

## **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.

Existing land uses within the vicinity of the study area can be characterized as predominantly rural, large-lot ranches and single-family homes, with a mixture of small-scale agriculture, recreational, and open space, with the exception of the Campo Band of Kumeyaay Indians Reservation, wind turbines to the north of I-8, and the Tule Wind Project. The 500-kilovolt Sunrise Powerlink traverses the northeast portion of the study area.

The study area is within the U.S. Geological Survey's 7.5-minute Sombrero Peak and Live Oak Springs quadrangle maps within Township 17 South, Range 6 East, Sections 01, 05, and 06; Township 17 South, Range 7 East, Sections 05 and 06; and Township 16 South, Range 6 East, Sections 19, 20, 29, 30, 31, and 32.

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

## VEGETATION COMMUNITIES

The study area supports chaparral, scrub, grassland, and oak woodland communities.

## QUINO CHECKERSPOT BUTTERFLY SURVEY

### Background Information

The Quino subspecies was added to the federal Endangered Species List by the U.S. Fish and Wildlife Service (USFWS) on January 16, 1997 (62 FR 2313–2322). The species, Edith's checkerspot (*E. editha*), has a range extending from British Columbia and Alberta, Canada, south through Colorado and Utah, and west along the coast to northern Baja California. It is divided into 20 subspecies, each of which has its own range and biological and morphological characteristics. In California, there are 12 subspecies (Garth and Tilden 1986), three of which are currently known to occur in Southern California. The Quino is the southwesternmost subspecies of *E. editha* (Mattoni et al. 1997).

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

The Quino is a medium-sized butterfly (approximately 0.8-inch to 1.1-inch wingspan) belonging to the family Nymphalidae. The adults are primarily orange-red with white and have black markings on the dorsal wing surface. They are active primarily in March and April. This active period may vary depending on weather conditions (Ballmer et al. 2001). The adult butterfly feeds on nectar, which it obtains from spring annuals such as popcorn flower (*Plagiobothrys* spp., *Cryptantha* spp.), whitedaisy tidytips (*Layia glandulosa*), goldenbush (*Ericameria* spp.), pincushion (*Chaenactis* spp.), fiddleneck (*Amsinckia* spp.), chia (*Salvia columbariae*), and bluedicks (*Dichelostemma capitatum*), among others.

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

A female may lay 20 to 75 eggs at one time and may produce up to 1,200 eggs in her lifetime. The eggs hatch in approximately 10 days under favorable weather conditions and the young larvae will immediately begin to feed upon a host plant. The feeding larvae use the dwarf plantain (*Plantago erecta*), Patagonia plantain (*P. patagonica*), Coulter’s snapdragon (*Antirrhinum coulterianum*), and Chinese houses (*Collinsia concolor*) as their host plants (Pratt 2009). Stiffbranch bird’s beak (*Cordylanthus rigidus*) and exserted Indian paintbrush (*Castilleja exserta*) are considered secondary hosts (USFWS 2002).

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

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

Reasons for the butterfly’s reduction in population are not well understood. Habitat loss due to degradation and fragmentation caused by urban and rural development, agricultural conversion, off-road vehicular use, the invasion of non-native plants and insects, fire management practices, over collecting, and adverse weather conditions have likely contributed to the species’ decline (62 FR 2313–2322).

## Methods

Prior to the focused surveys, Dudek biologists conducted a habitat assessment within the study area to identify suitable habitat and exclude unsuitable habitat. Excluded areas consisted of developed areas and densely vegetated chaparral with tall shrubs forming closed canopies. Host plant surveys were performed in concert with the habitat assessment and augmented during the survey effort.

The 2014 USFWS protocol states that focused Quino surveys should begin the third week of February and end the second Saturday in May unless otherwise approved by USFWS. Surveys are to be conducted during the adult flight season by biologists possessing a recovery permit for this species pursuant to Section 10(a)(1)(A) of the federal Endangered Species Act (USFWS 2014). The 2018 focused surveys followed the 2014 USFWS protocol with the exception of an approved amendment included in the 2018 notification (USFWS 2018). The amendment allowed surveys to begin the week of March 12 to account for the location's higher elevation, generally colder conditions, and general later start of Quino emergence.

Focused Quino surveys were conducted over 10 visits from March 13, 2018, through May 12, 2018, per the 2014 USFWS Quino Checkerspot Butterfly Survey Guidelines (see Table 1). The survey area consisted of suitable habitat for Quino checkerspot (Figures 2 and 3). Surveys were conducted by Quino-permitted biologists Anita Hayworth (TE-781084-9.1), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-813545-5), Jeff Priest (TE-840619-6), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), Paul M. Lemons (TE-051248-5), and Tricia Wotipka (working under TE-840619-6).

**Table 1**  
**Schedule of Focused Quino Checkerspot Butterfly Surveys**

Survey Area	Survey Pass	Survey Date	Biologist	Survey Time	Conditions	Notes
N/A	Habitat Assessment	2018-02-16	SC	8:00 AM–5:00 PM	Air temp: 43°F–57°F; ground temp: 70°F–77°F; 80% cloud cover; 0 mph wind	
1	1	2018-03-12	CA, PS	9:45 AM–4:50 PM	Air temp: 62°F–75°F; ground temp: 70°F–77°F; 20%–40% cloud cover; 0–2 mph wind; clear	Survey included area 3
	2	2018-03-19	CA, EB, PS	9:27 AM–2:19 PM	Air temp: 55°F–57°F; ground temp: 55°F–57°F; 20% cloud cover; 0–5 mph wind; clear	
	3	2018-03-28	EB, PS	9:00 AM–12:45 PM	Air temp: 65°F–74°F; ground temp: 76°F; 0% cloud cover; 0–4 mph wind	

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 <sup>a</sup>	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 <sup>a</sup>	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 <sup>a</sup>	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	



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**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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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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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 <sup>b</sup>	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 <sup>a</sup>	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 <sup>b</sup>	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.

<sup>a</sup> Surveys terminated early due to non-protocol weather conditions.

<sup>b</sup> Survey area 8 was reduced to 7.7 acres after pass 4 and the remaining passes were completed in conjunction with survey area 7.

The biologists were provided with 200-scale (1 inch = 200 feet) aerial maps of the study area. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species. Surveys also focused on identifying Quino host plants; however, only dried host plants from last year were observed. Therefore, no host plants were mapped within the study area.

The survey methods consisted of slowly walking roughly parallel transects spaced approximately 30 feet (10 meters) apart throughout all suitable habitats within the 517-acre study area. The study area was divided into eight survey areas, ranging from 67 acres to 82 acres each (Figures 2 and 3). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10 acres per person hour. All wildlife species were recorded and are included in Appendix A.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; winds greater than 15 miles per hour measured 4–6 feet above ground level for more than 30 seconds; temperature in the shade at ground level less than 60°F on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the Quino survey are shown in Table 1. Copies of the surveyors' field notes are included as Appendix B.

Weather conditions varied throughout the survey season, and numerous surveys were postponed or ended early/began late due to high winds, cloud cover, and/or low temperatures. Because of these weather conditions, some areas were surveyed over 2 days to complete the survey. If a survey pass was missed due to sustained inclement weather, a makeup survey was performed on non-consecutive days the following week, in accordance with the 2014 USFWS protocol.

## RESULTS

No Quino were observed during the 2018 focused surveys. A total of 33 butterfly species were observed during the surveys. The weeks in which these butterflies were observed are shown in Tables 2A and 2B.

**Table 2A**  
**Butterflies Observed on Site Weeks 1–5**

Scientific Name	Common Name	Week				
		1	2	3	4	5
Hesperiidae – Skippers						
Erynnis brizo	sleepy duskywing	—	—	—	—	—
Erynnis funeralis	funereal duskywing	X	X	X	X	X
Erynnis propertius	Propertius duskywing	—	—	—	X	X
Hylephila phyleus	fiery skipper	—	—	—	—	—
	duskywing sp.	—	—	—	—	X
Nymphalidae – Brush-Footed Butterflies						
Adelpha bredowii	California sister	—	—	—	—	—
Chlosyne californica	California patch	—	—	—	—	—
Chlosyne gabbii	Gabb's checkerspot	—	—	—	—	—
Danaus gilippus	queen	—	—	—	—	X
Limenitis lorquini	Lorquin's admiral	—	—	—	—	—
Nymphalis californica	California tortoiseshell	—	X	X	—	—
Vanessa cardui	painted lady	—	—	X	—	—
	lady sp.	X	X	—	—	—

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**Table 2A**  
**Butterflies Observed on Site Weeks 1–5**

Scientific Name	Common Name	Week				
		1	2	3	4	5
Lycaenidae – Blues and Hairstreaks						
<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
Papilionidae – Swallowtails						
<i>Papilio eurymedon</i>	pale swallowtail	—	—	—	—	—
<i>Papilio rutulus</i>	western tiger swallowtail	X	X	X	—	X
Pieridae – Whites and Sulfurs						
<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
Riodinidae – Metalmarks						
<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
Hesperiidae – Skippers						
Erynnis brizo	sleepy duskywing	—	X	—	—	—
Erynnis funeralis	funereal duskywing	X	X	X	X	—
Erynnis propertius	Propertius duskywing	X	X	X	—	X
Hylephila phyleus	fiery skipper	—	—	—	X	—

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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>Limnitis 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>Acemisson (=Lotus) spp.</i>	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>		
<b><i>Antirrhinum coulterianum</i></b>	<b>Coulter's snapdragon</b>	—
<b><i>Collinsia</i> sp.</b>	<b>Chinese houses</b>	—
<i>Keckiella antirrhinoides</i> var. <i>antirrhinoides</i>	snapdragon penstemon	—
<i>Keckiella cordifolia</i>	heartleaf keckiella, climbing bush penstemon	—
<b><i>Plantago erecta</i></b>	<b>dwarf plantain</b>	—
<b><i>Plantago patagonica</i></b>	<b>woolly plantain</b>	—



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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>		
<b><i>Castilleja exserta</i></b>	<b>exserted Indian paintbrush, common owl's-clover</b>	—
<i>Scrophulariaceae – Figwort Family</i>		
<b><i>Cordylanthus rigidus</i> ssp. <i>setiger</i></b>	<b>stiffbranch birds beak, dark-tipped bird's-beak</b>	—
<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.




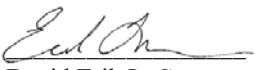
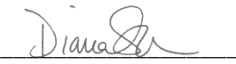
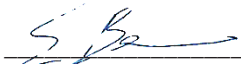
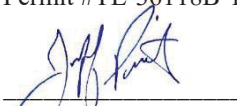

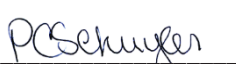


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Please feel free to contact Brock Ortega at [bortega@dudek.com](mailto:bortega@dudek.com) or Callie Amoaku at [cford@dudek.com](mailto:cford@dudek.com) if you have any questions regarding the contents of this report.

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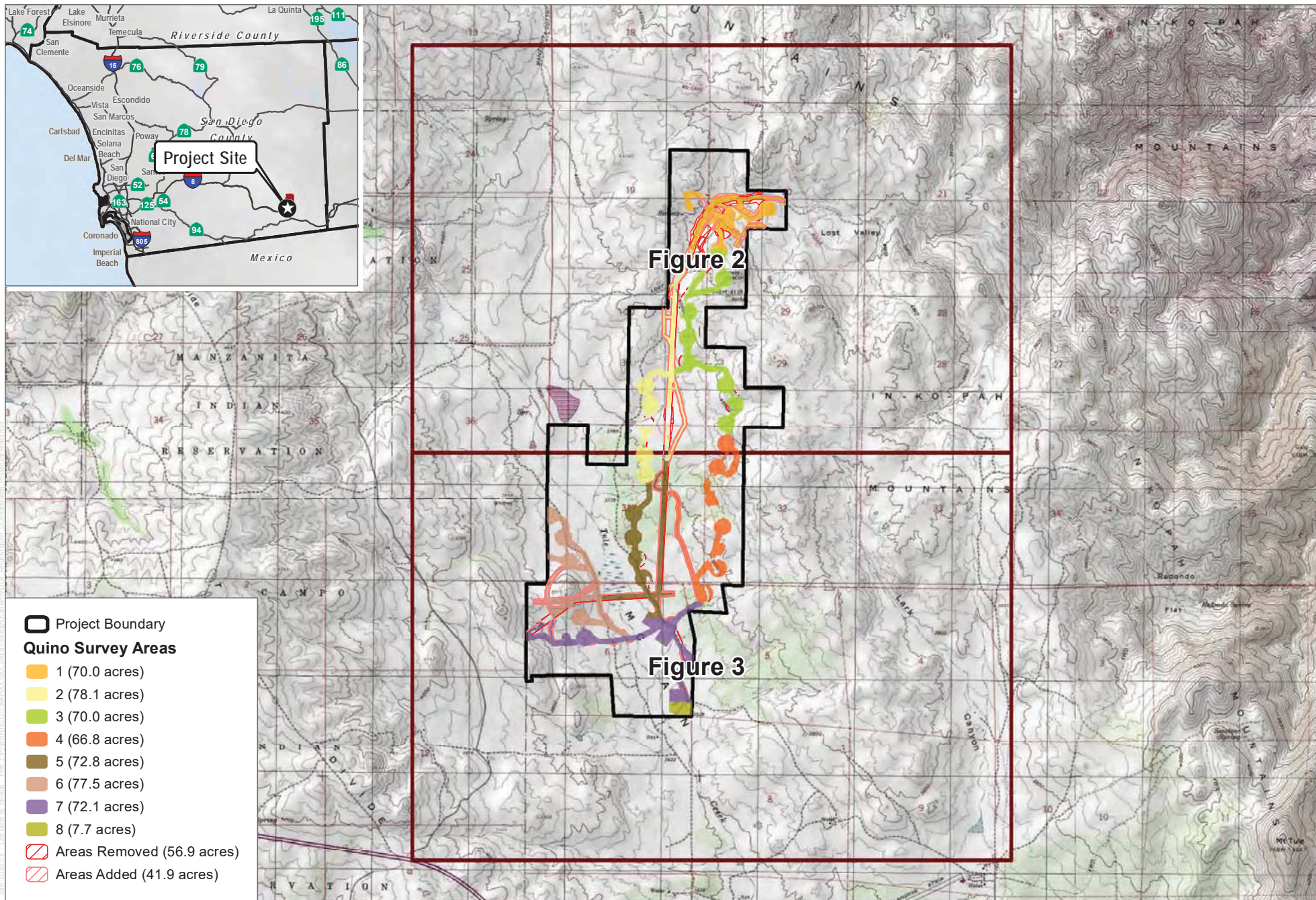
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Subject: 2018 Focused Quino Checkerspot Butterfly Survey Report for the Campo Wind Project, Boulevard, San Diego County, California

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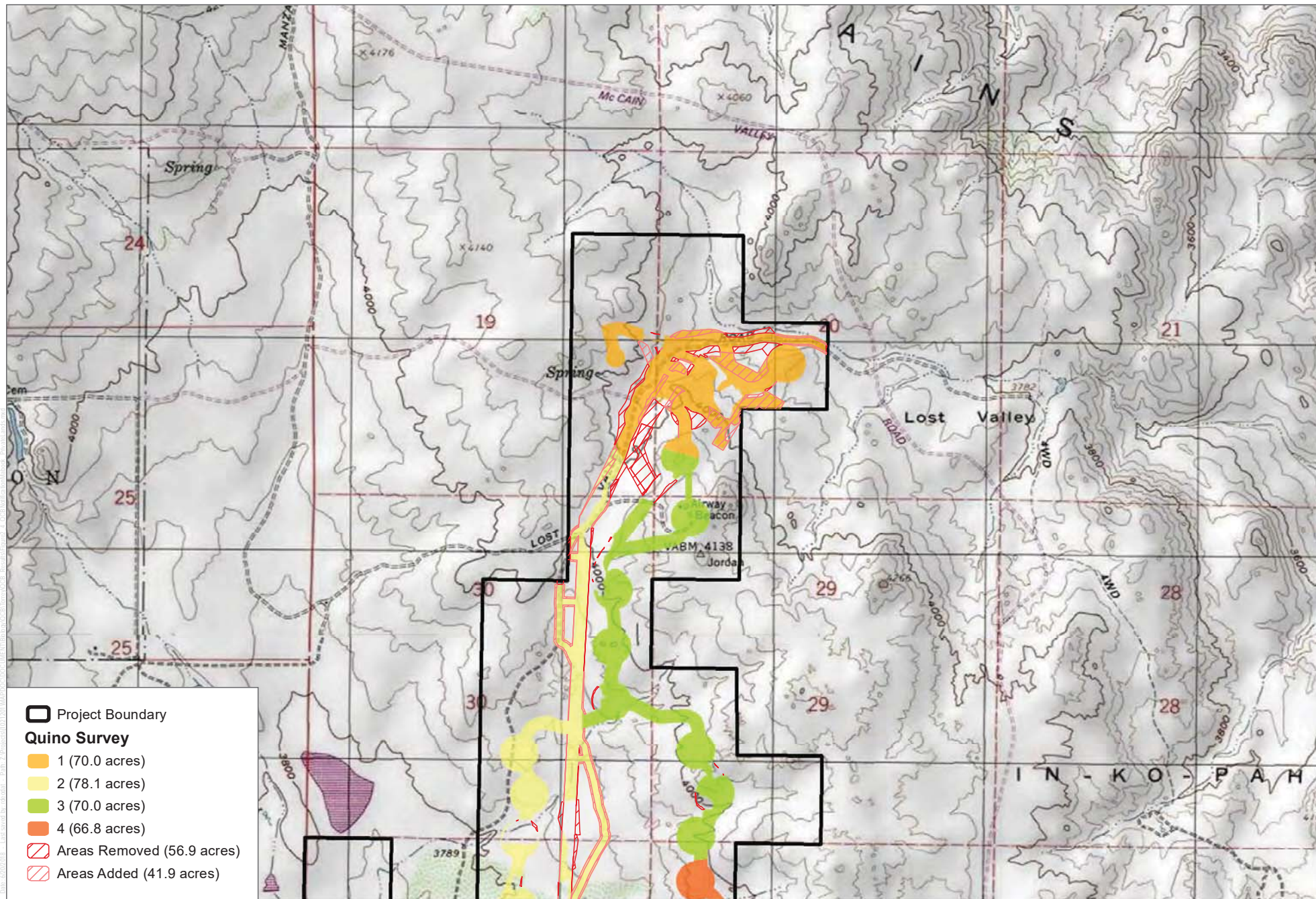
SOURCE: USGS 2018

FIGURE 1

Survey Results - Index

Torrey Wind Project - Results of 2018 Quino Checkerspot Survey

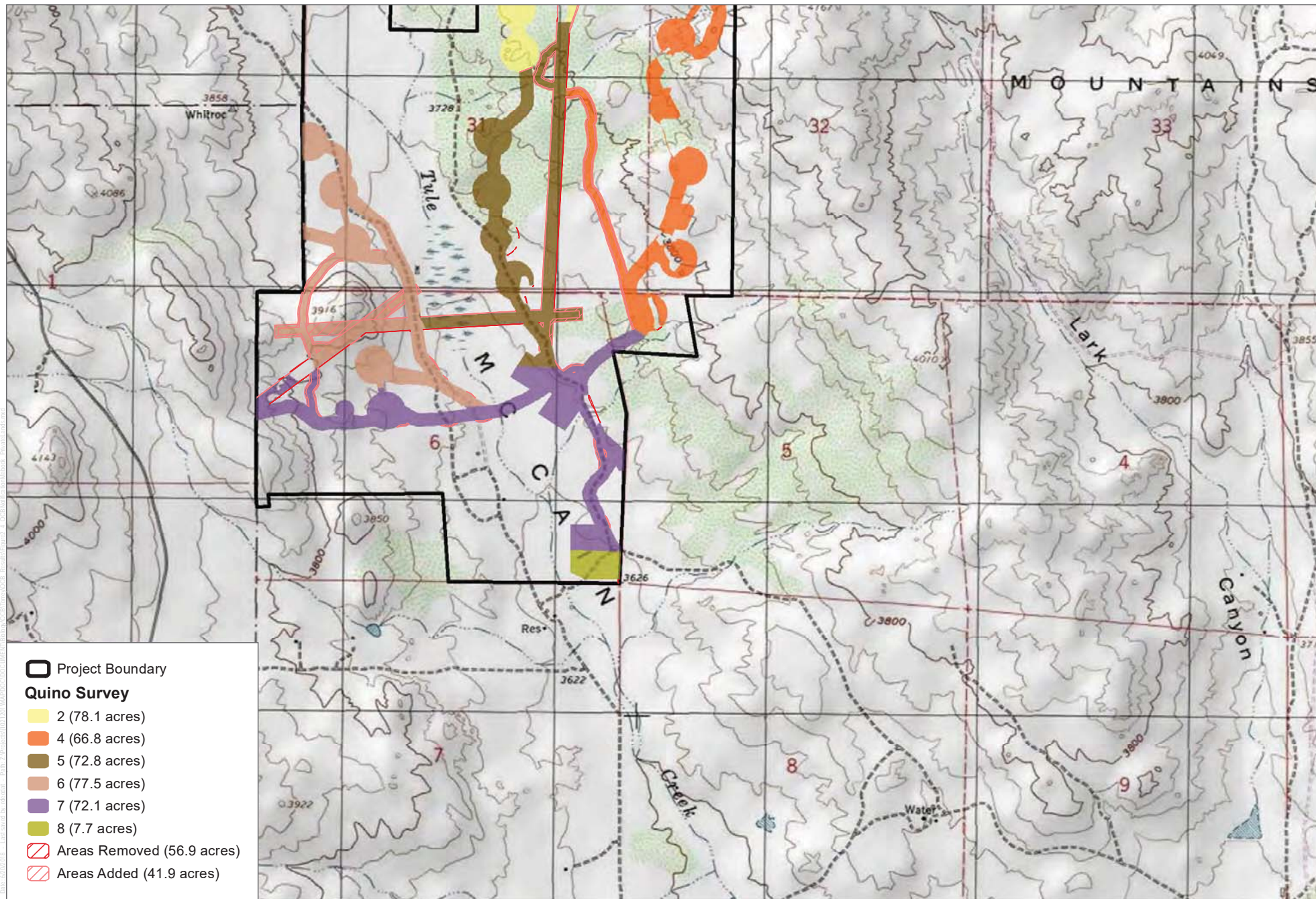




SOURCE: USGS 2018

**FIGURE 2**  
Survey Results





SOURCE: USGS 2018

**DUDEK**



0 1,000 2,000 Feet

**FIGURE 3**  
Survey Results

Torrey Wind Project - Results of 2018 Quino Checkerspot Survey

# **APPENDIX A**

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





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

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**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***

*Psaltiriparus 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***

*Aphelocoma californica*—California scrub-jay

*Corvus brachyrhynchos*—American crow

*Corvus corax*—common raven

*Cyanocitta stelleri*—Steller's jay

### LARKS

#### ***ALAUDIDAE—LARKS***

*Eremophila alpestris*—horned lark

### MOCKINGBIRDS AND THRASHERS

#### ***MIMIDAE—MOCKINGBIRDS AND THRASHERS***

*Mimus polyglottos*—northern mockingbird

*Oreoscoptes montanus*—sage thrasher

*Toxostoma redivivum*—California thrasher

### NEW WORLD QUAIL

#### ***ODONTOPHORIDAE—NEW WORLD QUAIL***

*Callipepla californica*—California quail

## APPENDIX A (Continued)

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### NEW WORLD VULTURES

#### ***CATHARTIDAE—NEW WORLD VULTURES***

*Cathartes aura*—turkey vulture

### OLD WORLD WARBLERS AND GNATCATCHERS

#### ***SYLVIIDAE—SYLVIID WARBLERS***

*Poliophtila 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)

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### 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)

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### WRENS

#### **TROGLODYTIDAE—WRENS**

- Campylorhynchus brunneicapillus*—cactus wren
- Salpinctes obsoletus*—rock wren
- Thryomanes bewickii*—Bewick's wren
- Troglodytes aedon*—house wren

### WRENTITS

#### **TIMALIIDAE—BABBLERS**

- Chamaea fasciata*—wrentit

### NEW WORLD SPARROWS

#### **PASSERELLIDAE—NEW WORLD SPARROWS**

- Amphispiza bilineata*—black-throated sparrow
- Artemisiospiza nevadensis*—sagebrush sparrow
- Junco hyemalis*—dark-eyed junco
- Melospiza melodia*—song sparrow
- 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)

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*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)

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### 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)

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### **ANGUIDAE—ALLIGATOR LIZARDS**

*Elgaria multicarinata*—southern alligator lizard

### **TEIIDAE—WHIPTAIL LIZARDS**

*Aspidoscelis tigris stejnegeri*—San Diegan tiger whiptail

## **SNAKES**

### **COLUBRIDAE—COLUBRID SNAKES**

*Coluber lateralis*—striped racer

*Pituophis catenifer*—gophersnake

### **VIPERIDAE—VIPERS**

*Crotalus oreganus*—western rattlesnake

\* Signifies introduced (non-native) species



# **APPENDIX B**

## ***2018 Torrey Wind Project Quino Survey Field Notes***



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-12
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 1, Private 3
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:45:00	62	70	40	2	clear	
2	11:45:00	75	77	20	2	clear	
3	13:06:00	72	76	20	2	patchy	
4	14:56:00	74	78	40	2	patchy	
End	16:50:00	71	74	50	1	patchy	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (19)	Lady sp. (1+)	western tiger swallowtail (1)
bramble hairstreak (9)	Pacific sara orangetip (4)	
funereal duskywing (5)	southern blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-09
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 2, Private 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:04:00	66	70	30	2	clear	
1100	11:00:00	76	79	30	4	clear	Gusts 10mph
1300	13:00:00	72	76	40	5	patchy	Gusts 10mph
1430	14:30:00	73	76	60	10	patchy	Gusts 15mph
End	15:30:00	68	70	80	12	patchy	

BUTTERFLY LIST <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 SPECIES (COUNT)		
Behr's metalmark (4)	funereal duskywing (1)	western bluebird (1+)
bramble hairstreak (3)	Pacific sara orangetip (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
oak titmouse (1+)	California towhee (1+)	northern flicker (1+)
black-tailed jackrabbit (1+)	common raven (1+)	western fence lizard (1+)
black phoebe (1+)	European starling (1+)	white-crowned sparrow (1+)
bushtit (1+)	house finch (1+)	
California scrub-jay (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 1
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:27:00	55	55	20	4	clear	Still too cold to start
End	10:43:00	57	57	20	5	clear	Still cold
End	11:41:00	59.7	66	10	9	clear	Start 11:42
End	12:46:00	62	68	10	10	clear	
End	14:19:00	64		10	10	clear	

BUTTERFLY LIST <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 SPECIES (COUNT)		
Pacific sara orangetip (1+)		

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
<b>oak titmouse (1+)</b>	California thrasher (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
(none)		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-19
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 7
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	16:40:00	66	69	30	3	patchy	
End	17:15:00	64	67	30	3	patchy	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (1)	Lady sp (1)	Pacific sara orangetip (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-20
Biologist(s)	Callie Amoaku, Erin Bergman, Patricia Schuyler
Survey Area	Private 7
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:26:00	71		10	9	clear	
End	12:20:00	72		0	10	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (25)	funereal duskywing (2)	
bramble hairstreak (6)	Pacific sara orangetip (8)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Blainville's horned lizard (1+)	California quail (1+)	phainopepla (1+)
song sparrow (1+)	California scrub-jay (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	common side-blotched lizard (1+)	
bushtit (1+)	northern flicker (1+)	

INCIDENTAL PLANT LIST		
<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 SPECIES (COUNT)		
Behr's metalmark (25)	funereal duskywing (2)	painted lady (2)
bramble hairstreak (9)	Pacific sara orangetip (9)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
black-throated sparrow (1+)	chipping sparrow (1+)	turkey vulture (1+)
California quail (1+)	common raven (1+)	
California scrub-jay (1+)	phainopepla (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-30
Biologist(s)	Callie Amoaku, Erin Bergman
Survey Area	Private 2
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:55:00	73	70	0	1	clear	
2	10:40:00	87	92	0	2	clear	
End	12:38:00	84	83	0	2	clear	

BUTTERFLY LIST <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		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-03-28
Biologist(s)	Paul Lemons
Survey Area	Private 4
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:00:00	64	60	0	2	clear	
End	15:10:00	73	70	0	6	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Behr's metalmark (1+)	bramble hairstreak (1+)	Pacific sara orangetip (1+)
blue-gray gnatcatcher (1+)	funereal duskywing (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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)		
<b>oak titmouse (1+)</b>	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>		
<b>oak titmouse (1+)</b>	common raven (1+)	red-tailed hawk (1+)
acorn woodpecker (1+)	desert cottontail (1+)	western fence lizard (1+)
American kestrel (1+)	Eurasian collared-dove (1+)	western kingbird (1+)
brown-headed cowbird (1+)	European starling (1+)	white-crowned sparrow (1+)
California ground squirrel (1+)	granite spiny lizard (1+)	wrentit (1+)
California quail (1+)	greater roadrunner (1+)	
California scrub-jay (1+)	mourning dove (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-02
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 1
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:06:00	58	63	0	1	clear	
2	10:28:00	68	70	0	8	clear	
End	13:14:00	73	71	0	6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (64)	brown elfin (2)	Pacific sara orangetip (31)
blue-gray gnatcatcher (1+)	checkered white (3)	Sulphur sp. (1+)
bramble hairstreak (10)	desert pearly marble (11)	White sp. (1+)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
bushtit (1+)	California quail (1+)	red-tailed hawk (1+)
cactus wren (1+)	California scrub-jay (1+)	

INCIDENTAL PLANT LIST		
<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+)	Proterotus 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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1+)	funereal duskywing (1+)	
bramble hairstreak (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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</i> sp.	<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)	Proterops 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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (11)	checkered white (2)	Pacific sara orangetip (2)
bramble hairstreak (2)	funereal duskywing (1)	Proterptus duskywing (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
American crow (1+)	common side-blotched lizard (1+)	red-tailed hawk (1+)
Botta's pocket gopher (1+)	desert cottontail (1+)	spotted towhee (1+)
California quail (1+)	European starling (1+)	turkey vulture (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	white-crowned sparrow (1+)
California towhee (1+)	mourning dove (1+)	
common raven (1+)	northern mockingbird (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-14
Biologist(s)	Callie Amoaku, Erin Bergman
Survey Area	Private 1
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:09:00	69	70	0	3	clear	
End	11:10:00	71	72	0	4	clear	Temp check
End	13:18:00	72	74	0	3	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (64)	bramble hairstreak (1)	Pacific sara orangetip (24)
blue-gray gnatcatcher (1+)	desert pearly marble (7)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
California quail (1+)	chipping sparrow (1+)	white-crowned sparrow (1+)
California scrub-jay (1+)	phainopepla (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
<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+)	Proterotus 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 SPECIES (COUNT)		
San Diegan tiger whiptail (1+)	brown elfin (3)	western bluebird (1+)
Acmon blue (20)	desert pearly marble (7)	western tiger swallowtail (3)
Behr's metalmark (37)	Pacific sara orangetip (9)	White sp. (1+)
Blue sp. (1+)	queen (1)	
bramble hairstreak (1)	spring white (3)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Brewer's sparrow (1+)	Cassin's kingbird (1+)	lesser goldfinch (1+)
oak titmouse (1+)	chipping sparrow (1+)	mourning dove (1+)
San Diego black-tailed jackrabbit (1+)	common side-blotched lizard (1+)	mule deer (1+)
Anna's hummingbird (1+)	coyote (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	dark-eyed junco (1+)	orange-crowned warbler (1+)
Bewick's wren (1+)	desert cottontail (1+)	red-tailed hawk (1+)
black-throated sparrow (1+)	Erynnis sp. (1+)	rock wren (1+)
bobcat (1+)	Eurasian collared-dove (1+)	Say's phoebe (1+)
bushtit (1+)	European starling (1+)	spotted towhee (1+)
California ground squirrel (1+)	gophersnake (1+)	turkey vulture (1+)
California quail (1+)	greater roadrunner (1+)	western fence lizard (1+)
California scrub-jay (1+)	horned lark (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
California towhee (1+)	house finch (1+)	Wilson's warbler (1+)

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-09
Biologist(s)	Erin Bergman, Patricia Schuyler
Survey Area	Private 5
Survey Pass	5

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:30:00	86	80	0	5	clear	
End	16:30:00	78	79	50	5	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (32)	funereal duskywing (1)	spring white (4)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (21)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Blainville's horned lizard (1+)	California scrub-jay (1+)	western meadowlark (1+)
oak titmouse (1+)	Cassin's kingbird (1+)	white-crowned sparrow (1+)
Bewick's wren (1+)	chipping sparrow (1)	
bushtit (1+)	northern mockingbird (1+)	

INCIDENTAL PLANT LIST		
<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 SPECIES (COUNT)		
Acmon blue (2)	bramble hairstreak (1)	Pacific sara orangetip (34)
Behr's metalmark (122)	desert pearly marble (19)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Blainville's horned lizard (1+)	California scrub-jay (1+)	white-crowned sparrow (1+)
barn owl (1+)	California towhee (1+)	wild turkey (1+)
bushtit (1+)	greater roadrunner (1+)	wrentit (1+)
California quail (1+)	mourning dove (1+)	

INCIDENTAL PLANT LIST		
<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)		
<b>oak titmouse (1+)</b>	California scrub-jay (1+)	phainopepla (1+)
acorn woodpecker (1+)	California towhee (1+)	red-tailed hawk (1+)
bushtit (1+)	common raven (1+)	turkey vulture (1+)

INCIDENTAL PLANT LIST		
<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)	Proterops 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)	Proterotus 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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (41)	desert orangetip (5)	spring white (14)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (8)	
brown elfin (1+)	Proterops duskywing (14)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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+)	Proterptus 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+)	Proterptus duskywing (1+)
Behr's metalmark (1+)	funereal duskywing (1+)	western tiger swallowtail (1+)
bramble hairstreak (1+)	Pacific sara orangetip (1+)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
acorn woodpecker (1+)	California scrub-jay (1+)	mourning dove (1+)
American kestrel (1+)	common raven (1+)	red-tailed hawk (1+)
brush rabbit (1+)	common side-blotched lizard (1+)	Steller's jay (1+)
Bullock's oriole (1+)	European starling (1+)	turkey vulture (1+)
California ground squirrel (1+)	greater roadrunner (1+)	western meadowlark (1+)
California quail (1+)	Merriam's chipmunk (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-17
Biologist(s)	Erin Bergman
Survey Area	Private 7, Private 8
Survey Pass	6

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:58:00	67	67	0	3	clear	
Temp check	14:26:00	84	85	0	2	clear	
End	17:03:00	68	69	0	2	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (58)	Pacific sara orangetip (11)	White species (8)
bramble hairstreak (1+)	southern blue (1+)	
desert pearly marble (7)	spring white (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
<b>oak titmouse (1+)</b>	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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (12)	pale swallowtail (1)	Proterotus duskywing (2)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
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)	Proterotus duskywing (1)
bramble hairstreak (1)	Pacific sara orangetip (2)	western bluebird (1+)

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
<b>oak titmouse (1+)</b>	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 SPECIES (COUNT)		
Acmon blue (3)	desert pearly marble (2)	western bluebird (1)
Behr's metalmark (22)	Gabb's checkerspot (2)	White species (3)
blue-gray gnatcatcher (1+)	Pacific sara orangetip (10)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
California scrub-jay (1+)	chipping sparrow (1+)	common raven (1+)

INCIDENTAL PLANT LIST		
<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)	Proterptus 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 SPECIES (COUNT)		
Behr's metalmark (14)	Gabb's checkerspot (1)	Propertius duskywing (2)
desert pearly marble (4)	pale swallowtail (1)	sleepy duskywing (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-04-25
Biologist(s)	Erin Bergman
Survey Area	Private 5
Survey Pass	7

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:14:00	76	77	0	1	clear	
End	12:00:00	73	77	0	1	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (18)	Pacific sara orangetip (5)	spring white (2)
desert pearly marble (9)	pale swallowtail (1)	White species (9)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
acorn woodpecker (1+)	chipping sparrow (1+)	western meadowlark (1+)
California scrub-jay (1)	turkey vulture (1+)	white-crowned sparrow (1+)

INCIDENTAL PLANT LIST		
<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 SPECIES (COUNT)		
Acmon blue (5)	desert pearly marble (7)	Sulphur species (2)
Behr's metalmark (44)	Pacific sara orangetip (12)	White species (17)
blue-gray gnatcatcher (1+)	spring white (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
acorn woodpecker (1+)	California towhee (1+)	turkey vulture (1+)
Bewick's wren (1+)	Cassin's kingbird (1+)	white-crowned sparrow (1+)
bushtit (1+)	chipping sparrow (1+)	wrentit (1+)
California scrub-jay (1+)	common raven (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-03
Biologist(s)	Patricia Schuyler
Survey Area	Private 1
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:37:00	63	62	0	3	clear	
End	15:40:00	74	78	0	5	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (17)	blue-gray gnatcatcher (1+)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
California scrub-jay (1+)	mule deer (1+)	white-tailed antelope squirrel (1+)
common raven (1+)	turkey vulture (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-04
Biologist(s)	Callie Amoaku
Survey Area	Private 2
Survey Pass	8

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:34:00	72	81	0	3	clear	
2	10:50:00	79	79	0	3	clear	
End	16:26:00	81	85	0	3	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (10)	pale swallowtail (1)	western tiger swallowtail (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
ash-throated flycatcher (1+)	California quail (1+)	phainopepla (1+)
black-throated sparrow (1+)	California scrub-jay (1+)	white-crowned sparrow (1+)
bushtit (1+)	granite spiny lizard (1+)	white-tailed antelope squirrel (1+)
California ground squirrel (1+)	northern flicker (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
<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 SPECIES (COUNT)		
Behr's metalmark (1+)	pale swallowtail (1+)	
Pacific sara orangetip (1+)	western bluebird (1+)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Lawrence's goldfinch (1+)	California quail (1+)	mourning dove (1+)
oak titmouse (1+)	California scrub-jay (1+)	northern flicker (1+)
acorn woodpecker (1+)	common raven (1+)	red-tailed hawk (1+)
American kestrel (1+)	common side-blotched lizard (1+)	spotted towhee (1+)
ash-throated flycatcher (1+)	European starling (1+)	western meadowlark (1+)
black-tailed jackrabbit (1+)	greater roadrunner (1+)	wrentit (1+)
brush rabbit (1+)	hooded oriole (1+)	yellow-rumped warbler (1+)
bushtit (1+)	house finch (1+)	
California ground squirrel (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Jeffrey Priest
Survey Area	Private 1
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	68	67	0	5		
Mid afternoon conditions.	14:08:00	86	90	0	12		
End	16:00:00	84	86	0	10		

BUTTERFLY LIST <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		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 2
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:40:00	86	88	0	8	clear	
End	16:46:00	90	93	0	3	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (2)	Behr's metalmark (5)	California sister (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
Bewick's wren (1+)	common raven (1+)	turkey vulture (1+)
California towhee (1+)	gophersnake (1+)	white-tailed antelope squirrel (1+)

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Callie Amoaku, Patricia Schuyler
Survey Area	Private 3
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:35:00	76	70	10	3	clear	
End	12:35:00	86	88	0	5	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Behr's metalmark (10)	California sister (1)	funereal duskywing (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
San Diego black-tailed jackrabbit (1+)	California scrub-jay (1+)	
bushtit (1+)	sagebrush sparrow (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-08
Biologist(s)	Callie Amoaku
Survey Area	Private 4
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:59:00	84	90	10	1	clear	
2	12:16:00	90	92	10	2	clear	
End	15:39:00	91	93	0	2	clear	

BUTTERFLY LIST <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 <i>SPECIES (COUNT)</i>		
Behr's metalmark (1+)	southern blue (1+)	
fiery skipper (1+)	western bluebird (1+)	

INCIDENTAL WILDLIFE LIST <i>SPECIES (COUNT)</i>		
oak titmouse (1+)	common raven (1+)	mule deer (1+)
acorn woodpecker (1+)	dark-eyed junco (1+)	northern flicker (1+)
ash-throated flycatcher (1+)	desert cottontail (1+)	Nuttall's woodpecker (1+)
Bewick's wren (1+)	Eurasian collared-dove (1+)	red-tailed hawk (1+)
Bullock's oriole (1+)	European starling (1+)	rock wren (1+)
California ground squirrel (1+)	hermit warbler (1+)	Townsend's warbler (1+)
California quail (1+)	hooded oriole (1+)	turkey vulture (1+)
California scrub-jay (1+)	house finch (1+)	western tanager (1+)
California thrasher (1+)	lesser goldfinch (1+)	western wood-pewee (1+)
Cassin's kingbird (1+)	mourning dove (1+)	Wilson's warbler (1+)

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-07
Biologist(s)	Erin Bergman
Survey Area	Private 7, Private 8
Survey Pass	9

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:04:00	74	76	20	1	clear	
End	16:59:00	73	76	0	1	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (5)	desert pearly marble (2)	White species (5)
Behr's metalmark (16)	pale swallowtail (1)	
bramble hairstreak (1)	southern blue (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
acorn woodpecker (1+)	chipping sparrow (1+)	phainopepla (1+)
black phoebe (1+)	common raven (1+)	red-tailed hawk (1+)
bushtit (1+)	house wren (1+)	turkey vulture (1+)
California scrub-jay (1+)	mourning dove (1+)	wrentit (1+)

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-12
Biologist(s)	Margie Mulligan
Survey Area	Private 1
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:32:00	49	0	100	5	drizzle	
End	09:35:00	53	0	50	10	patchy	
End	10:33:00	57	0	10	15	clear	
	11:31:00	61	0	0	15	clear	
End	12:43:00	61	0	0	20		

BUTTERFLY LIST SPECIES (COUNT)		
(none)		

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Jeffrey Priest
Survey Area	Private 2
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	62	62	20	8		
Mid day, valley, wind rising	13:00:00	72	79	20	29		Wind 8-15, gusts 15-29 mph.
End	14:00:00	72	79	20	30		Winds above protocol, survey cut short.

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (1)	Behr's metalmark (1)	blue-gray gnatcatcher (1+)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
acorn woodpecker (1+)	common raven (1+)	Merriam's chipmunk (1+)
Bewick's wren (1+)	common side-blotched lizard (1+)	mourning dove (1+)
brush rabbit (1+)	coyote (1+)	red-tailed hawk (1+)
bushtit (1+)	granite spiny lizard (1+)	turkey vulture (1+)
California ground squirrel (1+)	house finch (1+)	white-throated swift (1+)
California scrub-jay (1+)	lesser goldfinch (1+)	

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Tricia Wotipka
Survey Area	Private 3
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:45:00	62	62	20	8	patchy	
End	14:00:00	72	79	40	27	patchy	Survey was called short due to sustained high winds exceeding an average of 15mph over a 30 second period.

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (1+)	blue-gray gnatcatcher (1+)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
<b>oak titmouse (1+)</b>	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+)	Proterius 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 SPECIES (COUNT)		
Acmon blue (1)		

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Campo Wind (Private Land)
Survey Date	2018-05-11
Biologist(s)	Erik LaCoste
Survey Area	Private 7, Private 8
Survey Pass	10

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:15:00	60	63	0	8	clear	
End	13:45:00	70	72	10	26	clear	

BUTTERFLY LIST SPECIES (COUNT)		
California sister (1)		

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

