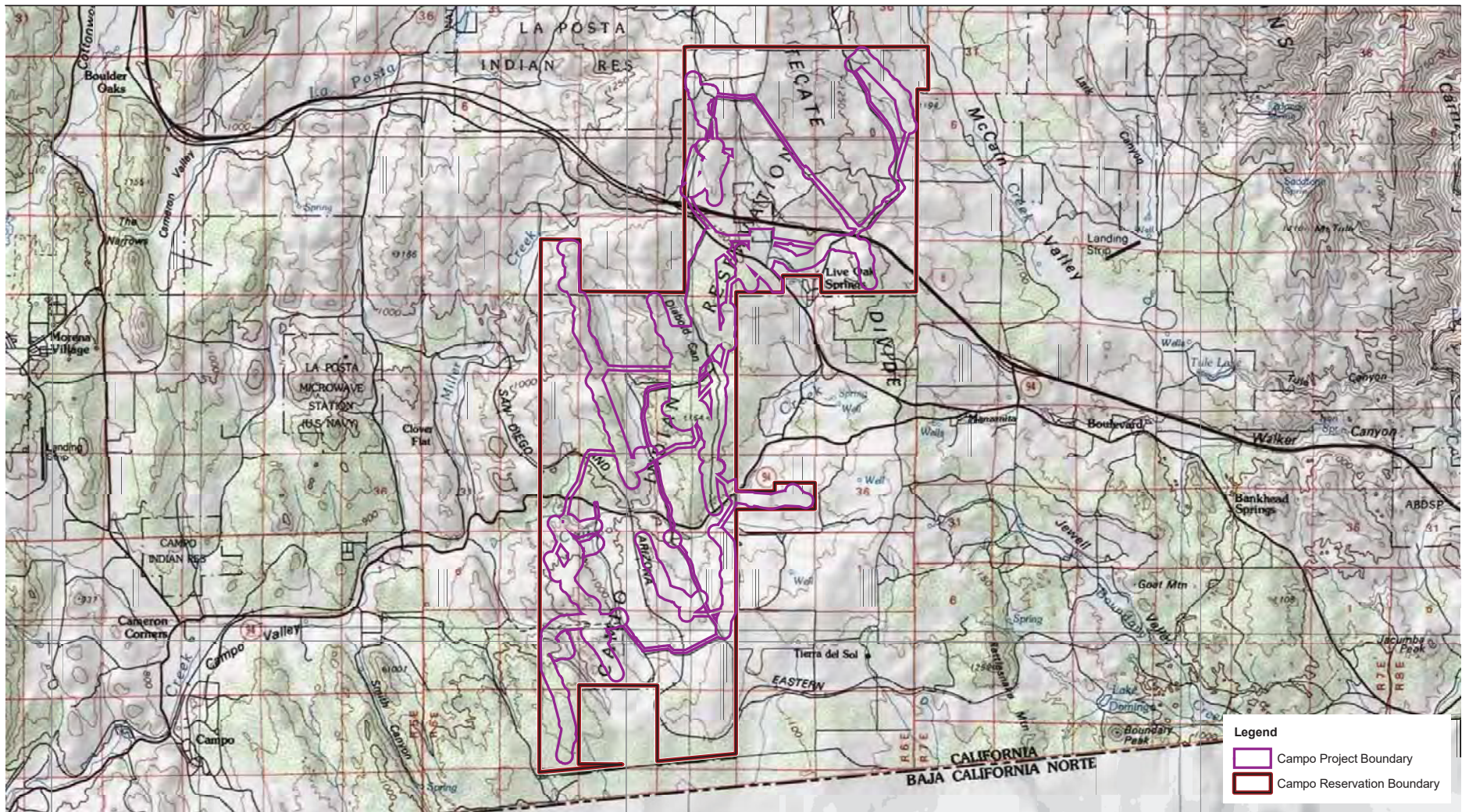


Figure 1
Regional Map



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

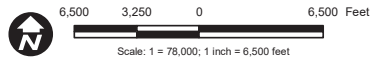
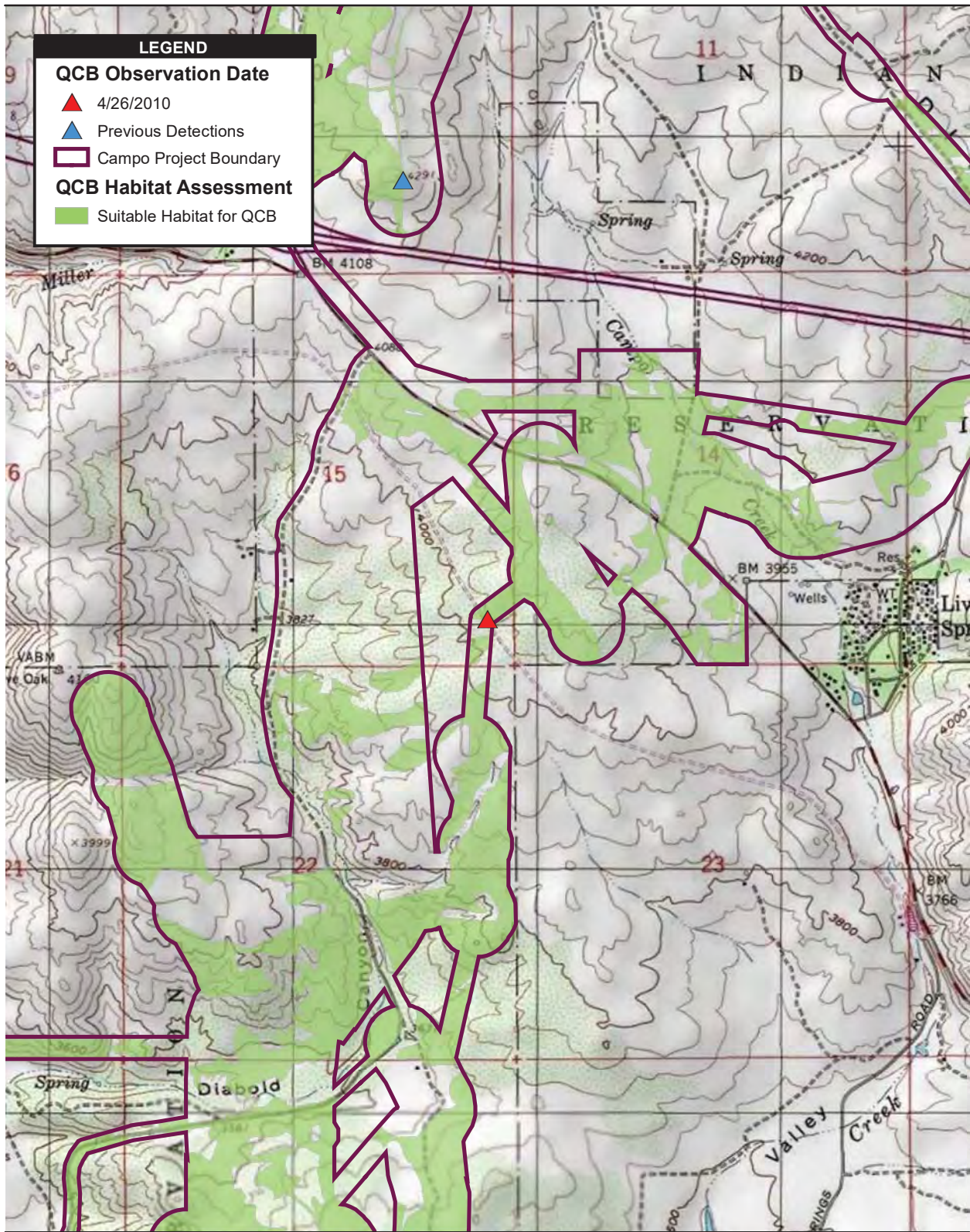


Figure 2
Vicinity Map



Source: DigitalGlobe 2008; SDG&E 2010

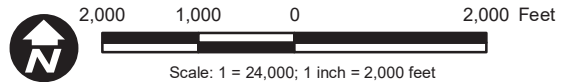


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation7_20100426.mxd, 04/26/10, johnsonaa

APPENDIX F.7
04/26/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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

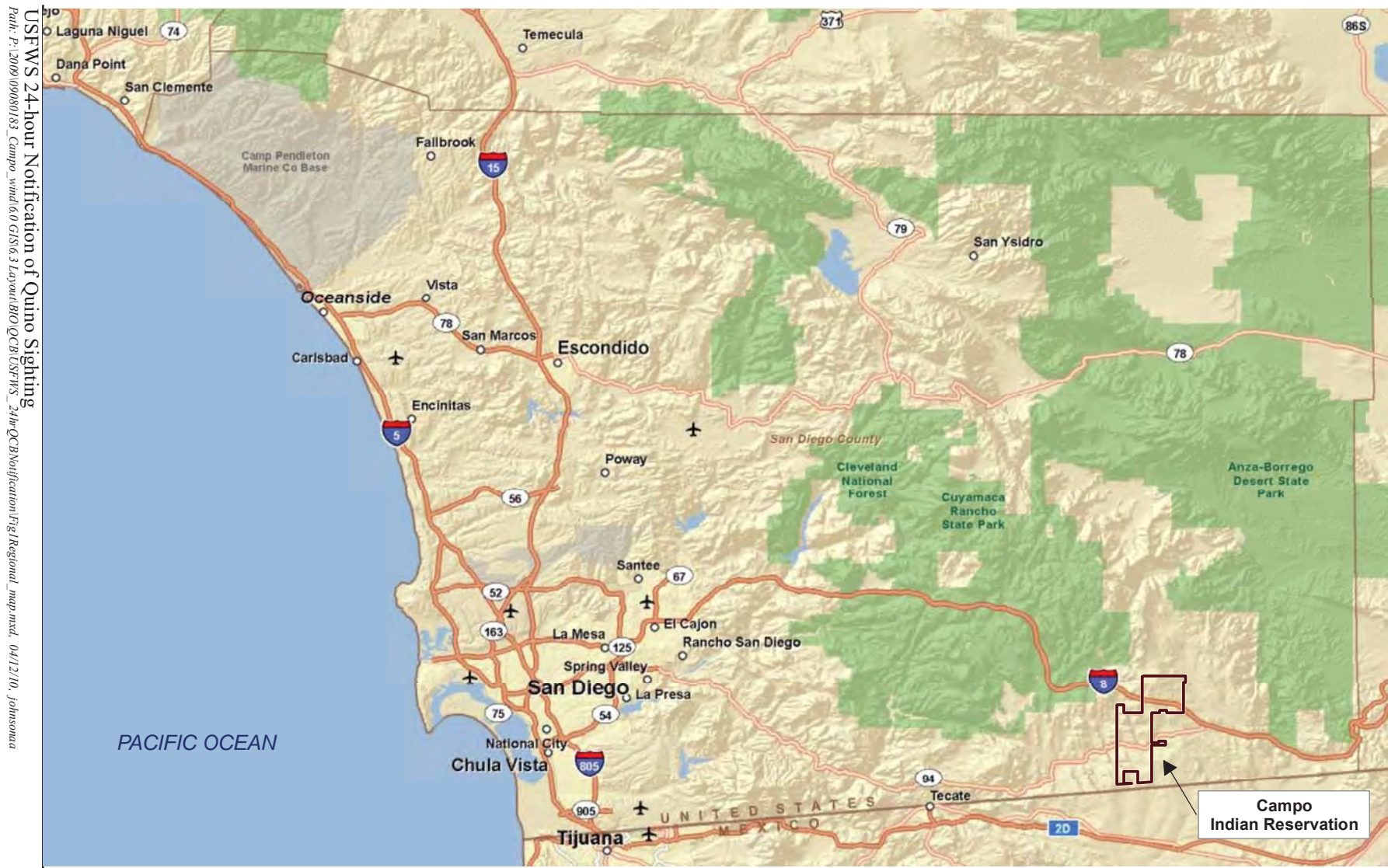
cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60 GIS\6.3 Layout\BRO\OCB\USFWS_24hr\OCBNotificationFig\Regional_map.mxd, 04/12/10, Johnsonma

Source: ESRI 2009

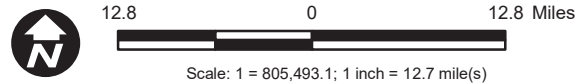
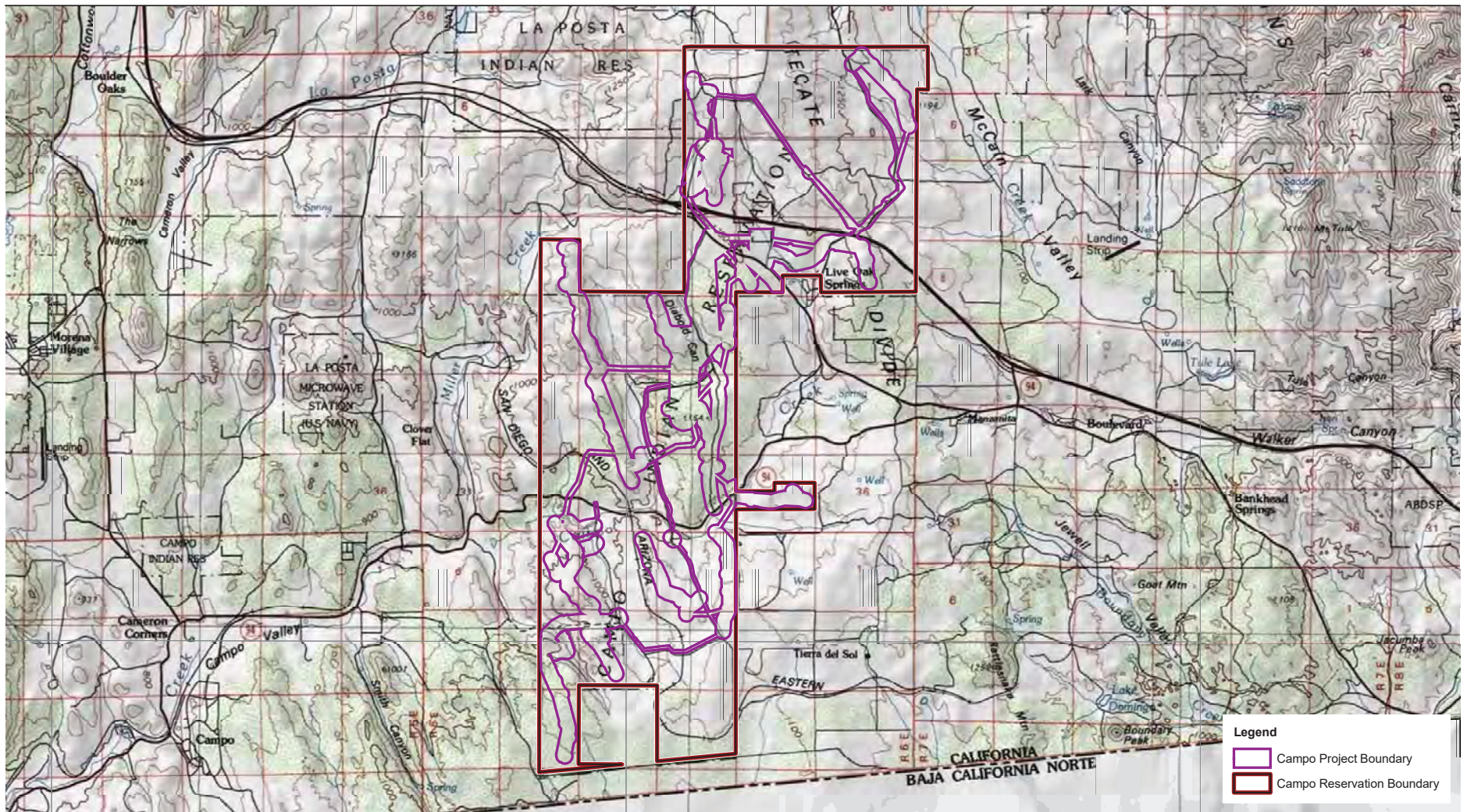


Figure 1
Regional Map



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

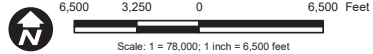
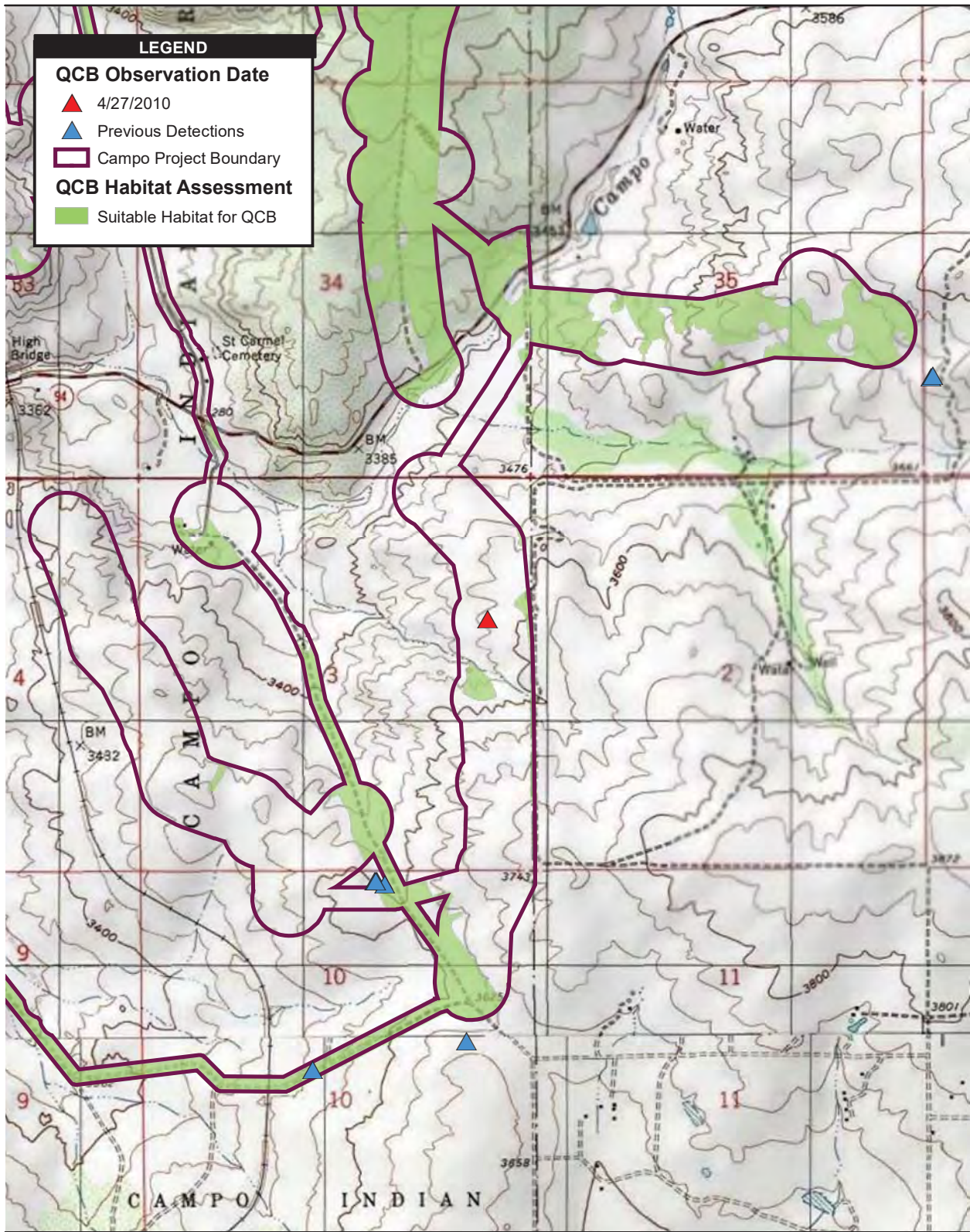


Figure 2
Vicinity Map



Source: DigitalGlobe 2008; SDG&E 2010

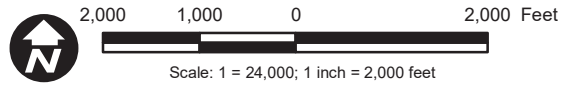


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation8_20100427.mxd, 04/27/10, johnsonaa

APPENDIX F.8
04/27/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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. Additionally, 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 conducting 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

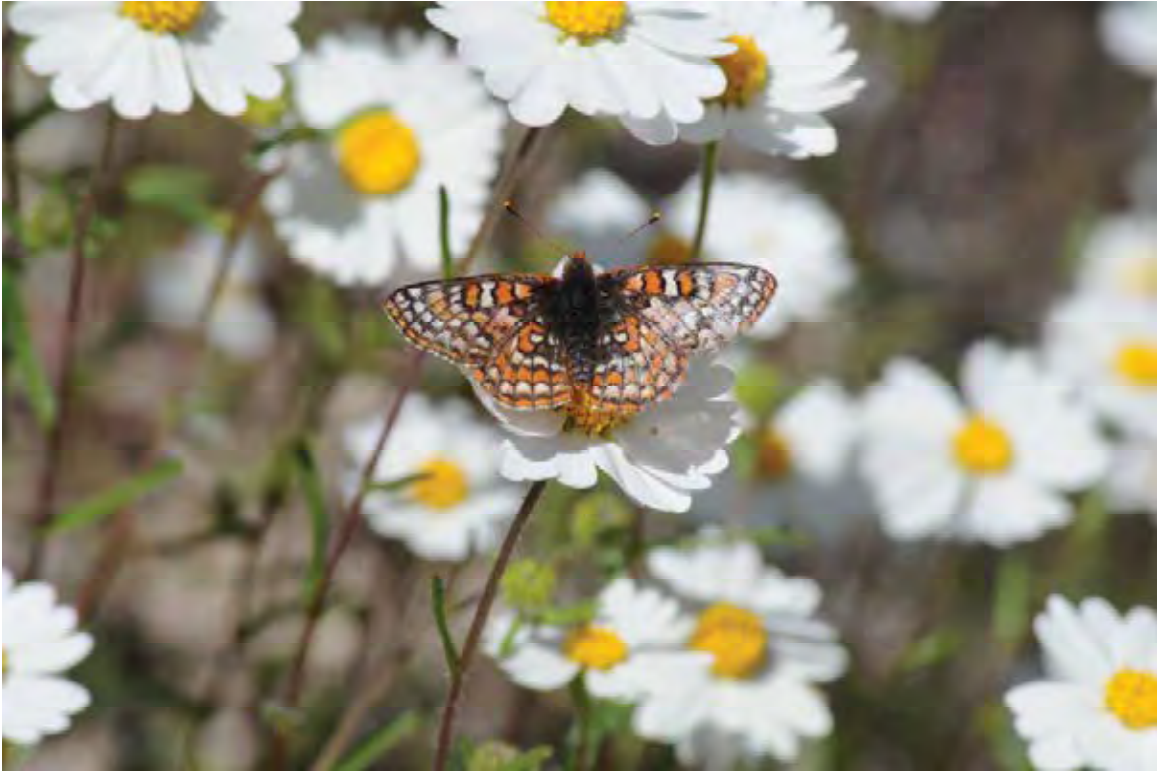


Photo 5



Photo 6



APPENDIX F.9
05/01/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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

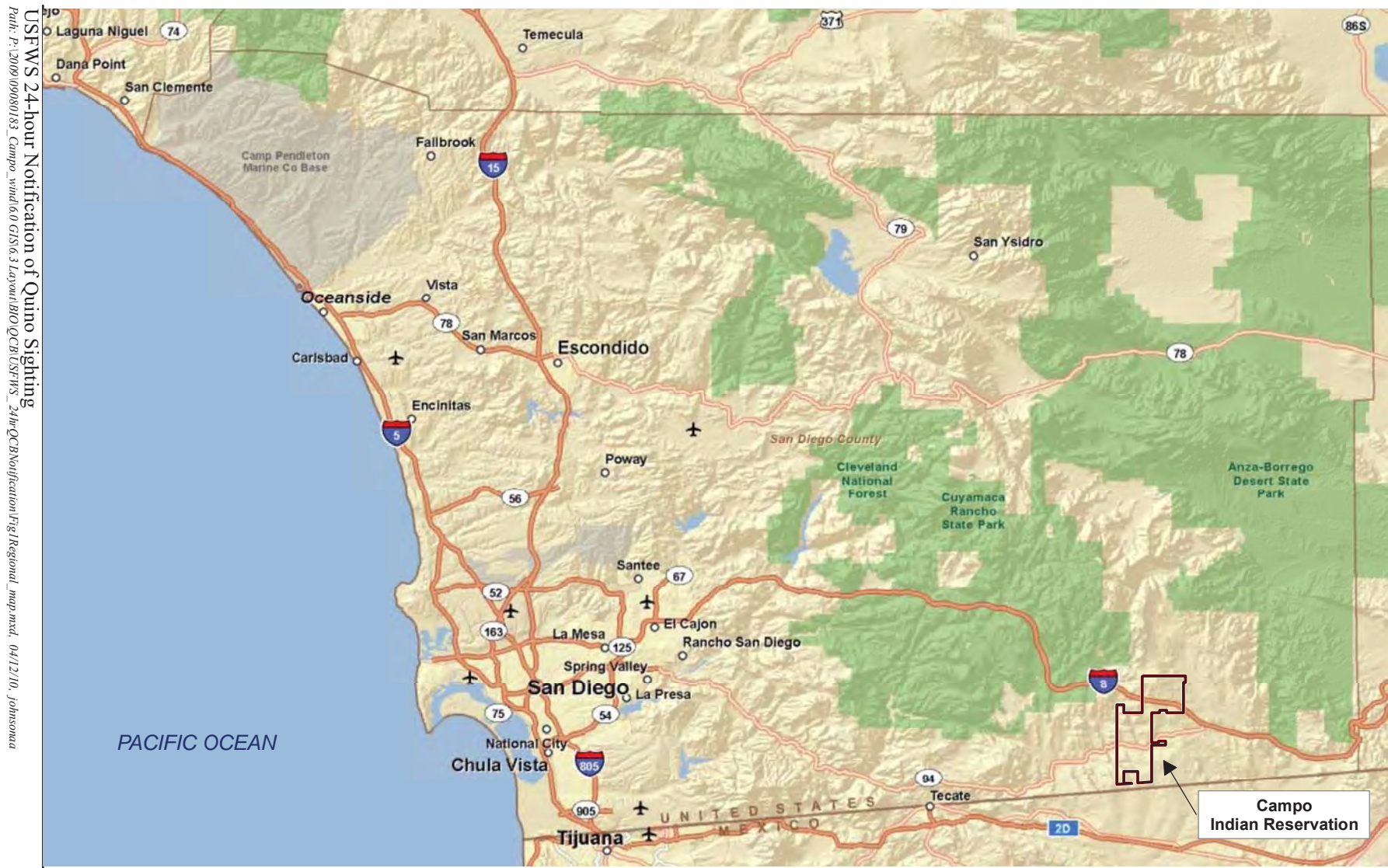
cc: Eric Porter, USFWS
Alison Anderson, USFWS
Kelly Meyer, Invenergy
Monique LaChappa, Chairwoman, Campo Kumeyaay Nation
Deanna Leon, President, Muht-Hei Inc.
Lisa Gover, Campo EPA
Denise Turner Walsh, Campo Tribal Attorney

Photo 1



Photo 2





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60 GIS\6.3 Layout\BRO\OCB\USFWS_24hr\OCB\notification\Fig1\Regional_map.mxd, 04/12/10, Johnsonma

Source: ESRI 2009

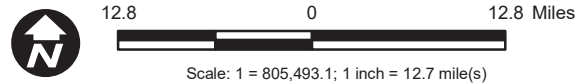
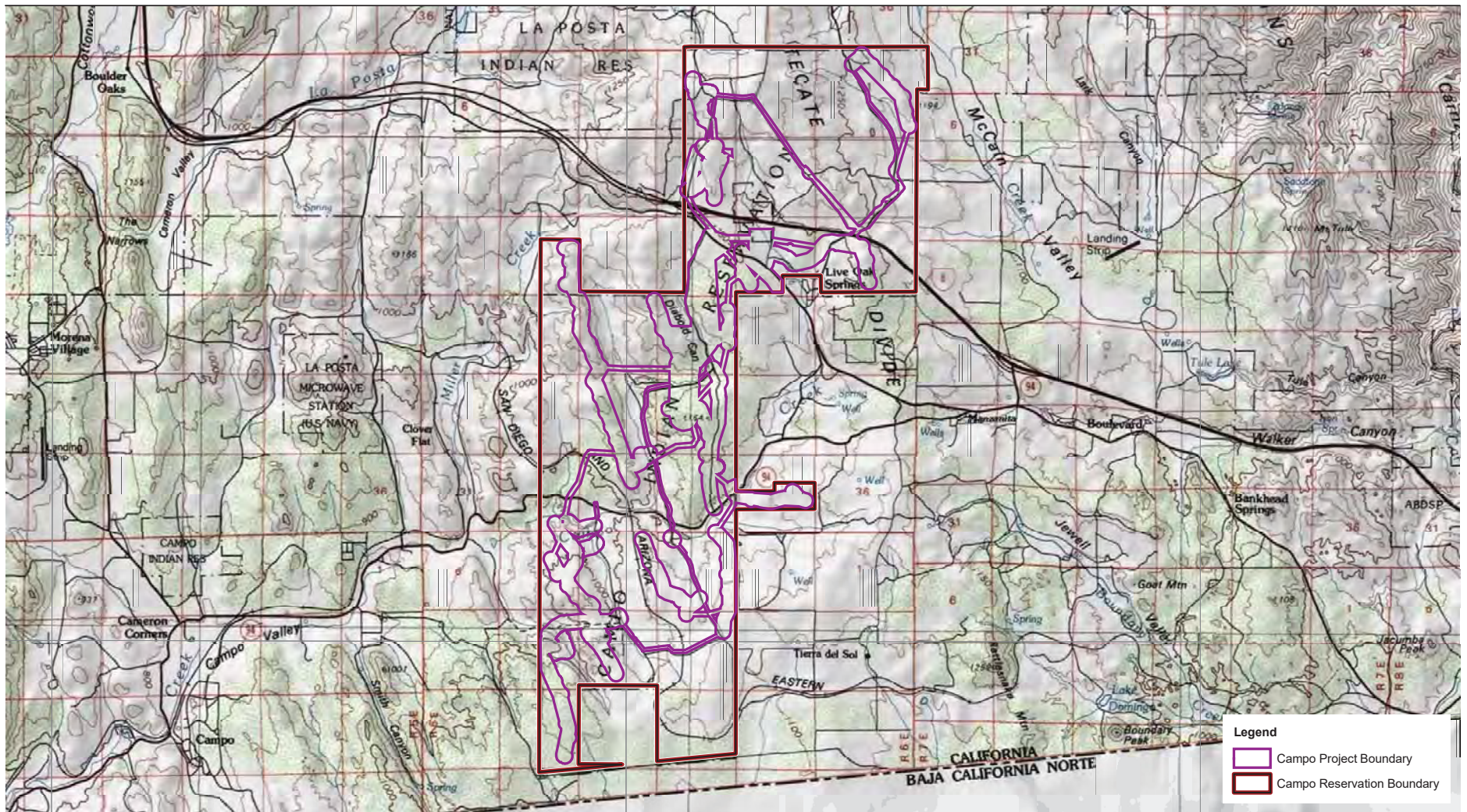


Figure 1
Regional Map



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

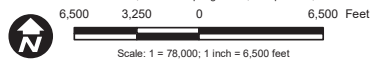
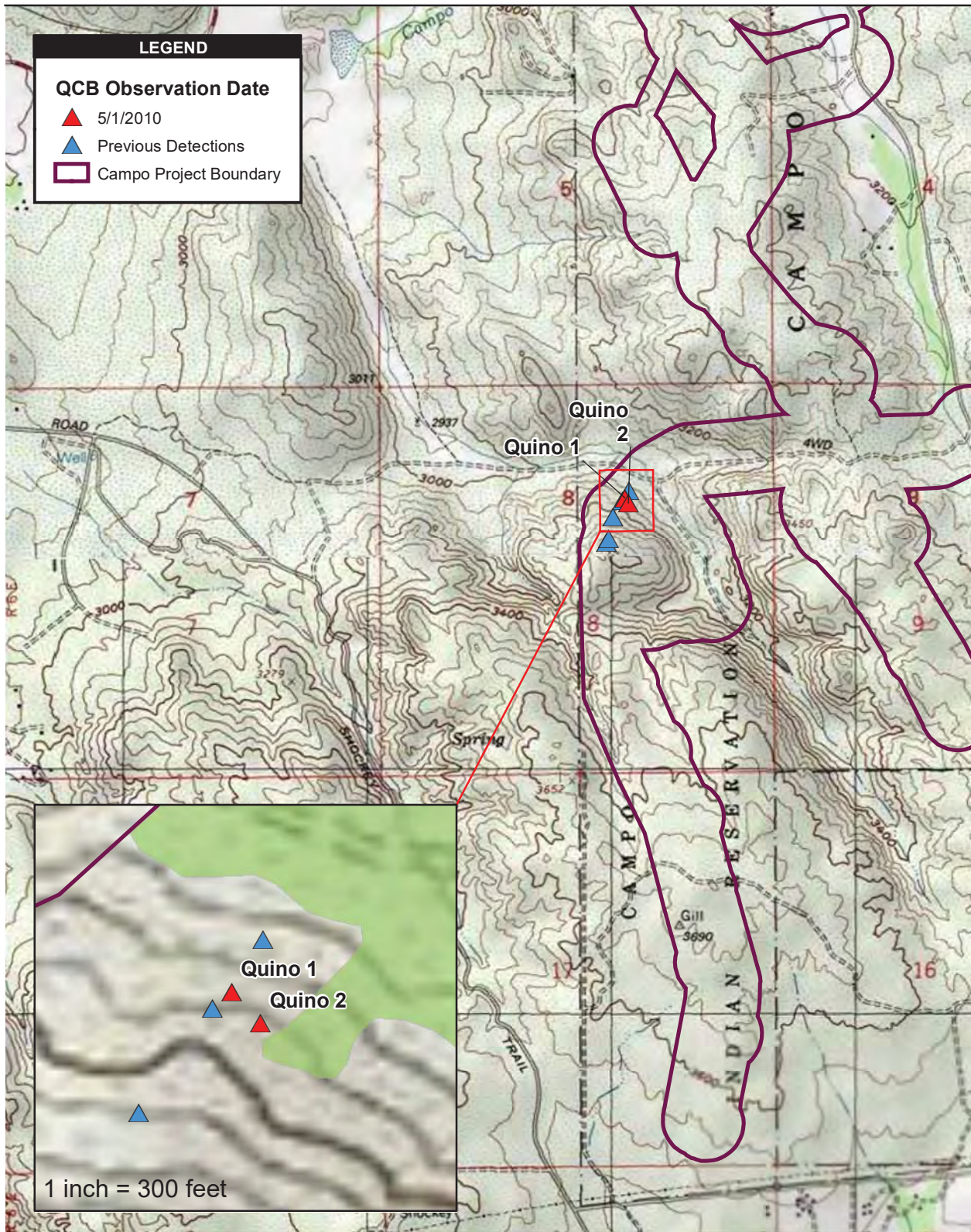


Figure 2
Vicinity Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0_GIS\6.3_Layout\BIO\QCB\USFWS_24hrQCBNotification\Fig2Vicinity.mxd, 04/12/10, johnsona



Source: DigitalGlobe 2008; SDG&E 2010

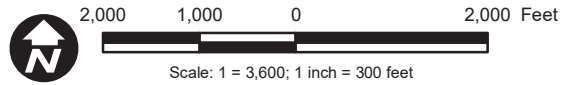


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation10_20100503.mxd, 05/03/10, johnsona

APPENDIX F.10
05/06/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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, 2010, 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

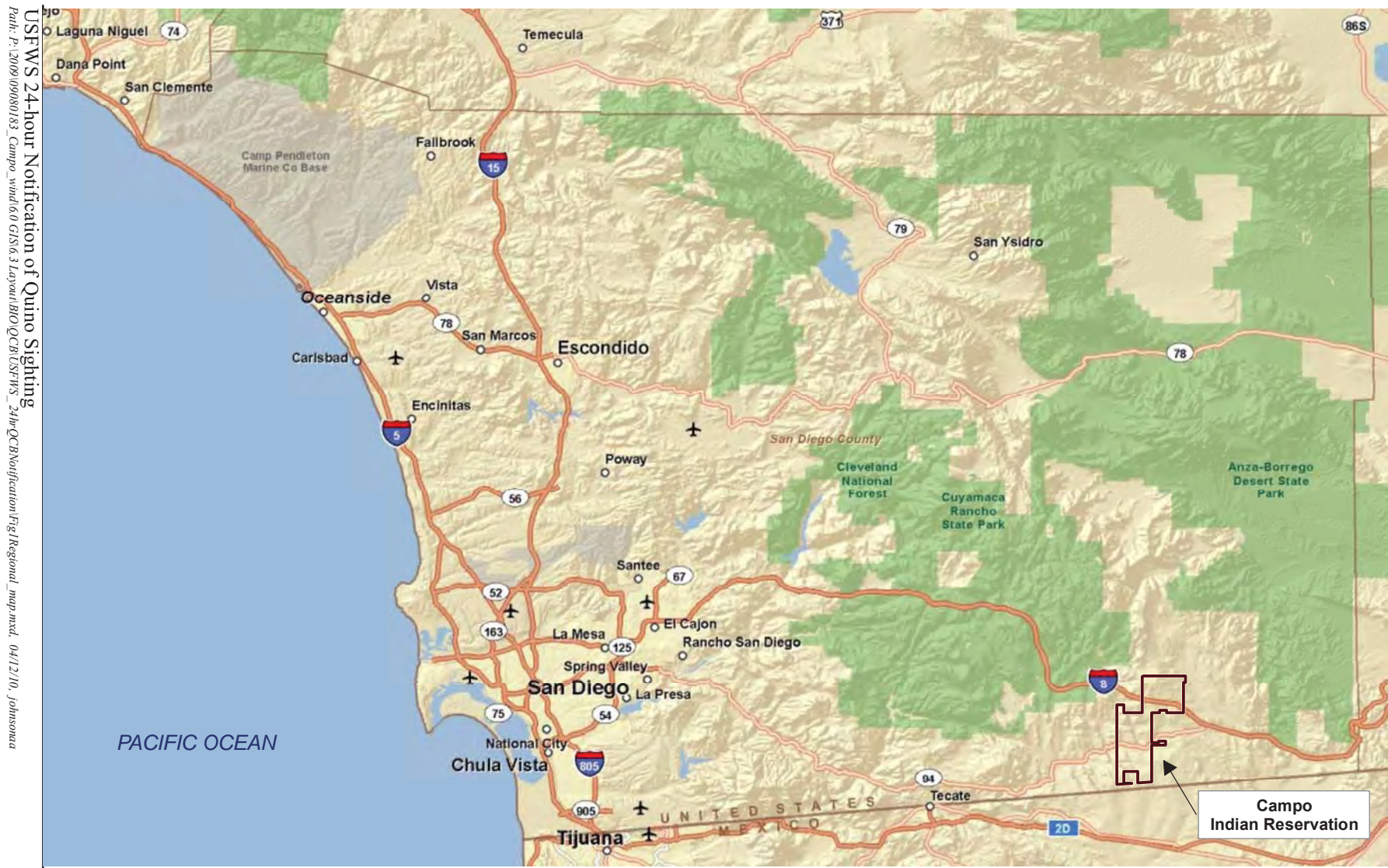


Photo 3



Photo 4





USFWS 24-hour Notification of Quino Sighting
 Path: P:\2009\09\08\0183_Campo_mind\60\GIS\6.3\Layout\BRO\OC\B\USFWS_24hr\OC\B\notification\Fig\Regional_map.mxd, 04/12/10, Johnsonma

Source: ESRI 2009

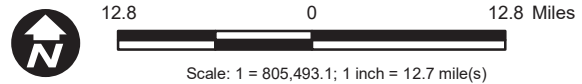
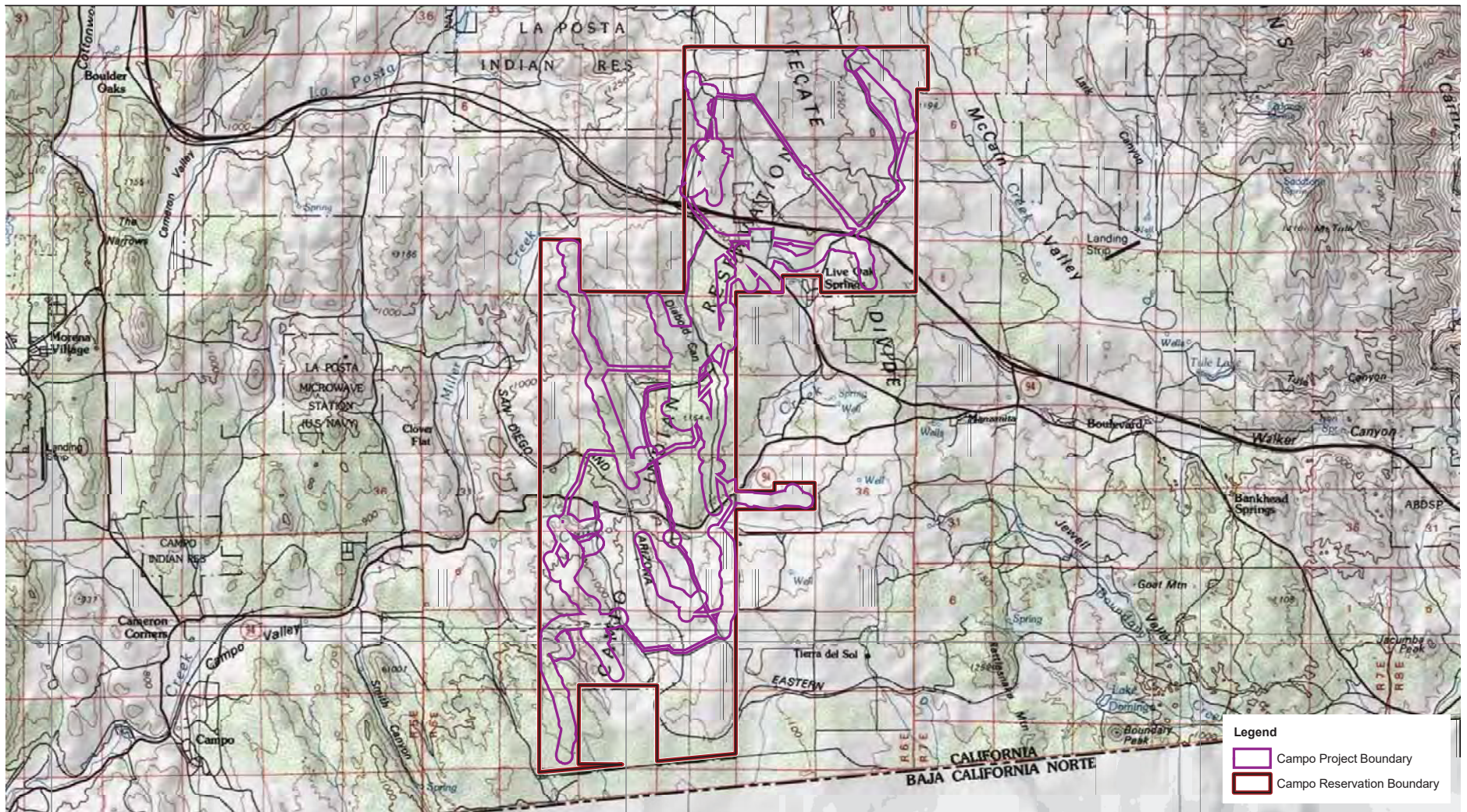


Figure 1
Regional Map



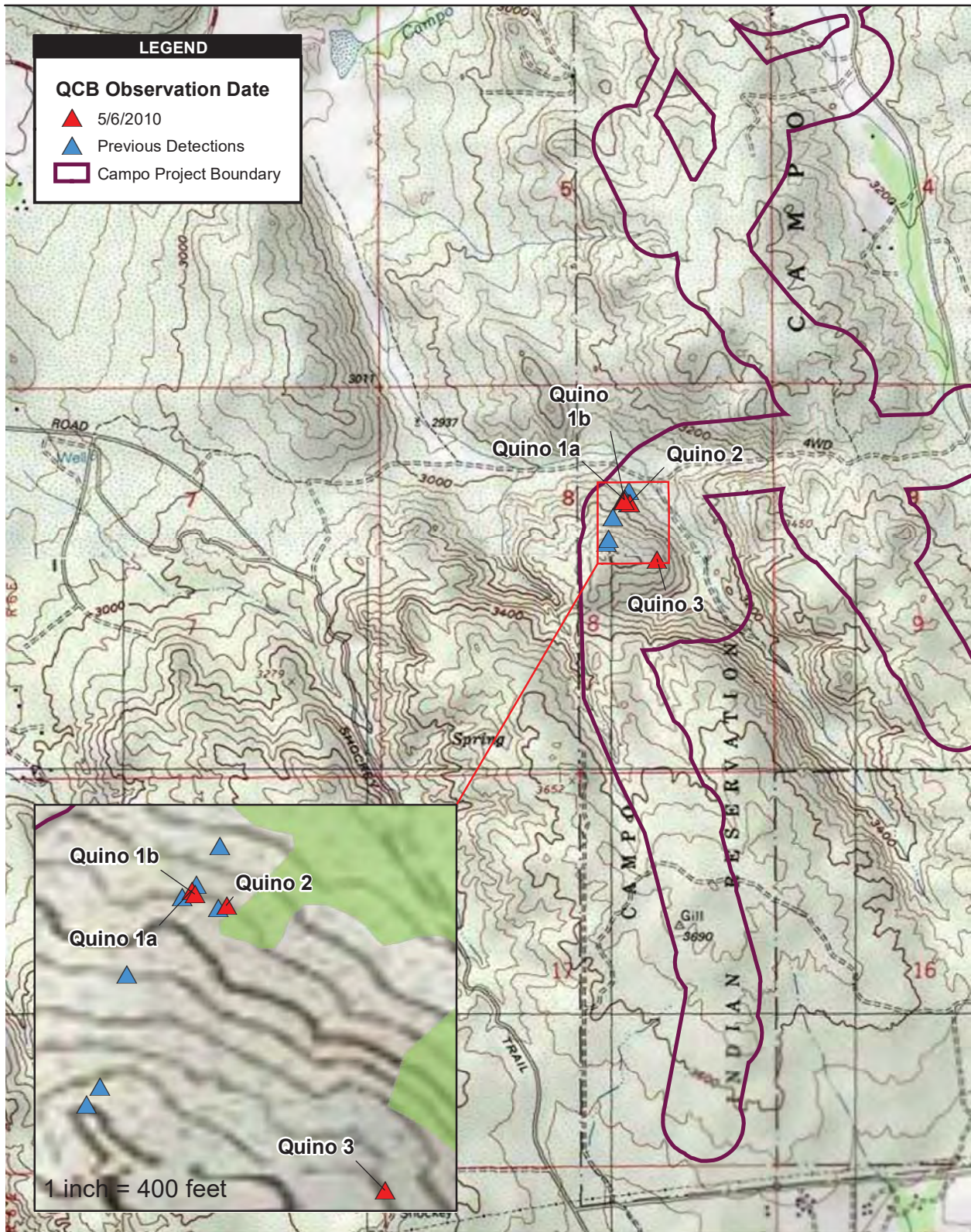
Source: Tierra del Sol 1959; Live Oak Springs 1975; Campo 1959; Cameron Corners 1988

6,500 3,250 0 6,500 Feet



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

Figure 2
Vicinity Map



Source: DigitalGlobe 2008; SDG&E 2010; AECOM 2010

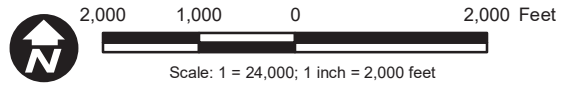


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation11_20100506.mxd, 05/10/10, johnsona

APPENDIX F.11
05/07/2010 24-HOUR NOTIFICATION LETTER TO USFWS

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 butterfly. A photograph of the sighting location is provided (Photo 1).

This Quino was north of a hill and across a drainage from 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,



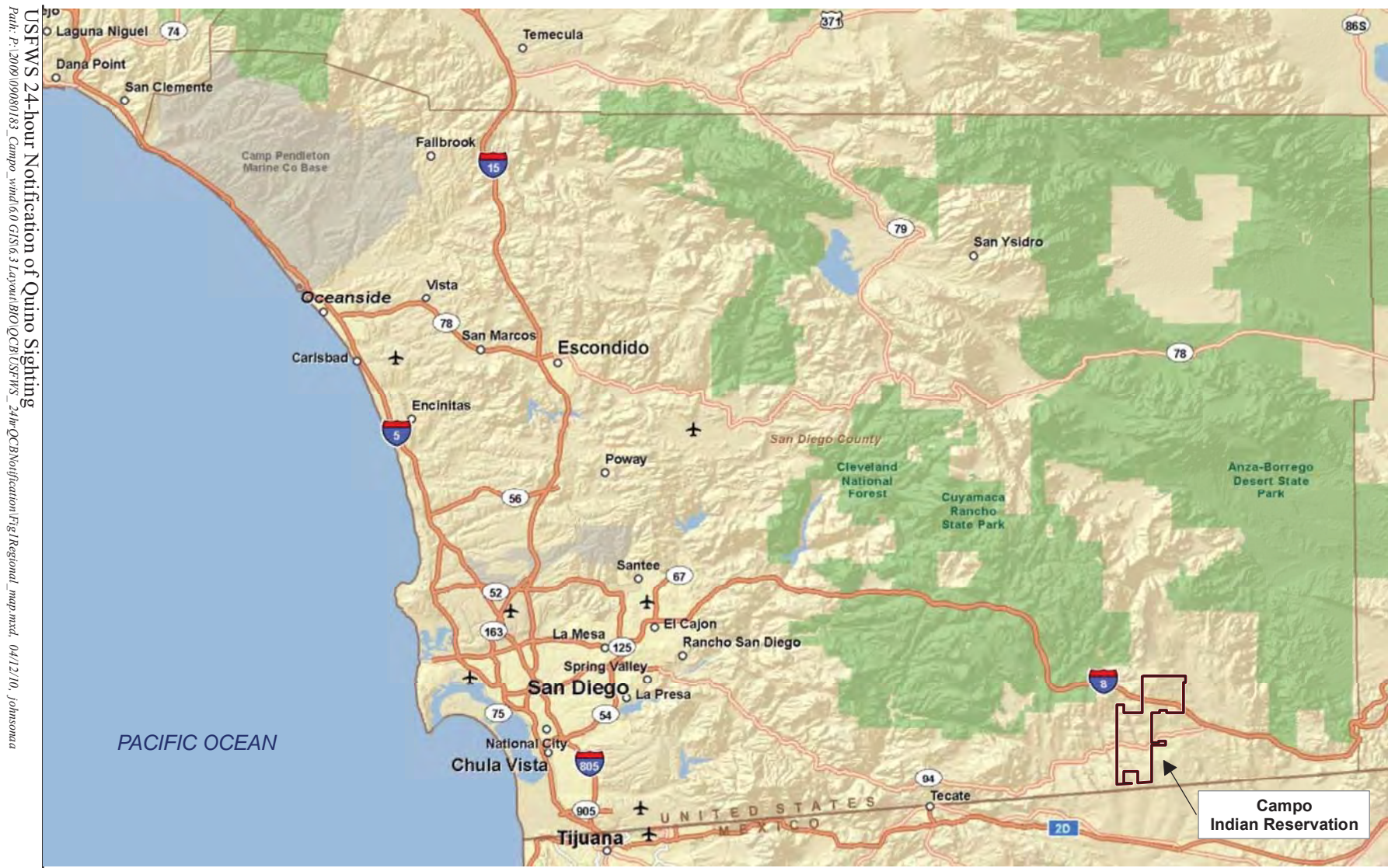
Barbra Calantas
Wildlife Biologist

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 Quirio Sighting
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Source: ESRI 2009

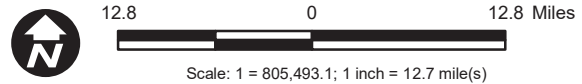
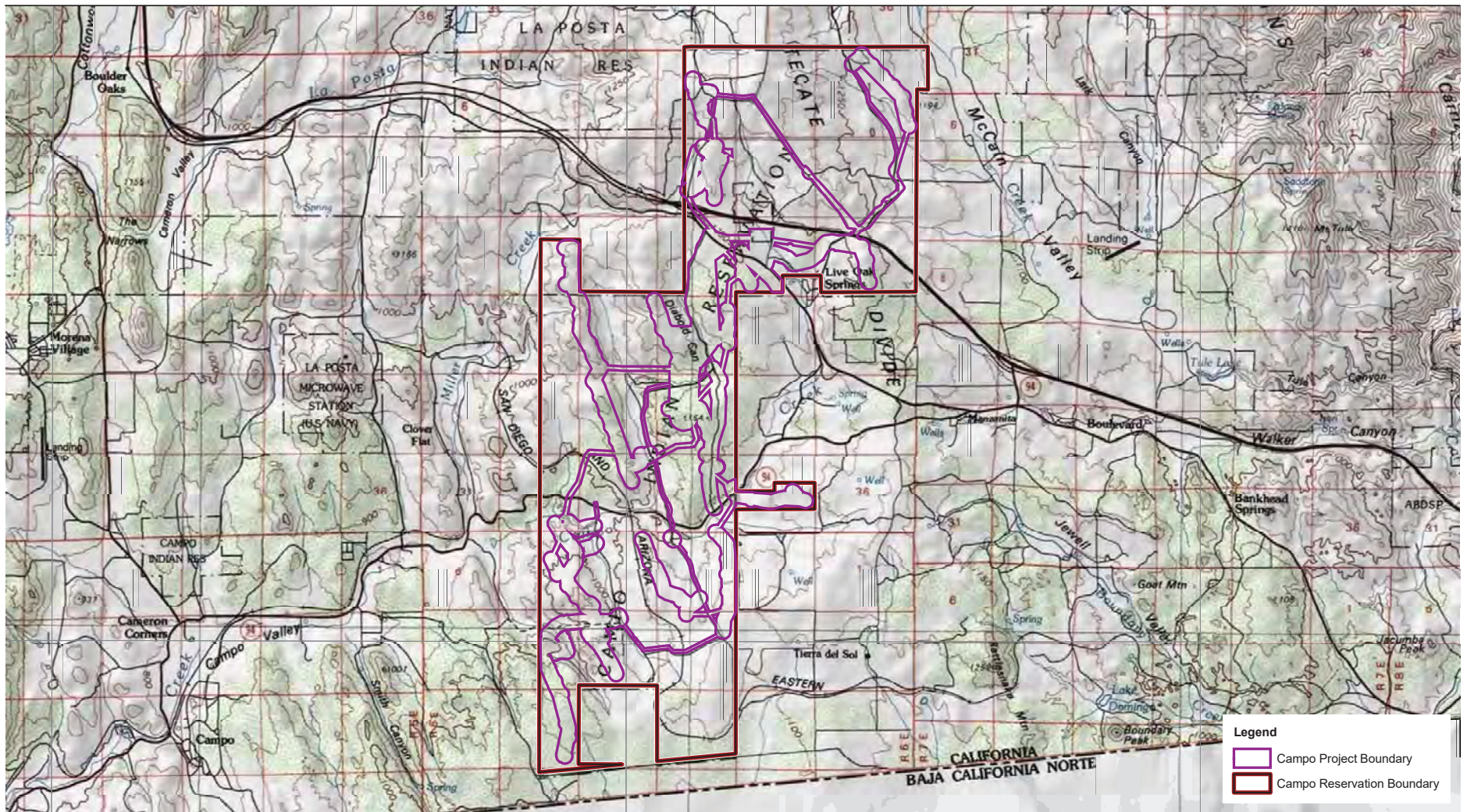


Figure 1
Regional Map



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

6,500 3,250 0 6,500 Feet

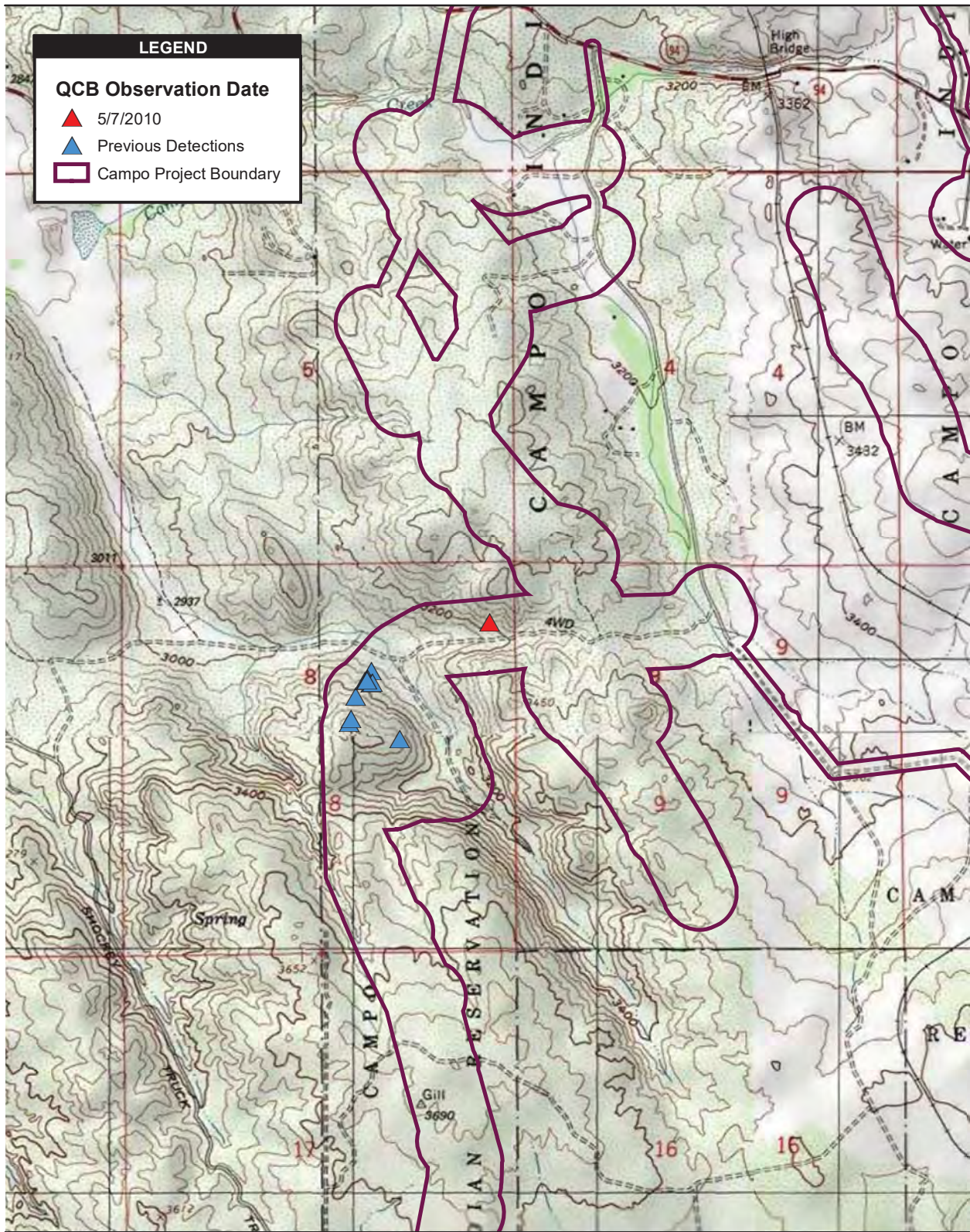


Scale: 1" = 78,000'; 1 inch = 6,500 feet

Legend

- Campo Project Boundary
- Campo Reservation Boundary

Figure 2
Vicinity Map



Source: DigitalGlobe 2008; SDG&E 2010; AECOM 2010

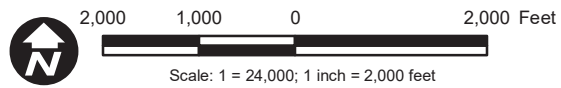


Figure 3
Quino Detection Location Map

USFWS 24-hour Notification of Quino Sighting

Path: P:\2009\09080183_Campo_wind\6.0 GIS\6.3 Layout\BIO\QCB\USFWS_24hrQCBNotification\QCB_observation12_20100507.mxd, 05/10/10, johnsona

APPENDIX B-2

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

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-leaved 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*, *Sisyrinchium*, *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 rigput 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))	
<i>Week 1</i>						
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

Recovery Permit Coordinator

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

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
<i>Week 2</i>						
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
<i>Week 3</i>						
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
<i>Week 4</i>						
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

Recovery Permit Coordinator

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

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
<i>Week 5</i>						
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.

Recovery Permit Coordinator

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

Table 4
Butterflies Observed on Site

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

Table 4
Butterflies Observed on Site

Scientific Name	Common Name	Week				
		1	2	3	4	5
<i>Riodinidae</i> – Metalmarks						
<i>Apodemia virgulti</i>	Behr's metalmark	X	X	X	X	X
<i>Calephelis wrightii</i>	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 Plants¹

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

Recovery Permit Coordinator

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

Table 5
QCB Larval Food and Adult Nectar Plants¹

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

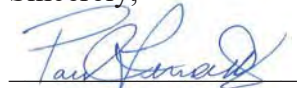
¹ List derived from Mattoni et al. 1997; USFWS 2002a, USFWS 2002b; USFWS 2003 (for *Euphydras editha*)

² Plants listed in bold print are known QCB larval host plant species.

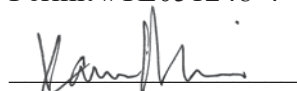
Dudek certifies that the information in this survey report and attached exhibits fully and accurately represents the work conducted by the QCB permitted biologists who conducted this focused survey.

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

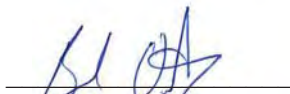
Sincerely,



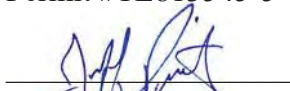
Paul M. Lemons
Permit #TE051248-4



Kam J. Muri
Permit # TE051250-0



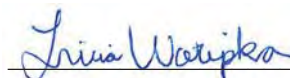
Brock A. Ortega
Permit #TE813545-5



Jeffrey D. Priest
Permit #TE840619-2



Anita M. Hayworth
Permit #TE781084

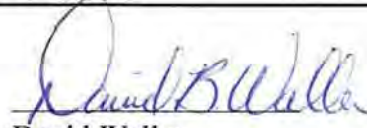


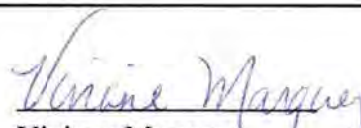
Tricia L. Wotipka
Permit # TE840619-2

Recovery Permit Coordinator

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


Vipul R. Joshi
Permit # TE019949-0


David Waller
Permit #TE025394-2


Viviane Marquez
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

Recovery Permit Coordinator

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

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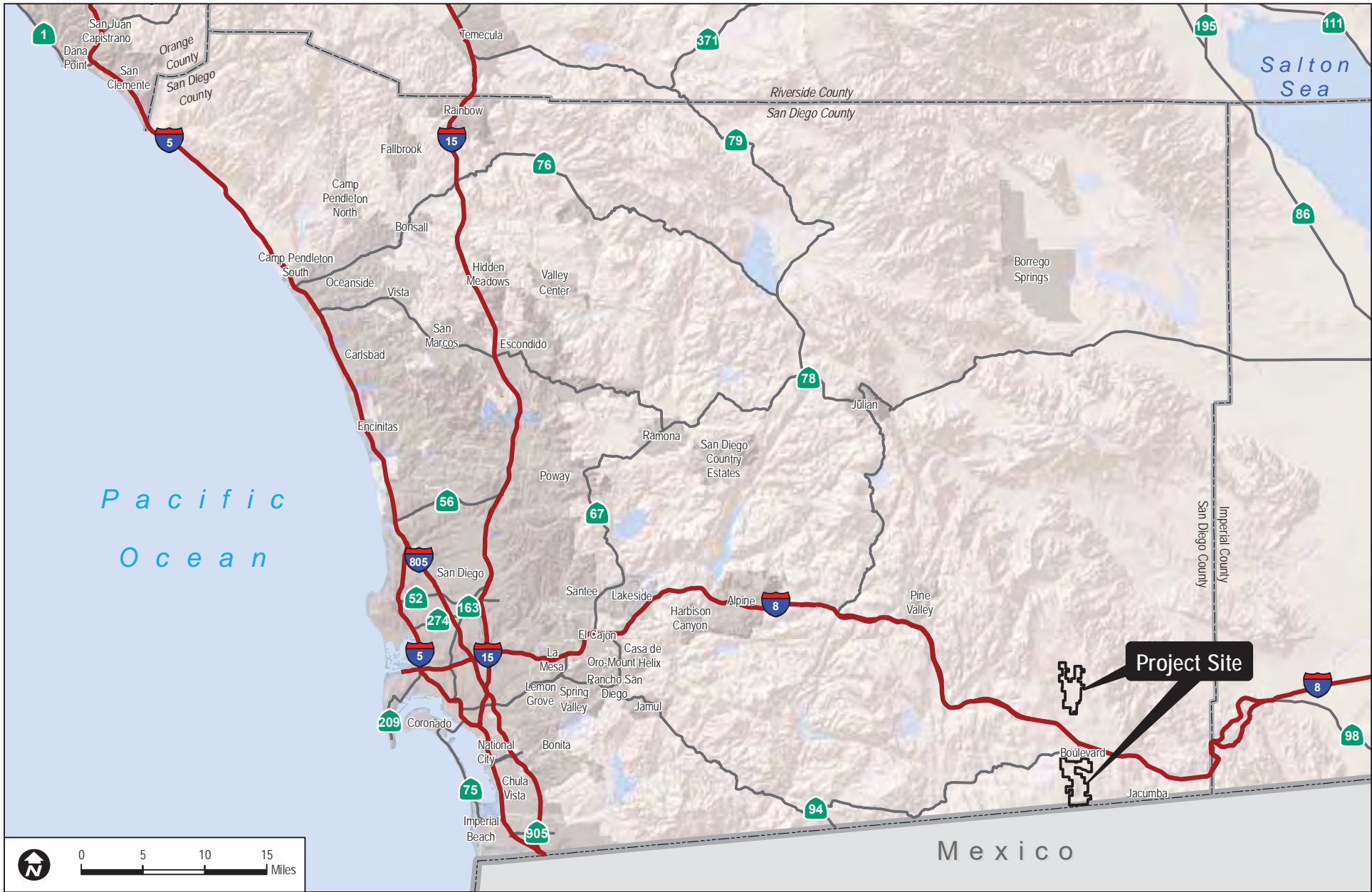
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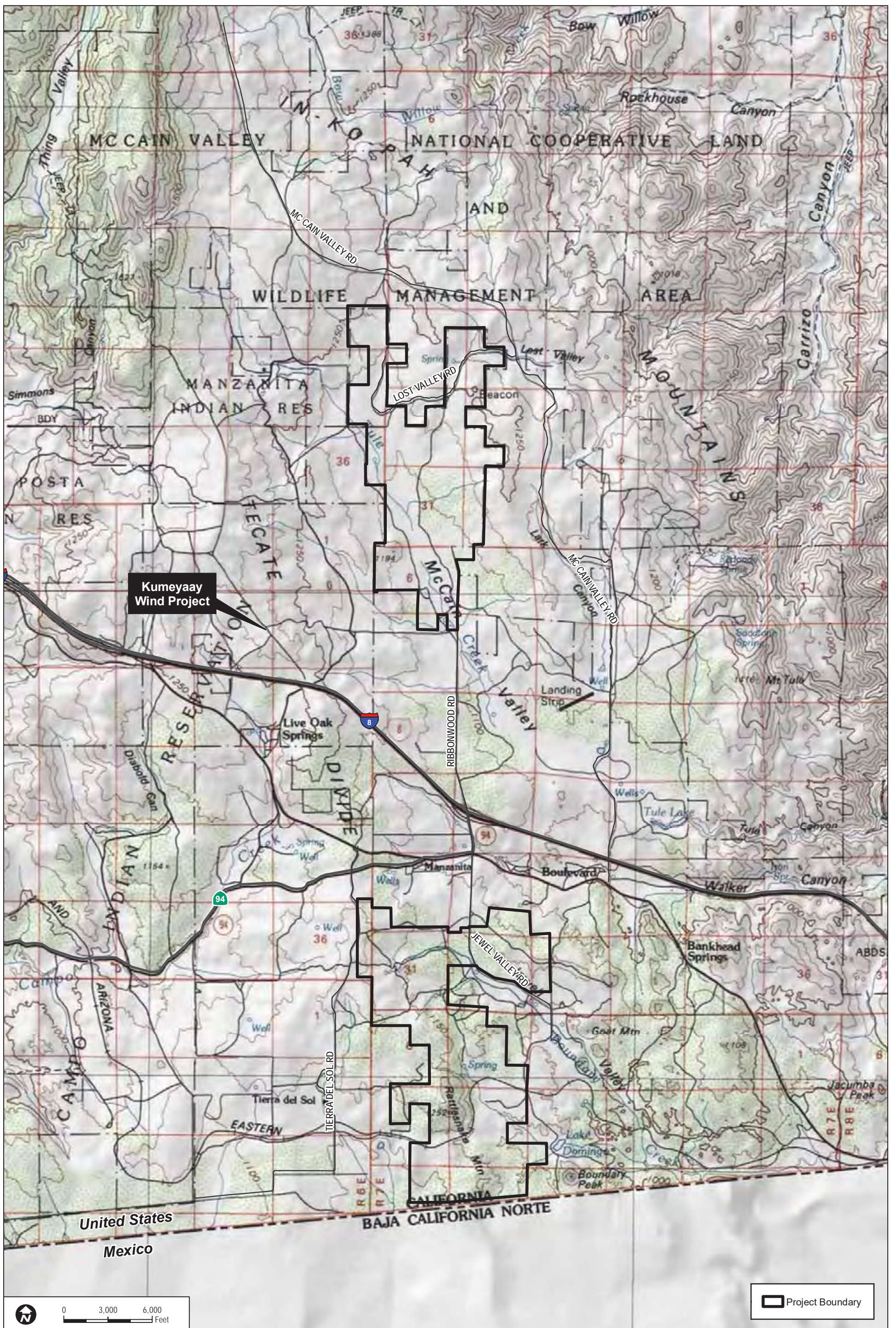
USFWS. 2003. *Recovery Plan for the Quino Checkerspot Butterfly (Euphydryas editha quino)*. Portland, Oregon. August 11.




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6759-4.7

FIGURE 1
Regional Map



 Project Boundary

0 3,000 6,000 Feet

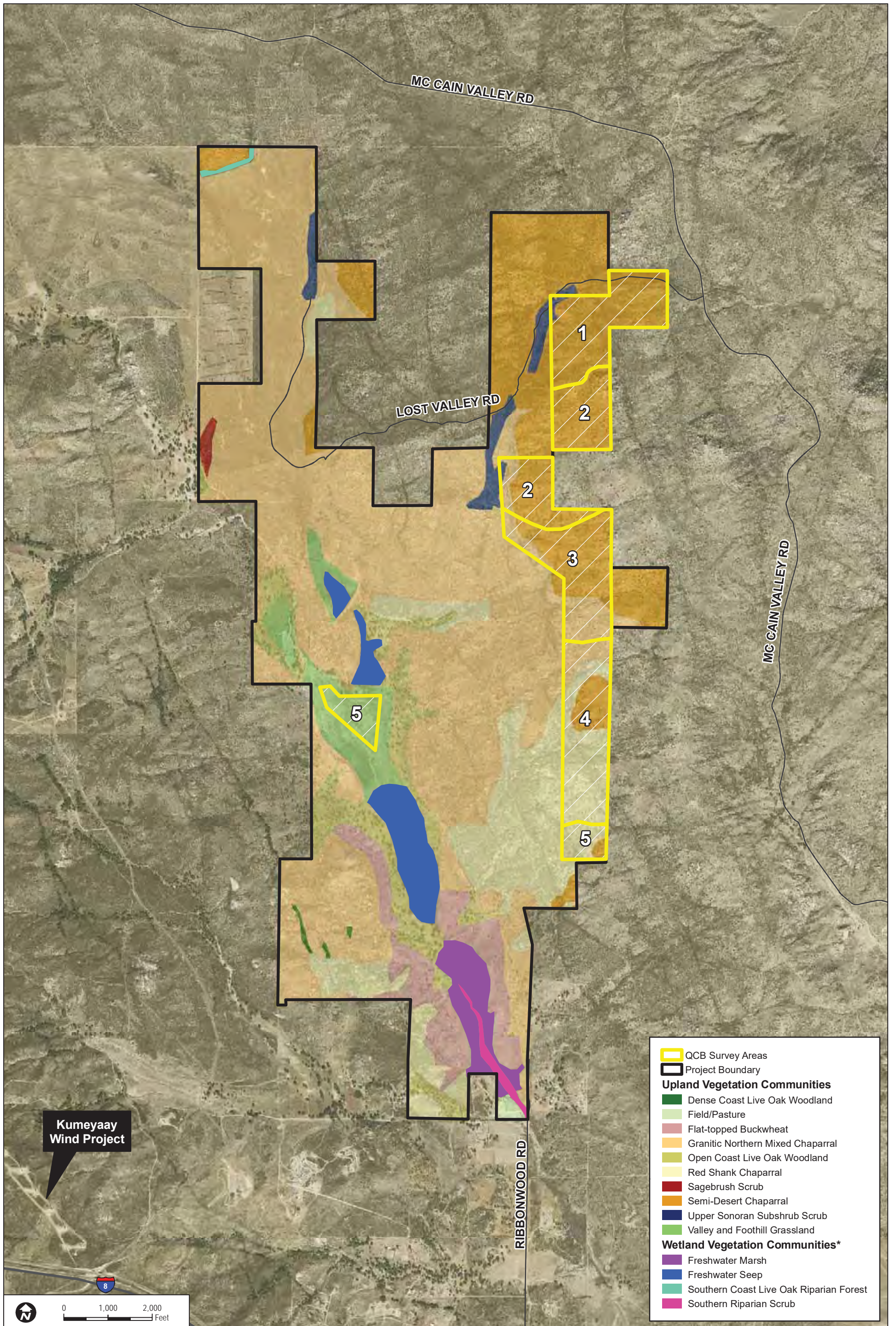
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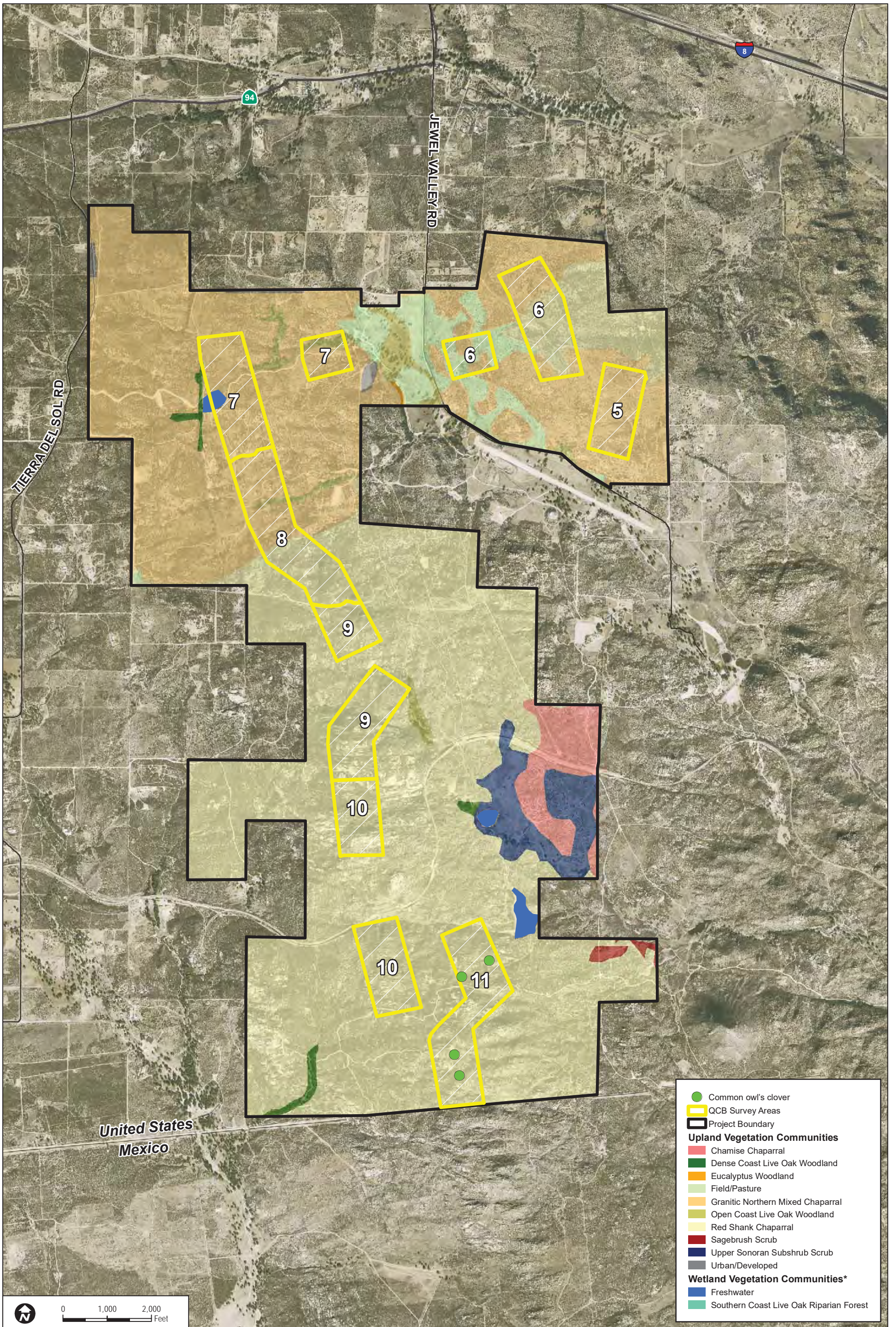
SOURCE: Digital Globe 2008
SANGIS 2010

6759-4.7

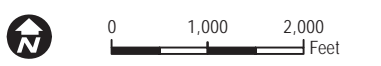
2011 Focused Quino Checkerspot Butterfly Survey Report for the Jewell Valley Wind Project

FIGURE 2
Vicinity Map





- Common owl's clover
- QCB Survey Areas
- Project Boundary
- Upland Vegetation Communities**
- Chamise Chaparral
- Dense Coast Live Oak Woodland
- Eucalyptus Woodland
- Field/Pasture
- Granitic Northern Mixed Chaparral
- Open Coast Live Oak Woodland
- Red Shank Chaparral
- Sagebrush Scrub
- Upper Sonoran Subshrub Scrub
- Urban/Developed
- Wetland Vegetation Communities***
- Freshwater
- Southern Coast Live Oak Riparian Forest



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SOURCE: Digital Globe 2008
SANGIS 2010

FIGURE 4
Biological Resources Map with Quino Survey Areas - South

6759-4.7

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

APPENDIX A (Continued)

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

APPENDIX A (Continued)

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

- Apelocoma 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

- Poliotila 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

APPENDIX A (Continued)

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

APPENDIX A (Continued)

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

Peromyscus 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

APPENDIX A (Continued)

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
- Papilio 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

APPENDIX A (Continued)

***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

APPENDIX A (Continued)

INTENTIONALLY LEFT BLANK

APPENDIX B

2011 Jewell Valley QCB Survey Field Notes

AMTB

3/11/2011
0805 1100 1400 Jewel Valley
64 75 81 OLB
3-5 MPH 8 MPH 6-10 Area
Clear Clear Clear

WESTA deer poop + tracks
CAQU BUSH
WCSP BEWR

CORA
CATH
USSO

RIHA-overhead
WISW flyover
WREN
SPTD

CATD

Funereal type (skipper) IIII many

Wht + black (skipper) 1

blue (marine) 1

Brown (w/ light's metalmark) IIII

White (Becker's) IIII

moth - underwing w/ yellow spots ~10

Behr's Metalmark IIII 111

S. Blue III

Acmon Blue 1

"underwing" moth 1/3 ~15
harford's 1

AMH

0945 Jewel Valley
 64 grad 3/18/2011
 60 di Area 2
 high wispy (sun's intermittent) PCB Survey
 1-3 MPH

WSJA	Pactreeing
CAQU	BTSP
COQA	CAH
LEGO	Kingbird sp (Laorwe- flowby)
BUSH	WCSP
HAH	BEWR
SPTD	RHA (on nest in dead tree)
CARD	DEJU
CATH	

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

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

Stopped recording metalmarks
 they are quite numerous

End
 1515
 64F
 5-10MPH,
 quots to 15
 clear

Behr's metalmark	+++		many
Emerald type			
Perplexing hairstreak			
Blackspotted moth	+++		
Common white			
Western Coast lady			
pale swallowtail			
skipper all black			
Arizon blue			

AMH

0930 4:15 pm 3/29/2011
Clear 80% CC Week 3
3-5 mph 5-8 mph Jewel Valley
64 72° Area 1

UREN	CAQU
CATO	CATH
DPTO	OST
YRWA	BEWR
WSJA	GRRO
BTSP	WCSP
CAWR	TUVU flyover
BTGW	DEJA

Striped racer

Sand O. tip	
White-Becker or Common	1
Bm Elf in	
Perplexing	
Behr's m.m.	 many
Silv. blue	
White-large	
Harford's sulphur	1
Skipper, large black	
Desert marble	
Lady sp.	1
Gynny blue	

AMH

Patches w carpet of annuals
in bloom. popcorn, Lesth

Also patches of erodurus
lot of bare sandy
exp. soil. Also patches
with shrub cover.

Some shrub cover is pretty
dense w stub oak. In

drainage at n. end is
patch of redhawk/chamise

Lots of scrub jays
conditions were excellent
w low wind, sun, warm

temps. Lots of butterfly
activity - many Behr's
(stopped counting)

196

AMH

Site
P

4/1/2011

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

Harford		
Sara Otip		
black skipper		- many
Metal mark, Bew's		- many
Blue, Southern		
Desert marble		
perplexing		
Common white		
Pale swallow tail		
very common - fitting around the bucket		
buckeye		
Blue (demon)		

WKSP	MOBO
WREN	BTSP
CATD	NUWD
SPTD	PIAI
WSJA	THRU
DEJU	CATH
CAQU	ROWR
CORA	SCOR
CAWR	WTSW

small yellow (forgot the name)

3 overhead pretty low

also pretty low

||

Exp list for Bob Murrey
LÖREN

AMtb

lot more whites (common, marble, xara 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

f/2011
2.18.11 Mt. Site
6N + BSASP.

Alot more written / names

AMH

nt. Site
ASP

Spp List for QCB survey

- WREN
- BEWR
- BTSP
- WCSP
- NOFL
- TUVU
- ~~WSJA~~ WSJA
- CAWR
- CORA
- CATIT
- CAQU
- CATO
- SPTO
- GRIRO
- WTSW

SMO
vils

APPENDIX C-1

2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project

July 11, 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 Campo Wind Project, Campo, 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 Campo Wind project located within the community of Campo, San Diego County, California. This report is intended to satisfy reporting requirements for the following Quino-permitted biologists: Anita Hayworth (TE-781084-9.1), Callie Amoaku (TE-36118B-1), Darin Busby (initially working under Melissa Busby's permit until permit renewal of TE-115373-4), 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), Melissa Busby (TE-0807792-3), Patricia Schuyler (TE-27502B-1), Paul M. Lemons (TE-051248-5), and Tricia Wotipka (working under TE-840619-6).

PROJECT LOCATION AND EXISTING CONDITIONS

The proposed project site is located on tribal lands within the community of Campo in San Diego County, California, on Assessor's Parcel Numbers 608-101-01, 608-110-06, 608-110-07, 608-120-01, 608-120-02, 608-120-03, 608-120-04, 608-120-05, 609-020-08, 609-040-16, 609-050-15, 609-050-16, 609-110-01, 609-130-16, 609-140-01, 609-150-01, 610-020-05, 610-020-06, 610-080-08, 610-080-09, 610-080-17, 610-110-23, 610-130-01, 610-130-02, 610-130-03, 610-130-04, 610-130-05, 610-130-06, 610-130-07, 657-020-06, 657-030-01, 657-030-02, 657-080-09, 657-100-01, 657-100-02, 657-110-01, 657-110-02, 658-010-01, 658-070-03, 658-070-16, 658-130-01, 658-130-02, 760-120-12, and 760-120-13 (Figure 1, Survey Results – Index). The study area consisted of the proposed wind turbine locations with a 250-foot-wide buffer (total of 500-foot-wide area), and associated roads and infrastructure. In early April, the study area was modified slightly, resulting in 0.6 acres being removed from the study area and 45.7 acres being added (Figures 2 and 3, Survey Results). The additional areas were slivers of land 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 does not change the conclusions of the report.

The project site is located on the Campo Band of Kumeyaay Indians Reservation in southeastern San Diego County, approximately 60 miles east of the City of San Diego, California, in the vicinity of the unincorporated communities of Campo, Boulevard, and Live Oak Springs. The project site's elevation is between approximately 3,153 and 4,168 feet above mean sea level. The Campo Band of Kumeyaay Indians Reservation includes lands both north and south of Interstate 8 along the Tecate Divide, extending from the southern boundary of the Manzanita Indian Reservation to the north and south to 0.25 miles north of the U.S. international border with Mexico. The project site is within the U.S. Geological Survey's 7.5-minute Live Oak Springs, Cameron Corners, Tierra Del Sol, and Campo quadrangle maps within Township 17 South, Range 6 East, Sections 01, 12, 13, 14, 15, 20, 21, 22, 23, 27, 28, 33, and 34; Township 17 South, Range 7 East, Section 06; and Township 18 South, Range 6 East, Sections 03, 04, 05, 08, 09, 10, 11, 14, 15, 16, 17, 20, and 21.

The project site includes undeveloped land as well as paved and dirt roads. Additionally, the site is characterized by rural, large-lot ranches and single-family homes, as well as an old sand mine.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service, the following seven soil series were mapped on site: Calpine (coarse sandy loam, 5% to 9% slopes, eroded); Kitchen Creek (loamy coarse sand, 5% to 9% slopes; loamy coarse sand, 9% to 15% slopes, eroded); La Posta (loamy coarse sand, 5% to 30% slopes, eroded; loamy coarse sand, 5% to 30% slopes, severely eroded; rocky loamy coarse sand, 5% to 30% slopes, eroded); loamy alluvial land; Mottsville (loamy coarse sand, 0% to 2% slopes; loamy coarse sand, 2% to 9% slopes; loamy coarse sand, 9% to 15% slopes); and Tollhouse (rocky coarse sandy loam, 30% to 65% slopes; rocky coarse sandy loam, 5% to 30% slopes, eroded) (USDA 2018).

VEGETATION COMMUNITIES

Vegetation communities are currently being mapped and the data is not yet finalized. In general, the project site supports chaparral, scrub, grassland, and oak woodland communities.

QUINO CHECKERSPOT BUTTERFLY SURVEY

Background Information

The Quino was added to the federal Endangered Species List by the U.S. Fish and Wildlife Service 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 other subspecies of *E. editha* are currently known to occur in Southern California. The Quino (*E. editha 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-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 tidytops (*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 on 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).

The 2014 U.S. Fish and Wildlife Service protocol states that focused Quino surveys begin the third week of February and end the second Saturday in May unless otherwise approved by the FWS. Surveys must 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 Endangered Species Act (USFWS 2014). The 2018 focused surveys followed the 2014 U.S. Fish and Wildlife Service protocol with the addition of an amendment included in the 2018 notification (USFWS 2018). The approved amendment allowed for surveys to begin the week of March 12 to account for the location's higher elevation, generally colder conditions, and generally later start of Quino emergence.

Methods

Prior to the focused surveys, Dudek biologists conducted a habitat assessment within the study area in order 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.

Focused Quino surveys were conducted over 10 visits between March 3, 2018, and May 15, 2018, per the Quino survey guidelines published on December 15, 2014 (USFWS 2014).¹ The survey area consisted of suitable habitat for Quino (Figures 2 and 3). Surveys were conducted by Quino-permitted biologists Anita Hayworth (TE-781084-9.1), Callie Amoaku (TE-36118B-1), Darin Busby (initially working under Melissa Busby's permit until permit renewal of TE-115373-

¹ Only nine passes were completed at survey area 1 due to weather-related survey cancellations.

4), 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), Melissa Busby (TE-0807792-3), Patricia Schuyler (TE-27502B-1), Paul M. Lemons (TE-051248-5), and Tricia Wotipka (working under TE-840619-6).

The biologists were provided with 200-scale (1 inch = 200 feet) aerial maps of the survey 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 on site.

The survey methods consisted of slowly walking roughly parallel transects spaced approximately 30 feet (10 meters) apart throughout all suitable habitats within the 699-acre study area. The site was divided into 10 survey areas, ranging from 62 acres to 82 acres (Figures 2 through 6, Survey Results). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 5 to 10 acres per person hour. All wildlife species observed were recorded and are listed 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 1. Copies of the surveyors' field notes are included as Appendix B.

Weather conditions at the project site 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 in order 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 protocol (USFWS 2014).

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
N/A	Habitat assessment	2018-02-21	EB	8:00 AM–5:00 PM	45°F–63°F; 20%–30% cloud cover; 0–4 mph wind; clear	
N/A	Habitat Assessment	2018-02-22	SC	8:00 AM–3:30 PM	45°F–63°F; 20%–30% cloud cover; 0–4 mph wind; clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
N/A	Habitat Assessment	2018-02-28	SC, MF	8:00 AM–3:30 PM	47°F–66°F; 10%–50% cloud cover; 0–4 mph wind	
1	1	2018-03-12	MM	9:40 AM–4:08 PM	Air temp: 63°F–73°F; ground temp: 60°F–75°F; 20%–30% cloud cover; 3–5 mph wind; patchy	
	2	2018-03-20	EL, MM	9:40 AM–4:08 PM	Air temp: 65°F–70°F; ground temp: 0°F–75°F; 0%–20% cloud cover; 1–4 mph wind; clear to patchy	Survey included area 2
	3	2018-03-28	EL, MB	9:20 AM–4:15 PM	Air temp: 65°F–66°F; ground temp: 0°F–65°F; 0% cloud cover; 1–10 mph wind; clear	Survey included area 2
	4	2018-04-04	EL, MM	9:30 AM–4:15 PM	Air temp: 73°F; ground temp: 73°F–74°F; 30%–50% cloud cover; 0–10 mph wind; patchy	Survey included area 2
	5	2018-04-23	DS	9:05 AM–4:20 PM	Air temp: 73°F–85°F; ground temp: 73°F–87°F; 0%–50% cloud cover; 0–7 mph wind; clear to patchy	
	6	2018-04-27	DB, EL	8:45 AM–3:30 PM	Air temp: 71°F–78°F; ground temp: 69°F–82°F; 0% cloud cover; 1–15 mph wind; clear	Survey included area 4
	7	2018-05-04	JP	9:40 AM–5:00 PM	Air temp: 73°F–80°F; ground temp: 72°F–82°F; 0% cloud cover; 2–8 mph wind	
	8	2018-05-07	EL	8:45 AM–3:30 PM	Air temp: 73°F–83°F; ground temp: 68°F–88°F; 0%–10% cloud cover; 1–17 mph wind; clear	
	9	2018-05-15	DS	9:15 AM–12:40 PM	Air temp: 67°F–78°F; ground temp: 67°F–76°F; 0% cloud cover; 5–8 mph wind; clear	
2	1	2018-03-13	MM	9:50 AM–4:05 PM	Air temp: 62°F–69°F; ground temp: 65°F–69°F; 100% cloud cover; 1–4 mph wind	
	2	2018-03-20	EL, MM	9:40 AM–4:08 PM	Air temp: 63°F–70°F; ground temp: 65°F–73°F; 0%–20% cloud cover; 1–4 mph wind; clear to patchy	Survey included area 1
	3	2018-03-28	EL, MB	9:20 AM–4:15 PM	Air temp: 65°F–66°F; ground temp: 0°F–65°F; 0% cloud cover; 1–10 mph wind; clear	Survey included area 1

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	4	2018-04-04	EL, MM	9:30 AM–4:15 PM	Air temp: 73°F; ground temp: 73°F–74°F; 30%–50% cloud cover; 0–10 mph wind; patchy	Survey included area 1
	5	2018-04-09	DB	8:30 AM–4:00 PM	Air temp: 71°F–76°F; ground temp: 68°F–78°F; 0% cloud cover; 6–14 mph wind; clear	
	6	2018-04-20	MM	9:25 AM–4:30 PM	60°F–75°F; 0% cloud cover; 2–9 mph wind; clear	
	7	2018-04-25	EL	8:45 AM–3:15 PM	Air temp: 66°F–75°F; ground temp: 66°F–75°F; 0% cloud cover; 6–13 mph wind; clear	
	8	2018-05-08	DS, EL	8:45 AM–4:15 PM	Air temp: 75°F–88°F; ground temp: 71°F–92°F; 0% cloud cover; 1–8 mph wind; clear	Survey included area 7
	9	2018-05-10	JP	8:40 AM–4:40 PM	Air temp: 76°F–82°F; ground temp: 74°F–88°F; 0% cloud cover; 3–10 mph wind	
	10	2018-05-16	DS	8:45 AM–4:00 PM	Air temp: 67°F–74°F; ground temp: 68°F–73°F; 0% cloud cover; 5–13 mph wind; clear	
3	1	2018-03-12	EL	9:35 AM–3:25 PM	Air temp: 58°F; ground temp: 58°F–62°F; 40%–50% cloud cover; 3–8 mph wind; patchy	
	2	2018-03-20	DB, MB	9:30 AM–1:00 PM	Air temp: 62°F–74°F; ground temp: 64°F–78°F; 0%–20% cloud cover; 3–6 mph wind; clear to patchy	
	3	2018-03-29	DS, EL	9:45 AM–3:50 PM	Air temp: 67°F–75°F; ground temp: 65°F–70°F; 0% cloud cover; 1–3 mph wind; clear	Survey included area 4
	4 (Portion)	2018-04-03	DS, EL	9:30 AM–4:00 PM	Air temp: 62°F–78°F; ground temp: 62°F–78°F; 0%–10% cloud cover; 0–4 mph wind; clear	Survey included area 4
	4 (Finish)	2018-04-05	MM	9:13 AM–4:05 PM	Air temp: 64°F–73.5°F; ground temp: 65°F–74°F; 10%–20% cloud cover; 2–8 mph wind; clear to patchy	Survey included area 9
	5	2018-04-10	DS	8:30 AM–4:30 PM	Air temp: 70°F–83°F; ground temp: 62°F–78°F; 0% cloud cover; 1–16 mph wind; clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	6	2018-04-24	EL	8:45 AM–3:42 PM	Air temp: 66°F–73°F; ground temp: 65°F–74°F; 10%–30% cloud cover; 1–8 mph wind; clear to patchy	
	7	2018-05-03	JP	8:45 AM–4:35 PM	Air temp: 54°F–58°F; ground temp: 54°F–57°F; 0% cloud cover; 3–10 mph wind	
	8	2018-05-09	JP	8:45 AM–5:00 PM	Air temp: 74°F–86°F; ground temp: 70°F–88°F; 0%–20% cloud cover; 0–8 mph wind	
	9	2018-05-14	JP	8:50 AM–5:05 PM	Air temp: 62°F–70°F; ground temp: 64°F–73°F; 0% cloud cover; 0–10 mph wind	
	10	2018-05-17	JP	8:45 AM–5:00 PM	Air temp: 62°F–68°F; ground temp: 62°F–72°F; 0% cloud cover; 0–15 mph wind	
4	1	2018-03-13	DB, MB	1:10 PM–4:00 PM	Air temp: 70°F; ground temp: 70°F; 100% cloud cover; 1–7 mph wind; overcast	
	2	2018-03-20	DB, MB	1:00 PM–4:15 PM	Air temp: 70°F–74°F; ground temp: 72°F–78°F; 20% cloud cover; 3–6 mph wind; patchy	
	3	2018-03-29	DS, EL	9:45 AM–3:50 PM	Air temp: 67°F–75°F; ground temp: 65°F–70°F; 0% cloud cover; 1–3 mph wind; clear	Survey included area 3
	4	2018-04-03	DS, EL	9:30 AM–4:00 PM	Air temp: 62°F–78°F; ground temp: 62°F–78°F; 0%–10% cloud cover; 0–4 mph wind; clear	Survey included area 3
	5	2018-04-18	EB	8:30 AM–4:24 PM	Air temp: 67°F–74°F; ground temp: 67.5°F–75°F; 0% cloud cover; 0–2 mph wind; clear	
	6	2018-04-20	EL	9:40 AM–4:30 PM	Air temp: 60°F–75°F; ground temp: 60°F–75°F; 0% cloud cover; 1–9 mph wind; clear	
	7	2018-04-27	DB, EL	8:45 AM–3:30 PM	Air temp: 71°F–78°F; ground temp: 69°F–82°F; 0% cloud cover; 1–15 mph wind; clear	Survey included area 1
	8	2018-05-08	JP	8:45 AM–4:15 PM	Air temp: 76°F–84°F; ground temp: 70°F–88°F; 40%–60% cloud cover; 2–6 mph wind	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	9	2018-05-15	JP	8:40 AM–3:25 PM	Air temp: 60°F–76°F; ground temp: 65°F–78°F; 0% cloud cover; 2–8 mph wind	
	10	2018-05-18	DS, EL, MM	8:45 AM–4:15 PM	Air temp: 60°F–69°F; ground temp: 63°F–79°F; 0% cloud cover; 2–8 mph wind; clear	Survey included areas 6, 8, 10
5	1	2018-03-13	DB, MB	10:15 AM–1:10 PM	Air temp: 68°F–70°F; ground temp: 68°F–70°F; 100% cloud cover; 1–7 mph wind; overcast	
	2	2018-03-21	MM	9:30 AM–3:48 PM	Air temp: 67°F–70°F; ground temp: 67°F; 50%–60% cloud cover; 1–4 mph wind; patchy	
	3	2018-03-29	MM	9:20 AM–4:10 PM	Air temp: 72°F–78°F; ground temp: 72°F–82°F; 0% cloud cover; 1–4 mph wind; clear	
	4	2018-04-04	DS	9:20 AM–4:00 PM	Air temp: 73°F–83°F; ground temp: 71.1°F–85°F; 10% cloud cover; 0–5 mph wind; clear to patchy	
	5	2018-04-11	DS	9:00 AM–2:00 PM	73°F–83°F; 0%–20% cloud cover; 1–14 mph wind; clear to patchy	
	6	2018-04-20	CA	9:00 AM–4:07 PM	Air temp: 62.6°F–73°F; ground temp: 66°F–76°F; 0% cloud cover; 0–3 mph wind; clear	
	7	2018-04-26	JP	8:50 AM–3:05 AM	Air temp: 69°F–80°F; ground temp: 70°F–84°F; 30%–50% cloud cover; 0–10 mph wind	
	8	2018-05-09	DS	8:45 AM–3:30 PM	Air temp: 77°F–95°F; ground temp: 79°F–98°F; 0% cloud cover; 0–4 mph wind; clear	
	9	2018-05-14	AH	8:45 AM–3:42 PM	Air temp: 63°F–74°F; ground temp: 64°F–76°F	
	10	2018-05-17	DS	8:45 AM–3:27 PM	Air temp: 63°F–64°F; ground temp: 65°F–73°F; 0% cloud cover; 0–13 mph wind; clear	
6	1	2018-03-20	PL	9:15 AM–4:30 PM	Air temp: 61°F–70°F; ground temp: 61°F–69°F; 10%–30% cloud cover; 0–6 mph wind; clear to patchy	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	2	2018-03-28	JP, DS	9:37 AM–1:35 PM	Air temp: 66°F–72°F; ground temp: 65°F–70°F; 0% cloud cover; 1–12 mph wind	
	3	2018-03-30	JP	9:40 AM–4:00 PM	Air temp: 74°F–82°F; ground temp: 68°F–82°F; 0%–70% cloud cover; 2–12 mph wind	
	4	2018-04-03	JP	11:00 AM–5:45 PM	Air temp: 68°F–70°F; ground temp: 68°F–72°F; 30% cloud cover; 3–12 mph wind	
	5	2018-04-09	JP	8:30 AM–3:15 AM	Air temp: 72°F–78°F; ground temp: 68°F–82°F; 0%–30% cloud cover; 2–10 mph wind; clear	
	6	2018-04-18	EL	8:45 AM–3:30 PM	Air temp: 63°F–87°F; ground temp: 62°F–85°F; 0%–30% cloud cover; 5–7 mph wind; clear to patchy	
	7	2018-04-25	DB	8:40 AM–3:20 PM	Air temp: 69°F–81°F; ground temp: 71°F–87°F; 0% cloud cover; 1–10 mph wind; clear	
	8	2018-05-10	DS, MM	9:09 AM–4:30 PM	74°F–88°F; 0%–10% cloud cover; 2–7 mph wind; clear	Survey included area 7
	9	2018-05-15	PS	9:00 AM–2:46 PM	Air temp: 64°F–78°F; ground temp: 64°F–81°F; 0%–10% cloud cover; 0–5 mph wind; clear	
	10	2018-05-18	DS, EL, MM	8:45 AM–4:15 PM	Air temp: 60°F–69°F; ground temp: 63°F–79°F; 0% cloud cover; 2–8 mph wind; clear	Survey included areas 4, 8, 10
	7	1 (Portion)	2018-03-12	JP	1:10 PM–4:30 PM	Air temp: 70°F–72°F; ground temp: 68°F–70°F; 40%–70% cloud cover; 1–6 mph wind
1 (Finish)		2018-03-13	JP	1:00 PM–5:00 AM	Air temp: 67°F–70°F; ground temp: 70°F–74°F; 100% cloud cover; 2–8 mph wind; overcast	
2		2018-03-20	JP, TW	9:20 AM–2:00 PM	Air temp: 64°F–74°F; ground temp: 60°F–76°F; 0%–50% cloud cover; 1–5 mph wind; clear	
3		2018-03-30	DS	9:30 AM–4:00 PM	Air temp: 71°F–78°F; ground temp: 74°F–80°F; 0% cloud cover; 1–8 mph wind; clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	4	2018-04-04	JP	9:15 AM–4:15 PM	Air temp: 68°F–74°F; ground temp: 64°F–76°F; 10%–30% cloud cover; 1–9 mph wind	
	5	2018-04-10	JP	8:30 AM–3:15 PM	Air temp: 67°F–86°F; ground temp: 63°F–92°F; 10%–40% cloud cover; 0–6 mph wind	
	6	2018-04-18	DS	9:00 AM–3:35 PM	Air temp: 63°F–69°F; ground temp: 63°F–71°F; 0% cloud cover; clear	
	7	2018-04-24	DB	8:45 AM–3:20 PM	Air temp: 67°F–84°F; ground temp: 65°F–88°F; 10%–20% cloud cover; 0–8 mph wind; patchy	
	8	2018-05-08	DS, EL	8:45 AM–4:15 PM	Air temp: 75°F–88°F; ground temp: 71°F–92°F; 0% cloud cover; 1–8 mph wind; clear	Survey included area 2
	9	2018-05-10	DS, MM	9:09 AM–4:30 PM	Air temp: 72°F–85°F; ground temp: 74°F–88°F; 0%–10% cloud cover; 2–7 mph wind; clear	Survey included area 6
	10	2018-05-15	EL	8:40 AM–3:10 PM	Air temp: 64°F–78°F; ground temp: 64°F–85°F; 0% cloud cover; 1–12 mph wind; clear	
8	1	2018-03-12	MB	9:30 AM–3:50 PM	Air temp: 62°F–73°F; ground temp: 65°F–75°F; 10%–60% cloud cover; 1–3 mph wind; patchy	
	2 (Portion)	2018-03-20	JP, TW	2:00 PM–4:00 PM	Air temp: 72°F–74°F; ground temp: 72°F–76°F; 50% cloud cover; 1–6 mph wind	
	2 (Finish)	2018-03-21	JP	10:30 AM–3:15 P M	Air temp: 72°F–76°F; ground temp: 70°F–78°F; 80%–90% cloud cover; 1–8 mph wind	
	3	2018-03-30	MM	9:28 AM–3:22 PM	Air temp: 83°F–84°F; ground temp: 82°F–87°F; 0%–70% cloud cover; 1–4 mph wind; clear to overcast	
	4	2018-04-16	DB, MB	9:30 AM–1:10 PM	Air temp: 54°F–66°F; ground temp: 62°F–66°F; 20% cloud cover; 9–19 mph wind; patchy	
	5	2018-04-20	DS	9:10 AM–3:40 PM	Air temp: 61°F–76°F; ground temp: 63°F–76°F; 0% cloud cover; 1–7 mph wind; clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	6	2018-04-23	DB, MB	8:45 AM–3:15 PM	Air temp: 73°F–86°F; ground temp: 75°F–88°F; 0%–30% cloud cover; 1–10 mph wind; clear to patchy	Survey included area 10
	7	2018-04-27	EB	8:30 AM–4:33 PM	Air temp: 66°F–75°F; ground temp: 67°F–78°F; 0% cloud cover; 0–1 mph wind; clear	
	8	2018-05-03	EL, MB	12:17 PM–4:00 PM	Air temp: 73°F–79°F; ground temp: 71°F–83°F; 0% cloud cover; 3–8 mph wind; clear	
	9	2018-05-14	EL, MB	8:45 AM–3:30 PM	Air temp: 62°F–70°F; ground temp: 62°F–82°F; 0% cloud cover; 2–12 mph wind; clear	Survey included area 9
	10	2018-05-18	DS, EL, MM	8:45 AM–4:15 PM	Air temp: 60°F–69°F; ground temp: 63°F–79°F; 0% cloud cover; 2–8 mph wind; clear	Survey included areas 4, 6, 10
9	1	2018-03-19	DB, DS	11:15 AM–1:00 PM	Air temp: 60°F–66°F; ground temp: 60°F–66°F; 10%–20% cloud cover; 4–10 mph wind; clear	
	2	2018-03-21	DS	9:35 AM–4:35 PM	Air temp: 64°F–73°F; ground temp: 62.2°F–73°F; 20%–40% cloud cover; 1–5 mph wind; patchy	
	3	2018-03-28	CA	9:07 AM–3:53 PM	Air temp: 63°F–66°F; ground temp: 65°F–69°F; 0% cloud cover; 0–4 mph wind; clear	
	4	2018-04-02	DB, EL	9:40 AM–4:00 PM	Air temp: 56°F–62°F; ground temp: 61°F–62°F; 10% cloud cover; 5–9 mph wind; clear	Survey included area 10
	5	2018-04-11	CA	8:15 AM–3:43 PM	Air temp: 78°F–79°F; ground temp: 70°F–79°F; 0%–10% cloud cover; 0–2 mph wind; clear	
	6	2018-04-17	DB, DS, EL, MB	9:45 AM–2:30 PM	Air temp: 58°F–60°F; ground temp: 62°F–63°F; 0% cloud cover; 3–16 mph wind; clear	Survey included area 10
	7	2018-04-24	DS	8:50 AM–3:25 PM	Air temp: 72°F–87°F; ground temp: 72°F–89°F; 20%–30% cloud cover; 0–2 mph wind; patchy	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	8	2018-05-04	EL	11:20 AM–4:20 PM	Air temp: 78°F–86°F; ground temp: 82°F–88°F; 0% cloud cover; 2–8 mph wind; clear	
	9	2018-05-14	EL, MB	8:45 AM–3:30 PM	Air temp: 62°F–70°F; ground temp: 62°F–82°F; 0% cloud cover; 2–12 mph wind; clear	Survey included area 8
	10	2018-05-18	JP	8:30 AM–4:05 PM	Air temp: 55°F–58°F; ground temp: 56°F–60°F; 0% cloud cover; 1–8 mph wind	
10	1 (Portion)	2018-03-13	EL	9:59 AM–3:33 PM	Air temp: 66°F; ground temp: 63°F–66°F; 100% cloud cover; 0–1 mph wind; overcast	
	1 (Finish)	2018-03-19	DB, DS	1:15 PM–4:00 PM	Air temp: 66°F; ground temp: 66°F; 10% cloud cover; 4–8 mph wind; clear to patchy	
	2	2018-03-20	DS	9:50 AM–3:15 PM	Air temp: 66°F–76°F; ground temp: 63°F–74°F; 0%–40% cloud cover; 1–8 mph wind; clear to patchy	
	3	2018-03-29	JP	9:15 AM–3:30 PM	Air temp: 68°F–77°F; ground temp: 66°F–78°F; 0% cloud cover; 0–8 mph wind	
	4	2018-04-02	DB, EL	9:40 AM–4:00 PM	Air temp: 56°F–62°F; ground temp: 61°F–62°F; 10% cloud cover; 5–9 mph wind; clear	Survey included area 9
	5	2018-04-17	DB, DS, EL, MB	9:45 AM–2:30 PM	Air temp: 58°F–60°F; ground temp: 62°F–63°F; 0% cloud cover; 3–16 mph wind; clear	Survey included area 9
	6	2018-04-17	DB, DS, EL, MB	9:45 AM–2:30 PM	Air temp: 58°F–60°F; ground temp: 62°F–63°F; 0% cloud cover; 3–16 mph wind; clear	Survey included area 9
	7	2018-05-03	EL, MB	9:41 AM–12:13 PM	Air temp: 63°F–73°F; ground temp: 63°F–71°F; 0% cloud cover; 4–8 mph wind; clear	
	8	2018-05-07	DB	8:45 AM–3:03 PM	Air temp: 73°F–86°F; ground temp: 73°F–89°F; 0%–10% cloud cover; 1–8 mph wind; clear	
	9	2018-05-10	EL	8:45 AM–3:00 PM	Air temp: 78°F–88°F; ground temp: 74°F–89°F; 0% cloud cover; 2–12 mph wind; clear	

Table 1
Schedule of Focused Quino Checkerspot Butterfly Surveys

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
	10	2018-05-16	EL	8:40 AM–3:00 PM	Air temp: 68°F–78°F; ground temp: 67°F–80°F; 0% cloud cover; 1–8 mph wind; clear	

AH = Anita Hayworth (TE-781084-9.1); CA = Callie Amoaku (TE-36118B-1); DB = Darin Busby (initially working under Melissa Busby's permit until permit renewal of TE-115373-4); 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); MB = Melissa Busby (TE-0807792-3); MF = Mackenzie Forgey; 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-840619-2).

RESULTS

No Quino were observed during the 2018 focused surveys. In total, 55 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
<i>Hesperiidae – Skippers</i>						
<i>Erynnis afranius</i>	Afranius duskywing	—	X	—	—	—
<i>Erynnis brizo</i>	sleepy duskywing	—	X	—	X	X
<i>Erynnis funeralis</i>	funereal duskywing	X	X	X	X	X
<i>Erynnis propertius</i>	Propertius duskywing	X	X	X	X	X
<i>Hylephila phyleus</i>	fiery skipper	—	X	—	—	—
<i>Pholisora catullus</i>	common sootywing	—	—	—	—	X
	duskywing sp.	—	X	—	—	—
<i>Nymphalidae – Brush-Footed Butterflies</i>						
<i>Adelpha bredowii</i>	California sister	—	—	—	—	X
<i>Chlosyne californica</i>	California patch	—	—	—	—	X
<i>Chlosyne gabbii</i>	Gabb's checkerspot	—	—	—	—	—
<i>Coenonympha tullia californica</i>	common California ringlet	X	X	—	—	—
<i>Danaus gilippus</i>	queen	—	—	—	—	—
<i>Euphydryas chalcedona chalcedona</i>	chalcedon variable checkerspot	—	—	—	X	X
<i>Euphydryas chalcedona</i>	variable checkerspot	—	—	—	—	X
<i>Junonia coenia</i>	common buckeye	—	—	—	—	—
<i>Limenitis lorquini</i>	Lorquin's admiral	—	—	—	—	—
<i>Nymphalis antiopa</i>	mourning cloak	—	—	—	—	X

Table 2A
Butterflies Observed on Site Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
<i>Nymphalis californica</i>	California tortoiseshell	X	X	X	X	X
<i>Phyciodes mylitta</i>	Mylitta crescent	—	—	—	—	X
<i>Vanessa annabella</i>	west coast lady	—	—	—	X	—
<i>Vanessa atalanta</i>	red admiral	—	—	X	—	—
<i>Vanessa cardui</i>	painted lady	X	X	—	—	—
<i>Lycaenidae – Blues and Hairstreaks</i>						
<i>Atlides halesus</i>	great purple hairstreak	—	—	—	—	—
<i>Brephidium exile</i>	western pygmy-blue	—	X	X	—	—
<i>Callophrys augustinus</i>	brown elfin	X	X	X	X	X
<i>Callophrys dumetorum</i>	bramble hairstreak	X	X	X	X	X
<i>Celastrina ladon [argiolus] echo</i>	echo blue	X	X	X	X	X
<i>Euphilotes battoides bernardino</i>	Bernardino square-spotted blue	—	—	—	—	—
<i>Everes amyntula</i>	western tailed-blue	—	—	—	X	—
<i>Glaucopsyche lygdamus australis</i>	southern blue	X	X	X	X	X
<i>Hemiargus ceraunus gyas</i>	Edward's blue	—	—	—	—	X
<i>Icaricia acmon acmon</i>	Acmon blue	X	X	X	X	X
<i>Leptotes marina</i>	marine blue	—	—	—	—	—
<i>Lycaeides melissa</i>	Melissa blue	—	—	—	—	—
<i>Lycaena gorgon</i>	Gorgon copper	—	—	—	—	—
<i>Philotes sonorensis</i>	Sonoran blue	—	—	—	—	—
<i>Satyrium saepium</i>	hedgerow hairstreak	—	—	—	—	—
<i>Strymon melinus</i>	gray hairstreak	—	—	—	—	—
	blue sp.	—	—	—	—	—
<i>Papilionidae – Swallowtails</i>						
<i>Papilio eurymedon</i>	pale swallowtail	X	X	X	X	X
<i>Papilio rutulus</i>	western tiger swallowtail	X	X	—	X	—
<i>Papilio zelicaon</i>	anise swallowtail	X	—	X	X	X
<i>Pieridae – Whites and Sulfurs</i>						
<i>Anthocharis cethura</i>	desert orangetip	—	X	X	X	X
<i>Anthocharis sara</i>	Pacific Sara orangetip	X	X	X	X	X
<i>Colias eurytheme</i>	orange sulphur	—	—	X	—	X
<i>Colias harfordii</i>	Harford's sulphur	—	—	—	—	—
<i>Copaeodes aurantiacus</i>	orange skipperling	—	—	—	—	—
<i>Euchloe hyantis lotta</i>	desert pearly marble	X	X	X	X	X
<i>Philotes sonorensis</i>	cloudless sulphur	—	—	X	—	X
<i>Pieris rapae</i>	cabbage white	—	—	—	X	—
<i>Pontia protodice</i>	checkered white	X	X	X	—	X

Table 2A
Butterflies Observed on Site Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
<i>Pontia sisymbrii</i>	spring white	X	X	X	X	X
	sulphur sp.	—	X	—	X	—
	white sp.	—	—	—	—	X
<i>Riodinidae – Metalmarks</i>						
<i>Apodemia virgulti</i>	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
<i>Hesperiidae – Skippers</i>						
<i>Erynnis afranius</i>	Afranius duskywing	—	—	—	—	—
<i>Erynnis brizo</i>	sleepy duskywing	X	—	—	—	—
<i>Erynnis funeralis</i>	funereal duskywing	X	X	X	X	X
<i>Erynnis propertius</i>	Propertius duskywing	X	X	X	X	X
<i>Hylephila phyleus</i>	fiery skipper	—	—	X	—	X
<i>Pholisora catullus</i>	common sootywing	X	X	—	X	—
	duskywing sp.	—	X	—	—	—
<i>Nymphalidae – Brush-Footed Butterflies</i>						
<i>Adelpha bredowii</i>	California sister	—	X	X	X	X
<i>Chlosyne californica</i>	California patch	—	X	X	—	—
<i>Chlosyne gabbii</i>	Gabb's checkerspot	X	X	X	X	X
<i>Coenonympha tullia californica</i>	common California ringlet	—	X	X	—	—
<i>Danaus gilippus</i>	queen	—	—	X	—	—
<i>Euphydryas chalcedona chalcedona</i>	chalcedon variable checkerspot	X	X	X	X	X
<i>Euphydryas chalcedona</i>	variable checkerspot	X	—	X	—	X
<i>Junonia coenia</i>	common buckeye	—	—	X	—	—
<i>Limenitis lorquini</i>	Lorquin's admiral	—	X	X	X	—
<i>Nymphalis antiopa</i>	mourning cloak	—	—	—	—	—
<i>Nymphalis californica</i>	California tortoiseshell	X	—	—	—	—
<i>Phyciodes mylitta</i>	Mylitta crescent	—	—	—	—	—
<i>Vanessa annabella</i>	west coast lady	—	—	—	—	—
<i>Vanessa atalanta</i>	red admiral	—	—	—	—	—
<i>Vanessa cardui</i>	painted lady	X	—	X	—	—

Table 2B
Butterflies Observed on Site Weeks 6–10

Scientific Name	Common Name	Week				
		6	7	8	9	10
<i>Lycaenidae – Blues and Hairstreaks</i>						
<i>Atlides halesus</i>	great purple hairstreak	X	—	—	—	—
<i>Brephidium exile</i>	western pygmy-blue	—	—	—	X	X
<i>Callophrys augustinus</i>	brown elfin	X	X	X	X	X
<i>Callophrys dumetorum</i>	bramble hairstreak	X	X	X	—	—
<i>Celastrina ladon [argiolus] echo</i>	echo blue	X	X	X	—	X
<i>Euphilotes battoides bernardino</i>	Bernardino square-spotted blue	—	—	X	X	X
<i>Everes amyntula</i>	western tailed-blue	X	X	X	X	—
<i>Glaucopsyche lygdamus australis</i>	southern blue	X	—	X	—	—
<i>Hemiargus ceraunus gyas</i>	Edward's blue	v	X	X	X	X
<i>Icaricia acmon acmon</i>	Acmon blue	X	X	X	X	X
<i>Leptotes marina</i>	marine blue	X	X	X	X	X
<i>Lycaeides melissa</i>	Melissa blue	—	—	—	X	X
<i>Lycaena gorgon</i>	Gorgon copper	—	—	—	—	X
<i>Philotes sonorensis</i>	Sonoran blue	—	—	X	—	—
<i>Satyrrium saepium</i>	hedgerow hairstreak	—	—	—	X	—
<i>Strymon melinus</i>	gray hairstreak	—	—	—	X	—
	blue sp.	X	—	—	—	—
<i>Papilionidae – Swallowtails</i>						
<i>Papilio eurymedon</i>	pale swallowtail	X	X	X	X	X
<i>Papilio rutulus</i>	western tiger swallowtail	X	—	X	—	—
<i>Papilio zelicaon</i>	anise swallowtail	—	—	X	—	—
<i>Pieridae – Whites and Sulfurs</i>						
<i>Anthocharis cethura</i>	desert orangetip	X	X	—	X	—
<i>Anthocharis sara</i>	Pacific Sara orangetip	X	X	X	X	—
<i>Colias eurytheme</i>	orange sulphur	X	X	X	X	X
<i>Colias harfordii</i>	Harford's sulphur	—	—	X	X	X
<i>Copaeodes aurantiacus</i>	orange skipperling	—	—	—	—	X
<i>Euchloe hyantis lotta</i>	desert pearly marble	X	X	X	X	—
<i>Philotes sonorensis</i>	cloudless sulphur	—	—	X	—	—
<i>Pieris rapae</i>	cabbage white	v	X	—	X	—
<i>Pontia protodice</i>	checkered white	X	X	X	—	X
<i>Pontia sisymbrii</i>	spring white	X	X	X	X	—
	sulphur sp.	X	—	—	—	—
	white sp.	X	X	—	—	—
<i>Riodinidae – Metalmarks</i>						
<i>Apodemia virgulti</i>	Behr's metalmark	X	X	X	X	X

No Quino host plants were observed within the survey areas. 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 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
<i>Apiaceae – Carrot Family</i>		
<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	woolly-fruit lomatium	—
<i>Lomatium utriculatum</i>	common lomatium	—
<i>Asteraceae – Sunflower Family</i>		
<i>Achillea millefolium</i>	common yarrow, milfoil	—
<i>Lasthenia californica</i> or <i>Lasthenia gracilis</i>	common goldfields	X
<i>Lasthenia coronaria</i>	southern goldfields	X
<i>Layia platyglossa</i>	coastal tidytips, common tidytips	—
<i>Boraginaceae – Borage Family</i>		
<i>Amsinckia menziesii</i>	Menzies' fiddleneck, rancher's fireweed	X
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rancher's fiddleneck	—
<i>Amsinckia menziesii</i> var. <i>menziesii</i>	rigid fiddleneck	—
<i>Cryptantha</i> spp. or <i>Plagiobothrys</i> spp.	popcorn flower	X
<i>Phacelia distans</i>	distant phacelia, wild-heliotrope	—
<i>Fabaceae – Pea Family</i>		
<i>Acmispon</i> (=Lotus) spp.	deerweed, spanishclover, lotus	X
<i>Hydrophyllaceae – Waterleaf Family</i>		
<i>Eriodictyon crassifolium</i> var. <i>crassifolium</i>	thickleaf yerba santa	—
<i>Eriodictyon trichocalyx</i> var. <i>trichocalyx</i>	hairy yerba santa	—
<i>Lamiaceae – Mint Family</i>		
<i>Salvia columbariae</i>	chia	X
<i>Plantaginaceae – Plantain Family</i>		
<i>Antirrhinum coulterianum</i>	Coulter's snapdragon	—
<i>Collinsia</i> sp.	Chinese houses	—
<i>Keckiella antirrhinoides</i> var. <i>antirrhinoides</i>	snapdragon penstemon	—
<i>Keckiella cordifolia</i>	heartleaf keckiella, climbing bush penstemon	—
<i>Plantago erecta</i>	dwarf plantain	—
<i>Plantago patagonica</i>	woolly plantain	—
<i>Polemoniaceae – Phlox Family</i>		
<i>Gilia angelensis</i>	grassland gilia	—
<i>Gilia capitata</i> ssp. <i>abrotanifolia</i>	ball gilia	—
<i>Linanthus</i> spp.	ground pink	X

Recovery Permit Coordinator

Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Campo, San Diego County, California

Table 3
Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
<i>Polygonaceae – Buckwheat Family</i>		
<i>Eriogonum fasciculatum</i>	California buckwheat	—
<i>Orobanchaceae – Broom-rape Family</i>		
Castilleja exserta	exserted Indian paintbrush, common owl’s-clover	—
<i>Scrophulariaceae – Figwort Family</i>		
Cordylanthus rigidus ssp. setiger	stiffbranch bird’s beak, dark-tipped bird’s-beak	—
<i>Liliaceae – Lily Family</i>		
<i>Allium haematochiton</i>	red-skin onion	—
<i>Allium peninsulare</i>	Mexicali onion, red-flower onion	—
<i>Allium praecox</i>	early onion	—
<i>Dichelostemma capitatum</i>	bluedicks	—
<i>Muilla clevelandii</i>	San Diego goldenstar	—
<i>Muilla maritima</i>	sea muilla, common muilla	—


Sources: 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 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.

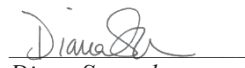
Sincerely,


Anita Hayworth
Permit #TE-781084-9.1

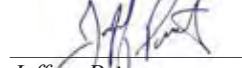

Callie Amoaku
Permit #TE-36118B-1

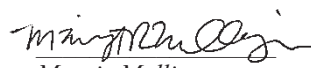

Darin Busby
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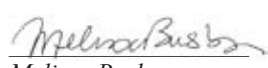

David Erik LaCoste
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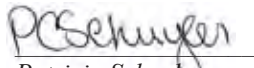

Diana Saucedo
Permit #TE-221287-1

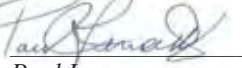

Erin Bergman
Permit #TE-813545-5

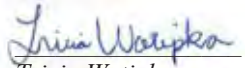

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Recovery Permit Coordinator

Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Campo, San Diego County, California

Att: Figure 1, Survey Results – Index

Figure 2, Survey Results

Figure 3, Survey Results

Figure 4, Survey Results

Figure 5, Survey Results

Figure 6, Survey Results

Appendix A – List of Wildlife Species Observed during the 2018 Campo Wind Project Quino Survey

Appendix B – 2018 Campo Wind Project Quino Survey Field Notes

CC: Brock Ortega, Dudek

Matthew Valerio, Dudek

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Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Campo, San Diego County, California

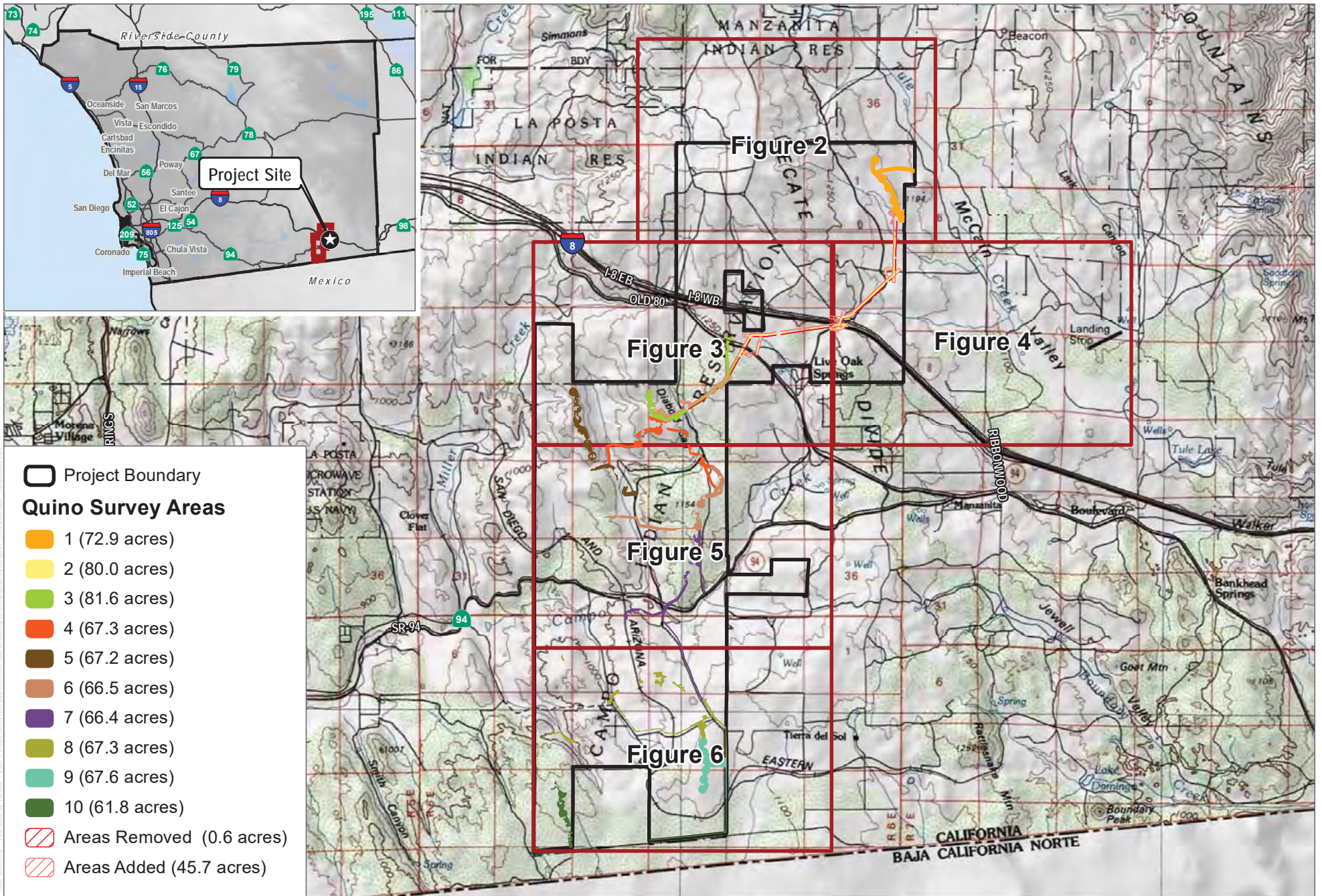
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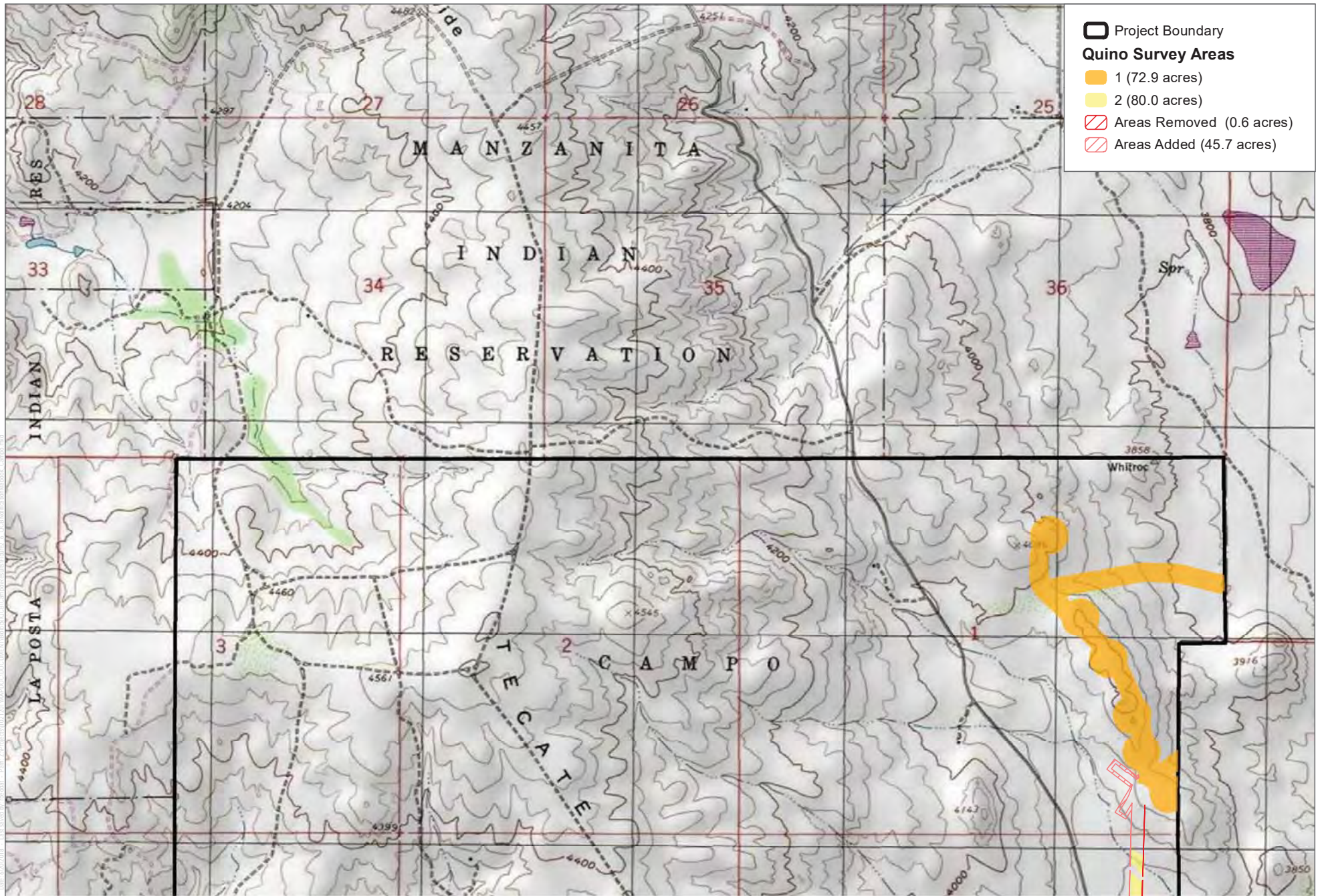
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SOURCE: USGS 2018

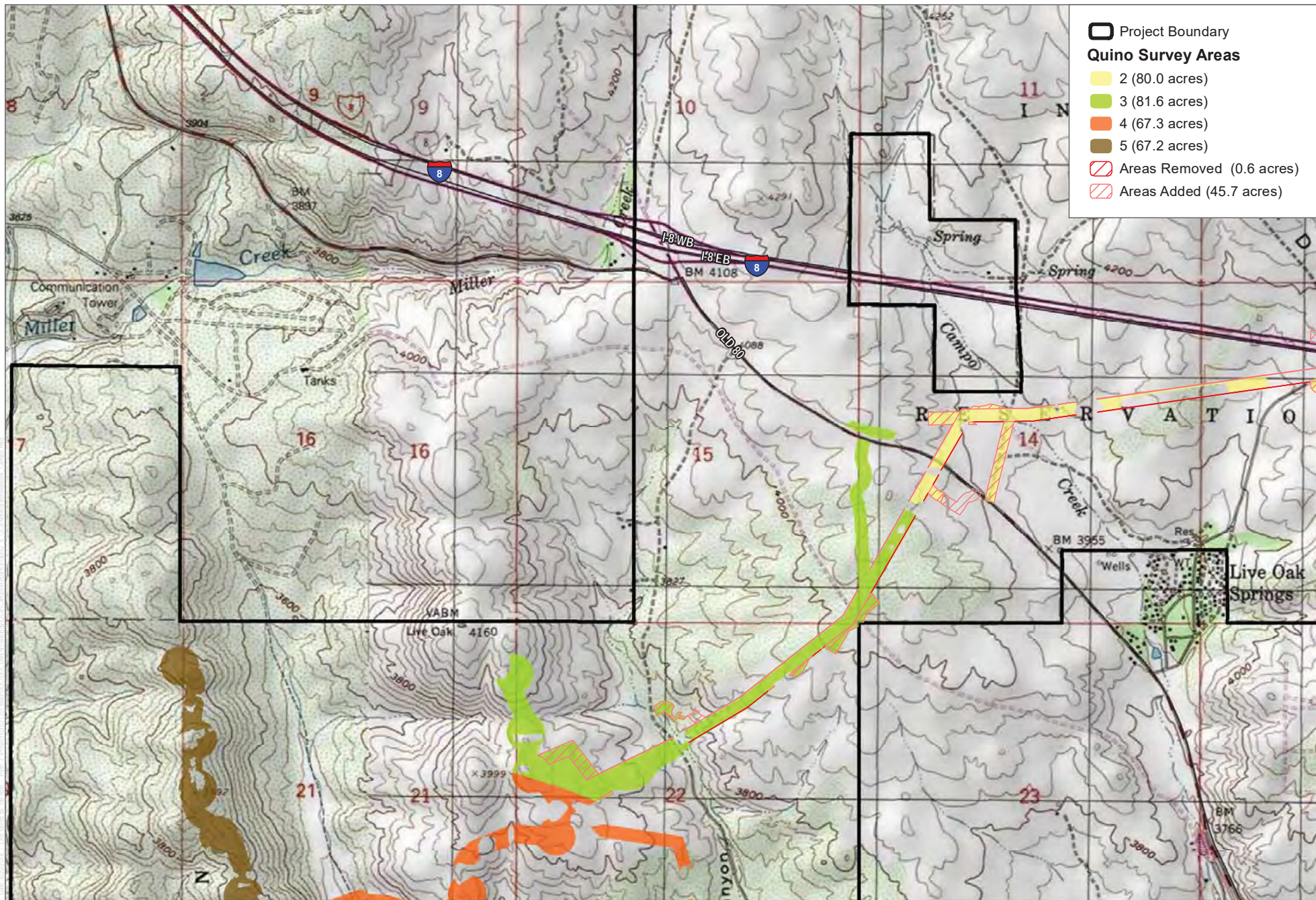


SOURCE: USGS 2018



FIGURE 2
Survey Results

Campo Wind Project - Results of 2018 Quino Checkerspot Survey

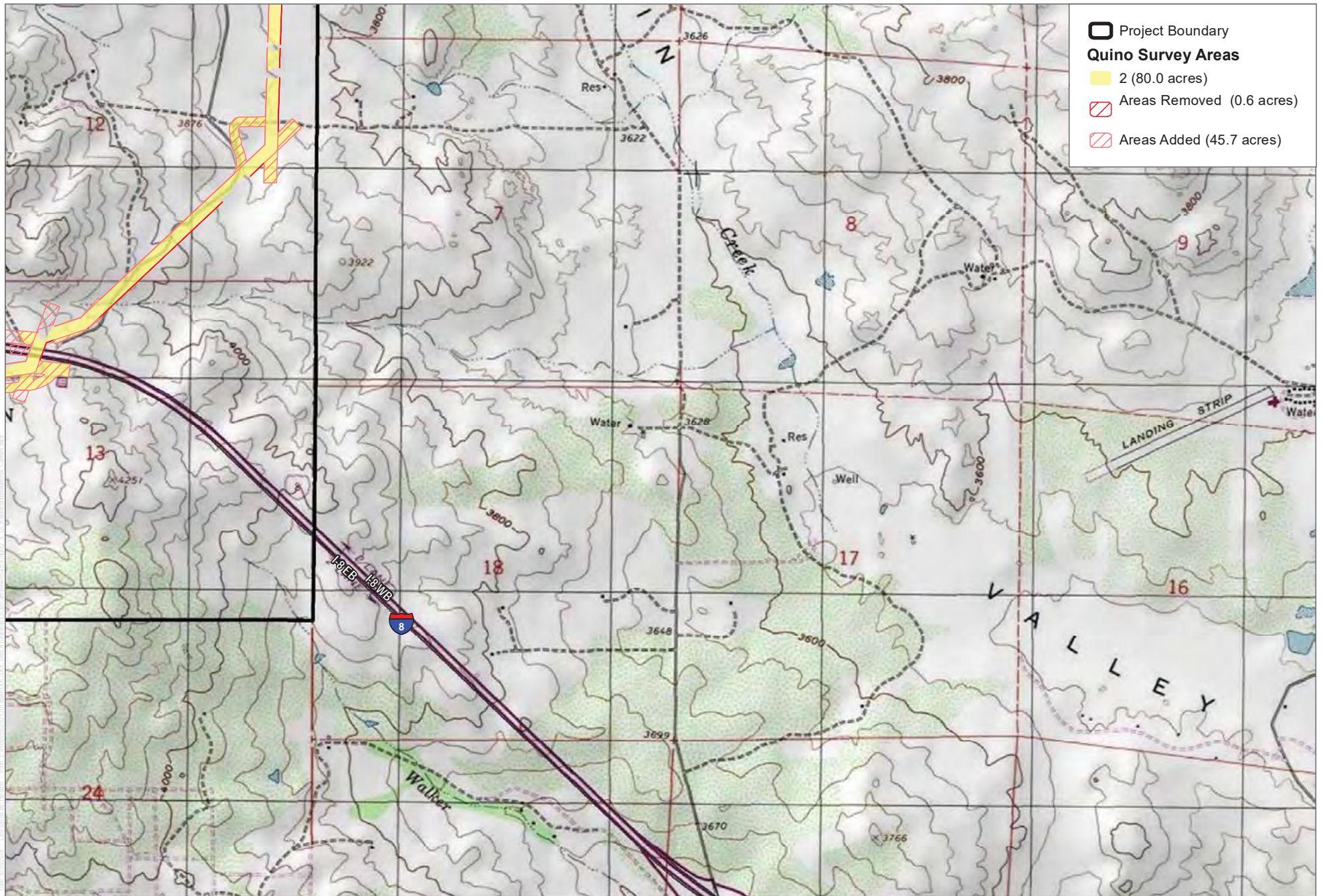


SOURCE: USGS 2018



FIGURE 3
Survey Results

Campo Wind Project - Results of 2018 Quino Checkerspot Survey

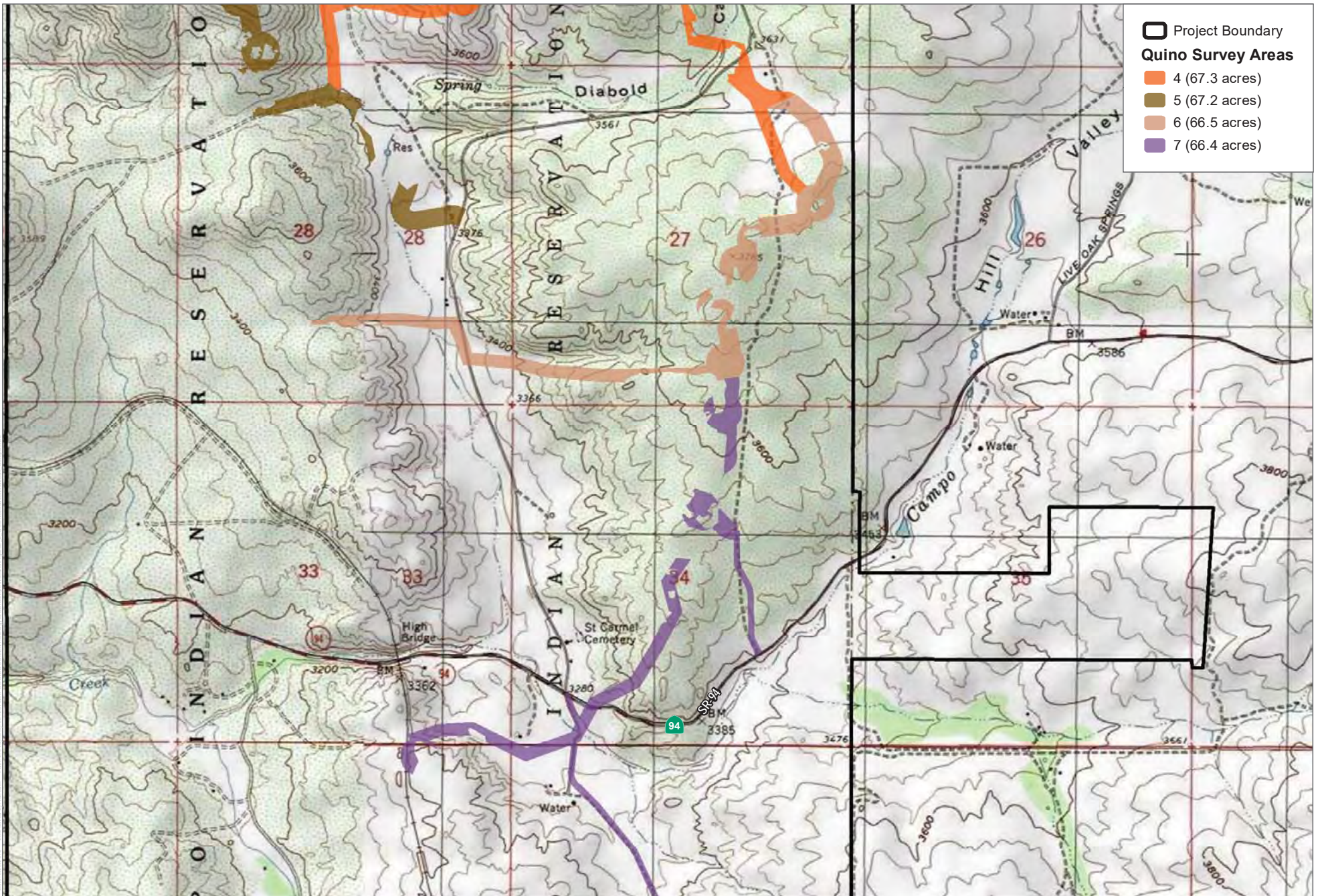


SOURCE: USGS 2018



FIGURE 4
Survey Results

Campo Wind Project - Results of 2018 Quino Checkerspot Survey



SOURCE: USGS 2018



FIGURE 5
Survey Results
 Campo Wind Project - Results of 2018 Quino Checkerspot Survey



SOURCE: USGS 2018



FIGURE 6
Survey Results
 Campo Wind Project - Results of 2018 Quino Checkerspot Survey

APPENDIX A

*List of Wildlife Species Observed during the 2018
Campo Wind Project Quino Survey*

APPENDIX A
List of Wildlife Species Observed during the 2018
Campo Wind Project Quino Survey

BIRD

BLACKBIRDS, ORIOLES, AND ALLIES

ICTERIDAE—BLACKBIRDS

Agelaius phoeniceus—red-winged blackbird

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

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

Myiarchus cinerascens—ash-throated flycatcher

Sayornis saya—Say's phoebe

Tyrannus verticalis—western kingbird

Tyrannus vociferans—Cassin's kingbird

APPENDIX A (Continued)

GOATSUCKERS

CAPRIMULGIDAE—GOATSUCKERS

Chordeiles acutipennis—lesser nighthawk

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper’s hawk

Buteo jamaicensis—red-tailed hawk

Circus hudsonius—northern harrier

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

LARKS

ALAUDIDAE—LARKS

Eremophila alpestris—horned lark

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

APPENDIX A (Continued)

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

STRIGIDAE—TYPICAL OWLS

Bubo virginianus—great horned owl

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

ROADRUNNERS AND CUCKOOS

CUCULIDAE—CUCKOOS, ROADRUNNERS, AND ANIS

Geococcyx californianus—greater roadrunner

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens—phainopepla

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Petrochelidon pyrrhonota—cliff swallow

Stelgidopteryx serripennis—northern rough-winged swallow

APPENDIX A (Continued)

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 huttoni—Hutton's vireo

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Geothlypis trichas—common yellowthroat

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Colaptes auratus—northern flicker

Melanerpes formicivorus—acorn woodpecker

Picoides nuttallii—Nuttall's woodpecker

WRENS

TROGLODYTIDAE—WRENS

Catherpes mexicanus—canyon wren

Salpinctes obsoletus—rock wren

Thryomanes bewickii—Bewick's wren

Troglodytes aedon—house wren

APPENDIX A (Continued)

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrenit

NEW WORLD SPARROWS

PASSERELLIDAE—NEW WORLD SPARROWS

Amphispiza bilineata—black-throated sparrow

Artemisiospiza belli—Bell's sparrow

Artemisiospiza nevadensis—sagebrush sparrow

Melospiza crissalis—California towhee

Pipilo maculatus—spotted towhee

Spizella atrogularis—black-chinned 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—bramble hairstreak

Celastrina ladon [argiolus] echo—echo blue

Euphilotes battoides bernardino—Bernardino square-spotted blue

Everes amyntula—western tailed-blue

Glaucopsyche lygdamus australis—southern blue

Hemiargus ceraunus gyas—Edward's blue

Icaricia acmon acmon—Acmon blue

Leptotes marina—marine blue

Lycaeides melissa—Melissa blue

Lycaena gorgon—Gorgon copper

Philotes sonorensis—Sonoran blue

Satyrium saepium—hedgerow hairstreak

Strymon melinus—gray hairstreak

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Adelpha bredowii—California sister

APPENDIX A (Continued)

Chlosyne californica—California patch
Chlosyne gabbii—Gabb’s checkerspot
Coenonympha tullia californica—common California ringlet
Danaus gilippus—queen
Euphydryas chalcedona chalcedona—chalcedon variable checkerspot
Euphydryas chalcedona—variable checkerspot
Junonia coenia—common buckeye
Limenitis lorquini—Lorquin’s admiral
Nymphalis antiopa—mourning cloak
Nymphalis californica—California tortoiseshell
Phyciodes mylitta—Mylitta crescent
Vanessa annabella—west coast lady
Vanessa atalanta—red admiral
Vanessa cardui—painted lady

RIODINIDAE—METALMARKS

Apodemia mormo virgulti—Behr’s metalmark

HESPERIIDAE—SKIPPERS

Copaeodes aurantiacus—orange skipperling
Erynnis afranius—Afranius duskywing
Erynnis brizo—sleepy duskywing
Erynnis funeralis—funereal duskywing
Erynnis propertius—Propertius duskywing
Hylephila phyleus—fiery skipper
Pholisora catullus—common sootywing

PAPILIONIDAE—SWALLOWTAILS

Papilio eurymedon—pale swallowtail
Papilio rutulus—western tiger swallowtail
Papilio zelicaon—anise swallowtail

PIERIDAE—WHITES AND SULFURS

Anthocharis cethura—desert orangetip
Anthocharis sara sara—Pacific sara orangetip
Colias eurytheme—orange sulphur
Colias harfordii—Harford’s sulphur
Euchloe hyantis lotta—desert pearly marble
Phoebis sennae—cloudless sulphur
Pieris rapae—cabbage white

APPENDIX A (Continued)

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—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

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

Tamias merriami—Merriam's chipmunk

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

APPENDIX A (Continued)

REPTILE

LIZARDS

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 skiltonianus—western skink

TEIIDAE—WHIPTAIL LIZARDS

Aspidoscelis tigris stejnegeri—San Diegan tiger whiptail

Aspidoscelis tigris—tiger whiptail

SNAKES

COLUBRIDAE—COLUBRID SNAKES

Pituophis catenifer—gophersnake

Rhinocheilus lecontei—long-nosed snake

BOIDAE—BOAS

Lichanura trivirgata—rosy boa

VIPERIDAE—VIPERS

Crotalus oreganus—western rattlesnake

APPENDIX B

*2018 Campo Wind Project Quino Survey
Field Notes*

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-12
Biologist(s)	Margie Mulligan
Survey Area	Tribal 1
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	63	60	50	2	patchy	
Mid day	11:47:00	70	0	30	5	patchy	
End	16:08:00	73	75	20	5	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (2)	desert pearly marble (12)	pale swallowtail (2)
brown elfin (1)	echo blue (5)	Propertius duskywing (6)
California tortoiseshell (1)	painted lady (1)	spring white (8)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Ribes quercetorum</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-13
Biologist(s)	Margie Mulligan
Survey Area	Tribal 2
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:50:00	62	65	100	4		Walked around site
Protocol begins	10:59:00	68	70	100	2		
End	16:05:00	69	69	80	3	overcast	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
bramble hairstreak (2)	California tortoiseshell (1)	Pacific sara orangetip (3)
brown elfin (1)	echo blue (1)	spring white (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Dendromecon rigida</i>	<i>Erodium cicutarium</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-12
Biologist(s)	Erik LaCoste
Survey Area	Tribal 3
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:35:00	58	58	50	5	patchy	
	10:03:00	58	62	40	8	patchy	
	10:37:00	64	64	20	6	patchy	
	13:58:00	75	80	20	3	patchy	
End	15:25:00	73	74	10	4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behrs metalmark (3)	funereal duskywing (2)	Sara Orangetip (4)
bramble hairstreak (3)	pale swallowtail (1)	southern blue (3)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
sagebrush sparrow (1+)	Spring azure (4)	Spring white (1)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-13
Biologist(s)	Darin Busby, Melissa Busby
Survey Area	Tribal 4
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:10:00	70	70	100	7	overcast	Hazy
End	16:00:00	70	70	100	6	overcast	Hazy

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (5)	brown elfin (3)	Pacific sara orangetip (3)
bramble hairstreak (1)	echo blue (8)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-13
Biologist(s)	Darin Busby, Melissa Busby
Survey Area	Tribal 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:15:00	68	68	100	3	overcast	Hazy and sun showing through clouds creating shadows
End	13:10:00	70	70	100	7	overcast	Hazy and sun showing through to create shadows

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (3)	common california ringlet (1)	southern blue (1)
Behr's metalmark (1)	echo blue (7)	western tiger swallowtail (1)
bramble hairstreak (2)	Pacific sara orangetip (4)	
brown elfin (3)	pale swallowtail (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Paul Lemons
Survey Area	Tribal 6
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	61	61	10	6	clear	
End	16:30:00	70	69	30	3	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
anise swallowtail (1+)	brown elfin (1+)	Pacific sara orangetip (1+)
Behr's metalmark (1+)	checkered white (1+)	painted lady (1+)
bramble hairstreak (1+)	funereal duskywing (1+)	southern blue (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
oak titmouse (1+)	desert cottontail (1+)	northern flicker (1+)
American crow (1+)	Five-striped sparrow (1+)	red-tailed hawk (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	greater roadrunner (1+)	wrentit (1+)
California thrasher (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-12
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 7
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:10:00	72	70	70	5		Protocol conditions at 1310. Area in Valley with limited view of sky and colder temperatures. Spoke with Brock and he confirmed I should stay out to see if it hits protocol conditions before 2pm. Prior conditions: 0911, 90%cc, w 2-6 with gusts 6-8 mph, air 64 F, ground 62 F. 0945, 90%cc, ground 62 F. 1015, 90% cc, ground 62 F. 1045, ground 64 F, 80% cc. 1116, ground 65, 80% cc. 1140, ground 64, 80%cc. 1207, ground 66, 70%cc. 1239, ground 66, 80%cc. 1256, ground 66, 90%cc / haze. Protocol conditions: 1310, ground 70F, air 72F, 70%cc, w 1-5 mph.
End	16:30:00	70	68	40	6		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (6)	funereal duskywing (8)	southern blue (2)
Behr's metalmark (1)	Pacific sara orangetip (12)	
bramble hairstreak (2)	painted lady (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
acorn woodpecker (1+)	California scrub-jay (1+)	lesser goldfinch (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
American crow (1+)	California thrasher (1+)	mourning dove (1+)
American kestrel (1+)	California towhee (1+)	phainopepla (1+)
Anna's hummingbird (1+)	common raven (1+)	spotted towhee (1+)
Bewick's wren (1+)	common side-blotched lizard (1+)	western meadowlark (1+)
Botta's pocket gopher (1+)	coyote (1+)	white-crowned sparrow (1+)
brush rabbit (1+)	granite spiny lizard (1+)	wrentit (1+)
bushtit (1+)	greater roadrunner (1+)	
California ground squirrel (1+)	house finch (1+)	

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-13
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 7
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:00:00	70	74	100	8	overcast	
End	17:00:00	67	70	100	7	overcast	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (1)	brown elfin (1)	Pacific sara orangetip (10)
Behr's metalmark (7)	funereal duskywing (6)	southern blue (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
bobcat (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
brush rabbit (1+)	granite spiny lizard (1+)	Say's phoebe (1+)
bushtit (1+)	greater roadrunner (1+)	Woodrat sp. (midden) (1+)
California thrasher (1+)	lesser goldfinch (1+)	
common raven (1+)	northern flicker (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-12
Biologist(s)	Melissa Busby
Survey Area	Tribal 8
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	62	65	60	2	patchy	
End	15:50:00	73	75	10	3	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (6)	brown elfin (4)	Propertius duskywing (1+)
Behr's metalmark (2)	funereal duskywing (5)	southern blue (6)
bramble hairstreak (9)	Pacific sara orangetip (11)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-19
Biologist(s)	Darin Busby, Diana Saucedo
Survey Area	Tribal 9
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:15:00	60	60	20	10	clear	
End	13:00:00	66	66	10	8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
ACBL (1)	brown elfin (3)	funereal duskywing (1)
Behr's metalmark (3)	echo blue (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
PSOR (1)		

INCIDENTAL PLANT LIST		
<i>Erodium sp.</i>	<i>Ceanothus sp.</i>	
<i>Rhus ovata</i>	<i>Xylococcus bicolor</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-13
Biologist(s)	Erik LaCoste
Survey Area	Tribal 10
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:59:00	66	63	100	1	overcast	
	10:30:00	66	66	100	1	overcast	
	11:30:00	67	74	100	1	overcast	
	12:27:00	70	75	100	4	overcast	
	13:48:00	72	73	80	6	overcast	
End	15:33:00	67	69	70	6	overcast	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
bramble hairstreak (3)	echo blue (3)	pale swallowtail (2)
brown elfin (4)	painter lady (2)	Saras orangetip (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-19
Biologist(s)	Darin Busby, Diana Saucedo
Survey Area	Tribal 10
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:15:00	66	66	10	8	clear	Surveyed a small portion of survey area 10, including the north-south running road in eastern portion of survey area.
End	16:00:00	66	66	10	8	patchy	Hazy

BUTTERFLY LIST <small>SPECIES (COUNT)</small>	
(none)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>	
(none)	

INCIDENTAL PLANT LIST		
<i>Arctostaphylos sp.</i>	<i>Ceanothus sp.</i>	<i>Erodium sp.</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Margie Mulligan
Survey Area	Tribal 1, Tribal 2
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	63	65	0	2	clear	
	13:59:00	70	70	20	4	patchy	
End	16:07:00	70	73	40	2	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (1)	California tortoiseshell (1)	Pacific sara orangetip (2)
Behr's metalmark (3)	desert pearly marble (5)	pale swallowtail (1)
bramble hairstreak (4)	echo blue (4)	Propertius duskywing (3)
brown elfin (3)	funereal duskywing (2)	spring white (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Sulfur (1)		

INCIDENTAL PLANT LIST		
<i>Lasthenia gracilis</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Erik LaCoste
Survey Area	Tribal 1, Tribal 2
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	65	0	0	2	clear	
Mid day	13:56:00	70	75	20	4	patchy	
End	16:08:00	73	81	30	3	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (1)	California tortoiseshell (1)	pale swallowtail (1)
Behr's metalmark (5)	desert pearly marble (3)	Propertius duskywing (2)
bramble hairstreak (4)	echo blue (3)	Sara orangetip (2)
brown elfin (3)	funereal duskywing (1)	spring white (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Darin Busby, Melissa Busby
Survey Area	Tribal 3
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	62	64	0	6	clear	
End	13:00:00	74	78	20	6	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (6)	common california ringlet (1)	pale swallowtail (1)
Blue sp. (4)	desert pearly marble (3)	Propertius duskywing (1)
bramble hairstreak (8)	fiery skipper (2)	western tiger swallowtail (1)
brown elfin (3)	Pacific sara orangetip (4)	White sp. (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Moth sp. (2)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Darin Busby, Melissa Busby
Survey Area	Tribal 4
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:00:00	74	78	20	6	patchy	
End	16:15:00	70	72	20	5	patchy	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (13)	common california ringlet (4)	Pacific sara orangetip (4)
Behr's metalmark (3)	desert pearly marble (2)	western pygmy-blue (2)
bramble hairstreak (2)	echo blue (1)	White sp. (3)
brown elfin (4)	funereal duskywing (3)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Duskywing sp. (3)		

INCIDENTAL PLANT LIST		
<i>Arctostaphylos sp.</i>	<i>Erodium sp.</i>	
<i>Ceanothus sp.</i>	<i>Ceanothus leucodermis</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-21
Biologist(s)	Margie Mulligan
Survey Area	Tribal 5
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	67	67	60	2	patchy	
	10:59:00	70	0	50	4	patchy	
End	15:48:00	71	0	40	4	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	brown elfin (1)	Pacific sara orangetip (3)
Behr's metalmark (12)	desert pearly marble (4)	pale swallowtail (7)
bramble hairstreak (5)	echo blue (11)	Propertius duskywing (4)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-28
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 6
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:37:00	66	65	0	5		
End	13:35:00	72	70	0	12		

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (2)	California tortoiseshell (1)	Pacific sara orangetip (16)
Behr's metalmark (13)	desert orangetip (1)	pale swallowtail (1)
bramble hairstreak (8)	desert pearly marble (2)	spring white (2)
brown elfin (2)	funereal duskywing (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
northern harrier (1+)	California scrub-jay (1+)	lesser goldfinch (1+)
American crow (1+)	California towhee (1+)	mule deer (1+)
Bewick's wren (1+)	common raven (1+)	Neotoma sp. (midden) (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	phainopepla (1+)
brush rabbit (1+)	coyote (1+)	red-tailed hawk (1+)
bush tit (1+)	granite spiny lizard (1+)	spotted towhee (1+)
California ground squirrel (1+)	greater roadrunner (1+)	turkey vulture (1+)
California quail (1+)	house finch (1+)	western meadowlark (1+)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 7
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:20:00	64	60	0	4	clear	5% cloud cover
End	14:00:00	74	76	50	5		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (6)	desert pearly marble (1)	pale swallowtail (1)
Behr's metalmark (11)	funereal duskywing (7)	southern blue (3)
bramble hairstreak (7)	Pacific sara orangetip (12)	western bluebird (1+)
checkered white (1)	painted lady (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
acorn woodpecker (1+)	California quail (1+)	coyote (1+)
American crow (1+)	California scrub-jay (1+)	granite spiny lizard (1+)
American kestrel (1+)	California thrasher (1+)	red-tailed hawk (1+)
Botta's pocket gopher (1+)	California towhee (1+)	western fence lizard (1+)
brush rabbit (1+)	common raven (1+)	western meadowlark (1+)
bushtit (1+)	common side-blotched lizard (1+)	Woodrat sp. (midden) (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 8
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	14:00:00	74	76	50	5		
End	16:00:00	72	72	50	6		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (3)	funereal duskywing (2)	
California tortoiseshell (2)	Pacific sara orangetip (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Lawrence's goldfinch (1+)	red-tailed hawk (1+)	Say's phoebe (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-21
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 8
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:30:00	72	70	90	5		Did not reach protocol temperatures until 1030. Conditions: 0930, 62 F ground, 75% cc. 0956, ground 62 F, air 67, 75% cc. 1017, 66 F ground, 75% cc.
End	15:15:00	76	78	80	8		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (6)	checkered white (2)	Pacific sara orangetip (9)
Behr's metalmark (12)	desert pearly marble (5)	painted lady (1)
bramble hairstreak (8)	funereal duskywing (4)	southern blue (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	California scrub-jay (1+)	Neotoma sp. (midden) (1+)
acorn woodpecker (1+)	California towhee (1+)	northern flicker (1+)
American crow (1+)	common raven (1+)	red-tailed hawk (1+)
Anna's hummingbird (1+)	common side-blotched lizard (1+)	rock wren (1+)
Botta's pocket gopher (1+)	coyote (1+)	spotted towhee (1+)
brush rabbit (1+)	greater roadrunner (1+)	turkey vulture (1+)
bushtit (1+)	house finch (1+)	wrentit (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 (Tribal Land)
Survey Date	2018-03-21
Biologist(s)	Diana Saucedo
Survey Area	Tribal 9
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:35:00	64	62.2	20	5	patchy	High haze
End	16:35:00	73	73	40	5	patchy	High thin clouds

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (2)	California tortoiseshell (5)	Pacific sara orangetip (3)
Behr's metalmark (5)	desert pearly marble (1)	sleepy duskywing (1)
bramble hairstreak (7)	funereal duskywing (11)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-20
Biologist(s)	Diana Saucedo
Survey Area	Tribal 10
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:50:00	66	63	0	2	clear	
End	15:15:00	76	74	40	8	patchy	
End	15:40:00	76	74	40	9	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	bramble hairstreak (3)	funereal duskywing (7)
Afranius duskywing (3)	brown elfin (7)	Pacific sara orangetip (3)
Behr's metalmark (3)	echo blue (5)	pale swallowtail (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-28
Biologist(s)	Erik LaCoste, Melissa Busby
Survey Area	Tribal 1, Tribal 2
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:20:00	65	65	0	2	clear	
	12:01:00	66	0	0	10	clear	
End	16:15:00	68	0	0	11	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	desert pearly marble (5)	pale swallowtail (2)
Behr's metalmark (6)	echo blue (5)	Propertius duskywing (8)
bramble hairstreak (14)	funereal duskywing (1)	spring white (6)
brown elfin (4)	Pacific sara orangetip (13)	western pygmy-blue (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-29
Biologist(s)	Erik LaCoste
Survey Area	Tribal 3, Tribal 4
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:46:00	67	0	0	3	clear	
End	15:50:00	75	0	0	3	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (6)	California tortoiseshell (1)	pale swallowtail (3)
Behr's metalmark (2)	desert pearly marble (8)	Propertius duskywing (6)
bramble hairstreak (4)	echo blue (1)	spring white (2)
brown elfin (3)	Pacific sara orangetip (11)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-29
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	Tribal 3, Tribal 4
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:45:00	67	65	0	3	clear	
End	15:50:00	75	70	0	3	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (3)	California tortoiseshell (1)	Pacific sara orangetip (12)
Behr's metalmark (10)	cloudless sulphur (1)	pale swallowtail (3)
bramble hairstreak (5)	desert pearly marble (3)	Propertius duskywing (3)
brown elfin (2)	echo blue (2)	spring white (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-29
Biologist(s)	Margie Mulligan
Survey Area	Tribal 5
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:20:00	72	72	0	3	clear	
End	16:10:00	78	82	0	4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (4)	desert pearly marble (4)	Propertius duskywing (8)
Behr's metalmark (12)	echo blue (9)	spring white (12)
bramble hairstreak (9)	Pacific sara orangetip (9)	
brown elfin (6)	pale swallowtail (11)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Caulanthus simulans</i>	<i>Ceanothus cuneatus var. cuneatus</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-28
Biologist(s)	Diana Saucedo
Survey Area	Tribal 6
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:45:00	66	65	0	5	clear	
End	13:30:00	72	70	0	12	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
anise swallowtail (3)	California tortoiseshell (3)	Pacific sara orangetip (11)
Behr's metalmark (10)	desert orangetip (3)	pale swallowtail (1)
bramble hairstreak (17)	echo blue (2)	Propertius duskywing (7)
brown elfin (6)	funereal duskywing (8)	spring white (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-30
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 6
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	74	68	0	8		
End	16:00:00	82	82	70	12		

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (1+)	desert orangetip (1+)	Pacific sara orangetip (15)
anise swallowtail (1+)	desert pearly marble (11)	pale swallowtail (1)
Behr's metalmark (8)	funereal duskywing (1+)	southern blue (1+)
bramble hairstreak (7)	orange sulphur (1+)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Blainville's horned lizard (1+)	California ground squirrel (1+)	house finch (1+)
American crow (1+)	California quail (1+)	mourning dove (1+)
Anna's hummingbird (1+)	California scrub-jay (1+)	mule deer (1+)
Bewick's wren (1+)	California towhee (1+)	red-tailed hawk (1+)
black-tailed jackrabbit (1+)	common raven (1+)	spotted towhee (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	turkey vulture (1+)
brush rabbit (1+)	granite spiny lizard (1+)	western meadowlark (1+)
bushtit (1+)	greater roadrunner (1+)	

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-30
Biologist(s)	Diana Saucedo
Survey Area	Tribal 7
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	71	0	0	3	clear	
End	16:00:00	78	0	0	8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (8)	desert pearly marble (2)	Propertius duskywing (1)
Behr's metalmark (27)	echo blue (1)	red admiral (1)
bramble hairstreak (3)	funereal duskywing (3)	spring white (7)
California tortoiseshell (3)	Pacific sara orangetip (39)	
desert orangetip (6)	pale swallowtail (3)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Amsinckia intermedia</i>	<i>Nemophila menziesii</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-30
Biologist(s)	Margie Mulligan
Survey Area	Tribal 8
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:28:00	83	82	0	3	clear	
End	15:22:00	84	87	70	4	overcast	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	California tortoiseshell (1)	pale swallowtail (1)
Behr's metalmark (23)	desert orangetip (20)	Propertius duskywing (5)
bramble hairstreak (14)	desert pearly marble (14)	southern blue (1)
brown elfin (3)	Pacific sara orangetip (22)	spring white (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Amsinckia intermedia</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-30
Biologist(s)	Margie Mulligan
Survey Area	Tribal 8
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:28:00	83	82	0	3	clear	
End	15:22:00	84	87	70	4	overcast	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	California tortoiseshell (1)	pale swallowtail (1)
Behr's metalmark (23)	desert orangetip (20)	Propertius duskywing (5)
bramble hairstreak (14)	desert pearly marble (14)	southern blue (1)
brown elfin (3)	Pacific sara orangetip (22)	spring white (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Pectocarya sp.</i>	<i>Amsinckia intermedia</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-28
Biologist(s)	Callie Amoaku
Survey Area	Tribal 9
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:07:00	63	65	0	0	clear	
2	11:11:00	66	69	0	4	clear	
2	12:50:00	70	72	0	3	clear	
3	15:03:00	68	71	0	5	clear	
End	15:53:00	68	71	0	2	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	California tortoiseshell (5)	Pacific sara orangetip (24)
Behr's metalmark (17)	checkered white (1)	southern blue (2)
bramble hairstreak (4)	desert pearly marble (2)	White sp. (1+)
brown elfin (1)	funereal duskywing (4)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
American kestrel (1+)	California quail (1+)	spotted towhee (1+)
Bell's sparrow (1+)	California scrub-jay (1+)	turkey vulture (1+)
black-tailed jackrabbit (1+)	California towhee (1+)	white-crowned sparrow (1+)
bobcat (1+)	common raven (1+)	wrentit (1+)
bushtit (1+)	northern flicker (1+)	
California ground squirrel (1+)	northern rough-winged swallow (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-03-29
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 10
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	68	66	0	1		
End	15:30:00	77	78	0	8		

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (2)	California tortoiseshell (1)	funereal duskywing (1)
Behr's metalmark (5)	checkered white (7)	Pacific sara orangetip (13)
bramble hairstreak (4)	desert orangetip (4)	spring white (1)
brown elfin (1)	desert pearly marble (10)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
acorn woodpecker (1+)	California scrub-jay (1+)	house finch (1+)
American crow (1+)	California towhee (1+)	lesser goldfinch (1+)
bobcat (1+)	common raven (1+)	mourning dove (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	mule deer (1+)
brush rabbit (1+)	coyote (1+)	phainopepla (1+)
bush tit (1+)	gophersnake (1+)	red-tailed hawk (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	western kingbird (1+)
California quail (1+)	greater roadrunner (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-04
Biologist(s)	Margie Mulligan
Survey Area	Tribal 1, Tribal 2
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	73	74	50	1	patchy	
Mid	12:46:00	73	0	30	10	patchy	
End	16:16:00	78	79	10	4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	desert pearly marble (16)	Propertius duskywing (6)
Behr's metalmark (14)	echo blue (4)	spring white (1)
bramble hairstreak (4)	Pacific sara orangetip (8)	western tailed-blue (1)
brown elfin (6)	pale swallowtail (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>	<i>Lasthenia gracilis</i>	<i>Senecio californicus</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-04
Biologist(s)	Erik LaCoste
Survey Area	Tribal 1, Tribal 2
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	73	74	50	1	patchy	
Mid.	12:46:00	73	73	30	10	patchy	
End	16:15:00	79	79	10	4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (6)	desert pearly marble (14)	southern blue (1)
Behr's metalmark (12)	Pacific sara orangetip (6)	spring white (1)
bramble hairstreak (4)	pale swallowtail (1)	western tailed-blue (1)
brown elfin (6)	Propertius duskywing (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-03
Biologist(s)	Diana Saucedo
Survey Area	Tribal 3, Tribal 4
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	62	62	0	4	clear	
End	16:00:00	78	78	10	1	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	desert orangetip (6)	Propertius duskywing (5)
Behr's metalmark (16)	desert pearly marble (9)	sleepy duskywing (1)
bramble hairstreak (6)	funereal duskywing (3)	southern blue (3)
brown elfin (2)	Pacific sara orangetip (11)	spring white (8)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Ceanothus leucodermis</i>	<i>Erodium cicutarium</i>	<i>Plagiobothrys collinus</i>
<i>Ceanothus perplexans</i>	<i>Eschscholzia californica</i>	
<i>Descurainia pinnata</i>	<i>Nemophila menziesii</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-03
Biologist(s)	Erik LaCoste
Survey Area	Tribal 3, Tribal 4
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	62	62	0	4	clear	
End	16:00:00	78	78	10	2	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (3)	desert pearly marble (15)	Southern blue (1)
Behrs metalmark (24)	Pacific sara orangetip (16)	spring white (2)
bramble hairstreak (5)	pale swallowtail (1)	
brown elfin (1)	Propertius duskywing (5)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-05
Biologist(s)	Margie Mulligan
Survey Area	Tribal 3, Tribal 9
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:13:00	64	65	10	8	clear	
End	16:05:00	73.5	74	20	5	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (1)	Chalcedon variable checkerspot (1)	Pacific sara orangetip (16)
Behr's metalmark (25)	desert pearly marble (12)	Propertius duskywing (9)
bramble hairstreak (6)	echo blue (1)	spring white (7)
brown elfin (4)	funereal duskywing (2)	western tiger swallowtail (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Colias sp. (2)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> sp.	<i>Amsinckia menziesii</i>	
<i>Pectocarya</i> sp.	<i>Lasthenia gracilis</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-04
Biologist(s)	Diana Saucedo
Survey Area	Tribal 5
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:20:00	73	71.1	10	2	clear	
End	16:00:00	83	0	10	5	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (17)	desert orangetip (4)	Pacific sara orangetip (21)
Behr's metalmark (33)	desert pearly marble (9)	pale swallowtail (11)
bramble hairstreak (8)	echo blue (3)	spring white (18)
brown elfin (1)	funereal duskywing (9)	west coast lady (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Amsinckia menziesii</i>	<i>Ephedra californica</i>	<i>Nemophila menziesii</i>
<i>Ceanothus leucodermis</i>	<i>Erodium cicutarium</i>	<i>Solanum douglasii</i>
<i>Ceanothus perplexans</i>	<i>Eschscholzia californica</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-03
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 6
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:00:00	70	72	30	12		
End	17:45:00	68	68	30	8		

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (8)	brown elfin (1)	Pacific sara orangetip (17)
anise swallowtail (1)	desert orangetip (4)	pale swallowtail (1)
Behr's metalmark (8)	desert pearly marble (1)	Propertius duskywing (4)
bramble hairstreak (7)	funereal duskywing (1)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
rufous hummingbird (1+)	California towhee (1+)	mule deer (1+)
American crow (1+)	Cassin's kingbird (1+)	Neotoma sp. (midden) (1+)
Bewick's wren (1+)	common raven (1+)	red-tailed hawk (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	turkey vulture (1+)
bushtit (1+)	coyote (1+)	western meadowlark (1+)
California quail (1+)	granite spiny lizard (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 (Tribal Land)
Survey Date	2018-04-04
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 7
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	68	64	30	4		
End	16:15:00	74	76	10	9		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	brown elfin (5)	Pacific sara orangetip (23)
Behr's metalmark (19)	desert orangetip (7)	Propertius duskywing (1)
bramble hairstreak (6)	funereal duskywing (1)	spring white (4)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
American crow (1+)	common raven (1+)	northern flicker (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
brush rabbit (1+)	coyote (1+)	spotted towhee (1+)
bushtit (1+)	K-rat sp. (burrows amd tail-drag sign) (1+)	western meadowlark (1+)
California ground squirrel (1+)	lesser goldfinch (1+)	
California towhee (1+)	Neotoma sp. (midden) (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-16
Biologist(s)	Darin Busby, Melissa Busby
Survey Area	Tribal 8
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	54	62	20	18	patchy	Hazy skies; average wind = 11mph
End	13:10:00	66	66	20	19	patchy	Hazy skies; average wind = 16mph

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (14)	desert pearly marble (3)	Propertius duskywing (1)
Behr's metalmark (22)	Orangetip sp. (1)	Sulphur sp. (2)
bramble hairstreak (1)	Pacific sara orangetip (7)	
Chalcedon variable checkerspot (45)	pale swallowtail (6)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-02
Biologist(s)	Darin Busby, Erik LaCoste
Survey Area	Tribal 9, Tribal 10
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	56	61	10	8	clear	
Mid	11:09:00	62	62	10	9	clear	
Mid. Start area 10	13:00:00	67	67	0	12	clear	
End	16:00:00	67	69	10	14	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
anise swallowtail (1)	cabbage white (1)	Pacific sara orangetip (36)
Behr's metalmark (10)	California tortoiseshell (1)	Propertius duskywing (11)
bramble hairstreak (13)	desert pearly marble (19)	
brown elfin (1)	funereal duskywing (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Spring white (1)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-23
Biologist(s)	Diana Saucedo
Survey Area	Tribal 1
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:05:00	73	73	0	1	clear	
End	16:20:00	85	87	50	7	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (4)	desert orangetip (7)	Pacific sara orangetip (3)
Behr's metalmark (22)	desert pearly marble (6)	pale swallowtail (4)
bramble hairstreak (2)	funereal duskywing (5)	Propertius duskywing (1)
brown elfin (2)	mourning cloak (1)	spring white (7)
checkered white (10)	orange sulphur (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Amsinckia intermedia</i>	<i>Gilia capitata ssp. abrotanifolia</i>	<i>Linanthus bellus</i>
<i>Ceanothus perplexans</i>	<i>Lasthenia gracilis</i>	<i>Nemophila menziesii</i>
<i>Ericameria linearifolia</i>	<i>Leptosiphon lemmonii</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-09
Biologist(s)	Darin Busby
Survey Area	Tribal 2
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	71	68	0	12	clear	
Weather check	11:30:00	76	78	0	14	clear	
End	16:00:00	82	82	0	10	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (5)	desert orangetip (12)	spring white (10)
Behr's metalmark (26)	desert pearly marble (11)	Sulphur sp. (1)
Blue sp. (1)	Mylitta crescent (2)	White sp. (9)
brown elfin (4)	Pacific sara orangetip (24)	
California patch (1)	Propertius duskywing (3)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Duskywing sp. (4)		

INCIDENTAL PLANT LIST		
<i>Arctostaphylos sp.</i>	<i>Boechera perennans</i>	<i>Lasthenia gracilis</i>
<i>Cryptantha sp.</i>	<i>Ceanothus leucodermis</i>	<i>Layia glandulosa</i>
<i>Ericameria sp.</i>	<i>Ceanothus perplexans</i>	<i>Phacelia parryi</i>
<i>Erodium sp.</i>	<i>Dendromecon rigida</i>	<i>Trichostema lanatum</i>
<i>Penstemon sp.</i>	<i>Eschscholzia californica</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-10
Biologist(s)	Diana Saucedo
Survey Area	Tribal 3
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	70	0	0	2	clear	
End	16:30:00	83	0	0	16	clear	High winds beginning

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (10)	desert pearly marble (30)	sleepy duskywing (5)
Behr's metalmark (51)	funereal duskywing (16)	spring white (9)
bramble hairstreak (10)	Pacific sara orangetip (53)	
desert orangetip (8)	pale swallowtail (3)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha spp</i>	<i>Amsinckia intermedia</i>	<i>Nemophila menziesii</i>
<i>Plagiobotrys spp</i>	<i>Lasthenia gracilis</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-18
Biologist(s)	Erin Bergman
Survey Area	Tribal 4
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	67	67.5	0	2	clear	
Temp check	10:16:00	74	75	0	1	clear	
End	16:24:00	72	73	0	1	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (5)	Pacific sara orangetip (7)	White species (7)
Behr's metalmark (23)	pale swallowtail (1)	
desert pearly marble (3)	spring white (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Bewick's wren (1+)	California towhee (1+)	turkey vulture (1+)
California quail (1+)	common raven (1+)	western meadowlark (1+)
California scrub-jay (1+)	mourning dove (1+)	white-crowned sparrow (1+)
California thrasher (1+)	red-tailed hawk (1+)	

INCIDENTAL PLANT LIST		
<i>Cryptantha species</i>	<i>Eulobus californicus</i>	<i>Penstemon centranthifolius</i>
<i>Amsinckia intermedia</i>	<i>Lasthenia gracilis</i>	<i>Phacelia parryi</i>
<i>Camissoniopsis confusa</i>	<i>Leptosyne californica</i>	<i>Salvia columbariae</i>
<i>Ceanothus leucodermis</i>	<i>Lupinus bicolor</i>	<i>Sisymbrium altissimum</i>
<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	<i>Nemophila menziesii</i>	
<i>Erodium cicutarium</i>	<i>Paeonia californica</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-11
Biologist(s)	Diana Saucedo
Survey Area	Tribal 5
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	73	0	0	5	clear	HWA DAY
Interim	14:00:00	83	0	0	14.5	clear	Butterflies still flying
End	15:45:00	83	0	20	14	patchy	HWA

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (21)	California tortoiseshell (1)	Pacific sara orangetip (22)
anise swallowtail (1)	desert pearly marble (16)	pale swallowtail (13)
Behr's metalmark (19)	echo blue (2)	spring white (15)
bramble hairstreak (8)	funereal duskywing (14)	variable checkerspot (1)
brown elfin (8)	orange sulphur (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Ceanothus leucodermis</i>	<i>Lasthenia gracilis</i>	
<i>Ceanothus perplexans</i>	<i>Nemophila menziesii</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-09
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 6
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	72	68	0	8	clear	
End	15:15:00	78	82	30	10		

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (5)	Edward's blue (1)	Proterius duskywing (1)
Behr's metalmark (17)	funereal duskywing (2)	spring white (8)
bramble hairstreak (9)	Pacific sara orangetip (3)	
Chalcedon variable checkerspot (1)	pale swallowtail (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
	California scrub-jay (1+)	granite spiny lizard (1+)
Blainville's horned lizard (1+)	California towhee (1+)	house finch (1+)
Anna's hummingbird (1+)	common raven (1+)	Neotoma sp. (midden) (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
bushtit (1+)	coyote (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-10
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 7
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	67	63	40	1		
End	15:15:00	86	92	10	6		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (8)	desert orangetip (10)	pale swallowtail (3)
Behr's metalmark (24)	funereal duskywing (2)	Properatus duskywing (2)
bramble hairstreak (6)	orange sulphur (1)	spring white (9)
checkered white (1)	Pacific sara orangetip (22)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
American crow (1+)	common side-blotched lizard (1+)	mourning dove (1+)
brush rabbit (1+)	coyote (1+)	red-tailed hawk (1+)
bushtit (1+)	greater roadrunner (1+)	turkey vulture (1+)
California towhee (1+)	horned lark (1+)	
common raven (1+)	K-rat sp. (tail-drags and burrows) (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-20
Biologist(s)	Diana Saucedo
Survey Area	Tribal 8
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:10:00	61	63	0	2	clear	
End	15:40:00	76	76	0	7	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (13)	common sootywing (4)	Pacific sara orangetip (30)
Behr's metalmark (20)	desert orangetip (1)	pale swallowtail (5)
bramble hairstreak (10)	desert pearly marble (9)	southern blue (1)
brown elfin (1)	echo blue (3)	spring white (3)
California sister (1)	funereal duskywing (4)	variable checkerspot (55)
cloudless sulphur (1)	orange sulphur (3)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
<i>Ceanothus perplexans</i>	<i>Layia platyglossa</i>	
<i>Lasthenia gracilis</i>	<i>Rhus ovata</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-11
Biologist(s)	Callie Amoaku
Survey Area	Tribal 9
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:15:00	79	70	0	1	clear	
2	10:56:00	78	79	10	2	clear	
3	12:48:00	80	86	0	9	clear	
4	14:31:00	77	84	0	12	clear	Gusts
End	15:43:00	81	82	0	12	clear	Gusts

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	checkered white (2)	Propertius duskywing (9)
Behr's metalmark (43)	desert pearly marble (14)	sleepy duskywing (2)
bramble hairstreak (5)	funereal duskywing (9)	southern blue (2)
brown elfin (2)	Pacific sara orangetip (68)	spring white (8)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Bewick's wren (1+)	coyote (1+)	western rattlesnake (1+)
bushtit (1+)	red-tailed hawk (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	sagebrush sparrow (1+)	wrentit (1+)
common raven (1+)	spotted towhee (1+)	

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>	<i>Lasthenia sp.</i>	<i>Amsinckia intermedia</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-17
Biologist(s)	Darin Busby, Diana Saucedo, Erik LaCoste, Melissa Busby
Survey Area	Tribal 9, Tribal 10
Survey Pass	5, 6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:45:00	60	63	0	7	clear	
Weather check	11:00:00	58	62	0	16	clear	Average wind speed = 13mph
Weather check	12:30:00	60	62	0	12	clear	
End	14:30:00	61	69	0	10	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (8)	brown elfin (2)	Pacific sara orangetip (15)
Blue sp. (1)	checkered white (5)	pale swallowtail (1)
bramble hairstreak (7)	desert pearly marble (11)	Propertius duskywing (6)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-20
Biologist(s)	Margie Mulligan
Survey Area	Tribal 2
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:25:00	60	0	0	6	clear	
End	16:30:00	75	0	0	9	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (4)	bramble hairstreak (1)	Pacific sara orangetip (4)
Behr's metalmark (15)	desert pearly marble (6)	southern blue (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Layia glandulosa</i>	<i>Linathus gracilis</i>	<i>Leptosiphon parviflorus</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-24
Biologist(s)	Erik LaCoste
Survey Area	Tribal 3
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	66	65	10	2	clear	
Mid	10:23:00	73	74	30	8	patchy	
End	15:42:00	78	80	40	11	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (12)	desert pearly marble (1)	pale swallowtail (6)
Behr's metalmark (14)	funereal duskywing (4)	Propertius duskywing (5)
bramble hairstreak (2)	orange sulphur (1)	spring white (6)
California tortoiseshell (1)	Pacific sara orangetip (7)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-20
Biologist(s)	Erik LaCoste
Survey Area	Tribal 4
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	60	60	0	2	clear	
End	16:30:00	75	75	0	9	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (1)	desert pearly marble (2)	Proterotus duskywing (3)
Behr's metalmark (2)	Pacific sara orangetip (4)	spring white (3)
bramble hairstreak (1)	pale swallowtail (7)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-20
Biologist(s)	Callie Amoaku
Survey Area	Tribal 5
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	62.6	66	0	1	clear	
2	13:06:00	73	76	0	4	clear	
End	16:07:00	73	76	0	3	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	desert pearly marble (1+)	Propertius duskywing (1)
Behr's metalmark (17)	funereal duskywing (2)	sleepy duskywing (1+)
bramble hairstreak (9)	Gabb's checkerspot (1+)	southern blue (1+)
brown elfin (1+)	Pacific sara orangetip (3)	spring white (8)
Chalcedon variable checkerspot (1)	pale swallowtail (2)	western tiger swallowtail (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	common yellowthroat (1+)	northern rough-winged swallow (1+)
California quail (1+)	house finch (1+)	red-tailed hawk (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	red-winged blackbird (1+)
common raven (1+)	northern mockingbird (1+)	turkey vulture (1+)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-18
Biologist(s)	Erik LaCoste
Survey Area	Tribal 6
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	63	62	0	4	clear	
End	15:30:00	87	85	30	7	patchy	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (2)	echo blue (1)	Propertius duskywing (5)
Behr's metalmark (3)	funereal duskywing (1)	spring white (10)
bramble hairstreak (4)	great purple hairstreak (1)	variable checkerspot (2)
brown elfin (2)	Pacific sara orangetip (8)	
desert pearly marble (6)	pale swallowtail (4)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-18
Biologist(s)	Diana Saucedo
Survey Area	Tribal 7
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	63	63	0	0	clear	
End	15:35:00	69	71	0	7	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (13)	desert pearly marble (8)	painted lady (2)
Behr's metalmark (31)	echo blue (5)	pale swallowtail (1)
bramble hairstreak (7)	funereal duskywing (10)	Propertius duskywing (7)
brown elfin (3)	orange sulphur (3)	spring white (8)
desert orangetip (1)	Pacific sara orangetip (30)	variable checkerspot (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Amsinckia intermedia</i>	<i>Lasthenia gracilis</i>	<i>Nemophila menziesii</i>
<i>Ceanothus leucodermis</i>	<i>Layia platyglossa</i>	<i>Rhus ovata</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-23
Biologist(s)	Darin Busby, Melissa Busby
Survey Area	Tribal 8, Tribal 10
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	73	75	0	5	clear	
End	15:15:00	86	88	30	10	patchy	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (43)	Chalcedon variable checkerspot (132)	pale swallowtail (7)
Behr's metalmark (44)	checkered white (6)	Properthus duskywing (13)
Blue sp. (10)	desert orangetip (7)	Sulphur sp. (2)
bramble hairstreak (10)	desert pearly marble (12)	White sp. (10)
brown elfin (3)	Pacific sara orangetip (35)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Anagallis arvensis</i>	<i>Castilleja affinis</i>	<i>Phacelia cicutaria</i> var. <i>hispida</i>
<i>Arctostaphylos</i> sp.	<i>Ceanothus leucodermis</i>	<i>Plagiobothrys nothofulvus</i>
<i>Brassica</i> sp.	<i>Eschscholzia californica</i>	<i>Rhus aromatica</i>
<i>Chaenactis</i> sp.	<i>Lasthenia gracilis</i>	<i>Rhus ovata</i>
<i>Erodium</i> sp.	<i>Linanthus dianthiflorus</i>	<i>Sambucus nigra</i>
<i>Lupinus</i> sp.	<i>Penstemon centranthifolius</i>	<i>Trichostema lanatum</i>
<i>Amsinckia menziesii</i>	<i>Penstemon spectabilis</i>	<i>Yucca schidigera</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-27
Biologist(s)	Darin Busby, Erik LaCoste
Survey Area	Tribal 1, Tribal 4
Survey Pass	6, 7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	71	69	0	4	clear	
End	15:30:00	78	82	0	15	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (8)	desert pearly marble (8)	western tailed-blue (1)
Behr's metalmark (10)	marine blue (1)	White sp. (1+)
brown elfin (1)	pale swallowtail (5)	
common sootywing (2)	Propertius duskywing (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Acmispon argophyllus</i> var. <i>argophyllus</i>	<i>Ericameria linearifolia</i>	<i>Mimulus aurantiacus</i>
<i>Amsinckia menziesii</i>	<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	<i>Penstemon clevelandii</i>
<i>Anisocoma acaulis</i>	<i>Eriophyllum wallacei</i>	<i>Penstemon spectabilis</i>
<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	<i>Eschscholzia californica</i>	<i>Phacelia parryi</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-04
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 1
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:40:00	73	72	0	7		
Mid day conditions	13:10:00	80	82	0	8		
End	17:00:00	75	78	0	8		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (3)	desert orangetip (1)	pale swallowtail (1)
Behr's metalmark (8)	desert pearly marble (1)	
blue-gray gnatcatcher (1+)	Lorquin's admiral (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	California ground squirrel (1+)	house finch (1+)
oak titmouse (1+)	California quail (1+)	lesser goldfinch (1+)
acorn woodpecker (1+)	California scrub-jay (1+)	mourning dove (1+)
American crow (1+)	California thrasher (1+)	mule deer (1+)
ash-throated flycatcher (1+)	California towhee (1+)	northern flicker (1+)
Botta's pocket gopher (1+)	common raven (1+)	spotted towhee (1+)
brush rabbit (1+)	common side-blotched lizard (1+)	western skink (1+)
bushtit (1+)	granite spiny lizard (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-25
Biologist(s)	Erik LaCoste
Survey Area	Tribal 2
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	66	66	0	9	clear	
Mid	10:37:00	75	75	0	13	clear	
Mid	12:57:00	79	79	0	15	clear	
End	15:15:00	78	76	10	15	patchy	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (10)	funereal duskywing (1)	pale swallowtail (1)
Behr's metalmark (1)	Pacific sara orangetip (3)	Propertius duskywing (1)

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
Spring white (1)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-03
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 3
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Not protocol yet.	08:45:00	54	57	0	9		Not protocol yet.
Not protocol yet.	09:15:00	58	54	0	10		Not protocol yet.
Not protocol yet.	09:40:00	60	56	0	10		Not protocol yet.
Start	10:00:00	62	60	0	10		Protocol conditions reached at 1000.
Mid afternoon conditions on a ridge.	14:00:00	70	72	0	10		Winds 6-10 with gusts 10-18 on ridge.
End	16:35:00	70	72	0	10		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (8)	checkered white (5)	orange sulphur (1)
Behr's metalmark (18)	common california ringlet (1)	spring white (7)
bramble hairstreak (2)	desert pearly marble (11)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	California quail (1+)	house finch (1+)
oak titmouse (1+)	California scrub-jay (1+)	lesser goldfinch (1+)
acorn woodpecker (1+)	California thrasher (1+)	mourning dove (1+)
American crow (1+)	California towhee (1+)	northern flicker (1+)
Anna's hummingbird (1+)	cliff swallow (1+)	phainopepla (1+)
ash-throated flycatcher (1+)	common raven (1+)	red-tailed hawk (1+)
brush rabbit (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
bushtit (1+)	granite spiny lizard (1+)	turkey vulture (1+)
California ground squirrel (1+)	greater roadrunner (1+)	white-throated swift (1+)

INCIDENTAL PLANT LIST

(none)

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-26
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 5
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
End	03:05:00	80	84	30	10		
Start	08:50:00	69	70	50	2		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (16)	checkered white (4)	pale swallowtail (24)
Behr's metalmark (23)	Edward's blue (2)	Proterptus duskywing (1)
brown elfin (1)	funereal duskywing (1)	tiger whiptail (1+)
cabbage white (3)	orange sulphur (1)	
California patch (1)	Pacific sara orangetip (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	California towhee (1+)	lesser goldfinch (1+)
Anna's hummingbird (1+)	common raven (1+)	mourning dove (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	mule deer (1+)
brush rabbit (1+)	coyote (1+)	red-tailed hawk (1+)
bushy tit (1+)	desert cottontail (1+)	rock wren (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	spotted towhee (1+)
California quail (1+)	great horned owl (1+)	turkey vulture (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 (Tribal Land)
Survey Date	2018-04-25
Biologist(s)	Darin Busby
Survey Area	Tribal 6
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:40:00	69	71	0	4	clear	
End	15:20:00	81	87	0	10	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (11)	desert pearly marble (20)	pale swallowtail (4)
Behr's metalmark (34)	funereal duskywing (8)	Propertius duskywing (5)
bramble hairstreak (3)	Gabb's checkerspot (4)	spring white (2)
brown elfin (1)	Pacific sara orangetip (12)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-24
Biologist(s)	Darin Busby
Survey Area	Tribal 7
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	67	65	10	1	patchy	
End	15:20:00	84	88	20	8	patchy	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (9)	California sister (1)	Pacific sara orangetip (12)
Behr's metalmark (26)	Chalcedon variable checkerspot (4)	Propertius duskywing (8)
bramble hairstreak (4)	checkered white (3)	White sp. (5)
brown elfin (3)	desert pearly marble (16)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-27
Biologist(s)	Erin Bergman
Survey Area	Tribal 8
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00	66	67	0	1	clear	
End	16:33:00	75	78	0	1	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (37)	desert pearly marble (10)	spring white (4)
Behr's metalmark (62)	orange sulphur (2)	White species (6)
California patch (2)	Pacific sara orangetip (16)	
Chalcedon variable checkerspot (69)	pale swallowtail (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
California quail (1+)	chipping sparrow (1+)	rosy boa (1+)
California scrub-jay (1+)	Duskywing species (1)	wrentit (1+)

INCIDENTAL PLANT LIST		
<i>Amsinckia intermedia</i>	<i>Lupinus bicolor</i>	<i>Sisymbrium altissimum</i>
<i>Hirschfeldia incana</i>	<i>Paeonia californica</i>	
<i>Lasthenia gracilis</i>	<i>Penstemon centranthifolius</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-04-24
Biologist(s)	Diana Saucedo
Survey Area	Tribal 9
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:50:00	72	72	20	2	patchy	
End	15:25:00	87	89	30	0	patchy	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (1)	desert pearly marble (11)	Pacific sara orangetip (6)
Behr's metalmark (14)	echo blue (1)	Propertius duskywing (5)
bramble hairstreak (1)	Edward's blue (3)	spring white (3)
checkered white (3)	funereal duskywing (1)	
desert orangetip (3)	orange sulphur (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Collinsia</i>	<i>Ceanothus perplexans</i>	<i>Rhus ovata</i>
<i>Phacelia</i>	<i>Dichelostemma capitatum</i>	<i>Salvia columbariae</i>
<i>Amsinckia intermedia</i>	<i>Gilia capitata</i>	
<i>Arctostaphylos glauca</i>	<i>Layia platyglossa</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-03
Biologist(s)	Erik LaCoste, Melissa Busby
Survey Area	Tribal 10
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:41:00	63	63	0	8	clear	
End	12:13:00	73	71	0	7	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (2)	brown elfin (1)	Pacific sara orangetip (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-07
Biologist(s)	Erik LaCoste
Survey Area	Tribal 1
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	73	68	10	4	clear	
Mid day	12:40:00	83	88	0	17	clear	
End	15:30:00	88	92	0	15	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	California sister (2)	marine blue (1)
Behr's metalmark (5)	echo blue (3)	Propertius duskywing (2)
brown elfin (1)	funereal duskywing (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-08
Biologist(s)	Diana Saucedo, Erik LaCoste
Survey Area	Tribal 2, Tribal 7
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	75	71	0	3	clear	
End	16:15:00	88	92	0	8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (12)	checkered white (2)	Pacific sara orangetip (2)
Behr's metalmark (17)	cloudless sulphur (3)	pale swallowtail (3)
brown elfin (1)	desert pearly marble (4)	Propertius duskywing (1)
California sister (2)	marine blue (13)	queen (1)
Chalcedon variable checkerspot (8)	orange sulphur (3)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-09
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 3
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	74	70	0	2		
Mid day	12:08:00	86	88	20	8		
End	17:00:00	92	94	10	6		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (16)	funereal duskywing (2)	pale swallowtail (2)
Behr's metalmark (13)	Lorquin's admiral (2)	Propertius duskywing (1)
brown elfin (1)	marine blue (6)	southern blue (2)
desert pearly marble (1)	orange sulphur (1)	
Edward's blue (3)	painted lady (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
acorn woodpecker (1+)	cliff swallow (1+)	northern mockingbird (1+)
American crow (1+)	common raven (1+)	northern rough-winged swallow (1+)
Anna's hummingbird (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
ash-throated flycatcher (1+)	coyote (1+)	rock wren (1+)
black-throated sparrow (1+)	granite spiny lizard (1+)	spotted towhee (1+)
Botta's pocket gopher (1+)	greater roadrunner (1+)	turkey vulture (1+)
brush rabbit (1+)	lesser goldfinch (1+)	white-throated swift (1+)
California scrub-jay (1+)	Merriam's chipmunk (1+)	wrentit (1+)
California thrasher (1+)	mourning dove (1+)	
California towhee (1+)	mule deer (1+)	

INCIDENTAL PLANT LIST

(none)

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-08
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 4
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	76	70	40	4		
Mid day	13:36:00	84	88	60	6		
End	16:15:00	89	92	20	8		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (4)	common california ringlet (1)	Propertius duskywing (1)
Behr's metalmark (1)	Edward's blue (2)	western tiger swallowtail (1)
blue-gray gnatcatcher (1+)	orange sulphur (1)	
Chalcedon variable checkerspot (1)	pale swallowtail (3)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
acorn woodpecker (1+)	common raven (1+)	mourning dove (1+)
Anna's hummingbird (1+)	common side-blotched lizard (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	coyote (1+)	red-tailed hawk (1+)
black-throated sparrow (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 meadowlark (1+)
California thrasher (1+)	lesser goldfinch (1+)	western rattlesnake (1+)
California towhee (1+)	Merriam's chipmunk (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-09
Biologist(s)	Diana Saucedo
Survey Area	Tribal 5
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	77	79	0	1	clear	
End	15:30:00	95	98	0	4	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (30)	desert pearly marble (4)	pale swallowtail (12)
anise swallowtail (1)	fiery skipper (1)	Proterpius duskywing (1)
Behr's metalmark (15)	funereal duskywing (2)	spring white (4)
California patch (2)	Harford's sulphur (3)	variable checkerspot (5)
California sister (3)	marine blue (15)	
common buckeye (1)	orange sulphur (1)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha spp</i>	<i>Castilleja foliolosa</i>	<i>Malacothrix glabrata</i>
<i>Phacelia sp</i>	<i>Ceanothus perplexans</i>	
<i>Plagiobotrys spp</i>	<i>Eriophyllum confertiflorum</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-03
Biologist(s)	Erik LaCoste, Melissa Busby
Survey Area	Tribal 8
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:17:00	73	71	0	8	clear	
End	16:00:00	79	83	0	6	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (26)	Chalcedon variable checkerspot (70)	orange sulphur (3)
Behr's metalmark (14)	desert pearly marble (1)	Southern blue (2)
bramble hairstreak (3)	Gabb's checkerspot (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-04
Biologist(s)	Erik LaCoste
Survey Area	Tribal 9
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:20:00	78	82	0	8	clear	
End	16:15:00	86	88	0	8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (4)	Propertius duskywing (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-07
Biologist(s)	Darin Busby
Survey Area	Tribal 10
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	73	73	10	3	clear	
End	15:03:00	86	89	0	8	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Behr's metalmark (3)	California sister (2)	western tiger swallowtail (2)
Blue sp. (5)	Chalcedon variable checkerspot (5)	White sp. (6)
bramble hairstreak (5)	echo blue (2)	
brown elfin (1)	marine blue (2)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
<i>Erysimum sp.</i>	<i>Eriophyllum confertiflorum</i>	<i>Penstemon centranthifolius</i>
<i>Castilleja affinis</i>	<i>Eschscholzia californica</i>	<i>Trichostema lanatum</i>
<i>Eriastrum sapphirinum</i>	<i>Lasthenia gracilis</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-10
Biologist(s)	Diana Saucedo, Margie Mulligan
Survey Area	Tribal 6, Tribal 7
Survey Pass	8, 9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:09:00	72	74	10	6	clear	
End	16:30:00	85	88	0	7	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (21)	Chalcedon variable checkerspot (11)	orange sulphur (1)
Behr's metalmark (11)	funereal duskywing (2)	Pacific sara orangetip (1)
Bernardino square-spotted blue (20)	Gabb's checkerspot (1)	pale swallowtail (2)
brown elfin (1)	Harford's sulphur (2)	western tailed-blue (1)
California sister (2)	marine blue (5)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-15
Biologist(s)	Diana Saucedo
Survey Area	Tribal 1
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	67	67	0	7	clear	Great day for wind, bad day for butterflies.
Windy	12:40:00	74	0	0	13	clear	Sustained winds above 10-13 mph
End	16:35:00	78	76	0	8	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (14)	California sister (4)	pale swallowtail (2)
Behr's metalmark (1)	hedgerow hairstreak (1)	Propertius duskywing (1)
Bernardino square-spotted blue (14)	Melissa blue (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha sp</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-10
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 2
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:40:00	76	74	0	8		
End	16:40:00	82	88	0	10		

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
San Diegan tiger whiptail (1+)	desert orangetip (1)	orange sulphur (1)
Acmon blue (13)	Lorquin's admiral (4)	
Behr's metalmark (4)	marine blue (3)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
Cooper's hawk (1+)	California scrub-jay (1+)	lesser goldfinch (1+)
American kestrel (1+)	California towhee (1+)	long-nosed snake (1+)
Botta's pocket gopher (1+)	common side-blotched lizard (1+)	mule deer (1+)
brush rabbit (1+)	granite spiny lizard (1+)	red-tailed hawk (1+)
bushtit (1+)	greater roadrunner (1+)	turkey vulture (1+)
California ground squirrel (1+)	house finch (1+)	
California quail (1+)	house wren (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-14
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 3
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:50:00	62	64	0	3		
Mid day	12:08:00	70	73	0	10		
End	17:05:00	70	72	0	10		

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (20)	brown elfin (1)	Edward's blue (4)
Behr's metalmark (8)	cabbage white (1)	pale swallowtail (1)
blue-gray gnatcatcher (1+)	Chalcedon variable checkerspot (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Anna's hummingbird (1+)	gophersnake (1+)	lesser goldfinch (1+)
Botta's pocket gopher (1+)	granite spiny lizard (1+)	mourning dove (1+)
brush rabbit (1+)	great horned owl (1+)	phainopepla (1+)
California towhee (1+)	house finch (1+)	spotted towhee (1+)
common side-blotched lizard (1+)	house wren (1+)	turkey vulture (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-15
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 4
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:40:00	60	65	0	5		
Mid day	12:08:00	76	78	0	8		
End	15:25:00	75	80	0	8		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (13)	blue-gray gnatcatcher (1+)	Edward's blue (3)
Behr's metalmark (1)	brown elfin (1)	marine blue (6)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	bushtit (1+)	house finch (1+)
Costa's hummingbird (1+)	California scrub-jay (1+)	lesser goldfinch (1+)
acorn woodpecker (1+)	California towhee (1+)	mourning dove (1+)
American crow (1+)	common raven (1+)	red-tailed hawk (1+)
Anna's hummingbird (1+)	common side-blotched lizard (1+)	rock wren (1+)
Bewick's wren (1+)	granite spiny lizard (1+)	spotted towhee (1+)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-14
Biologist(s)	Anita Hayworth
Survey Area	Tribal 5
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	63	64	0	6		
End	15:42:00	74	76	0	9		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (1)	desert pearly marble (1+)	marine blue (1)
Behr's metalmark (1+)	Harford's sulphur (1)	pale swallowtail (1)
Chalcedon variable checkerspot (1+)	Lorquin's admiral (1)	spring white (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
black-chinned sparrow (1+)	California towhee (1+)	Nuttall's woodpecker (1+)
Costa's hummingbird (1+)	canyon wren (1+)	red-tailed hawk (1+)
Anna's hummingbird (1+)	common raven (1+)	red-winged blackbird (1+)
Bewick's wren (1+)	house finch (1+)	rock wren (1+)
black-headed grosbeak (1+)	Hutton's vireo (1+)	Say's phoebe (1+)
bushtit (1+)	lesser goldfinch (1+)	spotted towhee (1+)
California quail (1+)	mourning dove (1+)	turkey vulture (1+)
California scrub-jay (1+)	northern flicker (1+)	wrentit (1+)
California thrasher (1+)	northern rough-winged swallow (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-15
Biologist(s)	Patricia Schuyler
Survey Area	Tribal 6
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	64	64	0	2	clear	
End	14:46:00	78	81	10	5	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (20)	Behr's metalmark (1)	Gabb's checkerspot (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
California scrub-jay (1+)	common raven (1+)	turkey vulture (1+)
California towhee (1+)	spotted towhee (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-14
Biologist(s)	Erik LaCoste, Melissa Busby
Survey Area	Tribal 8, Tribal 9
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	62	62	0	5	clear	
Mid	13:35:00	70	82	0	12	clear	
End	15:30:00	71	77	0	9	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (6)	funereal duskywing (2)	pale swallowtail (1)
Bernardino square-spotted blue (67)	Gabb's checkerspot (2)	Propertius duskywing (2)
California sister (2)	gray hairstreak (4)	western pygmy-blue (1)
Chalcedon variable checkerspot (84)	marine blue (2)	
common sootywing (1)	orange sulphur (8)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-10
Biologist(s)	Erik LaCoste
Survey Area	Tribal 10
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	78	74	0	5	clear	
End	15:00:00	88	89	0	12	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (2)	funereal duskywing (1)	
Chalcedon variable checkerspot (1)	marine blue (3)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-16
Biologist(s)	Diana Saucedo
Survey Area	Tribal 2
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	67	68	0	7	clear	Breeze sustained above 7 mph
End	16:00:00	74	73	0	13	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	California sister (1)	pale swallowtail (1)
Behr's metalmark (3)	Harford's sulphur (1)	
Bernardino square-spotted blue (15)	Melissa blue (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha sp</i>		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-15
Biologist(s)	Erik LaCoste
Survey Area	Tribal 7
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:40:00	64	64	0	2	clear	
End	15:10:00	78	85	0	12	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
Acmon blue (2)	California sister (2)	funereal duskywing (1)
Behr's metalmark (4)	Chalcedon variable checkerspot (3)	marine blue (4)
Bernardino square-spotted blue (12)	checkered white (2)	orange sulphur (2)

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-18
Biologist(s)	Jeffrey Priest
Survey Area	Tribal 9
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Not protocol yet	08:30:00	55	56	0	8		
Start	09:15:00	58	60	0	5		
End	16:05:00	70	74	0	8		

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (8)	Bernardino square-spotted blue (24)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Blainville's horned lizard (1+)	common raven (1+)	red-tailed hawk (1+)
American kestrel (1+)	common side-blotched lizard (1+)	rock wren (1+)
black-tailed jackrabbit (1+)	coyote (1+)	turkey vulture (1+)
bushtit (1+)	house finch (1+)	western meadowlark (1+)
California towhee (1+)	lesser nighthawk (1+)	white-throated swift (1+)
cliff swallow (1+)	mule deer (1+)	

INCIDENTAL PLANT LIST		
(none)		

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Tribal Land)
Survey Date	2018-05-16
Biologist(s)	Erik LaCoste
Survey Area	Tribal 10
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:40:00	68	67	0	3	clear	
End	15:00:00	78	80	0	8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (1)	Chalcedon variable checkerspot (2)	
Bernardino square-spotted blue (5)	checkered white (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

APPENDIX C-2

*2018 Focused Quino Checkerspot Butterfly Survey
Report for the Torrey Wind Project*

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.

Ms. Stacey Love, Recovery Permit Coordinator

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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).

Ms. Stacey Love, Recovery Permit Coordinator

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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	

Ms. Stacey Love, Recovery Permit Coordinator

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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	

Ms. Stacey Love, Recovery Permit Coordinator

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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	

Ms. Stacey Love, Recovery Permit Coordinator

Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Boulevard, San Diego County, California

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	

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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	

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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
<i>Hesperiidae – Skippers</i>						
<i>Erynnis brizo</i>	sleepy duskywing	—	—	—	—	—
<i>Erynnis funeralis</i>	funereal duskywing	X	X	X	X	X
<i>Erynnis propertius</i>	Propertius duskywing	—	—	—	X	X
<i>Hylephila phyleus</i>	fiery skipper	—	—	—	—	—
	duskywing sp.	—	—	—	—	X
<i>Nymphalidae – Brush-Footed Butterflies</i>						
<i>Adelpha bredowii</i>	California sister	—	—	—	—	—
<i>Chlosyne californica</i>	California patch	—	—	—	—	—
<i>Chlosyne gabbii</i>	Gabb's checkerspot	—	—	—	—	—
<i>Danaus gilippus</i>	queen	—	—	—	—	X
<i>Limenitis lorquini</i>	Lorquin's admiral	—	—	—	—	—
<i>Nymphalis californica</i>	California tortoiseshell	—	X	X	—	—
<i>Vanessa cardui</i>	painter lady	—	—	X	—	—
	lady sp.	X	X	—	—	—

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Table 2A
Butterflies Observed on Site Weeks 1–5

Scientific Name	Common Name	Week				
		1	2	3	4	5
<i>Lycaenidae – Blues and Hairstreaks</i>						
<i>Callophrys augustinus</i>	brown elfin	—	—	X	X	X
<i>Callophrys dumetorum</i>	bramble hairstreak	X	X	X	X	X
<i>Glaucopsyche lygdamus australis</i>	southern blue	X	X	X	—	—
<i>Icaricia acmon acmon</i>	Acmon blue	—	X	X	X	X
<i>Leptotes marina</i>	marine blue	—	—	—	—	—
<i>Philotes sonorensis</i>	Sonoran blue	—	X	—	—	—
<i>Strymon melinus</i>	gray hairstreak	—	—	—	—	—
	blue sp.	X	—	—	X	X
<i>Papilionidae – Swallowtails</i>						
<i>Papilio eurymedon</i>	pale swallowtail	—	—	—	—	—
<i>Papilio rutulus</i>	western tiger swallowtail	X	X	X	—	X
<i>Pieridae – Whites and Sulfurs</i>						
<i>Anthocharis cethura</i>	desert orangetip	—	—	—	X	X
<i>Anthocharis sara</i>	Pacific Sara orangetip	X	X	X	X	X
<i>Colias eurydice</i>	California dogface	X	—	—	X	—
<i>Colias eurytheme</i>	orange sulphur	—	—	—	X	—
<i>Euchloe hyantis lotta</i>	desert pearly marble	—	—	X	X	X
<i>Pontia protodice</i>	checkered white	—	X	X	X	X
<i>Pontia sisymbrii</i>	spring white	—	—	—	X	X
	white sp.	—	X	—	—	—
	sulphur sp.	—	—	—	X	X
<i>Riodinidae – Metalmarks</i>						
<i>Apodemia virgulti</i>	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
<i>Hesperiidae – Skippers</i>						
<i>Erynnis brizo</i>	sleepy duskywing	—	X	—	—	—
<i>Erynnis funeralis</i>	funereal duskywing	X	X	X	X	—
<i>Erynnis propertius</i>	Propertius duskywing	X	X	X	—	X
<i>Hylephila phyleus</i>	fiery skipper	—	—	—	X	—

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Table 2B
Butterflies Observed on Site Weeks 6–10

Scientific Name	Common Name	Week				
		6	7	8	9	10
	duskywing sp.	—	—	—	—	—
<i>Nymphalidae – Brush-Footed Butterflies</i>						
<i>Adelpha bredowii</i>	California sister	—	—	—	X	X
<i>Chlosyne californica</i>	California patch	—	X	—	—	—
<i>Chlosyne gabbii</i>	Gabb's checkerspot	—	X	X	—	—
<i>Danaus gilippus</i>	Queen	—	—	—	—	—
<i>Limenitis lorquini</i>	Lorquin's admiral	—	—	—	X	X
<i>Nymphalis californica</i>	California tortoiseshell	—	—	—	—	—
<i>Vanessa cardui</i>	painted lady	—	—	—	—	—
	lady sp.	—	X	—	—	—
<i>Lycaenidae – Blues and Hairstreaks</i>						
<i>Callophrys augustinus</i>	brown elfin	X	—	—	—	—
<i>Callophrys dumetorum</i>	bramble hairstreak	X	X	—	X	—
<i>Glaucopsyche lygdamus australis</i>	southern blue	X	X	—	X	—
<i>Icaricia acmon acmon</i>	Acmon blue	X	X	X	X	X
<i>Leptotes marina</i>	marine blue	—	—	—	—	—
<i>Philotes sonorensis</i>	Sonoran blue	—	—	—	—	—
<i>Strymon melinus</i>	gray hairstreak	—	—	—	X	—
	blue sp.	—	—	—	—	—
<i>Papilionidae – Swallowtails</i>						
<i>Papilio eurymedon</i>	pale swallowtail	X	X	X	X	—
<i>Papilio rutulus</i>	western tiger swallowtail	X	—	X	—	—
<i>Pieridae – Whites and Sulfurs</i>						
<i>Anthocharis cethura</i>	desert orangetip	X	—	—	—	—
<i>Anthocharis sara</i>	Pacific Sara orangetip	X	X	X	—	—
<i>Colias eurydice</i>	California dogface	—	—	—	—	—
<i>Colias eurytheme</i>	orange sulphur	—	—	—	—	—
<i>Euchloe hyantis lotta</i>	desert pearly marble	X	X	X	X	—
<i>Pontia protodice</i>	checkered white	X	—	—	—	—
<i>Pontia sisymbrii</i>	spring white	X	X	X	—	X
	white sp.	X	X	—	X	—
	sulphur sp.	—	—	—	—	—
<i>Riodinidae – Metalmarks</i>						
<i>Apodemia virgulti</i>	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
<i>Apiaceae – Carrot Family</i>		
<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	woolly-fruit lomatium	X
<i>Lomatium utriculatum</i>	common lomatium	—
<i>Asteraceae – Sunflower Family</i>		
<i>Achillea millefolium</i>	common yarrow, milfoil	—
<i>Lasthenia californica</i> or <i>Lasthenia gracilis</i>	common goldfields	X
<i>Lasthenia coronaria</i>	southern goldfields	—
<i>Layia platyglossa</i>	coastal tidytips, common tidytips	—
<i>Boraginaceae – Borage Family</i>		
<i>Amsinckia menziesii</i>	Menzies' fiddleneck, rancher's fireweed	—
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rancher's fiddleneck	—
<i>Amsinckia menziesii</i> var. <i>menziesii</i>	rigid fiddleneck	—
<i>Cryptantha</i> spp. or <i>Plagiobothrys</i> spp.	popcorn flower	X
<i>Phacelia distans</i>	distant phacelia, wild-heliotrope	—
<i>Fabaceae – Pea Family</i>		
<i>Acmispon (=Lotus)</i> spp.	deerweed, spanishclover, lotus	—
<i>Hydrophyllaceae – Waterleaf Family</i>		
<i>Eriodictyon crassifolium</i> var. <i>crassifolium</i>	thickleaf yerba santa	—
<i>Eriodictyon trichocalyx</i> var. <i>trichocalyx</i>	hairy yerba santa	—
<i>Lamiaceae – Mint Family</i>		
<i>Salvia columbariae</i>	chia	X
<i>Plantaginaceae – Plantain Family</i>		
<i>Antirrhinum coulterianum</i>	Coulter's snapdragon	—
<i>Collinsia</i> sp.	Chinese houses	—
<i>Keckiella antirrhinoides</i> var. <i>antirrhinoides</i>	snapdragon penstemon	—
<i>Keckiella cordifolia</i>	heartleaf keckiella, climbing bush penstemon	—
<i>Plantago erecta</i>	dwarf plantain	—
<i>Plantago patagonica</i>	woolly plantain	—

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Table 3
Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
<i>Polemoniaceae – Phlox Family</i>		
<i>Gilia angelensis</i>	grassland gilia	—
<i>Gilia capitata</i> ssp. <i>abrotanifolia</i>	ball gilia	—
<i>Linanthus</i> spp.	ground pink	X
<i>Polygonaceae – Buckwheat Family</i>		
<i>Eriogonum fasciculatum</i>	California buckwheat	—
<i>Orobanchaceae – Broom-Rape Family</i>		
<i>Castilleja exserta</i>	exserted Indian paintbrush, common owl’s-clover	—
<i>Scrophulariaceae – Figwort Family</i>		
<i>Cordylanthus rigidus</i> ssp. <i>setiger</i>	stiffbranch birds beak, dark-tipped bird’s-beak	—
<i>Liliaceae – Lily Family</i>		
<i>Allium haematochiton</i>	redskin onion	—
<i>Allium peninsulare</i>	Mexicali onion, red-flower onion	—
<i>Allium praecox</i>	early onion	—
<i>Bloomeria clevelandii</i>	San Diego goldenstar	—
<i>Dichelostemma capitatum</i>	bluedicks	—
<i>Muilla maritima</i>	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.

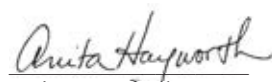
Dudek certifies that the information in this survey report and the attached figures and appendices fully and accurately represents the work conducted by the Quino-permitted biologists who conducted this focused survey.

Ms. Stacey Love, Recovery Permit Coordinator

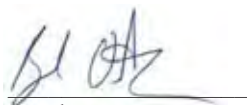
Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Boulevard, San Diego County, California

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,



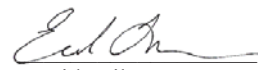
Anita Hayworth
Permit #TE-781084-9.1



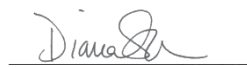
Brock Ortega
Permit #TE-813545-6



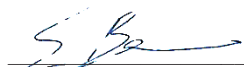
Callie Amoaku
Permit #TE-36118B-1



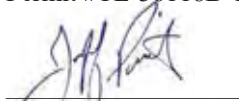
David Erik LaCoste
Permit #TE-027736-6



Diana Saucedo
Permit #TE-221287-1



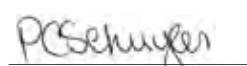
Erin Bergman
Permit #TE-813545-5



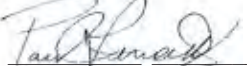
Jeffrey Priest
Permit #TE-840619-6



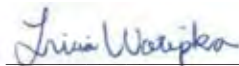
Margie Mulligan
Permit #TE-88969B-0



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

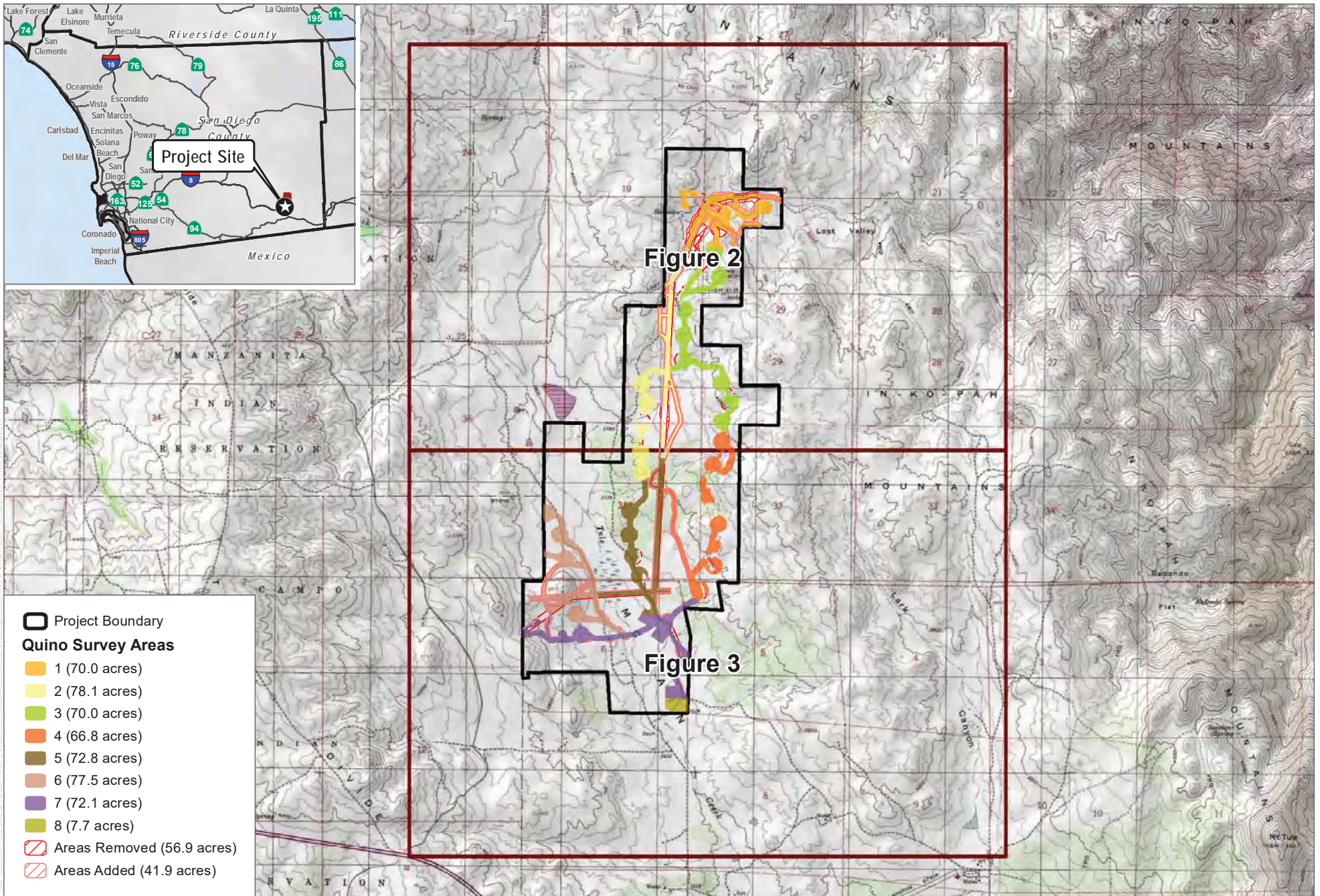
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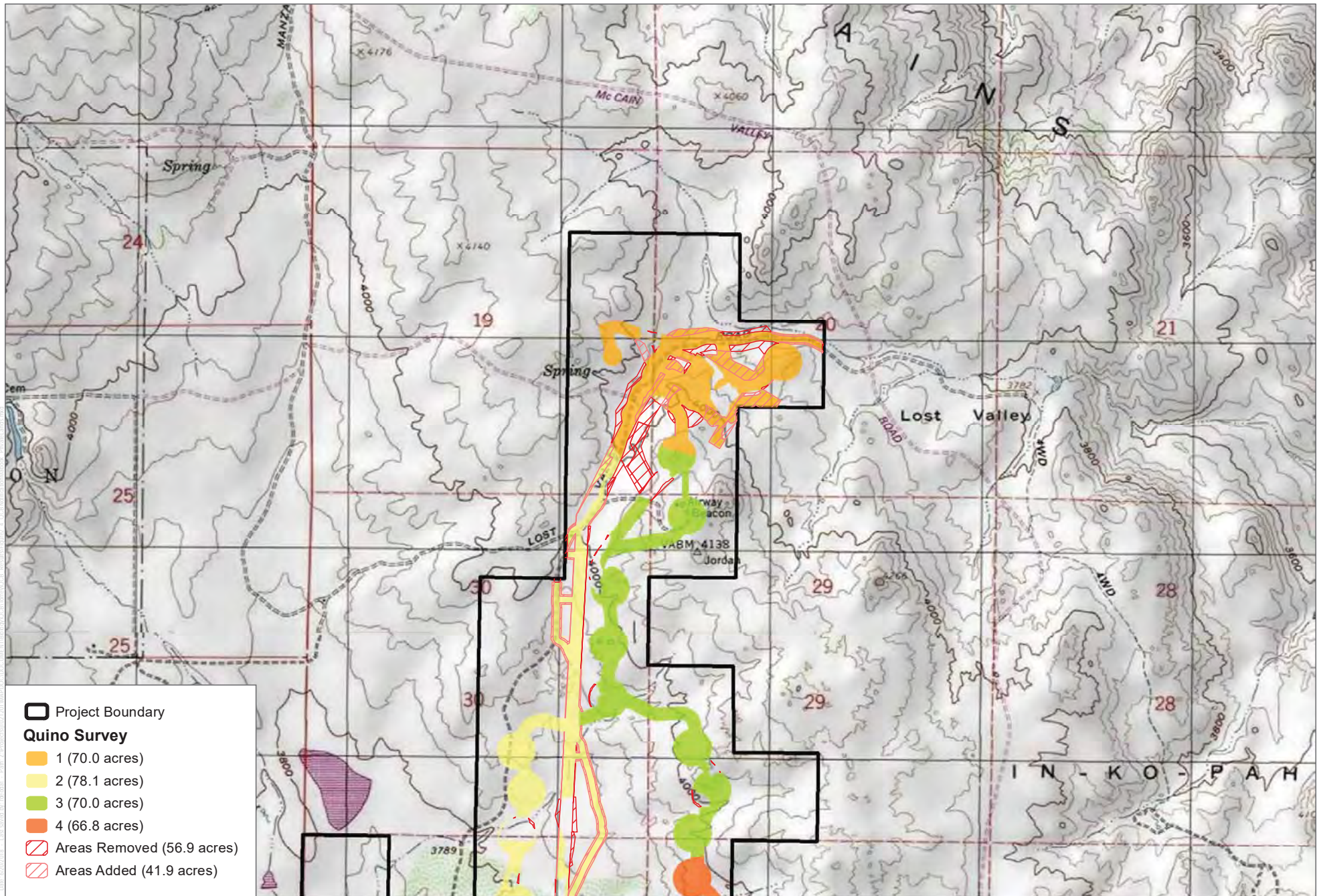
Ms. Stacey Love, Recovery Permit Coordinator

Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Boulevard, San Diego County, California

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SOURCE: USGS 2018

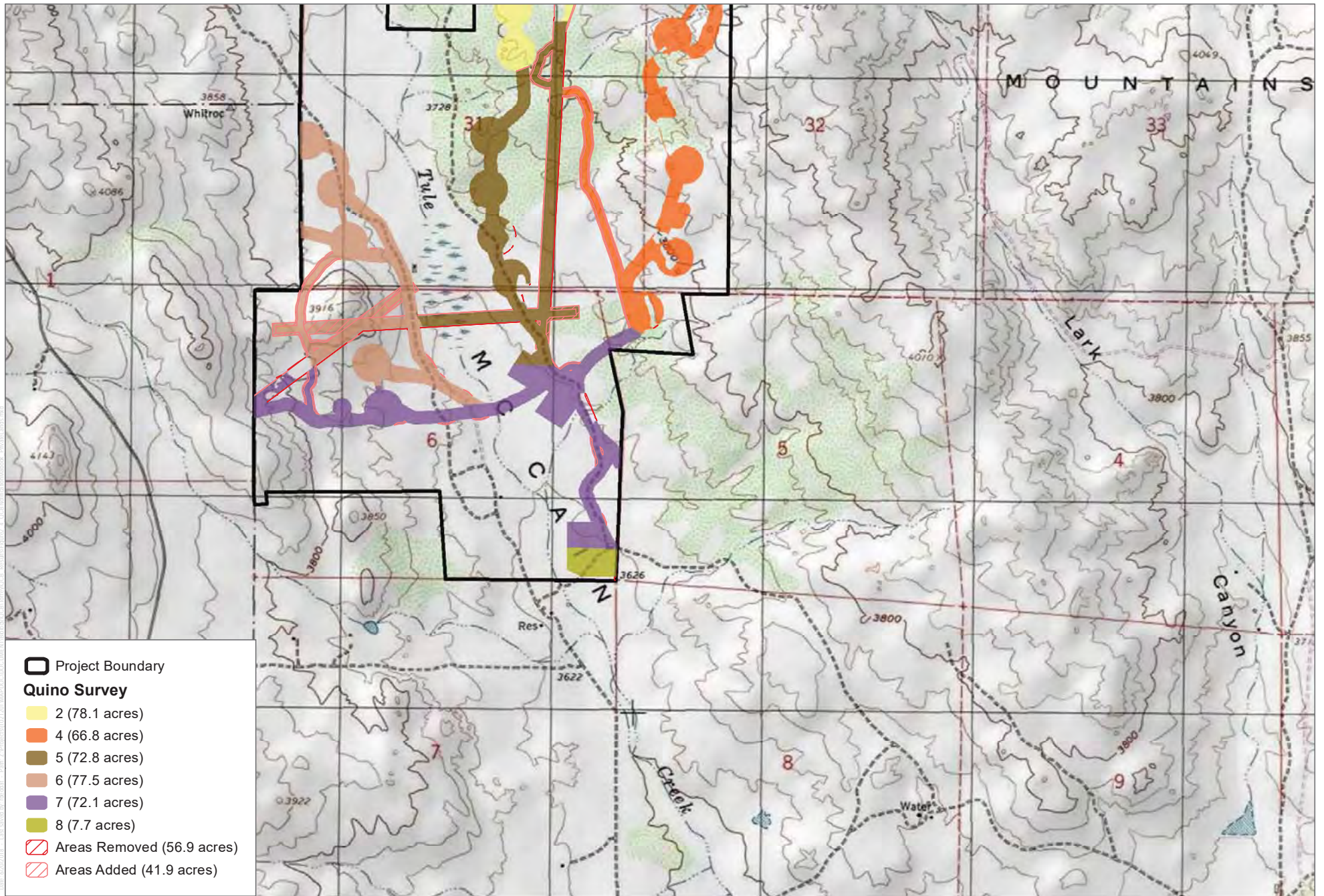


SOURCE: USGS 2018



FIGURE 2
Survey Results

Torrey Wind Project - Results of 2018 Quino Checkerspot Survey



SOURCE: USGS 2018



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

APPENDIX A (Continued)

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

Apelocoma 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

APPENDIX A (Continued)

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

APPENDIX A (Continued)

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

APPENDIX A (Continued)

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*—wren tit

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
- Melospiza 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

APPENDIX A (Continued)

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

APPENDIX A (Continued)

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

APPENDIX A (Continued)

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (30)	bramble hairstreak (2)	southern blue (1)
Blue sp. (1+)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (3)	Pacific sara orangetip (8)	west coast lady (1)
funereal duskywing (1)	southern blue (3)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (3)	bramble hairstreak (1)	Pacific sara orangetip (7)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (4)	funereal duskywing (1)	western bluebird (1+)
bramble hairstreak (3)	Pacific sara orangetip (4)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (15)	funereal duskywing (3)	
bramble hairstreak (14)	Pacific sara orangetip (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (37)	checkered white (2)	
bramble hairstreak (8)	Pacific sara orangetip (8)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Pacific sara orangetip (1+)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1)	Lady sp (1)	Pacific sara orangetip (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (25)	funereal duskywing (2)	
bramble hairstreak (6)	Pacific sara orangetip (8)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>Deinandra floribunda</i>		

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (25)	funereal duskywing (2)	painting lady (2)
bramble hairstreak (9)	Pacific sara orangetip (9)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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		
<i>(none)</i>		

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		
<i>Cordylanthus rigidus</i>		

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 <i>SPECIES (COUNT)</i>		
checkered white (1+)	funereal duskywing (1+)	Pacific sara orangetip (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
bushtit (1+)	California quail (1+)	red-tailed hawk (1+)
cactus wren (1+)	California scrub-jay (1+)	

INCIDENTAL PLANT LIST		
<i>Cryptantha micrantha</i>		

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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	
<i>Ericameria sp.</i>	<i>Cryptantha micrantha</i>

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (64)	bramble hairstreak (1)	Pacific sara orangetip (24)
blue-gray gnatcatcher (1+)	desert pearly marble (7)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
California quail (1+)	chipping sparrow (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	phainopepla (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
<i>Ceanothus leucodermis</i>	<i>Ericameria linearifolia</i>	<i>Oenothera californica</i>
<i>Ceanothus perplexans</i>	<i>Garrya veatchii</i>	<i>Rhus aromatica</i>
<i>Chenopodium californicum</i>	<i>Leptosiphon lemmonii</i>	
<i>Cryptantha micrantha</i>	<i>Lupinus concinnus</i>	

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1+)	checkered white (1+)	western bluebird (1+)
bramble hairstreak (1+)	desert orangetip (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>Ceanothus perplexans</i>	<i>Ericameria linearifolia</i>	
<i>Cryptantha micrantha</i>	<i>Lasthenia gracilis</i>	

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
California towhee (1+)	house finch (1+)	Wilson's warbler (1+)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

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 <small>SPECIES (COUNT)</small>		
Behr's metalmark (32)	funereal duskywing (1)	spring white (4)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (21)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
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		
<i>Boechera californica</i>	<i>Lasthenia gracilis</i>	<i>Lomatium dasycarpum</i>
<i>Ceanothus perplexans</i>	<i>Layia platyglossa</i>	
<i>Cryptantha micrantha</i>	<i>Leptosyne californica</i>	

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		
<i>Amsinckia intermedia</i>	<i>Lasthenia gracilis</i>	<i>Rhus aromatica</i>
<i>Ceanothus perplexans</i>	<i>Leptosyne californica</i>	

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 <i>SPECIES (COUNT)</i>		
Acmon blue (2)	bramble hairstreak (1)	Pacific sara orangetip (34)
Behr's metalmark (122)	desert pearly marble (19)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>Acmispon heermannii</i>	<i>Erodium cicutarium</i>	<i>Pectocarya penicillata</i>
<i>Amsinckia intermedia</i>	<i>Lasthenia gracilis</i>	<i>Plagiobothrys arizonicus</i>
<i>Ceanothus perplexans</i>	<i>Lomatium dasycarpum</i>	
<i>Cryptantha micrantha</i>	<i>Lupinus concinnus</i>	

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		
<i>Ceanothus leucodermis</i>	<i>Chenopodium californicum</i>	<i>Lasthenia gracilis</i>
<i>Ceanothus perplexans</i>	<i>Ericameria pinifolia</i>	<i>Lomatium dasycarpum</i>

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+)
bushy tit (1+)	common raven (1+)	turkey vulture (1+)

INCIDENTAL PLANT LIST		
<i>Ericameria linearifolia</i>	<i>Leptosyne californica</i>	<i>Oenothera californica ssp. avita</i>
<i>Lasthenia gracilis</i>	<i>Lupinus concinnus</i>	<i>Plagiobothrys arizonicus</i>

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (17)	Pacific sara orangetip (5)	Propertius duskywing (3)
bramble hairstreak (1)	pale swallowtail (1)	spring white (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1+)	Pacific sara orangetip (1+)	
checkered white (1+)	Propertius duskywing (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>Anisocoma acaulis</i>	<i>Eriophyllum wallacei</i>	<i>Leptosiphon lemmonii</i>
<i>Ceanothus perplexans</i>	<i>Euphorbia albomarginata</i>	<i>Leptosiphon parviflorus</i>
<i>Cryptantha micrantha</i>	<i>Geraea viscida</i>	<i>Linanthus bellus</i>
<i>Descurainia pinnata</i>	<i>Lasthenia gracilis</i>	<i>Lomatium dasycarpum</i>
<i>Ericameria linearifolia</i>	<i>Layia glandulosa</i>	<i>Lupinus concinnus</i>

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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		
<i>Ceanothus leucodermis</i>	<i>Ericameria linearifolia</i>	<i>Layia glandulosa</i>
<i>Ceanothus perplexans</i>	<i>Erodium cicutarium</i>	<i>Linanthus bellus</i>
<i>Chenopodium californicum</i>	<i>Lasthenia gracilis</i>	

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)	Proterptus 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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (9)	funereal duskywing (1)	Propertius duskywing (1)
bramble hairstreak (1)	Pacific sara orangetip (2)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (49)	Pacific sara orangetip (1)	
desert pearly marble (4)	pale swallowtail (3)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
California scrub-jay (1+)	chipping sparrow (1+)	common raven (1+)

INCIDENTAL PLANT LIST		
<i>Geraea viscida</i>	<i>Linanthus bellus</i>	

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)	Proterpterus 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		
<i>Ceanothus leucodermis</i>	<i>Ericameria linearifolia</i>	<i>Lupinus concinnus</i>
<i>Ceanothus perplexans</i>	<i>Eriodictyon crassifolium</i>	<i>Nama demissa</i>
<i>Chaenactis glabriuscula</i>	<i>Erodium cicutarium</i>	<i>Oenothera californica</i>
<i>Cryptantha micrantha</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Dichelostemma capitatum</i>	<i>Linanthus bellus</i>	

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (14)	Gabb's checkerspot (1)	Propertius duskywing (2)
desert pearly marble (4)	pale swallowtail (1)	sleepy duskywing (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (18)	Pacific sara orangetip (5)	spring white (2)
desert pearly marble (9)	pale swallowtail (1)	White species (9)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
acorn woodpecker (1+)	chipping sparrow (1+)	western meadowlark (1+)
California scrub-jay (1)	turkey vulture (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
<i>Ceanothus leucodermis</i>	<i>Euphorbia albomarginata</i>	<i>Lupinus concinnus</i>
<i>Ceanothus perplexans</i>	<i>Lasthenia gracilis</i>	<i>Pectocarya setosa</i>
<i>Ericameria linearifolia</i>	<i>Layia glandulosa</i>	<i>Rhus aromatica</i>
<i>Eriophyllum wallacei</i>	<i>Loeseliastrum schottii</i>	<i>Senecio californicus</i>

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		
<i>Amsinckia intermedia</i>	<i>Phlox austromontana</i>	
<i>Chenopodium californicum</i>	<i>Sisymbrium altissimum</i>	

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 <small>SPECIES (COUNT)</small>		
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 <small>SPECIES (COUNT)</small>		
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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (10)	pale swallowtail (1)	western tiger swallowtail (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>Ericameria linearifolia</i>	<i>Heliotropium curassavicum</i>	<i>Linanthus bellus</i>
<i>Eriodictyon trichocalyx</i>	<i>Hesperoyucca whipplei</i>	<i>Penstemon centranthifolius</i>

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)	Proterotus duskywing (3)
Behr's metalmark (22)	Gabb's checkerspot (1)	spring white (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Pectocarya spp</i>	<i>Eriastrum sapphirinum</i>	<i>Leptosiphon floribundus</i>
<i>Plagiobotrys</i>	<i>Erodium cicutarium</i>	<i>Leptosiphon lemmonii</i>
<i>Amsinckia intermedia</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>

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		
<i>Amsinckia intermedia</i>	<i>Ericameria linearifolia</i>	<i>Layia glandulosa</i>
<i>Ceanothus leucodermis</i>	<i>Eriodictyon crassifolium</i>	<i>Linanthus bellus</i>
<i>Ceanothus perplexans</i>	<i>Eriophyllum wallacei</i>	<i>Lupinus concinnus</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia gracilis</i>	<i>Penstemon centranthifolius</i>

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1+)	pale swallowtail (1+)	
Pacific sara orangetip (1+)	western bluebird (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Acmon blue (1)	blue-gray gnatcatcher (1+)	Lorquin's admiral (2)
Behr's metalmark (9)	desert pearly marble (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>(none)</i>		

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 <i>SPECIES (COUNT)</i>		
Acmon blue (2)	Behr's metalmark (5)	California sister (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Bewick's wren (1+)	common raven (1+)	turkey vulture (1+)
California towhee (1+)	gophersnake (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
<i>(none)</i>		

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 <i>SPECIES (COUNT)</i>		
San Diegan tiger whiptail (1+)	Behr's metalmark (2)	gray hairstreak (2)
Acmon blue (3)	California sister (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Acmon blue (2)	California sister (2)	
Behr's metalmark (4)	funereal duskywing (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Acmon blue (1)	Behr's metalmark (1)	blue-gray gnatcatcher (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Acmon blue (1+)	blue-gray gnatcatcher (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Acmon blue (1)	blue-gray gnatcatcher (1+)	Propertius duskywing (1)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Acmon blue (1)	Lorquin's admiral (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
Acmon blue (1)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
California sister (1)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL PLANT LIST		
(none)		

APPENDIX C-3

*2019 Focused Quino Checkerspot Butterfly Survey
for Proposed Wind Energy Facilities, Boulevard*

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 Borchert (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 tidytops (*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 Borchert (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
3	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	
	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	
5	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	
	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 Borchert (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						
<i>Copaeodes aurantiacus</i>	orange skipperling	–	–	X	–	–
<i>Erynnis funeralis</i>	funereal duskywing	X	X	X	X	X
<i>Erynnis propertius</i>	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
<i>Erynnis tristis</i>	mournful duskywing	-	-	-	-	-
<i>Pholisora catullus</i>	Common sootywing	-	-	X	X	X
<i>Pyrgus albescens</i>	white checkered-skipper	X	-	X	X	-
Nymphalidae – Brush-Footed Butterflies						
<i>Chlosyne californica</i>	California patch	X	-	X	-	-
<i>Chlosyne gabbii</i>	Gabb’s checkerspot	-	-	-	-	-
<i>Danaus gilippus</i>	queen	-	-	-	-	-
<i>Danaus plexippus</i>	monarch	-	X	-	-	-
<i>Euphydryas chalcedona chalcedona</i>	Chalcedon variable checkerspot	-	-	-	-	-
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	-	-	-	-	X
<i>Junonia coenia</i>	common buckeye	-	-	-	-	-
<i>Nymphalis antiopa</i>	mourning cloak	-	-	-	-	-
<i>Nymphalis californica</i>	California tortoiseshell	X	X	X	X	X
<i>Vanessa annabella</i>	west coast lady	X	X	X	X	X
<i>Vanessa cardui</i>	painting lady	X	X	X	X	X
	lady sp.	X	X	-	-	X
Lycaenidae – Blues and Hairstreaks						
<i>Atlides halesus</i>	great purple hairstreak	X	-	-	-	X
<i>Brephidium exile</i>	western pygmy-blue	-	X	-	X	-
<i>Callophrys augustinus</i>	brown elfin	X	X	X	X	X
<i>Callophrys dumetorum</i>	bramble hairstreak	X	X	X	X	X
<i>Callophrys dumetorum affinis</i>	immaculate bramble hairstreak	-	-	-	-	-
<i>Callophrys perplexa</i>	Perplexing hairstreak	-	X	-	-	-
<i>Euphilotes battoides bernardino</i>	Bernardino square-spotted blue	-	-	-	-	-
<i>Everes amyntula</i>	western tailed-blue	-	-	-	-	-
<i>Glaucopsyche lygdamus australis</i>	southern blue	-	-	-	-	-
<i>Hemiargus ceraunus gyas</i>	Edward’s blue	-	-	X	-	X
<i>Hemiargus isola</i>	Reakirt’s blue	-	-	-	-	-
<i>Icaricia acmon acmon</i>	Acmon blue	-	-	X	-	X
<i>Leptotes marina</i>	marine blue	-	-	-	X	X
<i>Lycaeides melissa</i>	Melissa blue	-	-	-	-	-
<i>Strymon melinus</i>	gray hairstreak	-	X	-	X	X
	blue sp.	-	X	-	X	-
Papilionidae – Swallowtails						
<i>Papilio eurymedon</i>	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						
<i>Anthocharis cethura</i>	desert orangetip	X	X	X	X	-
<i>Anthocharis sara sara</i>	Pacific Sara orangetip	X	X	X	X	X
<i>Colias eurydice</i>	California dogface	-	X	X	X	-
<i>Colias eurytheme</i>	orange sulphur	X	-	X	X	-
<i>Colias harfordii</i>	Harford’s sulphur	X	X	-	X	X
<i>Euchloe hyantis</i>	California marble	X	-	-	-	-
<i>Euchloe hyantis lotta</i>	desert pearly marble	X	X	X	X	X
<i>Eurema nicippe</i>	sleepy orange	-	-	-	-	-
<i>Nathalis iole</i>	dainty sulphur	X	X	X	X	X
<i>Phoebis sennae</i>	cloudless sulphur	-	-	X	-	-
<i>Pieris rapae</i>	cabbage white	-	X	-	X	X
<i>Pontia beckerii</i>	Becker’s white	-	-	X	X	-
<i>Pontia protodice</i>	checkered white	X	X	X	X	X
<i>Pontia sisymbrii</i>	spring white	X	X	X	X	X
	orangetip sp.	X	-	-	-	-
	sulphur sp.	X	X	X	X	X
	white sp.	-	X	X	-	X
Riodinidae – Metalmarks						
<i>Apodemia mormo virgulti</i>	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					
<i>Copaeodes aurantiacus</i>	orange skipperling	-	-	-	-
<i>Erynnis funeralis</i>	funereal duskywing	X	X	X	X
<i>Erynnis propertius</i>	Propertius duskywing	X	X	X	X
<i>Erynnis tristis</i>	mournful duskywing	-	X	-	-
<i>Pholisora catullus</i>	Common sootywing	X	X	-	-
<i>Pyrgus albescens</i>	white checkered-skipper	X	X	-	X
Nymphalidae – Brush-Footed Butterflies					
<i>Chlosyne californica</i>	California patch	-	-	-	-
<i>Chlosyne gabbii</i>	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
<i>Danaus gilippus</i>	queen	X	-	-	-
<i>Danaus plexippus</i>	monarch	-	-	-	X
<i>Euphydryas chalcedona chalcedona</i>	Chalcedon variable checkerspot	X	-	-	-
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	-	-	-	-
<i>Junonia coenia</i>	common buckeye	-	-	X	-
<i>Nymphalis antiopa</i>	mourning cloak	-	-	X	-
<i>Nymphalis californica</i>	California tortoiseshell	-	-	-	-
<i>Vanessa annabella</i>	west coast lady	X	X	X	-
<i>Vanessa cardui</i>	painted lady	X	X	X	X
	lady sp.	X	X	X	X
Lycaenidae – Blues and Hairstreaks					
<i>Atlides haesus</i>	great purple hairstreak	X	X	-	-
<i>Brephidium exile</i>	western pygmy-blue	X	X	X	X
<i>Callophrys augustinus</i>	brown elfin	-	-	X	-
<i>Callophrys dumetorum</i>	bramble hairstreak	X	-	X	-
<i>Callophrys dumetorum affinis</i>	immaculate bramble hairstreak	-	X	-	-
<i>Callophrys perplexa</i>	Perplexing hairstreak	-	-	-	-
<i>Euphilotes battoides bernardino</i>	Bernardino square-spotted blue	-	-	-	X
<i>Everes amyntula</i>	western tailed-blue	-	-	X	X
<i>Glaucopsyche lygdamus australis</i>	southern blue	-	X	-	-
<i>Hemiargus ceraunus gyas</i>	Edward's blue	X	X	X	X
<i>Hemiargus isola</i>	Reakirt's blue	X	-	-	-
<i>Icaricia acmon acmon</i>	Acmon blue	-	X	X	X
<i>Leptotes marina</i>	marine blue	-	X	X	X
<i>Lycaeides melissa</i>	Melissa blue	-	-	-	X
<i>Strymon melinus</i>	gray hairstreak	X	X	X	X
	blue sp.	X	-	X	X
Papilionidae – Swallowtails					
<i>Papilio eurymedon</i>	pale swallowtail	X	X	X	-
Pieridae – Whites and Sulfurs					
<i>Anthocharis cethura</i>	desert orangetip	X	-	X	-
<i>Anthocharis sara sara</i>	Pacific Sara orangetip	X	X	X	X
<i>Colias eurydice</i>	California dogface	X	-	-	-
<i>Colias eurytheme</i>	orange sulphur	X	X	X	X
<i>Colias harfordii</i>	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
<i>Euchloe hyantis</i>	California marble	-	-	-	-
<i>Euchloe hyantis lotta</i>	desert pearly marble	X	X	X	X
<i>Eurema nicippe</i>	sleepy orange	X	-	-	-
<i>Nathalis iole</i>	dainty sulphur	X	X	X	X
<i>Phoebis sennae</i>	cloudless sulphur	-	-	-	-
<i>Pieris rapae</i>	cabbage white	X	-	X	X
<i>Pontia beckerii</i>	Becker's white	X	-	-	X
<i>Pontia protodice</i>	checkered white	X	X	X	X
<i>Pontia sisymbrii</i>	spring white	X	-	-	-
	orangetip sp.	-	-	-	-
	sulphur sp.	X	-	-	X
	white sp.	X	X	X	X
Riodinidae – Metalmarks					
<i>Apodemia mormo virgulti</i>	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		
<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	woollyfruit desertparsley	X
<i>Lomatium utriculatum</i>	common lomatium	—
Asteraceae – Sunflower Family		
<i>Achillea millefolium</i>	common yarrow, milfoil	X
<i>Lasthenia californica</i> or <i>Lasthenia gracilis</i>	California goldfields or needle goldfields	X
<i>Lasthenia coronaria</i>	royal goldfields	—

Table 4. Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
<i>Layia platyglossa</i>	coastal tidytips, common tidytips	X
Boraginaceae – Borage Family		
<i>Amsinckia menziesii</i>	Menzies' fiddleneck, rancher's fireweed	X
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rancher's fiddleneck	—
<i>Amsinckia menziesii</i> var. <i>menziesii</i>	rigid fiddleneck	—
<i>Cryptantha</i> spp. or <i>Plagiobothrys</i> spp.	cryptantha or popcorn flower	X
<i>Phacelia distans</i>	distant phacelia, wild-heliotrope	X
Fabaceae – Pea Family		
<i>Acmispon</i> (=Lotus) spp.	deerweed, spanishclover, lotus	X
Hydrophyllaceae – Waterleaf Family		
<i>Eriodictyon crassifolium</i> var. <i>crassifolium</i>	thickleaf yerba santa	—
<i>Eriodictyon trichocalyx</i> var. <i>trichocalyx</i>	hairy yerba santa	—
Lamiaceae – Mint Family		
<i>Salvia columbariae</i>	chia	X
Plantaginaceae – Plantain Family		
<i>Antirrhinum coulterianum</i>	Coulter's snapdragon	X
<i>Collinsia heterophylla</i>	Purple Chinese houses	—
<i>Collinsia concolor</i>	Chinese houses	X
<i>Keckiella antirrhinoides</i> var. <i>antirrhinoides</i>	snapdragon penstemon	—
<i>Keckiella cordifolia</i>	heartleaf keckiella, climbing bush penstemon	—
<i>Plantago erecta</i>	dwarf plantain	—
<i>Plantago patagonica</i>	woolly plantain	—
Polemoniaceae – Phlox Family		
<i>Gilia angelensis</i>	chaparral gilia	X
<i>Gilia capitata</i> ssp. <i>abrotanifolia</i>	bluehead gilia	—
<i>Linanthus</i> spp.	ground pink	X
Polygonaceae – Buckwheat Family		
<i>Eriogonum fasciculatum</i>	California buckwheat	X
Orobanchaceae – Broom-Rape Family		
<i>Castilleja exserta</i>	exserted Indian paintbrush, common owl's-clover	—
Scrophulariaceae – Figwort Family		
<i>Cordylanthus rigidus</i>	stiffbranch bird's beak	X
Liliaceae – Lily Family		
<i>Allium haematochiton</i>	redskin onion	—
<i>Allium peninsulare</i>	Mexicali onion, red-flower onion	—

Ms. Stacey Love, Recovery Permit Coordinator

Subject: 2019 Focused Quino Checkerspot Butterfly Survey Report for Proposed Wind Energy Facilities, Boulevard, San Diego County, California

Table 4. Quino Adult Nectar Plants and Larval Food Plants

Scientific Name	Common Name	Observed During Focused Survey
<i>Allium praecox</i>	early onion	—
<i>Bloomeria clevelandii</i>	San Diego goldenstar	—
<i>Dichelostemma capitatum</i>	bluedicks	X
<i>Muilla maritima</i>	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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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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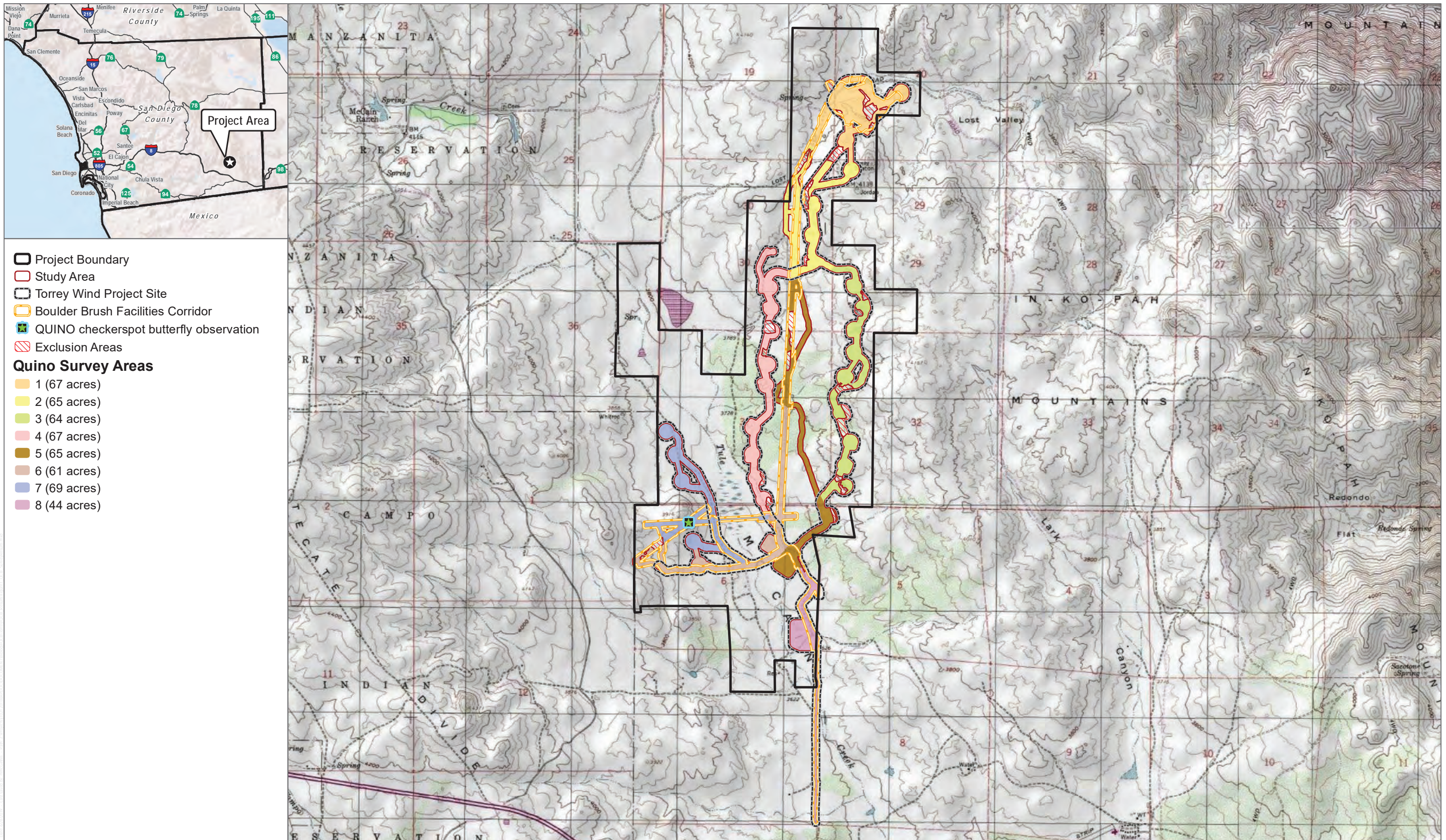
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Ms. Stacey Love, Recovery Permit Coordinator

Subject: 2019 Focused Quino Checkerspot Butterfly Survey Report for Proposed Wind Energy Facilities,
Boulevard, San Diego County, California

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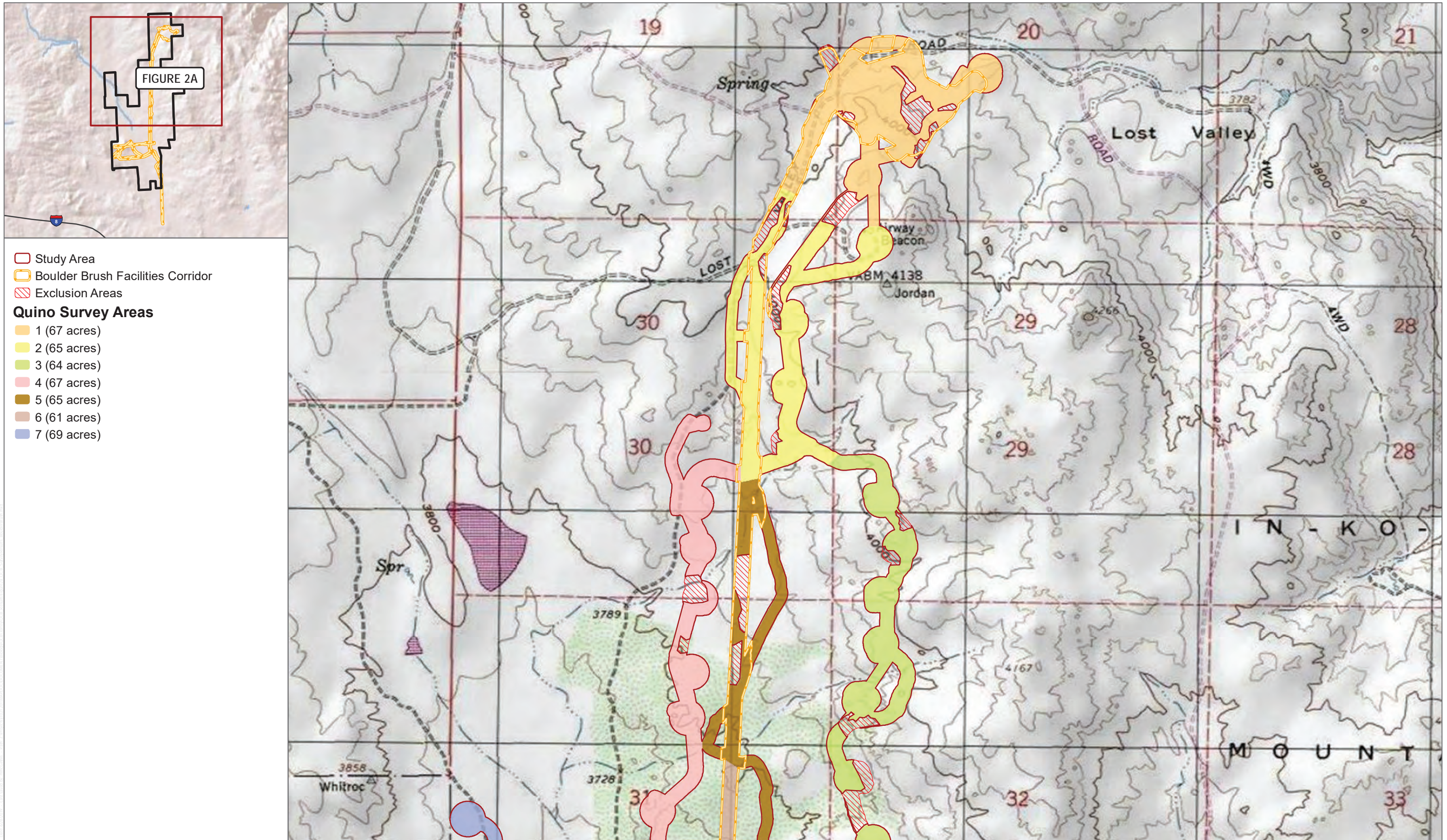


SOURCE: USGS 7.5-minute Quadrangle



FIGURE 1

Survey Results



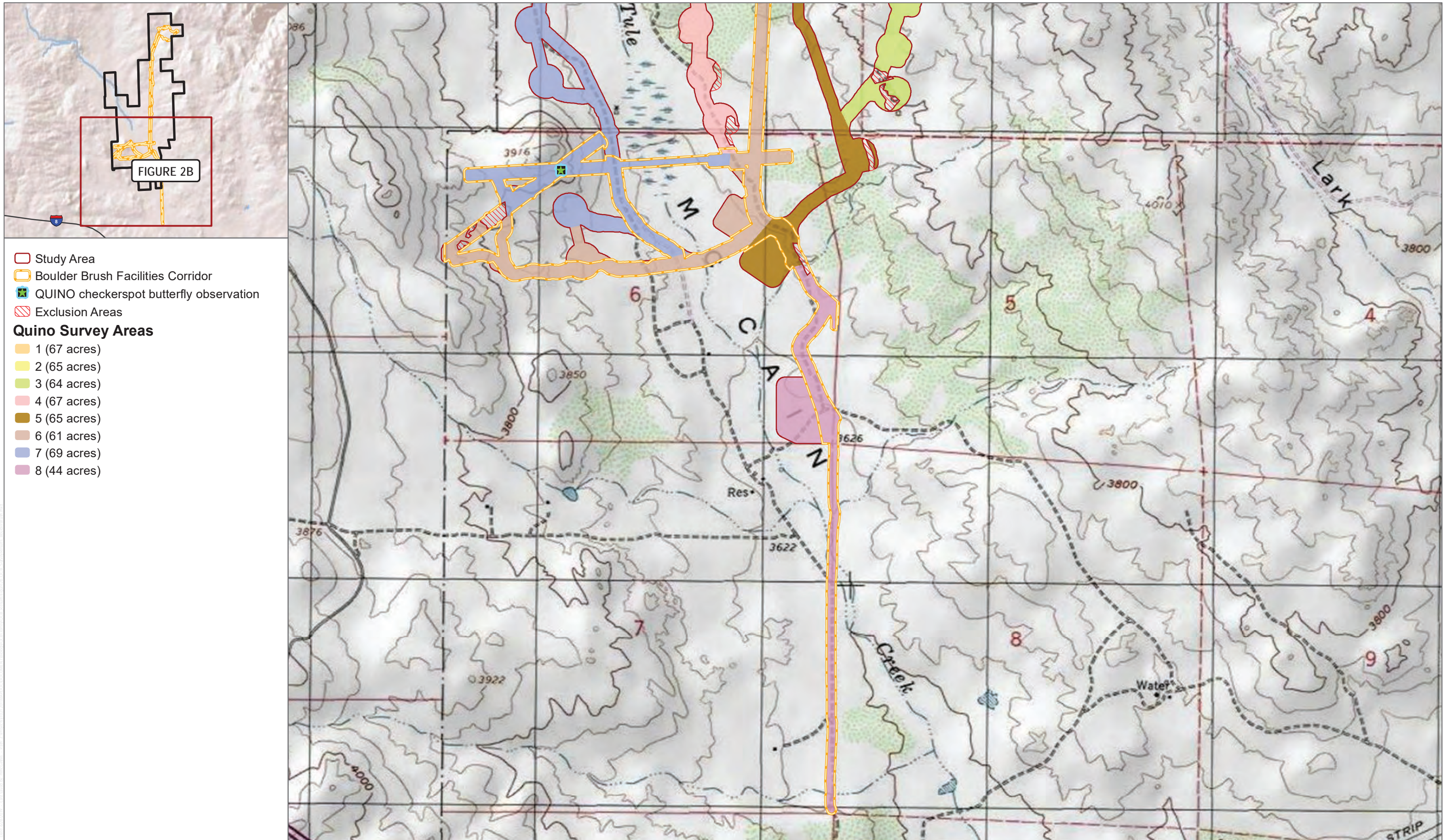
SOURCE: USGS 7.5-minute Quadrangle



FIGURE 2A

Survey Results - Boulder Brush

2019 Focused Quino Checkerspot Butterfly Survey Report

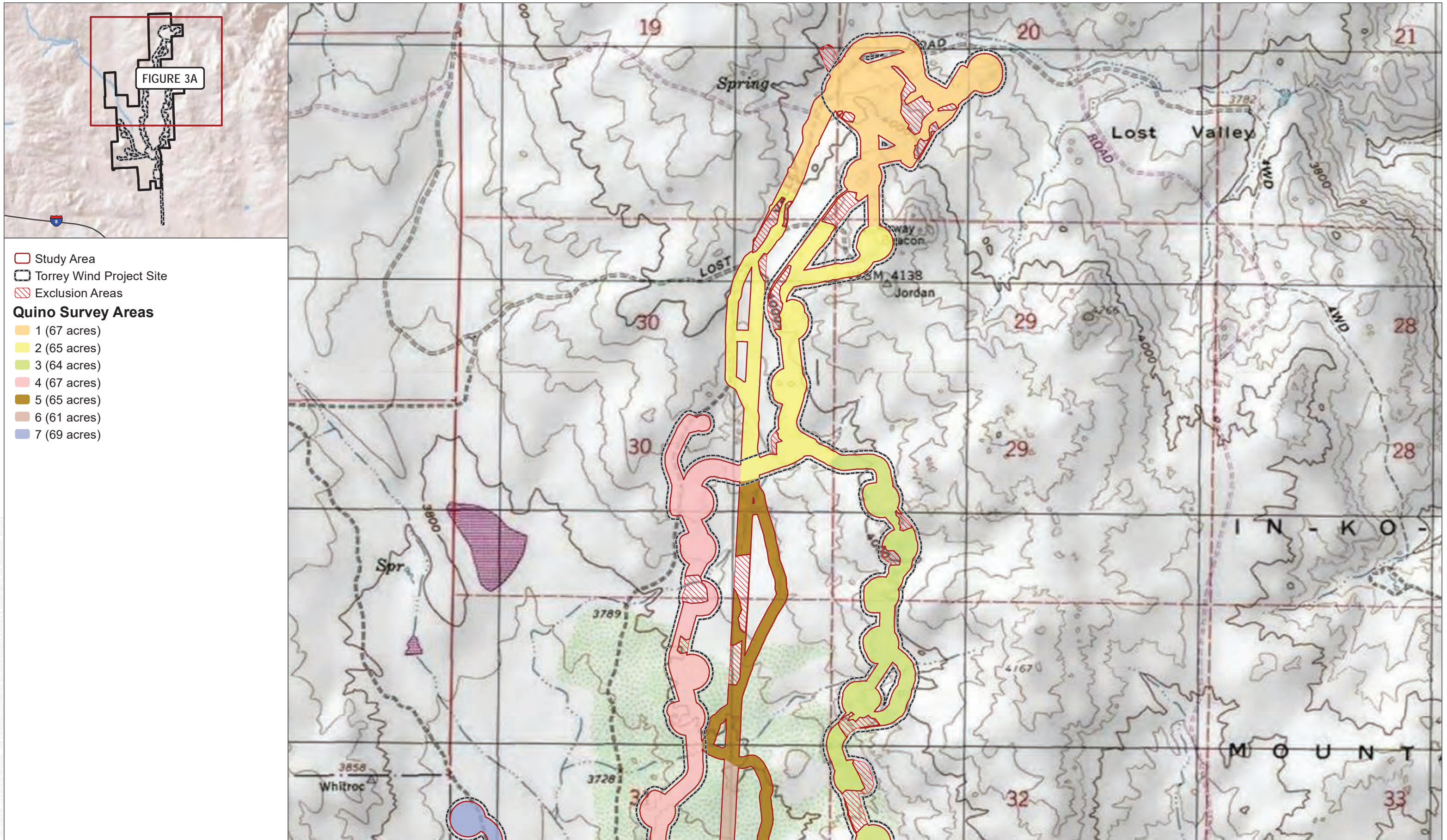


- Study Area
 - Boulder Brush Facilities Corridor
 - QUINO checkerspot butterfly observation
 - Exclusion Areas
- Quino Survey Areas**
- 1 (67 acres)
 - 2 (65 acres)
 - 3 (64 acres)
 - 4 (67 acres)
 - 5 (65 acres)
 - 6 (61 acres)
 - 7 (69 acres)
 - 8 (44 acres)

SOURCE: USGS 7.5-minute Quadrangle



FIGURE 2B



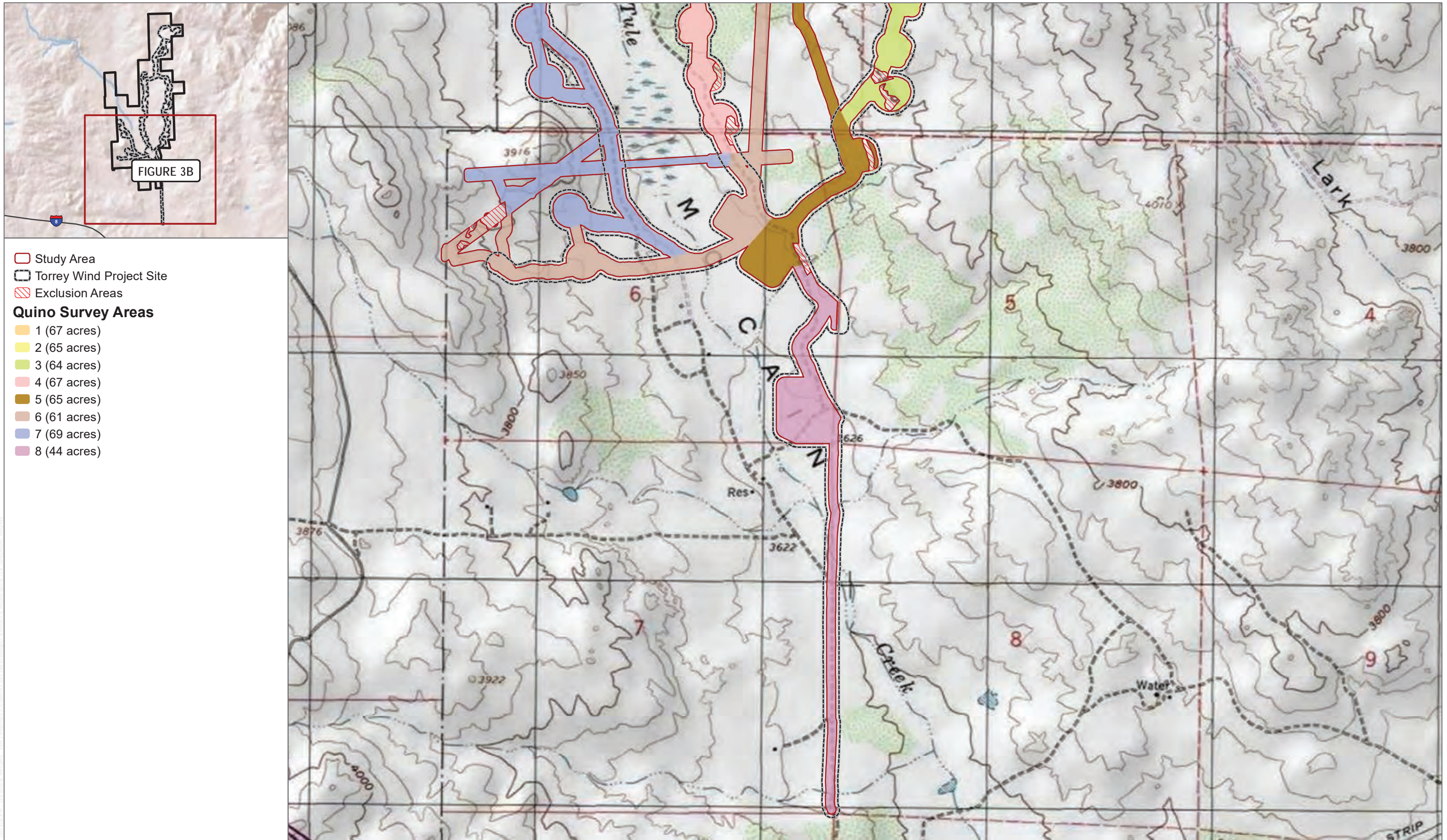
SOURCE: USGS 7.5-minute Quadrangle



FIGURE 3A

Survey Results - Torrey

2019 Focused Quino Checkerspot Butterfly Survey Report



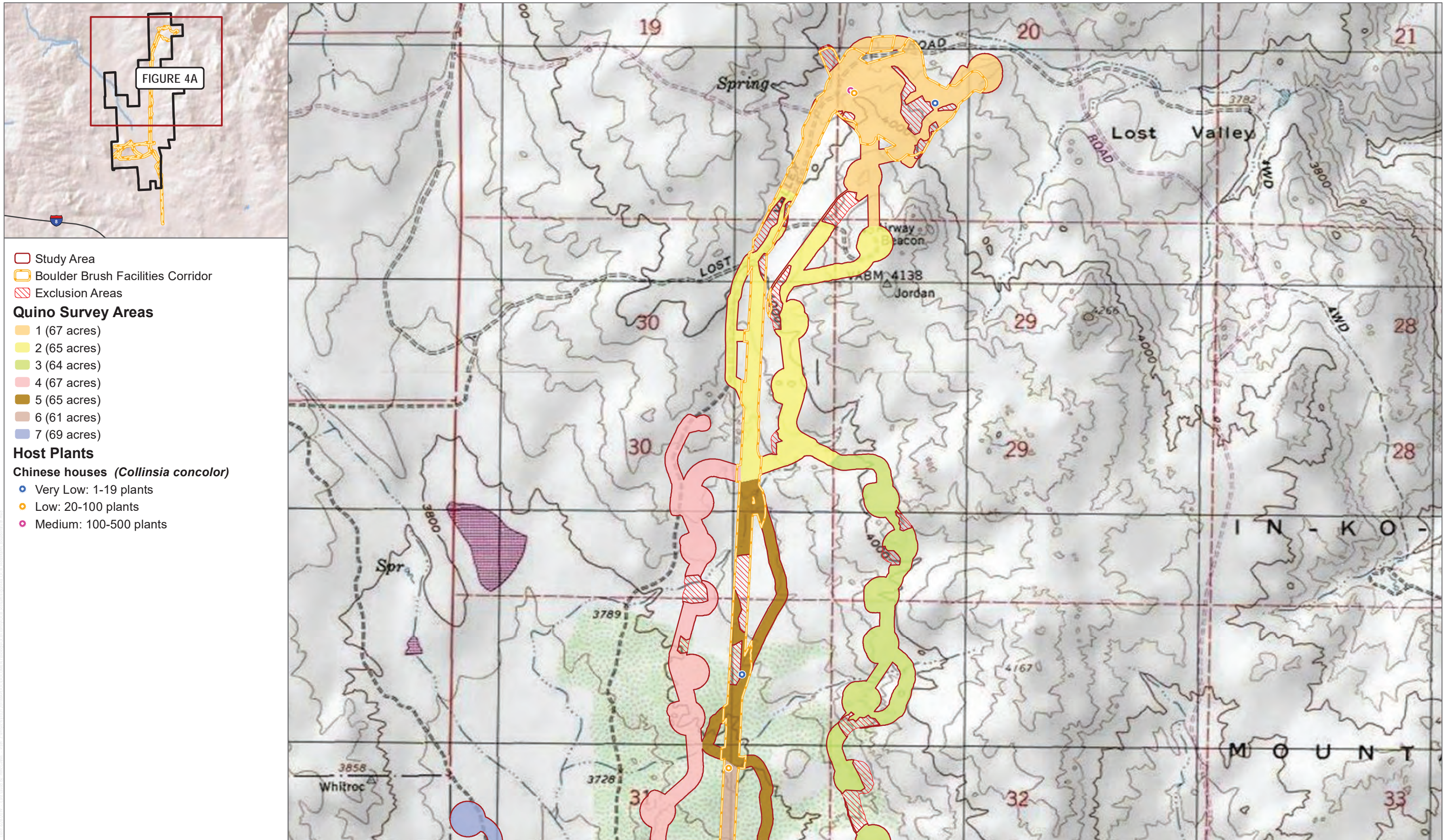
SOURCE: USGS 7.5-minute Quadrangle



FIGURE 3B

Survey Results - Torrey

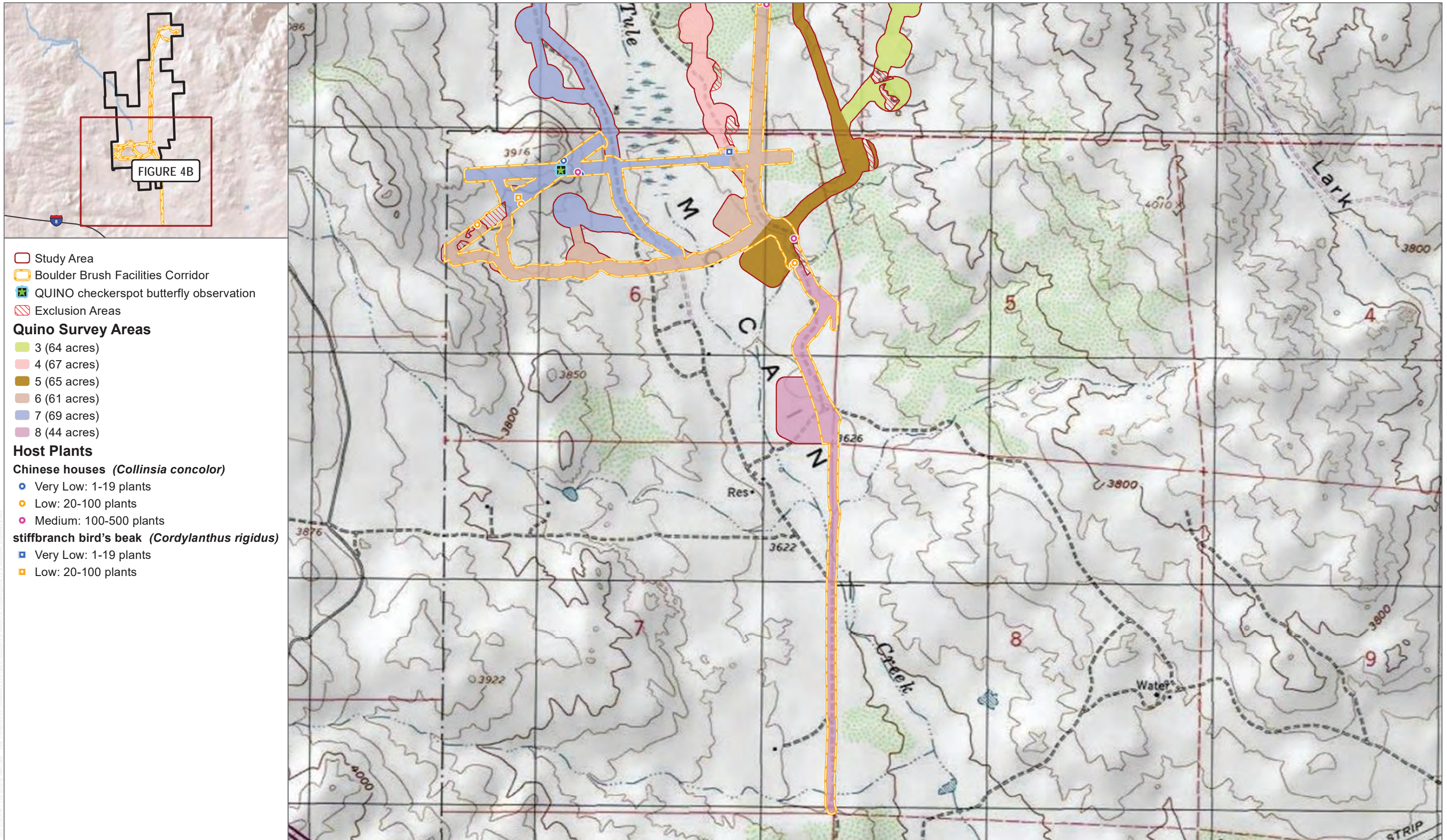
2019 Focused Quino Checkerspot Butterfly Survey Report



SOURCE: USGS 7.5-minute Quadrangle



FIGURE 4A

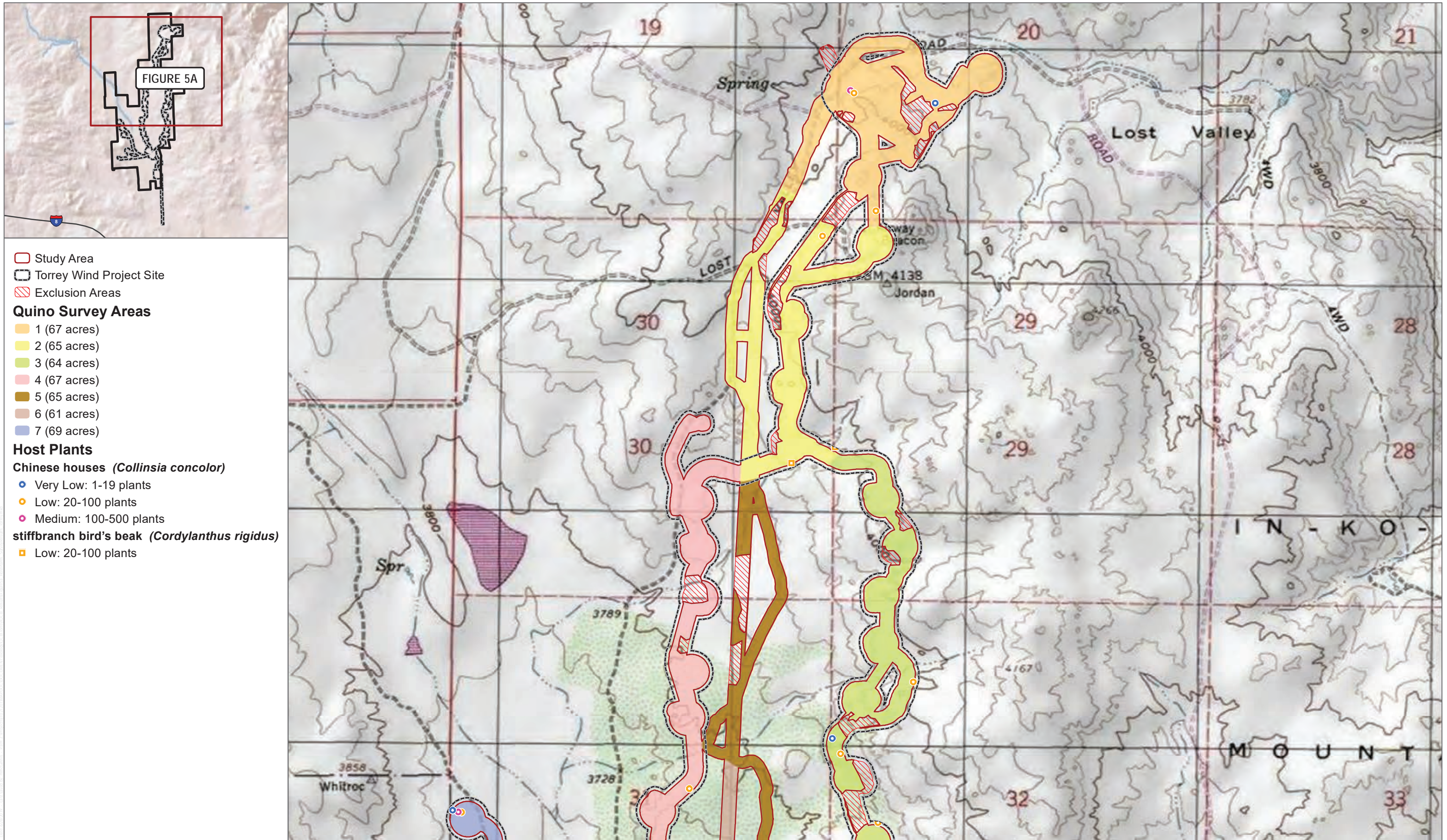


- Study Area
 - Boulder Brush Facilities Corridor
 - QUINO checkerspot butterfly observation
 - Exclusion Areas
- Quino Survey Areas**
- 3 (64 acres)
 - 4 (67 acres)
 - 5 (65 acres)
 - 6 (61 acres)
 - 7 (69 acres)
 - 8 (44 acres)
- Host Plants**
- Chinese houses (*Collinsia concolor*)**
- Very Low: 1-19 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



FIGURE 4B



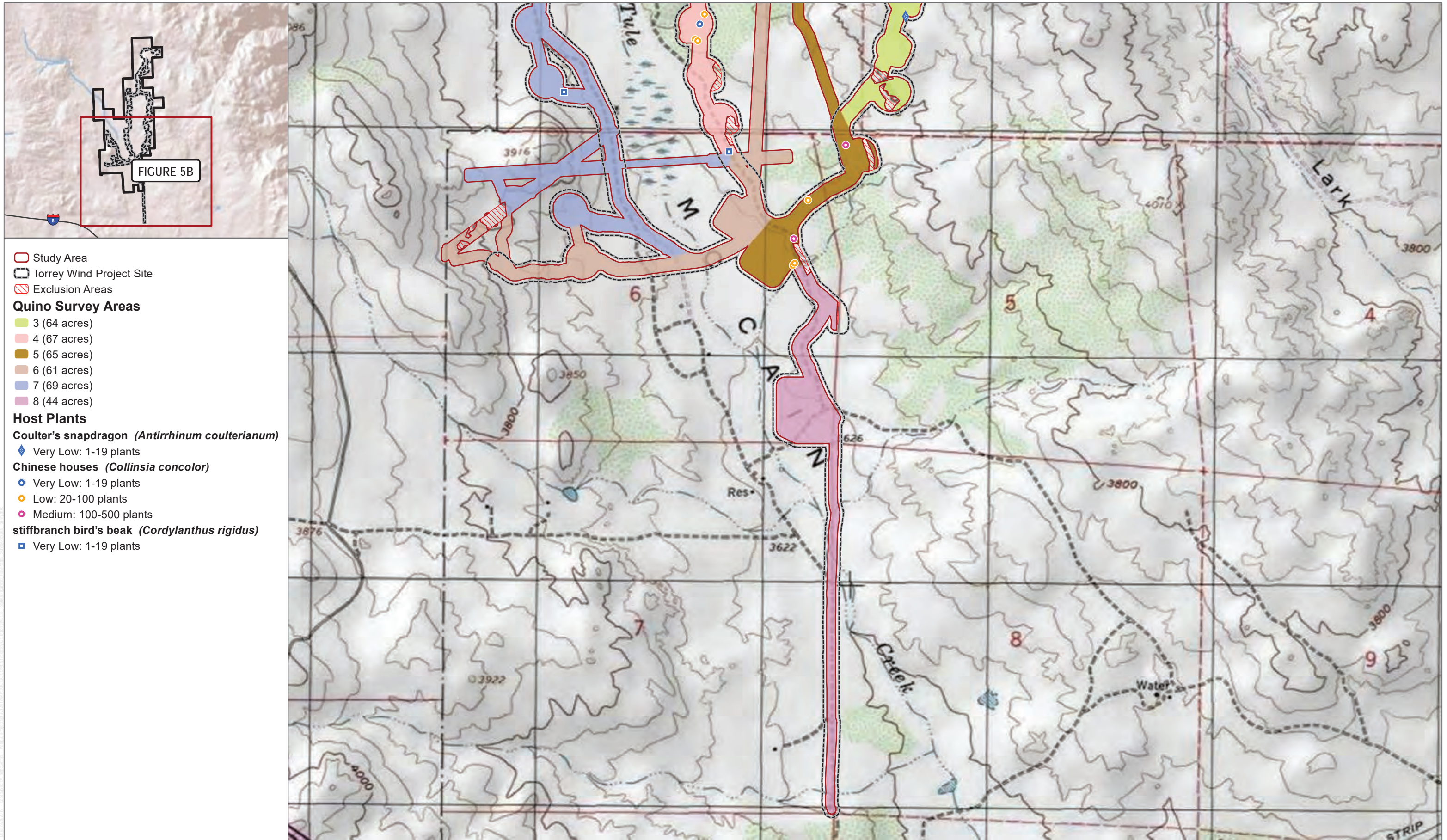
SOURCE: USGS 7.5-minute Quadrangle



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



FIGURE 5B

Host Plant Mapping - Torrey

2019 Focused Quino Checkerspot Butterfly Survey Report



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 hammondi*—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

Melospiza 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		
<i>Arabis sp.</i>	<i>Descurainia pinnata</i>	<i>Ribes quercetorum</i>
<i>Camissonia sp.</i>	<i>Erodium cicutarium</i>	<i>Sanicula arguta</i>
<i>Cryptantha sp.</i>	<i>Plagiobothrys sp.</i>	

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		
<i>Arctostaphylos sp.</i>	<i>Descurainia pinnata</i>	<i>Plagiobothrys sp.</i>
<i>Camissonia sp.</i>	<i>Erodium cicutarium</i>	<i>Tropidocarpum gracile</i>
<i>Cryptantha sp.</i>	<i>Lasthenia californica</i>	

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		
<i>Boechera pulchra</i>	<i>Erodium cicutarium</i>	<i>Ranunculus californicus</i>
<i>Camissoniopsis micrantha</i>	<i>Gilia diegensis</i>	<i>Rhus ovata</i>
<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	<i>Lasthenia glabrata</i>	<i>Salvia columbariae</i>
<i>Descurainia pinnata</i> ssp. <i>brachycarpa</i>	<i>Lomatium mohavense</i>	<i>Xylococcus bicolor</i>
<i>Ericameria pinifolia</i>	<i>Phacelia parryi</i>	
<i>Eriogonum fasciculatum</i> var. <i>fasciculatum</i>	<i>Plagiobothrys bracteatus</i>	

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)	painter lady (40)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Descurainia sophia</i>	<i>Lomatium dasycarpum</i>	<i>Linanthus bellus</i>
<i>Eriophyllum wallacei</i>	<i>Plagiobothrys sp.</i>	
<i>Erodium cicutarium</i>	<i>Ribes quercetorum</i>	

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		
<i>Acmispon strigosus</i>	<i>Descurainia pinnata</i>	<i>Oenothera californica</i>
<i>Amsinckia menziesii</i>	<i>Erodium sp.</i>	<i>Salvia columbariae</i>
<i>Camissoniopsis pallida</i>	<i>Gilia angelensis</i>	<i>Linanthus bellus</i>
<i>Ceanothus perplexans</i>	<i>Gilia diegensis</i>	
<i>Cryptantha sp.</i>	<i>Lasthenia sp.</i>	

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		
<i>Amsinckia menziesii</i>	<i>Ericameria palmeri</i>	<i>Marah macrocarpa</i>
<i>Arabis sp.</i>	<i>Erodium cicutarium</i>	<i>Oenothera californica</i>
<i>Camissonia spp.</i>	<i>Gilia diegensis</i>	<i>Penstemon clevelandii</i>
<i>Ceanothus leucodermis</i>	<i>Hypochaeris glabra</i>	<i>Phacelia distans</i>
<i>Ceanothus perplexans</i>	<i>Lasthenia californica</i>	<i>Plagibothryus sp.</i>
<i>Cercocarpus betuloides</i>	<i>Layia glandulosa</i>	<i>Platystemon californicus</i>
<i>Chamyesecea sp.</i>	<i>Leptosiphon lemmonii</i>	<i>Salvia columbariae</i>
<i>Cryptantha sp.</i>	<i>Linanthus sp.</i>	<i>Uropappus lindleyi</i>
<i>Descurainia pinnata</i>	<i>Lomatium lucidum</i>	<i>Yucca schidigera</i>
<i>Dichelostemma capitatum</i>	<i>Lupinus concinnus</i>	
<i>Emmenanthe penduliflora</i>	<i>Malacothrix californica</i>	

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		
<i>Amsinckia menziesii</i>	<i>Erodium cicutarium</i>	<i>Penstemon clevelandii</i>
<i>Camissonia strigulosa</i>	<i>Gilia diegensis</i>	<i>Phacelia cicutaria</i>
<i>Ceanothus leucodermis</i>	<i>Lasthenia glabrata</i>	<i>Phacelia parryi</i>
<i>Delphinium parishii</i>	<i>Leptosiphon lemmonii</i>	<i>Plagiobothrys sp.</i>
<i>Dichelostemma capitatum</i>	<i>Lupinus concinnus</i>	<i>Salvia columbariae</i>
<i>Eriophyllum wallacei</i>	<i>Oenothera californica</i>	<i>Linanthus bellus</i>

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		
<i>Ceanothus leucodermis</i>	<i>Ericameria sp</i>	<i>Phacelia</i>
<i>Ceanothus perplexans</i>	<i>Erodium cicutarium</i>	<i>Plagiobotrys sp</i>
<i>Chaenactis sp</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Cryptantha micrantha</i>	<i>Layia platyglossa</i>	<i>Tropidocarpum gracile</i>
<i>Delphinium</i>	<i>Lupinus concinnus</i>	<i>Linanthus bellus</i>
<i>Descurainia pinnata</i>	<i>Malacothrix glabrata</i>	
<i>Descurainia sophia</i>	<i>Pectocarya recurvata</i>	

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		
<i>Acmispon strigosus</i>	<i>Descurainia pinnata ssp. brachycarpa</i>	<i>Lupinus concinnus</i>
<i>Adenostoma fasciculatum</i>	<i>Dichelostemma capitatum ssp. capitatum</i>	<i>Oenothera californica ssp. avita</i>
<i>Anisocoma acaulis</i>	<i>Emmenanthe penduliflora</i>	<i>Phacelia cicutaria var. hispida</i>
<i>Astragulus sp</i>	<i>Ephedra californica</i>	<i>plagiobothrys sp</i>
<i>Camissonia sp</i>	<i>Eriastrum eremicum</i>	<i>Rhus aromatica</i>
<i>Ceanothus leucodermis</i>	<i>Ericameria linearifolia</i>	<i>Rhus ovata</i>
<i>Chaenactis fremontii</i>	<i>Eriodictyon crassifolium var. nigrescens</i>	<i>Salvia columbariae</i>
<i>Chaenactis glabriuscula</i>	<i>Eriogonum fasciculatum var. foliolosum</i>	<i>Solanum parishii</i>
<i>Chorizanthe fimbriata</i>	<i>Eriophyllum wallacei</i>	<i>Geraea viscida</i>

INCIDENTAL PLANT LIST		
<i>Collinsia concolor</i>	<i>Erodium cicutarium</i>	<i>Linanthus bellus</i>
<i>cryptantha sp</i>	<i>Lasthenia glabrata</i>	
<i>Delphinium parishii ssp. parishii</i>	<i>Leptosiphon lemmonii</i>	

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-16
Biologist(s)	Andrew Borchner
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)		
painter lady (1+)	Sara's orangetip (1+)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Cactus wren (1+)	Turkey vulture (1+)	Western scrub jay (1+)

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>	<i>Erodium cicutarium</i>	<i>Lomatium dasycarpum</i>

Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Proposed Wind Energy Facilities
Survey Date	2019-03-19
Biologist(s)	Andrew Borchner
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		
<i>Cammosonia sp.</i>	<i>Descuriana sp</i>	<i>Lomatium</i>
<i>Chrytantha sp</i>	<i>Erodium cicutarium</i>	

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		
<i>Caulanthus heterophyllus</i>	<i>Lasthenia californica</i>	<i>Platystemon californicus</i>
<i>Descurainia sophia</i>	<i>Leptosyne californica</i>	<i>Ribes quercetorum</i>
<i>Eriophyllum wallacei</i>	<i>Lomatium dasycarpum</i>	<i>Salvia columbariae</i>
<i>Erodium cicutarium</i>	<i>Nama demissa</i>	<i>Linanthus bellus</i>

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 <i>SPECIES (COUNT)</i>		
California patch (2)	painted lady (3)	
desert orangetip (2)	white checkered-skipper (1)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
California scrub-jay (1+)	common raven (1+)	white-crowned sparrow (1+)
California thrasher (1+)	cougar (1+)	

INCIDENTAL PLANT LIST		
<i>Erodium cicutarium</i>	<i>Lomatium dasycarpum</i>	

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 <small>SPECIES (COUNT)</small>		
Behr's metalmark (12)	painted lady (16)	
desert pearly marble (8)	Propertius duskywing (2)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
spotted towhee (1+)	white-crowned sparrow (1+)	

INCIDENTAL PLANT LIST		
<i>(none)</i>		

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		
<i>Boechera pulchra</i>	<i>Gilia diegensis</i>	<i>Plagiobothrys sp</i>
<i>Descurainia pinnata</i>	<i>Lasthenia sp.</i>	<i>Salvia columbariae</i>
<i>Erodium sp.</i>	<i>Lomatium dasycarpum</i>	<i>Linanthus bellus</i>
<i>Gilia angelensis</i>	<i>Lupinus concinnus</i>	

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)	painter lady (21)
checkered white (4)	funereal duskywing (6)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha micrantha</i>	<i>Gilia sp</i>	<i>Lupinus concinnus</i>
<i>Descurainia pinnata</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Descurainia sophia</i>	<i>Layia platyglossa</i>	<i>Linanthus bellus</i>
<i>Erodium cicutarium</i>	<i>Leptosyne californica</i>	

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		
<i>Cryptantha micrantha</i>	<i>Gilia sp</i>	<i>Lupinus concinnus</i>
<i>Descurainia pinnata</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Descurainia sophia</i>	<i>Layia platyglossa</i>	<i>Linanthus bellus</i>
<i>Erodium cicutarium</i>	<i>Leptosyne californica</i>	

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		
<i>Ceanothus palmeri</i>	<i>Eriophyllum wallacei</i>	<i>Sisymbrium altissimum</i>
<i>Cryptantha micrantha</i>	<i>Layia platyglossa</i>	<i>Caulanthus simulans</i>

INCIDENTAL PLANT LIST		
<i>Descurainia pinnata</i>	<i>Leptosiphon lemmonii</i>	<i>Geraea viscida</i>
<i>Descurainia sophia</i>	<i>Platystemon californicus</i>	<i>Linanthus bellus</i>

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		
<i>Ceanothus leucodermis</i>	<i>Ericameria sp</i>	<i>Phacelia</i>
<i>Ceanothus perplexans</i>	<i>Erodium cicutarium</i>	<i>Plagiobotrys sp</i>
<i>Chaenactis sp</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Cryptantha micrantha</i>	<i>Layia platyglossa</i>	<i>Tropidocarpum gracile</i>
<i>Delphinium</i>	<i>Lupinus concinnus</i>	<i>Linanthus bellus</i>
<i>Descurainia pinnata</i>	<i>Malacothrix glabrata</i>	
<i>Descurainia sophia</i>	<i>Pectocarya recurvata</i>	

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		
<i>Ceanothus leucodermis</i>	<i>Ericameria sp</i>	<i>Phacelia</i>
<i>Ceanothus perplexans</i>	<i>Erodium cicutarium</i>	<i>Plagiobotrys sp</i>
<i>Chaenactis sp</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Cryptantha micrantha</i>	<i>Layia platyglossa</i>	<i>Tropidocarpum gracile</i>
<i>Delphinium</i>	<i>Lupinus concinnus</i>	<i>Linanthus bellus</i>
<i>Descurainia pinnata</i>	<i>Malacothrix glabrata</i>	
<i>Descurainia sophia</i>	<i>Pectocarya recurvata</i>	

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 <small>SPECIES (COUNT)</small>		
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 <small>SPECIES (COUNT)</small>		
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		
<i>Acmispon strigosus</i>	<i>Eriophyllum wallacei</i>	<i>Navar. etia hamata</i>
<i>Astragalus didymocarpus</i>	<i>Erodium cicutarium</i>	<i>Pectocarya linearis</i>

INCIDENTAL PLANT LIST		
<i>Chorizanthe fimbriata</i>	<i>Euphorbia albomarginata</i>	<i>Pectocarya setosa</i>
<i>Cryptantha micrantha</i>	<i>Heliotropium curassavicum</i>	<i>Salvia columbariae</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia gracilis</i>	<i>Sisymbrium altissimum</i>
<i>Ericameria pinifolia</i>	<i>Leptosiphon lemmonii</i>	<i>Geraea viscida</i>
<i>Eriogonum fasciculatum</i>	<i>Lupinus bicolor</i>	<i>Linanthus bellus</i>

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)	painter lady (350)
checkered white (2)	orange sulphur (1)	
dainty sulphur (2)	Pacific sara orangetip (50)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Camissoniopsis pallida</i>	<i>Erodium ssp./em></i>	<i>Ribes quercetorum</i>
<i>Cercocarpus betuloides</i>	<i>Plagiobothrys spp</i>	<i>Ziziphus parryi</i>

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 <small>SPECIES (COUNT)</small>		
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 <small>SPECIES (COUNT)</small>		
common raven (1+)	spotted towhee (1+)	white-crowned sparrow (1+)
dark-eyed junco (1+)	western fence lizard (1+)	White-lined sphynx moth (1)

INCIDENTAL PLANT LIST		
<i>Amsinckia menziesii</i>	<i>Descurainia pinnata</i>	<i>Plagiobothrys sp</i>
<i>Boechera californica</i>	<i>Erodium cicutarium</i>	<i>Caulanthus simulans</i>
<i>Camissoniopsis pallida</i>	<i>Lasthenia gracilis</i>	
<i>Cryptantha sp</i>	<i>Lomatium dasycarpum</i>	

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		
<i>Boechera sp</i>	<i>Descurainia sophia</i>	<i>Prunus ilicifolia</i>
<i>Ceanothus perplexans</i>	<i>Eriophyllum wallacei</i>	<i>Viola spp</i>
<i>Coreopsis tinctoria</i>	<i>Phacelia campanularia</i>	<i>Caulanthus simulans</i>
<i>Descurainia pinnata</i>	<i>Platystemon californicus</i>	<i>Linanthus bellus</i>

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 <i>SPECIES (COUNT)</i>		
Becker's white (5)	dainty sulphur (1)	Pacific sara orangetip (6)
Behr's metalmark (1+)	desert orangetip (4)	painting lady (85)
California tortoiseshell (6)	desert pearly marble (28)	
checkered white (1)	funereal duskywing (6)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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-drag/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)	painter 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		
<i>Acmispon strigosus</i>	<i>Ericameria brachylepis</i>	<i>Malacothrix californica</i>
<i>Amsinckia intermedia</i>	<i>Erodium cicutarium</i>	<i>Oenothera californica</i>
<i>Anisocoma acaulis</i>	<i>Gilia diegensis</i>	<i>Pectocarya peninsularis</i>
<i>Castilleja subinclusa</i> ssp. <i>subinclusa</i>	<i>Lasthenia glabrata</i>	<i>Phacelia distans</i>
<i>Ceanothus perplexans</i>	<i>Leptosiphon lemmonii</i>	<i>Plagiobothrys bracteatus</i>
<i>Descurainia pinnata</i>	<i>Logfia filaginoides</i>	<i>Platystemon californicus</i>
<i>Emmenanthe penduliflora</i>	<i>Lupinus concinnus</i>	<i>Sisymbrium irio</i>

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		
<i>Boechera californica</i>	<i>Erodium cicutarium</i>	<i>Platystemon californicus</i>
<i>Camissoniopsis bistorta</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Ceanothus leucodermis</i>	<i>Layia platyglossa</i>	<i>Tropidocarpum gracile</i>
<i>Cryptantha micrantha</i>	<i>Lomatium dasycarpum</i>	<i>Geraea viscida</i>
<i>Descurainia pinnata</i>	<i>Lupinus concinnus</i>	<i>Linanthus bellus</i>
<i>Descurainia sophia</i>	<i>Malacothrix glabrata</i>	

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		
<i>Acmispon strigosus</i>	<i>Ericameria linearifolia</i>	<i>Leptosiphon lemmonii</i>
<i>Anisocoma acaulis</i>	<i>Eriophyllum wallacei</i>	<i>Leptosiphon parviflorus</i>
<i>Calyptridium monandrum</i>	<i>Erodium cicutarium</i>	<i>Nama demissa</i>
<i>Castilleja foliolosa</i>	<i>Galium andrewsii</i>	<i>Nama demissa var. demissa</i>
<i>Ceanothus leucodermis</i>	<i>Gilia angelensis</i>	<i>Pectocarya setosa</i>
<i>Chaenactis glabriuscula</i>	<i>Gilia capitata</i>	<i>Platystemon californicus</i>
<i>Collinsia concolor</i>	<i>Gilia diegensis</i>	<i>Salvia columbariae</i>
<i>Cryptantha intermedia var. intermedia</i>	<i>Lasthenia gracilis</i>	<i>Geraea viscida</i>
<i>Cryptantha micrantha</i>	<i>Layia glandulosa</i>	

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)	Proteropterus duskywing (1)
funereal duskywing (2)	Pacific sara orangetip (17)	western tailed-blue (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Amsinckia menziesii</i>	<i>Erodium cicutarium</i>	<i>Penstemon clevelandii</i>
<i>Anisocoma acaulis</i>	<i>Eulobus californicus</i>	<i>Plagiobothrys</i> sp.
<i>Antirrhinum coulterianum</i>	<i>Gilia capitata</i>	<i>Platystemon californicus</i>
<i>Delphinium parishii</i>	<i>Lasthenia glabrata</i>	<i>Salvia columbariae</i>
<i>Descurainia sophia</i>	<i>Layia glandulosa</i>	<i>Senecio californicus</i>
<i>Dichelostemma capitatum</i>	<i>Leptosiphon lemmonii</i>	<i>Uropappus lindleyi</i>
<i>Ericameria linearifolia</i>	<i>Oenothera californica</i>	<i>Geraea viscida</i>
<i>Eriodictyon trichocalyx</i>	<i>Penstemon centranthifolius</i>	<i>Linanthus bellus</i>

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 <small>SPECIES (COUNT)</small>		
Behr's metalmark (14)	gray hairstreak (2)	painted lady (7)
checkered white (17)	marine blue (1)	Proterpterus duskywing (1)
Edward's blue (1)	orange sulphur (1)	
funereal duskywing (1)	Pacific sara orangetip (2)	

INCIDENTAL WILDLIFE LIST <small>SPECIES (COUNT)</small>		
(none)		

INCIDENTAL PLANT LIST		
<i>Antirrhinum coulterianum</i>	<i>Ericameria pinifolia</i>	<i>Layia glandulosa</i>
<i>Chaenactis sp</i>	<i>Eriodyction sp</i>	<i>Leptosiphon lemmonii</i>
<i>Collinsia heterophylla</i>	<i>Eriophyllum confertiflorum var. confertiflorum</i>	<i>Leptosiphon parviflorus</i>
<i>Cryptantha micrantha</i>	<i>Eriophyllum wallacei</i>	<i>Lupinus concinnus</i>
<i>Cryptantha sp</i>	<i>Gilia angelensis</i>	<i>Malacothrix glabrata</i>
<i>Descurainia pinnata</i>	<i>Lasthenia gracilis</i>	<i>Solanum parishii</i>

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)		
painter lady (427)	Saras orangetip (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Arctostaphylos sp.</i>	<i>Descurainia pinnata</i>	<i>Plagiobothrys sp.</i>
<i>Cryptantha sp.</i>	<i>Erodium cicutarium</i>	

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		
<i>Arctostaphylos sp.</i>	<i>Lasthenia californica</i>	<i>Tauschia arguta</i>
<i>Descurainia pinnata</i>	<i>Plagiobothrys sp.</i>	
<i>Erodium cicutarium</i>	<i>Senecio californicus</i>	

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		
<i>Amsinckia menziesii</i>	<i>Erodium cicutarium</i>	<i>Sisymbrium irio</i>
<i>Arctostaphylos spp</i>	<i>Lasthenia californica</i>	<i>Tropidocarpum gracile</i>
<i>Camissoniopsis bistorta</i>	<i>Lomatium dasycarpum</i>	
<i>Cryptantha spp</i>	<i>Ribes quercetorum</i>	

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		
<i>Arabis sp.</i>	<i>Descurainia pinnata</i>	<i>Ribes quercetorum</i>
<i>Camissonia sp.</i>	<i>Erodium cicutarium</i>	<i>Sanicula arguta</i>
<i>Ceanothus greggi</i>	<i>Lasthenia californica</i>	<i>Senecio sp.</i>
<i>Cryptantha sp.</i>	<i>Plagiobothrys sp.</i>	

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		
<i>Amsinckia intermedia</i>	<i>Gilia diegensis</i>	<i>Platystemon californicus</i>
<i>Boechera arcuata</i>	<i>Hypochaeris glabra</i>	<i>Salvia columbariae</i>
<i>Camissoniopsis micrantha</i>	<i>Lasthenia glaberrima</i>	<i>Sanicula arguta</i>
<i>Ericameria linearifolia</i>	<i>Leptosyne californica</i>	<i>Tauschia arguta</i>
<i>Erodium cicutarium</i>	<i>Lomatium dasycarpum</i>	<i>Yucca schidigera</i>

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)	painting lady (20)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Sootywing (2)		

INCIDENTAL PLANT LIST		
<i>Acmispon strigosus</i>	<i>Eriophyllum wallacei</i>	<i>Lupinus concinnus</i>
<i>Amsinckia menziesii</i>	<i>Gilia angelensis</i>	<i>Malacothrix californica</i>
<i>Boechera pulchra</i>	<i>Gilia diegensis</i>	<i>Mentzelia veatchiana</i>
<i>Ceanothus perplexans</i>	<i>Lasthenia gracilis</i>	<i>Plagiobothrys sp.</i>
<i>Descurainia pinnata</i>	<i>Layia glandulosa</i>	<i>Linanthus bellus</i>
<i>Descurainia sophia</i>	<i>Leptosyne californica</i>	

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 <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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		
<i>Cryptantha micrantha</i>	<i>Gilia sp</i>	<i>Lupinus concinnus</i>
<i>Descurainia pinnata</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Descurainia sophia</i>	<i>Layia platyglossa</i>	<i>Linanthus bellus</i>
<i>Erodium cicutarium</i>	<i>Leptosyne californica</i>	

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 <i>SPECIES (COUNT)</i>		
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)	painter lady (24)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
Gre (1+)		

INCIDENTAL PLANT LIST		
<i>Cryptantha micrantha</i>	<i>Gilia sp</i>	<i>Lupinus concinnus</i>
<i>Descurainia pinnata</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Descurainia sophia</i>	<i>Layia platyglossa</i>	<i>Linanthus bellus</i>
<i>Erodium cicutarium</i>	<i>Leptosyne californica</i>	

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		
<i>Achillea millefolium</i>	<i>Dichelostemma capitatum</i>	<i>Phacelia cicutaria</i>
<i>Amsinckia intermedia</i>	<i>Emmenanthe penduliflora</i>	<i>Phacelia distans</i>
<i>Anisocoma acaulis</i>	<i>Ericameria linearifolia</i>	<i>Plagiobothrys sp</i>
<i>Boechera arcuata</i>	<i>Eriophyllum wallacei</i>	<i>Platystemon californicus</i>
<i>Camissonia sp</i>	<i>Erodium cicutarium</i>	<i>Salvia columbariae</i>
<i>Castilleja subinclusa ssp. subinclusa</i>	<i>Gilia diegensis</i>	<i>Yucca schidigera</i>
<i>Ceanothus leucodermis</i>	<i>Lasthenia glabrata</i>	<i>Linanthus bellus</i>
<i>cryptantha sp</i>	<i>Leptosiphon lemmonii</i>	

INCIDENTAL PLANT LIST		
<i>Descurainia pinnata ssp. glabra</i>	<i>Lupinus concinnus</i>	

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		
<i>Acmispon strigosus</i>	<i>Ericameria linearifolia</i>	<i>Lupinus concinnus</i>
<i>Amsinckia menziesii</i>	<i>Eriophyllum wallacei</i>	<i>Mimulus palmeri</i>
<i>Anisocoma acaulis</i>	<i>Erodium cicutarium</i>	<i>Phacelia distans</i>
<i>Boechera californica</i>	<i>Gilia diegensis</i>	<i>Platystemon californicus</i>
<i>Castilleja subinclusa ssp. subinclusa</i>	<i>Lasthenia glabrata</i>	<i>Salvia columbariae</i>
<i>Ceanothus perplexans</i>	<i>Layia glandulosa</i>	<i>Yucca schidigera</i>
<i>Descurainia pinnata ssp. brachycarpa</i>	<i>Leptosyne californica</i>	<i>Linanthus bellus</i>
<i>Dichelostemma capitatum</i>	<i>Lomatium dasycarpum</i>	

INCIDENTAL PLANT LIST		
<i>Emmenanthe penduliflora</i>	<i>Lomatium mohavense</i>	

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 <small>SPECIES (COUNT)</small>		
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 <small>SPECIES (COUNT)</small>		
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		
<i>Ceanothus perplexans</i>	<i>Leptosiphon lemmonii</i>	<i>Rhus aromatica</i>

INCIDENTAL PLANT LIST		
<i>Cryptantha micrantha</i>	<i>Leptosyne californica</i>	<i>Salvia columbariae</i>
<i>Ericameria pinifolia</i>	<i>Lupinus concinnus</i>	<i>Sisymbrium altissimum</i>
<i>Erodium cicutarium</i>	<i>Malacothrix glabrata</i>	<i>Geraea viscida</i>
<i>Lasthenia gracilis</i>	<i>Pectocarya setosa</i>	<i>Linanthus bellus</i>
<i>Layia platyglossa</i>	<i>Platystemon californicus</i>	

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		
<i>Delphinium parishii</i>	<i>Erodium cicutarium</i>	<i>Mentzelia sp.</i>
<i>Descurainia pinnata ssp. glabra</i>	<i>Gilia diegensis</i>	<i>Plagiobothrys sp.</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia glabrata</i>	<i>Salvia columbariae</i>
<i>Emmenanthe penduliflora</i>	<i>Layia glandulosa</i>	<i>Senecio californicus</i>
<i>Ericameria paniculata</i>	<i>Leptosiphon lemmonii</i>	<i>Linanthus bellus</i>

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		
<i>Adenostoma fasciculatum</i> var. <i>obtusifolium</i>	<i>Dichelostemma capitatum</i>	<i>Mentzelia veatchiana</i>
<i>Anisocoma acaulis</i>	<i>Emmenanthe penduliflora</i>	<i>Monardella nana</i>
<i>Astragalus</i> sp	<i>Ericameria linearifolia</i>	<i>Orobanche fasciculata</i>
<i>Camissonia</i> sp	<i>Eriodictyon trichocalyx</i>	<i>Penstemon spectabilis</i>
<i>Ceanothus leucodermis</i>	<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	<i>Plagiobothrys</i> sp.
<i>Chaenactis fremontii</i>	<i>Eriophyllum confertiflorum</i>	<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>
<i>Chaenactis glabriuscula</i>	<i>Eriophyllum wallacei</i>	<i>Quercus agrifolia</i>
<i>Chamaesyce</i> sp	<i>Erodium cicutarium</i>	<i>Salvia columbariae</i>
<i>Chorizanthe fimbriata</i>	<i>Gilia diegensis</i>	<i>Solanum parishii</i>

INCIDENTAL PLANT LIST		
<i>Collinsia concolor</i>	<i>Lasthenia glabrata</i>	<i>Tauschia arguta</i>
<i>Cordylanthus rigidus</i>	<i>Layia glandulosa</i>	<i>Yucca schidigera</i>
<i>Cryptantha sp</i>	<i>Leptosiphon lemmonii</i>	<i>Geraea viscida</i>
<i>Delphinium parishii</i>	<i>Leptosyne californica</i>	<i>Linanthus bellus</i>
<i>Descurainia pinnata ssp. glabra</i>	<i>Lupinus concinnus</i>	

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		
<i>Camissoniopsis bistorta</i>	<i>Pentachaeta aurea</i>	<i>Tropidocarpum gracile</i>
<i>Erodium cicutarium</i>	<i>Sanicula sp</i>	
<i>Lasthenia gracilis</i>	<i>Sisymbrium irio</i>	

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		
<i>Camissoniopsis bistorta</i>	<i>Pentachaeta aurea</i>	<i>Tropidocarpum gracile</i>
<i>Erodium cicutarium</i>	<i>Sanicula sp</i>	
<i>Lasthenia gracilis</i>	<i>Sisymbrium irio</i>	

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		
<i>Amsinckia menziesii</i>	<i>Erodium cicutarium</i>	<i>Sisymbrium irio</i>
<i>Arctostaphylos spp</i>	<i>Lasthenia californica</i>	<i>Tropidocarpum gracile</i>
<i>Camissoniopsis bistorta</i>	<i>Lomatium dasycarpum</i>	
<i>Cryptantha spp</i>	<i>Ribes quercetorum</i>	

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)	Unidentified 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		
<i>Arabis sp.</i>	<i>Descurainia pinnata</i>	<i>Nuttallianthus canadensis</i>
<i>Brassica sp.</i>	<i>Erodium cicutarium</i>	<i>Plagiobothrys sp.</i>
<i>Camissonia sp.</i>	<i>Leptosyne californica</i>	
<i>Cryptantha sp.</i>	<i>Mimulus fremontii</i>	

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		
<i>Amsinckia menziesii</i>	<i>Gilia sp.</i>	<i>Mimulus fremontii</i>
<i>Arabis sp.</i>	<i>Hypochaeris glabra</i>	<i>Plagiobothrys sp.</i>
<i>Ceanothus greggi</i>	<i>Lasthenia californica</i>	<i>Prunus fremontii</i>
<i>Cryptantha sp.</i>	<i>Layia glandulosa</i>	<i>Sisymbrium irio</i>
<i>Descurainia pinnata</i>	<i>Leptosyne californica</i>	<i>Tauschia arguta</i>
<i>Erodium cicutarium</i>	<i>Lomatium sp.</i>	

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		
<i>Calandrinia menziesii</i>	<i>Lasthenia gracilis</i>	<i>Mimulus fremontii</i>
<i>Ceanothus perplexans</i>	<i>Layia glandulosa</i>	<i>Plagiobotrys sp</i>
<i>Crytantha sp</i>	<i>Leptosyne californica</i>	<i>Platystemon californicus</i>
<i>Descurainia pinnata</i>	<i>Lomatium dasycarpum ssp. dasycarpum</i>	<i>Sisymbrium irio</i>
<i>Descurainia sophia</i>	<i>Lupinus hirsutissimus</i>	<i>Tropidocarpum gracile</i>
<i>Erodium cicutarium</i>	<i>Malacothrix californica</i>	<i>Linanthus bellus</i>

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		
<i>Cordylanthus rigidus</i>	<i>Layia glandulosa</i>	<i>Lupinus concinnus</i>
<i>Descurainia sophia</i>	<i>Leptosiphon lemmonii</i>	<i>Platystemon californicus</i>
<i>Erodium botrys</i>	<i>Leptosyne californica</i>	<i>Rhus aromatica</i>
<i>Lasthenia gracilis</i>	<i>Lomatium dasycarpum</i> ssp. <i>dasycarpum</i>	<i>Linanthus bellus</i>

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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		
<i>Amsinckia menziesii</i>	<i>Ericameria linearifolia</i>	<i>Lasthenia glabrata</i>
<i>Collinsia concolor</i>	<i>Erodium sp.</i>	<i>Leptosiphon lemmonii</i>
<i>Descurainia pinnata</i>	<i>Eulobus californicus</i>	<i>Plagiobothrys sp.</i>
<i>Dichelostemma capitatum</i>	<i>Gilia diegensis</i>	<i>Salvia columbariae</i>

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		
<i>Castilleja subinclusa</i>	<i>Eriophyllum confertiflorum</i>	<i>Plagiobothrys sp.</i>
<i>Ceanothus leucodermis</i>	<i>Erodium cicutarium</i>	<i>Salvia columbariae</i>
<i>Descurainia pinnata</i>	<i>Gilia diegensis</i>	<i>Uropappus lindleyi</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia gracilis</i>	<i>Geraea viscida</i>
<i>Emmenanthe penduliflora</i>	<i>Layia glandulosa</i>	<i>Linanthus bellus</i>
<i>Ericameria linearifolia</i>	<i>Leptosiphon lemmonii</i>	
<i>Eriodictyon trichocalyx</i>	<i>Penstemon centranthifolius</i>	

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 <i>SPECIES (COUNT)</i>		
Becker's white (1+)	funereal duskywing (1+)	painter lady (1+)
Behr's metalmark (1+)	gray hairstreak (1+)	Proterptus 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 <i>SPECIES (COUNT)</i>		
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		
<i>Amsinckia menziesii</i>	<i>Lasthenia gracilis</i>	
<i>Cryptantha micrantha</i>	<i>Sisymbrium altissimum</i>	

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		
<i>Amsinckia menziesii</i>	<i>Erodium cicutarium</i>	
<i>Descurainia pinnata</i>	<i>Nemophila menziesii</i>	

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		
<i>Acmispon heermannii</i>	<i>Erodium cicutarium</i>	<i>Phacelia distans</i>
<i>Acmispon strigosus</i>	<i>Eschscholzia californica</i>	<i>Phacelia imbricata</i>
<i>Amsinckia menziesii</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Anisocoma acaulis</i>	<i>Lomatium dasycarpum</i>	<i>Taraxacum officinale</i>
<i>Calyptridium monandrum</i>	<i>Lupinus concinnus</i>	<i>Tropidocarpum gracile</i>
<i>Cryptantha micrantha</i>	<i>Marah macrocarpa</i>	<i>Caulanthus simulans</i>
<i>Descurainia pinnata</i>	<i>Nemophila menziesii</i>	<i>Streptanthus campestris</i>

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)	Properthus 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		
<i>Boechera pulchra</i>	<i>Ericameria linearifolia</i>	<i>Layia glandulosa</i>

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
(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		
<i>Amsinckia intermedia</i>	<i>Eschscholzia californica</i>	<i>Malacothrix glabrata</i>
<i>Arctostaphylos pungens</i>	<i>Euphorbia albomarginata</i>	<i>Oenothera californica ssp. avita</i>
<i>Boechera pulchra</i>	<i>Gilia angelensis</i>	<i>Pectocarya setosa</i>
<i>Calyptidium monandrum</i>	<i>Gilia diegensis</i>	<i>Penstemon centranthifolius</i>
<i>Ceanothus leucodermis</i>	<i>Lasthenia gracilis</i>	<i>Phacelia distans</i>
<i>Ceanothus perplexans</i>	<i>Layia glandulosa</i>	<i>Plagiobothrys arizonicus</i>

INCIDENTAL PLANT LIST		
<i>Collinsia concolor</i>	<i>Leptosiphon floribundus ssp. glaber</i>	<i>Salvia columbariae</i>
<i>Cryptantha intermedia var. intermedia</i>	<i>Leptosiphon lemmonii</i>	<i>Sisymbrium altissimum</i>
<i>Cryptantha micrantha</i>	<i>Leptosiphon parviflorus</i>	<i>Sisymbrium irio</i>
<i>Descurainia pinnata</i>	<i>Lomatium dasycarpum ssp. dasycarpum</i>	<i>Uropappus lindleyi</i>
<i>Ericameria linearifolia</i>	<i>Lupinus bicolor</i>	<i>Linanthus bellus</i>
<i>Erodium cicutarium</i>	<i>Lupinus concinnus</i>	

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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		
<i>(none)</i>		

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 <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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		
<i>Anisocoma acaulis</i>	<i>Eriastrum eremicum ssp. eremicum</i>	<i>Lupinus concinnus</i>
<i>Antirrhinum coulterianum</i>	<i>Eriodictyon trichocalyx var. lanatum</i>	<i>Oenothera californica ssp. avita</i>
<i>Calycoseris parryi</i>	<i>Erodium cicutarium</i>	<i>Pectocarya setosa</i>
<i>Calyptridium monandrum</i>	<i>Eulobus californicus</i>	<i>Penstemon centranthifolius</i>
<i>Castilleja applegatei</i>	<i>Euphorbia albomarginata</i>	<i>Rhus aromatica</i>

INCIDENTAL PLANT LIST		
<i>Chaenactis glabriuscula</i>	<i>Lasthenia gracilis</i>	<i>Uropappus lindleyi</i>
<i>Chenopodium californicum</i>	<i>Layia glandulosa</i>	<i>Astragalus douglasii</i> var. <i>perstrictus</i>
<i>Chorizanthe fimbriata</i>	<i>Leptosiphon lemmonii</i>	<i>Delphinium parishii</i> ssp. <i>subglobosum</i>
<i>Cryptantha intermedia</i> var. <i>intermedia</i>	<i>Leptosiphon parviflorus</i>	<i>Geraea viscida</i>
<i>Cryptantha micrantha</i>	<i>Lupinus bicolor</i>	

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		
<i>Caulanthus heterophyllus</i>	<i>Erodium cicutarium</i>	<i>Lomatium dasycarpum</i>
<i>Cryptantha intermedia</i>	<i>Eschscholzia californica</i>	<i>Pectocarya linearis</i>
<i>Descurainia pinnata</i>	<i>Lasthenia californica</i>	<i>Tropidocarpum gracile</i>

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)	painting 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		
<i>Erodium cicutarium</i>		

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		
<i>Acmispon heermannii</i>	<i>Eschscholzia californica</i>	<i>Phacelia distans</i>
<i>Acmispon strigosus</i>	<i>Lasthenia gracilis</i>	<i>Phacelia imbricata</i>
<i>Amsinckia menziesii</i>	<i>Leptosiphon floribundus</i>	<i>Plagiobothrys arizonicus</i>
<i>Anisocoma acaulis</i>	<i>Leptosyne californica</i>	<i>Platystemon californicus</i>
<i>Arctostaphylos pungens</i>	<i>Lupinus concinnus</i>	<i>Salvia columbariae</i>

INCIDENTAL PLANT LIST		
<i>Calyptridium monandrum</i>	<i>Marah macrocarpa</i>	<i>Taraxacum officinale</i>
<i>Cryptantha micrantha</i>	<i>Nama demissa</i>	<i>Tropidocarpum gracile</i>
<i>Descurainia pinnata</i>	<i>Nemophila menziesii</i>	<i>Caulanthus simulans</i>
<i>Erodium cicutarium</i>	<i>Pectocarya sp.</i>	<i>Streptanthus campestris</i>

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		
<i>Castilleja affinis</i>	<i>Ericameria linearifolia</i>	<i>Caulanthus simulans</i>

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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (15)	checkered white (4)	painted lady (15)
bramble hairstreak (2)	common sootywing (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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		
<i>Collinsia concolor</i>	<i>Penstemon spectabilis</i>	
<i>Oenothera californica ssp. avita</i>	<i>Viola pedunculata</i>	

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)	painting 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		
<i>Cryptantha micrantha</i>	<i>Lasthenia gracilis</i>	<i>Phacelia distans</i>

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 <i>SPECIES (COUNT)</i>		
Acmon blue (1)	Edward's blue (2)	Painted lady (5)
Behr's metalmark (37)	Harford's sulphur (1)	Proterius 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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
funereal duskywing (2)	Pacific sara orangetip (2)	painted lady (18)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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		
<i>Erodium cicutarium</i>		

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		
<i>Cryptantha sp.</i>	<i>Lasthenia gracilis</i>	
<i>Erodium cicutarium</i>	<i>Plagiobothrys sp.</i>	

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		
<i>Acmispon strigosus</i>	<i>Erodium cicutarium</i>	<i>Salvia columbariae</i>
<i>Amsinckia menziesii</i>	<i>Lasthenia gracilis</i>	<i>Tropidocarpum gracile</i>
<i>Cryptantha micrantha</i>	<i>Lomatium dasycarpum</i>	
<i>Descurainia pinnata</i>	<i>Lupinus concinnus</i>	

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 <i>SPECIES (COUNT)</i>		
(none)		

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1)	cabbage white (5)	dainty sulphur (1)
bramble hairstreak (1)	California dogface (2)	painter lady (20)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
(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 <small>SPECIES (COUNT)</small>		
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 <small>SPECIES (COUNT)</small>		
(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		
<i>Amsinckia intermedia</i>	<i>Euphorbia albomarginata</i>	<i>Pectocarya setosa</i>
<i>Arctostaphylos pungens</i>	<i>Gilia angelensis</i>	<i>Phacelia distans</i>
<i>Boechera pulchra</i>	<i>Gilia diegensis</i>	<i>Salvia columbariae</i>
<i>Calyptridium monandrum</i>	<i>Lasthenia gracilis</i>	<i>Sisymbrium altissimum</i>
<i>Cryptantha micrantha</i>	<i>Lepidium perfoliatum</i>	<i>Uropappus lindleyi</i>
<i>Descurainia pinnata</i>	<i>Lupinus bicolor</i>	
<i>Ericameria linearifolia</i>	<i>Lupinus concinnus</i>	

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
(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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (14)	Lady spp. (1+)	White spp. (1+)
checkered white (7)	painter lady (5)	
Edward's blue (4)	white checkered-skipper (2)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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+)
bushy (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		
<i>Descurainia sophia</i>	<i>Heliotropium curassavicum</i>	<i>Pectocarya setosa</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia gracilis</i>	<i>Platystemon californicus</i>
<i>Ericameria linearifolia</i>	<i>Layia glandulosa</i>	<i>Salvia columbariae</i>
<i>Eriodictyon trichocalyx</i>	<i>Leptosiphon lemmonii</i>	<i>Uropappus lindleyi</i>
<i>Eriophyllum wallacei</i>	<i>Lupinus concinnus</i>	<i>Geraea viscida</i>
<i>Erodium cicutarium</i>	<i>Malacothrix glabrata</i>	<i>Linanthus bellus</i>

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		
<i>Amsinckia menziesii</i>	<i>Erodium cicutarium</i>	<i>Sisymbrium irio</i>
<i>Arctostaphylos spp</i>	<i>Lasthenia californica</i>	<i>Tropidocarpum gracile</i>
<i>Camissoniopsis bistorta</i>	<i>Lomatium dasycarpum</i>	
<i>Cryptantha spp</i>	<i>Ribes quercetorum</i>	

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		
<i>Acmispon argophyllus</i> var. <i>argophyllus</i>	<i>Eriophyllum wallacei</i>	<i>Lupinus concinnus</i>
<i>Amsinckia intermedia</i>	<i>Lasthenia gracilis</i>	<i>Salvia columbariae</i>
<i>Boechera pulchra</i>	<i>Layia glandulosa</i>	
<i>Calycoseris parryi</i>	<i>Lupinus bicolor</i>	

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 <i>SPECIES (COUNT)</i>		
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 <i>SPECIES (COUNT)</i>		
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

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 (*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.

Recovery Permit Coordinator
Re: QCB Observation Notification

Please contact me at (760) 274-3927 if there are any questions concerning this observation.

Very truly yours,

DUDEK



Erin Bergman
Biologist



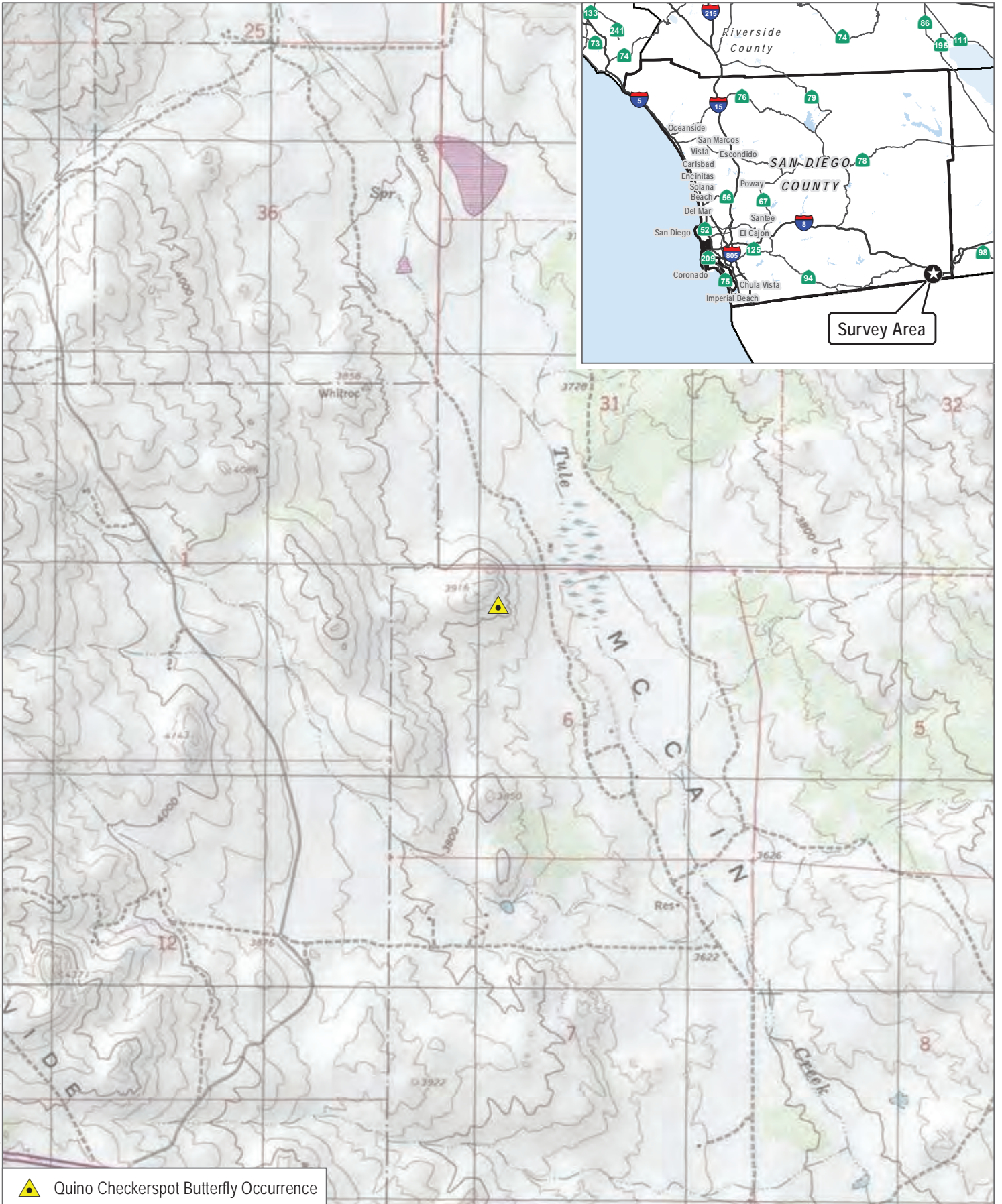
Quino Photo 1



Quino Photo 2



Quino Photo 3



SOURCE: USGS 7.5-Minute Series Live Oak Springs Quadrangle