

# **APPENDIX D**

## ***2016 Focused Quino Checkerspot Butterfly Survey Report***





August 22, 2016

9420-3

U.S. Fish and Wildlife Service  
Attention: Recovery Permit Coordinator  
2177 Salk Avenue #250  
Carlsbad, California 92008

***Subject: 2016 Focused Quino Checkerspot Butterfly Survey Report for the Pure Water San Diego Program, County of San Diego, California***

Dear Recovery Permit Coordinator:

This letter report documents the spring 2016 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 Pure Water San Diego Program project (Pure Water Program), located in the County of San Diego, California. The Pure Water Program is the City of San Diego's Public Utilities Department (PUD) proposed program to provide a safe, secure, and sustainable local drinking water supply for San Diego. The Pure Water Program consists of the design and construction of new advanced water treatment facilities, wastewater treatment facilities, pump stations, transmission lines, and pipelines. The Pure Water Program project site contains approximately 447 acres of potentially Quino-suitable habitat that were surveyed in 2016. This effort surveyed the current alignment, plus a 100-foot buffer where suitable habitat existed. However, buffer areas were not surveyed if intervening buildings or other large development occurred between the potential project area and the buffered habitat.

This report is intended to satisfy reporting requirements for the following Quino-permitted biologists:

- Brock Ortega, TE813545-6
- Greg Chatman, TE-075112-2
- Dale Powell, TE-006559-6
- Jun Powell, TE-006559-6

## **PROJECT LOCATION AND EXISTING CONDITIONS**

Pure Water Program pipelines extend from the Cities of San Diego, Santee, and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within MCAS Miramar (Figure 1, Regional Map), and meander in and out of U.S. Fish and Wildlife Service (USFWS)

required survey areas (USFWS 2014). The site occupies portions of Township 14 South, Range 1 East, unsectioned lands projected Sections 30, and 31; Township 14 South, Range 1 West, projected Sections 25, and 36; Township 14 South, Range 2 West, projected Sections 32, and 33; Township 15 South, Range 1 East, projected Sections 6, 7, and 18; Township 15 South, Range 1 West, projected Sections 1, 12, 13, 14, 21, 22, 23, 24, 28, 29, and 30; Township 15 South, Range 2 West, projected Sections 5, 6, 25, 29, 30, 31, 32, 33, 35, and 36; Township 15 South, Range 3 West, projected Sections 1, 8, 9, 10, 11, 12, 15, 16, 17, 20, 21, 22, 23, 25, 26, 28, 29, 32, 33, 35, and 36; and Township 16 South, Range 2 West, projected Sections 4, 5, 9, 19, 17, 20, 21, and 28 on the San Vicente Reservoir, El Cajon, La Mesa, Poway, La Jolla, and Del Mar U.S. Geological Survey 7.5 minute quadrangle maps (Figure 2, Vicinity Map).

Elevations range from about 2 feet above mean sea level in the southwestern portion of Pure Water Program area to approximately 1,230 feet above mean sea level.

Soils on site consist of acid igneous rock land; Altamont clay; Carlsbad gravelly loamy sand; Chestern fine sandy loam, Cieneba rocky and very rocky coarse sandy loam, Fallbrook sandy loam, loamy alluvial land-Hueruero complex; metamorphic rock land; Olivenhain cobbly loam; Redding cobbly and gravelly loam; riverwash; terrace escarpments; Tujunga sand; and Visalia sandy loam (SanGIS 2016).

## **SITE ASSESSMENT**

The site assessment was completed in accordance with the USFWS December 2014 survey protocol. Protocol Quino surveys are recommended in suitable habitat areas, including sage scrub, open chaparral, grasslands, and communities that are observed in open or sparsely vegetated areas or hilltops and ridgelines. Excluded areas not recommended for Quino surveys include:

- Orchards, developed areas, or small in-fill parcels (plots smaller than an acre completely surrounded by urban development) largely dominated by non-native vegetation;
- Active/in-use agricultural fields without natural or remnant inclusions of native vegetation or that are completely without any fallowed or unplowed areas;
- Closed-canopy woody vegetation including forests, riparian areas, shrub-lands, and chaparral.

“Closed-canopy woody vegetation” describes shrubs or trees growing closely together in which the upper portions of the vegetation converge (are touching) to the point that the open space between two or more plants is not significantly different than the open space within a single plant. Closed canopy shrub-land and chaparral are defined as vegetation so thick that it is inaccessible to humans except by destruction of woody vegetation (branches).

## VEGETATION COMMUNITIES

Vegetation communities were mapped in spring 2016 by Dudek. Based on species composition and general physiognomy, 12 vegetation communities were identified on the Pure Water Program site and off-site mapping areas (Figure 3, Vegetation Communities). Their acreages are presented in Table 1. A total of approximately 450 acres were evaluated for focused Quino surveys; however, 429 acres were determined to be Quino-suitable habitat and were mapped on the Project site according to Holland (1986) and Oberbauer et al. (2008).

**Table 1**  
**Vegetation Communities and Land Cover Types on the Pure Water Program Site**

Vegetation Community/Land Cover	Acres
<i>Suitable Quino Habitat</i>	
Southern Mixed Chaparral	88.7
Coast Live Oak Woodland	1.2
Coastal Sage Scrub <sup>1</sup>	164.1
Disturbed Coastal Sage Scrub <sup>1</sup>	31.0
Freshwater Marsh	1.7
Disturbed Habitat	63.6
Southern Arroyo Willow Riparian Forest	0.01
Southern Willow Scrub	0.2
Southern Sycamore–Alder Riparian Woodland	4.7
Non-Native Grassland	72.9
<i>Suitable Quino Habitat Total<sup>2</sup></i>	429.3
<i>Excluded Quino Survey Areas</i>	
Agriculture	6.0
Open Water	1.1
Developed Land	13.7
<i>Excluded Quino Survey Area Total<sup>2</sup></i>	20.8
<b>Grand Total<sup>2</sup></b>	<b>450.1</b>

**Notes:**

<sup>1</sup> Coastal Sage Scrub subtotal is 195.1 acres.

<sup>2</sup> Numbers do not sum precisely due to rounding.

## Agriculture

Agriculture refers to areas where irrigated row and field crops are being grown (i.e., intensive agriculture). This land has little biological resource value because it provides very limited habitat value for most native species. However, this area may supply grain and water for native and migratory birds. Approximately 6 acres supports agriculture, including fallow fields and non-

native vegetation. Agriculture was determined unsuitable Quino habitat during the site assessment due to being active, and therefore was not included in the focused Quino surveys.

### **Annual (Non-native) Grassland**

Annual (non-native) grassland is characterized by a sparse to dense cover of annual grasses typically up to 2 feet tall, with many annual wildflowers also present in years with favorable rainfall. This vegetation community typically occurs on fine-textured soils that are moist or wet in the winter and very dry during summer and fall. Plant species present typically include wild oat (*Avena* spp.), bromes (*Bromus* spp.), tarweeds (*Centromadia* spp., *Deinandra* spp.), and filarees (*Erodium* spp.) (Holland 1986). In San Diego County, annual grassland often occurs where the native vegetation has been disturbed by grazing, fire, agriculture, or other activities.

A total of 72.9 acres of annual grassland communities was mapped on the project area. Where the disturbance has been frequent and/or intensive, the native vegetation community often does not recover. These areas are characterized by weedy, introduced annuals, primarily grasses, including especially slender wild oat (*Avena barbata*), bromes, mustards (*Brassica* spp. and *Sisymbrium* spp.), filarees, and Russian-thistle (*Salsola tragus*).

Small, open patches of annual (non-native) grassland communities on site were determined suitable for focused Quino surveys.

### **Coast Live Oak Woodland**

Coast live oak woodland is a broad-leaved, sclerophyllous (stiff, firm-leaved) woodland dominated by coast live oak (*Quercus agrifolia*) trees that reach from 35 to 80 feet tall. The shrub layer is poorly developed but may contain native shrubs such as toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). A continuous herb layer dominated by non-native grasses and herbs is typically present. In Southern California, coast live oak woodland typically occurs on north-facing slopes and in shaded ravines (Holland 1986).

Coast live oak woodland on site occurs as several scattered patches totaling 1.2 acres in the northern part of the Pure Water Program site. Coast live oaks form small homogeneous stands, with a disturbed understory that includes ripgut grass (*Bromus diandrus*), soft chess (*B. hordeaceus*), red brome (*B. madritensis* ssp. *rubens*), and slender wild oat. It is contiguous, or nearly so, with some areas of southern coast live oak riparian forest, but occurs slightly higher topographically and not in association with a drainage.

## Coastal and Valley Freshwater Marsh

Coastal and valley freshwater marsh (freshwater marsh) typically is dominated by tall, perennial, emergent monocots, such as cattails and bulrushes. Freshwater marsh receives a more constant input of fresh water than cismontane alkali marsh, such as quiet, permanently flooded sites that develop deep, peaty soils (Holland 1986). These wetlands often develop where the water table is at or just above the ground surface, such as the margins of lakes, ponds, slow-moving streams, ditches, and seepages. Areas with greater than 50% non-native species are mapped as disturbed freshwater marsh.

On the Pure Water Program site, freshwater marsh occurs as several small patches in the southwest portion of the site near Interstate 5 (I-5). These areas are generally dominated by non-native or introduced hydrophytic species, including umbrella sedge (*Carex alternifolius*), rabbit's-foot grass (*Polypogon monspeliensis*), and Mexican fan-palm (*Washingtonia robusta*). One patch of freshwater marsh in a relatively natural area adjacent to the Santee Lakes access road is dominated by Mexican rush (*Juncus mexicanus*) and spiny cocklebur (*Xanthium strumarium*). In the central part of the site near sycamore alluvial woodland, freshwater marsh contains Mexican rush and yerba mansa (*Anemopsis californica*). Freshwater marsh was evaluated during the site assessment and included in the focused Quino surveys.

## Coastal Sage Scrub Communities

The majority of the project area, approximately 195.1 acres, contains coastal sage scrub vegetation types. Large portions of the site that probably historically supported coastal sage scrub have been disturbed severely or repeatedly by fire or other activities, such as ranching and off-road vehicles. The history of human and natural disturbances, combined with varied environmental conditions such as slope and aspect, has resulted in sub-communities that are different variants of the presumed original Diegan coastal sage scrub vegetation.

Diegan coastal sage scrub (coastal sage scrub) is a native plant community composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species, such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*), laurel sumac, and toyon. It typically develops on south-facing slopes and other xeric locations (Holland 1986).

Coastal sage scrub vegetation on site is dominated by California sagebrush and California buckwheat, with laurel sumac, spiny redberry (*Rhamnus crocea*), white sage (*Salvia apiana*),

black sage (*Salvia mellifera*), San Diego County viguiera (*Viguiera laciniata*, a special-status plant), toyon, and bush monkeyflower (*Mimulus aurantiacus*) as lesser components. In the southern portion of the site, some patches are dominated by white sage; in the north, redberry is the dominant shrub in some areas. This community supports a diverse understory of native herbs and forbs, including virgate tarplant (*Holocarpha virgata*), deerweed (*Lotus scoparius*), blue dicks (*Dichelostemma capitatum*), Cleveland's shooting-star (*Dodecatheon clevelandii*), blue-eyed grass (*Sisyrinchium bellum*), canchalagua (*Centaureum venustum*), and several species of grasses, both native and introduced. The primary introduced grass is slender wild oat.

Disturbed coastal sage scrub communities contain relatively more non-native grasses and fewer native shrubs. Areas with native coastal sage scrub shrub cover greater than 20% are mapped as coastal sage scrub; areas with native shrub cover of 11% to 20% are mapped as disturbed coastal sage scrub; areas with native shrub cover of 5% to 10% are mapped as disturbed coastal sage scrub/annual grassland. In addition, transitional areas containing a mix of coastal sage scrub types and baccharis scrub, valley needlegrass grasslands, or southern mixed chaparral have been identified and mapped.

Coastal sage scrub is recognized as a sensitive plant community by local, state, and federal wildlife agencies. It supports a rich diversity of sensitive plants and animals, and it is estimated that it has been reduced by 75% to 80% of its historical coverage throughout Southern California. It is the focus of the current State of California Natural Community Conservation Planning program in Southern California.

## **Developed**

Developed land refers to areas supporting man-made structures including buildings, yards, roadways, and other highly modified lands supporting structures associated with dwellings or other permanent structures. A total of 13.7 acres is mapped as developed land. However, since determined to be unsuitable Quino habitat during the site assessment, developed land was not included in focused Quino surveys.

## **Disturbed Habitat**

Disturbed habitat refers to land that has little habitat value for native species due to lawful activities (San Diego County 2004). Disturbed habitat typically includes areas that lack vegetation entirely, generally as the result of severe or repeated mechanical perturbation, and areas dominated by invasive, broad-leaved (ruderal) species that typically develop on compacted soils following intense disturbance.

Approximately 63.6 acres on site is disturbed habitat. These areas would typically still satisfy USFWS-requirements as suitable habitat.

## **Open Water**

Open water refers to areas that support standing water most or all of the year and do not contain any emergent vegetation. Open water totals 1.1 acres within the mapped project site. However, since determined to be unsuitable Quino habitat during the site assessment, open water was not included in focused Quino surveys.

## **Southern Arroyo Willow Riparian Woodland**

Southern arroyo willow riparian woodland is described by Holland (1986) as a dense, low, closed-canopy broad-leaved, winter-deciduous woodland dominated by arroyo willow (*Salix lasiolepis*). Arroyo willow generally grows as a large, tree-like shrub. Characteristic species include white alder (*Alnus rhombifolia*), California wax myrtle (*Myrica californica*), and Pacific willow (*Salix lasiandra*). There is 0.01 acre of southern arroyo willow riparian woodland on site. Focused Quino surveys were conducted within open areas within southern arroyo willow riparian woodland.

## **Southern Sycamore–Alder Riparian Woodland**

Southern sycamore–alder riparian woodland is described by Holland (1986) as a tall, open, broad-leaved, winter-deciduous streamside woodland dominated by well-spaced Western sycamore (*Platanus racemosa*) and often also white alder. Seldom forming closed canopy forests, these stands may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species and are subject to seasonally high-intensity flooding. Characteristic species of this habitat type include California mugwort (*Artemisia douglasiana*), coast live oak, California blackberry (*Rubus ursinus*), California laurel (*Umbellularia californica*), and giant stinging nettle (*Urtica holosericea*). There are 4.7 acres of southern sycamore–alder riparian woodland on site.

## **Southern Mixed Chaparral**

Southern mixed chaparral is a drought- and fire-adapted community of woody shrubs from 5 to 10 feet tall that often forms dense, impenetrable stands. It develops primarily on mesic north-facing slopes and in canyons and is characterized by crown- or stump-sprouting species that regenerate following fire. This association typically contains chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), wild lilac (*Ceanothus* spp.), California scrub oak (*Quercus berberidifolia*), and laurel sumac.

Southern mixed chaparral is the second most common vegetation type to coastal sage scrub in the project area, with approximately 88.7 acres in the project area. Due to its high-density cover, there is little or no understory in this community, except for in openings. The dominant species in the southern mixed chaparral on site are chamise, black sage, laurel sumac, coastal spicebush (*Cneoridium dumosum*), and mission manzanita. Understory species include rigid bird's beak (*Cordylanthus rigidus*), rock-rose (*Helianthemum scoparium*), and ashy spike-moss (*Selaginella cinerascens*). Focused Quino surveys were conducted within open areas within southern mixed chaparral.

Regionally, southern mixed chaparral is not considered a sensitive vegetation type; however, when it occurs in a mosaic distribution with other native communities, such as coastal sage scrub and oak woodland, it may be of high value for native wildlife, contributing to the overall habitat heterogeneity and patch size. Southern mixed chaparral that contains special-status plant species also may be considered sensitive.

### **Southern Willow Scrub**

Southern willow scrub is a dense, broad-leaved, winter-deciduous riparian thicket dominated by several species of willow (*Salix* spp.) that occurs on loose, large-grained alluvium along stream channels. The closed canopy inhibits the development of a diverse understory. It may contain scattered Fremont's cottonwood (*Populus fremontii*) and western sycamore trees emerging above the willow canopy and requires repeated flooding to avoid succession to a community dominated by these trees (Holland 1986).

On site, southern willow scrub occupies 0.2 acre in patches dominated by arroyo willow (*Salix lasiolepis*) and black willow, with an understory of mulefat (*Baccharis salicifolia*). Focused Quino surveys were conducted within open areas within southern willow scrub.

## **QUINO CHECKERSPOT BUTTERFLY SURVEY**

### **Background Information**

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



The Quino is known to occur in association with a variety of plant communities, soil types, and elevations (up to 5,000 feet). 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 (*Cryptantha* spp.), Layia (*Layia glandulosa*), goldenbush (*Ericameria* spp.), pincushion (*Chaenactis* spp.), fiddleneck (*Amsinckia intermedia*), chia (*Salvia columbariae*), and blue dicks, 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 dotseed plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), white snapdragon (*Antirrhinum coulterianum*), and Chinese houses (*Collinsia concolor*) as their host plants (Pratt 2009). Rigid bird’s beak and purple owl’s clover (*Castilleja exserta* ssp. *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**

### ***Focused Quino Surveys***

The surveys were conducted in accordance with the description in the most recent Quino checkerspot butterfly survey guidelines (December 15, 2014; USFWS 2014). According to the USFWS protocol, the first weekly survey shall begin during the third week of February, and the survey season will end the second Saturday in May. Surveys shall be conducted weekly and spaced no closer than 4 days apart (USFWS 2014).

Focused Quino surveys were conducted over 122 person days within a 13-week period between February 21, 2016, and May 23, 2016, per the USFWS protocol.

In accordance with current USFWS protocol, surveys were conducted by Quino-permitted biologists Brock Ortega (TE813545-6), Greg Chatman (TE075112-2), Dale Powell (TE006559-6), and Jun Powell (TE006559-6).

As noted, this effort surveyed the current alignment, plus a 100-foot buffer where suitable habitat occurs. However, buffer areas were not surveyed if intervening buildings or other large development occurred between the potential project area and the buffered habitat. Initially, there was more survey area, and then as the project was refined, less survey area was required. The ultimate survey areas are depicted on Figures 4 to 4G, Survey Areas). Defined “survey polygons” were not established as it was the intent that biologists would traverse through the linear alignment as daily weather and access allowed. In general, D. Powell and J. Powell surveyed from the west to the east while G. Chatman surveyed from the east to the west. At no time did the surveyors survey at a rate greater than 5 to 10 acres per hour (i.e., in accordance with USFWS protocol) resulting in 122 person days of effort. It should be noted that the survey area, alignments, and access were being refined during the first four survey passes, resulting in additional person days per pass when compared to the remaining eight passes. Due to the refinement, survey areas were modified and portions of the surveyed areas were eliminated (see Table 2, Schedule of Focused Quino Surveys). The biologists were provided with 200-scale (1 inch = 200 feet) aerial photographs of each survey area. These photographs were used for mapping host plant populations and Quino, if observed. Binoculars were used to aid in detecting

and identifying butterfly and other wildlife species. Global Positioning System (GPS) units also were available for recording locations of host plant populations.

The survey methods consisted of slowly walking roughly parallel transects spaced approximately 30 feet (10 meters) apart throughout all suitable habitat (429-acres) within the approximately 450-acre survey area. Survey routes were arranged to thoroughly cover the survey area at a rate of approximately 5 to 10 acres per person hour. Data was collected using an electronic dataform.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; winds greater than 15 miles per hour measured 4 to 6 feet above ground level for more than 30 seconds; temperature in the shade at ground level less than 60° Fahrenheit (°F) on a clear, sunny day with less than 50% cloud cover; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day with 50% or more cloud cover. Survey times, personnel, and conditions during the Quino surveys are shown in Table 2, Schedule of Focused Quino Surveys, and Table 3, Schedule of Host Plant Mapping Surveys. Photocopies of the surveyor's field notes are included as Appendix A.

**Table 2**  
**Schedule of Focused Quino Surveys**

Date	Hours	Personnel	Survey Hours <sup>1</sup>	Conditions
<i>Survey Pass 1<sup>2</sup> – 80 Survey Hours Total</i>				
2/28/2016	10:00 AM–4:45 PM	DP, GC, JP	20:15	68°F–70°F; 0% cc; 1–3 mph to 4–6 mph wind
2/28/2016	1:10 PM–3:20 PM	BO	2	76°F–77°F; 20% cc–20% cc; 3–5 mph to 3 mph wind
2/29/2016	9:15 AM–3:15 PM	DP, GC, JP	18	63°F–64°F; 0% cc; 2–4 mph to 2–4 mph wind
3/1/2016	9:30 AM–3:00 PM	DP, GC, JP	16:30	68°F–80°F; 0% cc–20% cc; 2–4 mph to 4–6 mph wind
3/2/2016	9:30 AM–3:30 PM	GC	6	70°F–73°F; NR% cc; 1-2 mph to 3–5 mph wind
3/3/2016	9:00 AM–5:00 PM	GC	8	67°F–68°F; 0% cc; 2–4 mph wind
3/4/2016	9:30 AM–11:30 AM	GC	2	66°F–69°F; 0% cc; 2–4 mph wind
3/9/2016	9:15 AM–11:00 AM	DP, GC, JP	4:30	65°F–71°F; 0% cc; 1–2 mph wind
3/10/2016	2:30 PM–3:55 PM	DP	1:30	70°F; 80% cc–100% cc; 1–3 mph wind
3/10/2016	2:30 PM–3:55 PM	JP	1	70°F; 50% cc–100% cc; 1–4 mph wind
<i>Survey Pass 2 – 67 Survey Hours Total</i>				
3/8/2016	9:10 AM–4:30 PM	DP, GC, JP	22	60°F–68°F; 0% cc; 1–2 mph to 6–9 mph wind
3/9/2016	11:00 AM–4:30 PM	DP, GC, JP	16:30	67°F–71°F; 0% cc; 4–6 mph wind
3/10/2016	9:15 AM–4:45 PM	DP, GC, JP	22:30	70°F–74°F; 0% cc; 2–6 mph wind
3/11/2016	8:30 AM–2:30 PM	GC	6	NR°F; 0% cc; 1–2 mph to 4–8 mph wind
<i>Survey Pass 3 – 51 Survey Hours Total</i>				
3/5/2016	9:00 AM–10:00 AM	BO	1	65°F–67°F; 20% cc–30% cc; 3–5 mph to 3–5 mph wind
3/13/2016	9:30 AM–4:45 PM	DP, GC, JP	18:45	67°F–68°F; 0% cc–5% cc; 0–8 mph wind

**Table 2**  
**Schedule of Focused Quino Surveys**

Date	Hours	Personnel	Survey Hours <sup>1</sup>	Conditions
3/13/2016	10:45 AM–3:20 PM	BO	4:30	71°F–73°F; 20% cc–30% cc; 3–5 mph to 5 mph wind
3/14/2016	1:15 PM–2:30 PM	DP, JP	2	70°F–72°F; 50% cc; 6 mph wind
3/15/2016	9:15 AM–3:30 PM	DP, GC, JP	18:45	64°F–71°F; 0% cc–15% cc; 1–6 mph wind
3/16/2016	10:30 AM–4:45 PM	GC	6	NR°F; 0% cc; 1–2 mph to 2–3 mph wind
<i>Survey Pass 4 – 55:30 Survey Hours Total</i>				
3/20/2016	10:00 AM–5:00 PM	DP, JP	21	61°F–75°F; 0% cc–70% cc; 1–3 mph wind
3/21/2016	12:00 PM–5:00 PM	DP, JP	10	67°F–68°F; 0% cc–65% cc; 3–6 mph wind
3/21/2016	10:00 AM–2:30 PM	GC	4:30	NR°F; 0% cc; 1–2 mph to 5–7 mph wind
3/22/2016	10:00 AM–4:00 PM	DP, GC, JP	18	61°F–70°F; 10% cc–60% cc; 4–6 mph wind
3/23/2016	10:00 AM–12:00 PM	GC	2	NR°F; 0% cc; 1–2 mph to 2–4 mph wind
<i>Survey Pass 5<sup>3</sup> – 46:45 Survey Hours Total</i>				
3/27/2016	9:15 AM–5:15 PM	DP, JP	16	65°F–75°F; 0% cc–60% cc; 1–5 mph wind
3/29/2016	11:00 AM–3:30 PM	DP, JP	9	67°F–72°F; 10% cc–20% cc; 3–4 mph to 4–8 mph wind
3/30/2016	9:30 AM–3:45 PM	GC	6:15	61°F–67°F; 0% cc–25% cc; 2–5 mph wind
3/31/2016	9:00 AM–3:30 PM	GC	6:30	61°F–73°F; 0% cc; 1–7 mph wind
4/1/2016	10:30 AM–1:30 PM	DP, JP	6	66°F–72°F; 0% cc; 1–7 mph to 5–8 mph wind
4/2/2016	10:00 AM–1:00 PM	GC	3	71°F–81°F; 0% cc; 1–5 mph wind
<i>Survey Pass 6 – 47:15 Survey Hours Total</i>				
4/3/2016	10:00 AM–5:15 PM	DP, JP	15	68°F–79°F; 0% cc; 3–5 mph wind
4/4/2016	9:15 AM–4:30 PM	DP, JP	14:30	68°F–74°F; 0% cc; 0–4 mph wind
4/4/2016	10:00 AM–4:45 PM	GC	6:45	76°F–80°F; 0% cc; 3–6 mph wind
4/5/2016	10:00 AM–4:00 PM	GC	6	70°F–82°F; 0% cc; 0–4 mph wind
4/5/2016	9:30 AM–11:30 PM	DP	2	68°F–80°F; 10% cc–20% cc; 0–4 mph wind
4/6/2016	9:30 AM–12:30 PM	GC	3	75°F–85°F; 0% cc; 1–4 mph wind
<i>Survey Pass 7 – 46:15 Survey Hours Total</i>				
4/11/2016	11:15 AM–5:15 PM	DP, JP	12	68°F–72°F; 10% cc–60% cc; 3–5 mph wind
4/12/2016	9:45 AM–4:45 PM	DP, JP	14	67°F–68°F; 10% cc–20% cc; 0–8 mph wind
4/13/2016	10:00 AM–4:30 PM	JP	6	67°F–76°F; 0% cc–70% cc; 0–8 mph wind
4/13/2016	10:00 AM–4:00 PM	GC	6	67°F–77°F; 0% cc; 2–6 mph wind
4/14/2016	9:30 AM–3:45 PM	GC	6:15	69°F–72°F; 0% cc; 1–7 mph wind
4/15/2016	10:00 AM–12:00 PM	GC	2	72°F–79°F; 0% cc; 1–4 mph wind
<i>Survey Pass 8 – 47 Survey Hours Total</i>				
4/17/2016	10:00 AM–5:00 PM	DP, JP	14	86°F–90°F; 0% cc; 5–8 mph
4/18/2016	8:55 AM–4:00 PM	DP, JP	12	79°F–87°F; 0% cc; 1–9 mph
4/19/2016	9:00 AM–12:30 PM	DP, JP	7	82°F; 0% cc; 0 mph
4/20/2016	10:00 AM–4:00 PM	GC	6	77°F–88°F; 0% cc; 2–7 mph wind

**Table 2**  
**Schedule of Focused Quino Surveys**

Date	Hours	Personnel	Survey Hours <sup>1</sup>	Conditions
4/21/2016	10:00 AM–4:00 PM	GC	6	74°F–79°F; 0% cc; 4–9 mph wind
4/22/2016	10:00 AM–12:00 PM	GC	2	69°F–73°F; 0% cc; 1–4 mph wind
<i>Survey Pass 9 – 46:45 Survey Hours Total</i>				
4/24/2016	10:30 AM–4:15 PM	DP, JP	11:15	70°F–76°F; 0% cc; 4–6 mph wind
4/25/2016	10:30 AM–4:30 PM	DP, JP	12	63°F–66°F; 50% cc–75% cc; 6–9 mph wind
4/26/2016	9:55 AM–2:30 PM	DP, JP	9	74°F; 0% cc–5% cc; 3–8 mph wind
4/26/2016	10:00 AM–3:30 PM	GC	5:30	66°F–68°F; 20% cc–40% cc; 4–6 mph wind
4/27/2016	10:00 AM–4:00 PM	GC	6	65°F–68°F; 25% cc; 6–8 mph wind
4/29/2016	10:00 AM–1:00 PM	GC	3	65°F–68°F; 10% cc; 6–8 mph wind
<i>Survey Pass 10 – 49 Survey Hours Total</i>				
5/1/2016	11:15 AM–5:25 PM	DP, JP	12	69°F–73°F; 10% cc–90% cc; 1–6 mph
5/2/2016	9:20 AM–4:20 PM	DP, JP	14	67°F–72°F; 0% cc–30% cc; 1–8 mph
5/2/2016	10:00 AM–4:00 PM	GC	6	67°F–71°F; 0% cc; 6–9 mph wind
5/3/2016	9:45 AM–1:45 PM	DP, JP	8	78°F; 0% cc; 3–5 mph wind
5/3/2016	10:00 AM–4:00 PM	GC	6	69°F–76°F; 0% cc; 4–8 mph wind
5/4/2016	10:00 AM–1:00 PM	GC	3	68°F–75°F; 0% cc; 2–6 mph wind
<i>Survey Pass 11 – 48:30 Survey Hours Total</i>				
5/8/2016	11:30 AM–5:55 PM	DP, JP	13	70°F; 25% cc–30% cc; 5–9 mph wind
5/8/2016	11:00 AM–2:00 PM	GC	3	70°F; 25% cc–30% cc; 5–9 mph wind
5/9/2016	10:00 AM–4:00 PM	GC	6	65°F–69°F; 20% cc–40% cc; 4–9 mph wind
5/9/2016	11:40 AM–4:50 PM	DP, JP	10	67°F–70°F; 10% cc–75% cc; 2–7 mph wind
5/10/2016	11:30 AM–5:15 PM	DP, JP	11:30	72°F; 10% cc; 6 mph wind
5/10/2016	11:00 AM–4:00 PM	GC	5	69°F–76°F; 10% cc–20% cc; 2–6 mph wind
<i>Survey Pass 12 – 56.5 Survey Hours Total</i>				
5/15/2016	12:05 PM–5:05 PM	DP, JP	14	69°F–72°F; 50% cc–55% cc; 5 mph wind
5/15/2016	11:00 AM–2:00 PM	GC	3	67°F–73°F; 10% cc–30% cc; 2–6 mph wind
5/16/2016	11:45 AM–3:00 PM	DP, JP	6:30	67°F–69°F; 60% cc–90% cc; 5–6 mph wind
5/16/2016	11:00 AM–4:00 PM	GC	5	64°F–67°F; 20% cc–30% cc; 3–8 mph wind
5/17/2016	1:45 PM–2:45 PM	DP, JP	2	69°F–70°F; 95% cc; 2–5 mph wind
5/18/2016	10:00 AM–4:00 PM	GC	6	66°F–70°F; 25% cc; 4–9 mph wind
5/21/2016	10:00 AM–1:00 PM	GC	6	69°F–71°F; 25% cc–50% cc; 4–7 mph wind
5/23/2016	11:30 AM–3:00 PM	GC	6	71°F–73°F; 20% cc–30% cc; 2–7 mph wind
5/23/2016	11:30 AM–3:30 PM	DP, JP	8	72°F–74°F; 5% cc–20% cc; 3–4 mph wind

**Notes:**

<sup>1</sup> In general D. Powell and J Powell performed surveys from the west to the east, while G. Chatman surveyed from the east to the west. Survey coverage per visit was variable dependent on weather, access and other factors. Specific survey areas could not be established do to this and surveyors simply started where they ended the day before until the entire study area was surveyed for that week's pass.

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<sup>2</sup> Focused Quino survey areas were refined to reflect changes in survey buffers and exclusion areas. Areas excluded included the western transmission corridor and widened an existing pipeline to 100 feet centered on the midline.

<sup>3</sup> Focused Quino survey areas were further reduced to account for reduced access to some military flight-line areas due to safety. BO = Brock Ortega (TE813545-6); DP = Dale Powell (TE006559-6); GC = Greg Chatman (TE075112-2); JP = Jun Powell (TE006559-6); cc = cloud cover; mph = miles per hour; NR = not recorded.

## Host Plant Mapping

Quino host plant mapping surveys were conducted within a 4-week period between April 11, 2016, and May 11, 2016, in accordance with the schedule provided in Table 3. Botanical surveys were conducted by biologist Greg Chatman (TE075112-2). All surveys were conducted on foot. Approximately 15 person-days were spent conducting host plant mapping within the study area.

Biologists were able to observe reference populations of dotseed plantain and purple owl's clover to develop a search-image before conducting surveys of the site. Host plant mapping surveys focused on the identification and location of all seven recognized host plants for Quino: dotseed plantain, purple owl's clover, woolly plantain, Coulter's snapdragon, rigid bird's beak, Chinese houses, and purple Chinese houses (*Collinsia heterophylla*) (USFWS 2014). All host plants were included in the survey; however, woolly plantain and Chinese houses do not have a western San Diego County distribution.

**Table 3**  
**Schedule of Host Plant Mapping Surveys**

Date	Hours	Personnel	Survey Area	Conditions (temperature, cloud cover, wind speed)
4/11/2016	10:00 AM–1:00 PM	GC	1	68°F–72°F; 10% cc–60% cc; 3–5 mph wind
4/12/2016	9:33 AM–5:30 PM	GC	2	67°F–68°F; 10% cc–20% cc; 0–8 mph wind
4/13/2016	10:00 AM–4:00 PM	GC	8	67°F–76°F; 0% cc–70% cc; 0–8 mph wind
4/14/2016	9:30 AM–3:45 PM	GC	5, 6	69°F–72°F; 0% cc; 1–7 mph wind
4/15/2016	1:00 PM–2:45 PM	GC	3	72°F–79°F; 0% cc; 1–4 mph wind
4/18/2016	9:00 AM–3:00 PM	GC	4	79°F–87°F; 0% cc; 1–9 mph wind
4/19/2016	9:00 AM–3:44 PM	GC	3	82°F–91°F; 0% cc–5% cc; 0–5 mph
4/22/2016	10:00 AM–12:00 PM	GC	7	69°F–73°F; 0% cc; 1–4 mph wind
4/22/2016	1:00 PM–2:54 PM	GC	4	69°F–73°F; 0% cc; 1–4 mph wind
4/24/2016	10:00 AM–4:00 PM	GC	3	68°F–75°F; 0% cc–60% cc; 4–12 mph wind
4/25/2016	10:30 AM–2:20 PM	GC	3	68°F; 50% cc–75% cc; 6–9 mph wind
4/28/2016	10:02 AM–5:45 PM	GC	4	65°F–68°F; 25% cc; 6–8 mph wind
5/3/2016	12:19 PM–5:00 PM	GC	4	72°F–78°F; 0% cc; 3–5 mph wind
5/4/2016	10:30 AM–12:00 PM	GC	3	68°F–75°F; 0% cc; 2–6 mph wind
5/5/2016	11:00 AM–3:00 PM	GC	4	68°F–75°F; 0% cc; 2–6 mph wind
5/9/2016	11:15 AM–1:00 PM	GC	3	65°F–69°F; 20% cc–40% cc; 4–9 mph wind

**Notes:** GC = Greg Chatman (TE075112-2); cc = cloud cover; mph = miles per hour.

Dudek biologists recorded locations of Quino host plants using a mobile application. Data collected included the surveyor(s), date, species of host plant, and density of the host plant at the point at which the host plant was found. All host plant occurrences were mapped as points. Density was assessed per square meter and was collected using the following classes:

- Very Low: 1–19 plants per square meter
- Low: 20–100 plants per square meter
- Medium: 100–1,000 plants per square meter
- High: 1,000–10,000+ plants per square meter

Points were collected within patches of host plant at least as close as every 3 meters (10 feet). In addition, all blooming nectar plants were recorded for the entire survey area.

At the conclusion of surveys, Dudek geographic information systems (GIS) analysts created a GIS coverage for host plants. After review by a biologist, a geodatabase was created to ensure these data are topologically correct and meet final quality control and assurance procedures.

## Results

### Focused Quino Surveys

No Quino were observed during the 2016 focused survey. Forty-two butterfly species were observed during the surveys. The weeks in which these butterflies were observed are shown in Table 4a, Butterflies Observed On Site during Survey Passes 1–7, and Table 4b, Butterflies Observed On Site during Survey Passes 8–12.

**Table 4a**  
**Butterflies Observed On Site during Survey Passes 1–7**

Scientific Name	Common Name	Week						
		1	2	3	4	5	6	7
Hesperiidae – Skippers								
Erynnis funeralis	Funereal duskywing	X	X	X	X	X	X	X
Heliopetes ericetorum	Northern white-skipper	—	—	X	X	X	X	X
Hylephila phyleus	Fiery skipper	X	X	X	X	X	X	X
Lerodea eufala	Eufala skipper	—	—	—	—	—	X	—
Pyrgus albescens	White checkered-skipper	X	X	X	X	X	X	X

**Table 4a**  
**Butterflies Observed On Site during Survey Passes 1–7**

Scientific Name	Common Name	Week						
		1	2	3	4	5	6	7
Nymphalidae – Brush-Footed Butterflies								
<i>Adelpha bredowii</i>	California sister	—	X	X	X	X	—	X
<i>Chlosyne californica</i>	California patch	—	—	X	—	—	—	—
<i>Limenitis lorquini</i>	Lorquin’s admiral	—	—	—	—	X	X	X
<i>Coenonympha tullia</i> <i>California</i>	Common California ringlet	X	X	X	X	X	X	X
<i>Danaus gilippus</i>	Queen	X	X	—	—	—	—	—
<i>Danaus plexippus</i>	Monarch	X	X	X	—	—	X	X
<i>Junonia coenia</i>	Common buckeye	X	X	X	X	X	X	X
<i>Nymphalis antiopa</i>	Mourning cloak	—	—	—	—	X	X	X
<i>Vanessa annabella</i>	West coast lady	X	X	X	X	X	X	X
<i>Vanessa atalanta</i>	Red admiral	X	X	X	X	X	—	X
<i>Vanessa cardui</i>	Painted lady	X	X	X	—	—	—	X
<i>Vanessa virginiensis</i>	American lady	—	—	—	X	X	X	X
Lycaenidae – Blues and Hairstreaks								
<i>Brephidium exile</i>	Western pygmy blue	X	X	X	X	X	X	X
<i>Callophrys augustinus</i>	Brown elfin	—	X	—	—	X	X	—
<i>Euphilotes battoides bernardino</i>	Bernardino square-spotted blue	—	—	—	—	—	—	—
<i>Hemiargus ceraunus</i>	Ceraunus blue	—	—	—	—	—	—	—
<i>Plebejus lupini</i>	Lupine blue	—	—	—	—	—	—	—
<i>Glaucopsyche lygdamus australis</i>	Southern blue	X	X	X	X	X	X	—
<i>Hemiargus ceraunus gyas</i>	Edward’s blue	—	X	—	—	—	—	—
<i>Leptotes marina</i>	Marine blue	—	—	—	—	X	X	X
<i>Plebejus acmon</i>	Acmon blue	X	X	X	—	—	—	X
<i>Strymon melinus</i>	Gray hairstreak	X	X	X	X	X	X	X
Papilionidae – Swallowtails								
<i>Papilio eurymedon</i>	Pale swallowtail	X	X	—	X	X	X	X
<i>Papilio rutulus</i>	Western tiger swallowtail	X	X	X	X	X	X	X
<i>Papilio zelicaon</i>	Anise swallowtail	X	X	X	X	X	X	X
Pieridae – Whites and Sulfurs								
<i>Anthocharis cethura</i>	Desert orangetip	—	—	—	—	—	—	—



**Table 4a**  
**Butterflies Observed On Site during Survey Passes 1–7**

Scientific Name	Common Name	Week						
		1	2	3	4	5	6	7
<i>Anthocharis sara sara</i>	Pacific sara orangetip	X	X	X	X	X	X	X
<i>Colias eurytheme</i>	Orange sulphur	X	—	X	X	—	X	X
<i>Colias harfordii</i>	Harford's sulfur	—	—	—	—	—	—	—
<i>Eurema nicippe</i>	Sleepy orange	—	—	—	—	—	—	X
<i>Nathalis iole</i>	Dainty sulphur	—	—	X	—	—	X	X
<i>Phoebis sennae</i>	Cloudless sulphur	X	X	X	X	—	X	X
<i>Pieris rapae rapae</i>	Cabbage white	X	—	—	—	X	X	X
<i>Pontia protodice</i>	Checkered white	—	X	X	—	X	X	X
<i>Riodinidae – Metalmarks</i>								
<i>Apodemia virgulti</i>	Behr's metalmark	X	X	X	X	X	X	X
<i>Apodemia mormo</i>	Mormon Metalmark	X	X	X	X	X	X	X

**Table 4b**  
**Butterflies Observed On Site during Survey Passes 8–12**

Scientific Name	Common Name	Week				
		8	9	10	11	12
Hesperiidae – Skippers						
<i>Erynnis funeralis</i>	Funereal duskywing	X	—	—	X	X
<i>Heliopetes ericetorum</i>	Northern white-skipper	X	X	X	—	—
<i>Hylephila phyleus</i>	Fiery skipper	—	—	X	X	X
<i>Lerodea eufala</i>	Eufala skipper	—	—	—	—	—
<i>Pyrgus albescens</i>	White checkered-skipper	X	X	X	X	X
Nymphalidae – Brush-Footed Butterflies						
<i>Adelpha bredowii</i>	California sister	—	—	X	X	X
<i>Chlosyne californica</i>	California patch	—	—	X	—	—
<i>Limnitis lorquini</i>	Lorquin's Admiral	—	—	—	—	—
<i>Coenonympha tullia californica</i>	Common California ringlet	—	—	—	—	—
<i>Danaus gilippus</i>	Queen	—	—	—	—	—
<i>Danaus plexippus</i>	Monarch	X	—	X	X	X
<i>Junonia coenia</i>	Common buckeye	X	X	X	X	X
<i>Nymphalis antiopa</i>	Mourning cloak	X	—	—	X	—
<i>Vanessa annabella</i>	West coast lady	—	X	—	X	X
<i>Vanessa atalanta</i>	Red admiral	—	—	—	X	X
<i>Vanessa cardui</i>	Painted lady	—	—	—	X	—

**Table 4b**  
**Butterflies Observed On Site during Survey Passes 8–12**

Scientific Name	Common Name	Week				
		8	9	10	11	12
<i>Vanessa virginiensis</i>	American lady	X	—	X	X	X
<i>Lycaenidae – Blues and Hairstreaks</i>						
<i>Brephidium exile</i>	Western pygmy blue	—	X	—	X	X
<i>Callophrys augustinus</i>	Brown elfin	—	X	—	—	X
<i>Euphilotes battoides bernardino</i>	Bernardino square-spotted blue	—	—	X	—	X
<i>Hemiargus ceraunus</i>	Ceraunus blue	—	—	—	—	X
<i>Plebejus lupini</i>	Lupine blue	X	—	—	—	—
<i>Glaucopsyche lygdamus australis</i>	Southern blue	—	—	—	—	—
<i>Hemiargus ceraunus gyas</i>	Edward's blue	—	—	—	—	—
<i>Leptotes marina</i>	Marine blue	X	X	X	X	X
<i>Plebejus acmon</i>	Acmon blue	—	—	X	X	X
<i>Strymon melinus</i>	Gray hairstreak	X	X	X	X	X
<i>Papilionidae – Swallowtails</i>						
<i>Papilio eurymedon</i>	Pale swallowtail	—	—	—	X	X
<i>Papilio rutulus</i>	Western tiger swallowtail	—	—	—	X	—
<i>Papilio zelicaon</i>	Anise swallowtail	X	—	X	X	X
<i>Pieridae – Whites and Sulfurs</i>						
<i>Anthocharis cethura</i>	Desert orangetip	—	X	—	—	—
<i>Anthocharis sara sara</i>	Pacific sara orangetip	X	—	X	X	X
<i>Colias eurytheme</i>	Orange sulphur	—	X	—	X	X
<i>Colias harfordii</i>	Harford's sulfur	—	—	X	X	—
<i>Eurema nicippe</i>	Sleepy orange	—	—	—	—	—
<i>Nathalis iole</i>	Dainty sulphur	—	—	—	X	—
<i>Phoebis sennae</i>	Cloudless sulphur	X	—	—	X	X
<i>Pieris rapae rapae</i>	Cabbage white	—	—	—	X	X
<i>Pontia protodice</i>	Checkered white	X	X	X	X	X
<i>Riodinidae – Metalmarks</i>						
<i>Apodemia virgulti</i>	Behr's metalmark	—	—	—	X	X
<i>Apodemia mormo</i>	Mormon Metalmark	X	X	X	X	X

### Host Plant Mapping

Three Quino larval host plants—dotseed plantain, purple owl's clover, and purple Chinese houses—were observed within the study area during focused surveys. Dotseed plantain and

purple owl's clover were recorded in the northwestern portion of the site (Figures 5 to 5D, Quino Host Plant Locations). Dotseed plantain is the dominant host plant observed and is commonly found in open patches and ridgetops. Exserted Indian paintbrush is densely populated on the northwestern portion of the site. Table 5, Quino Adult Nectar Plants, includes all adult Quino nectar plants observed in each focused survey area. No Quino larvae were observed during focused Quino and host plant mapping surveys.

**Table 5**  
**Quino Adult Nectar Plants**

Survey Area	Nectar Plants
1	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp.
2	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp., <i>Eriophyllum confertiflorum</i>
3	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp., <i>Rhus</i> spp., <i>Acmispon glaber</i>
4	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp., <i>Eriogonum</i> spp., <i>Salvia</i> spp.
5	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp., <i>Rhus</i> spp., <i>Eriogonum</i> spp.
6	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp.
7	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp., <i>Rhus</i> spp., <i>Eriogonum</i> spp., <i>Salvia</i> spp.
8	<i>Cryptantha</i> spp., <i>Dichelostemma capitatum</i> , <i>Encelia</i> spp., <i>Lasthenia</i> spp., <i>Eriodictyon</i> spp., <i>Eriogonum</i> spp., <i>Salvia</i> spp.

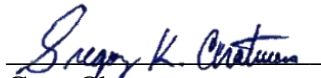
Forty-one wildlife species were recorded during this survey effort and are included in Appendix B, Wildlife Observed during the 2016 Pure Water Program Quino Survey.

Dudek certifies that the information in this survey report and attached exhibits fully and accurately represents the work conducted by the Quino-permitted biologists who conducted this focused survey. Please feel free to contact Brock Ortega, [bortega@dudek.com](mailto:bortega@dudek.com), if you have any questions regarding the contents of this report.

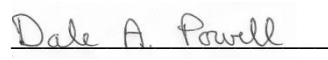
Sincerely,



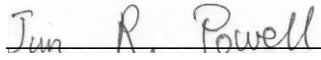
Brock Ortega  
Permit #TE813545-6



Greg Chatman  
Permit #TE075112-2



Dale Powell  
Permit #TE006559-6



Jun Powell  
Permit #TE006559-6

Recovery Permit Coordinator

Subject: 2016 Focused Quino Checkerspot Butterfly Survey Report for the Pure Water San Diego Program, County of San Diego, California.

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Att: Figure 1, Regional Map  
Figure 2, Vicinity Map  
Figure 3, Vegetation Communities  
Figures 4-4G, Survey Areas  
Figures 5-5D, Quino Host Plant Locations  
Appendix A, 2016 Pure Water Program Quino Survey Field Notes  
Appendix B, Wildlife Species Observed during the 2016 Pure Water Program Quino Survey

cc: Paul Lemons, Dudek

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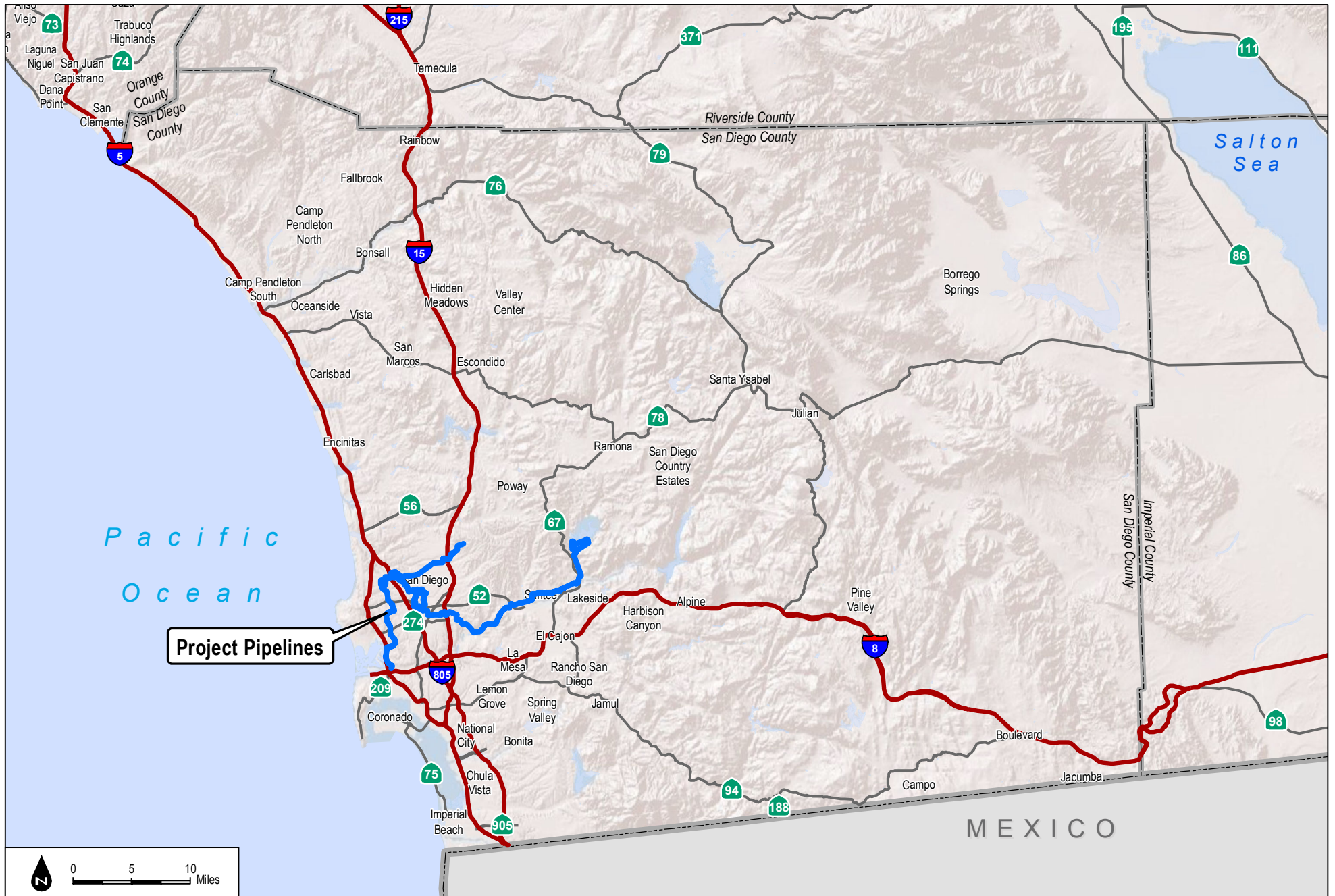
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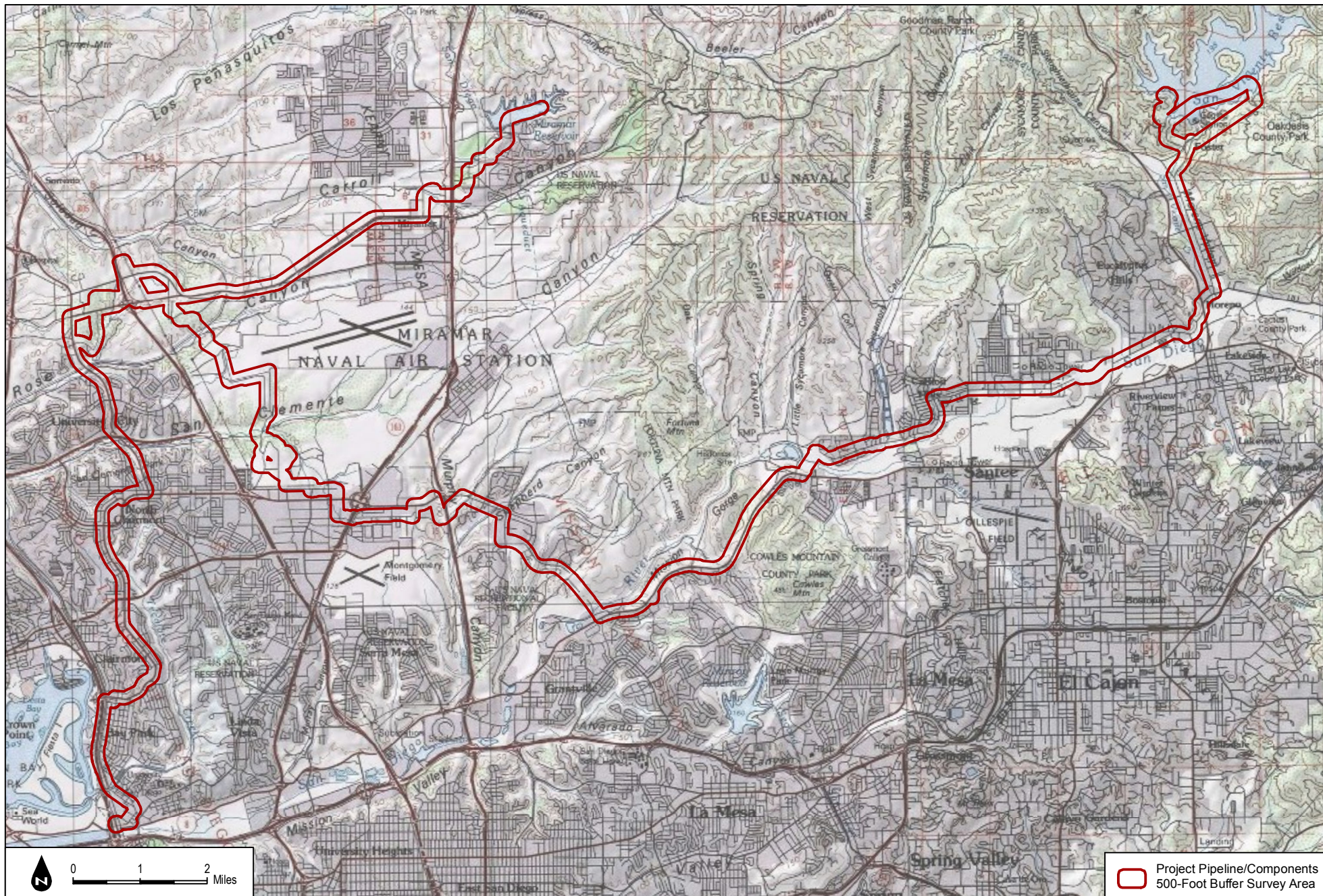
SOURCE: City San Diego 2016; ESRI 2016



**DUDEK**

Cultural and Paleontological Resources Constraints Analysis for Rancho Cucamonga North Eastern Sphere Annexation Area

**FIGURE 1**  
Regional Map





 Project Pipeline/Components  
 500-Foot Buffer Survey Area

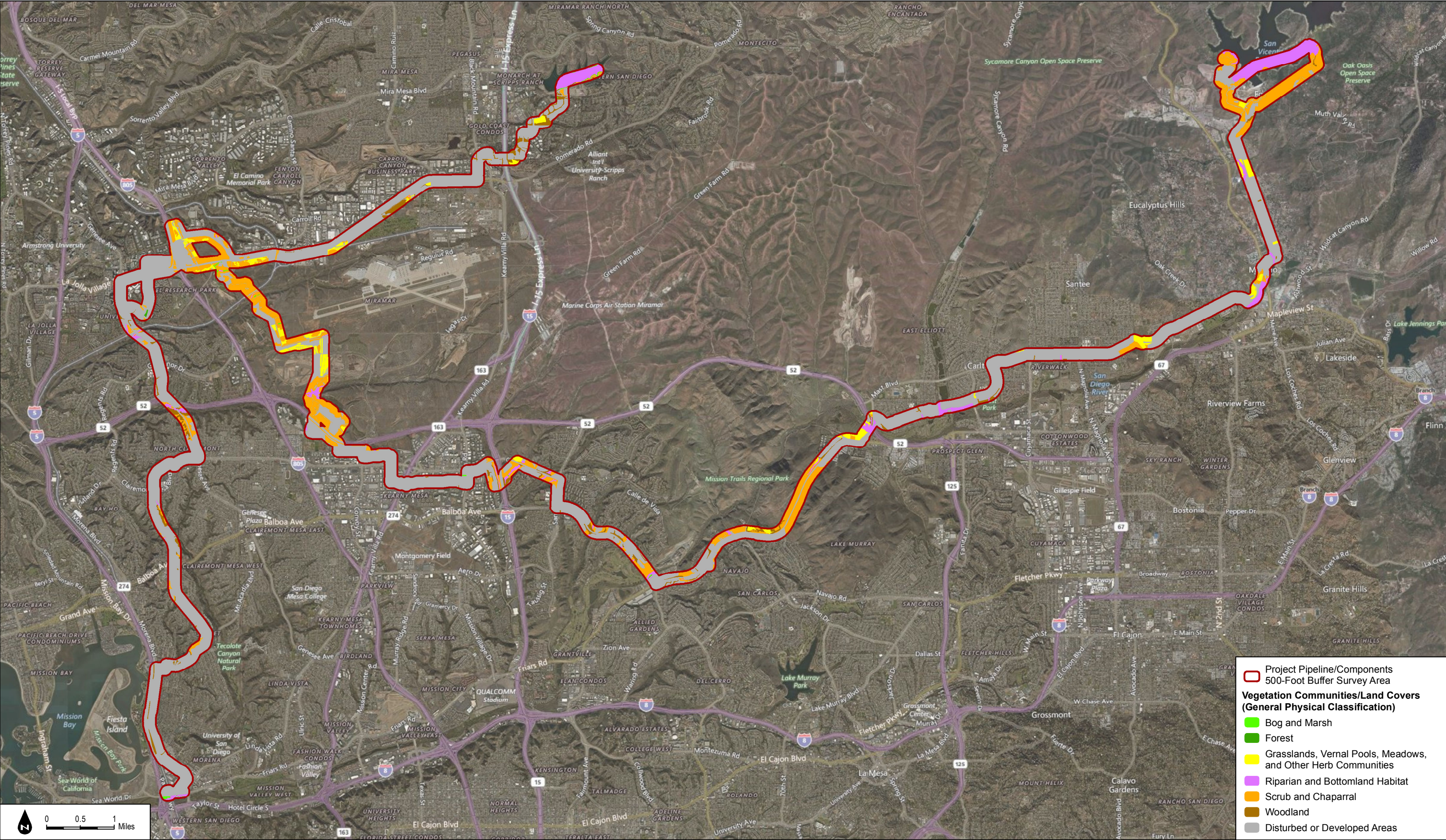
**FIGURE 2**  
 Vicinity Map

SOURCE: City San Diego 2016; USGS 7.5-Minute Series Del Mar, Poway, San Vicente Reservoir, La Jolla, La Mesa, El Cajon Quadrangles.

Pure Water San Diego Program North City Projects

**DUDEK**





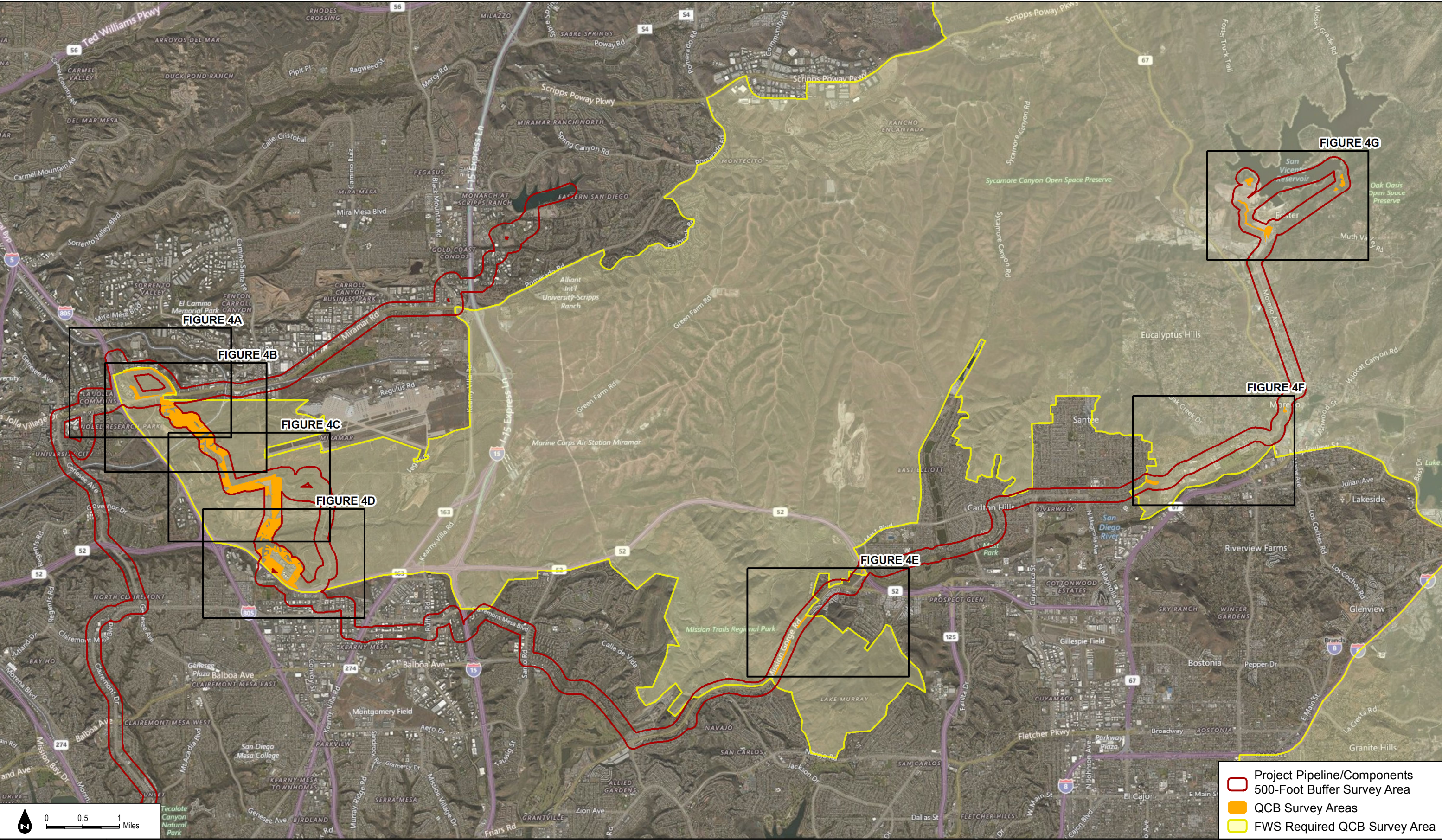
SOURCE: City San Diego 2016; Bing Maps 2016

**DUDEK**

Pure Water San Diego Program North City Projects

**FIGURE 3**  
Vegetation Communities





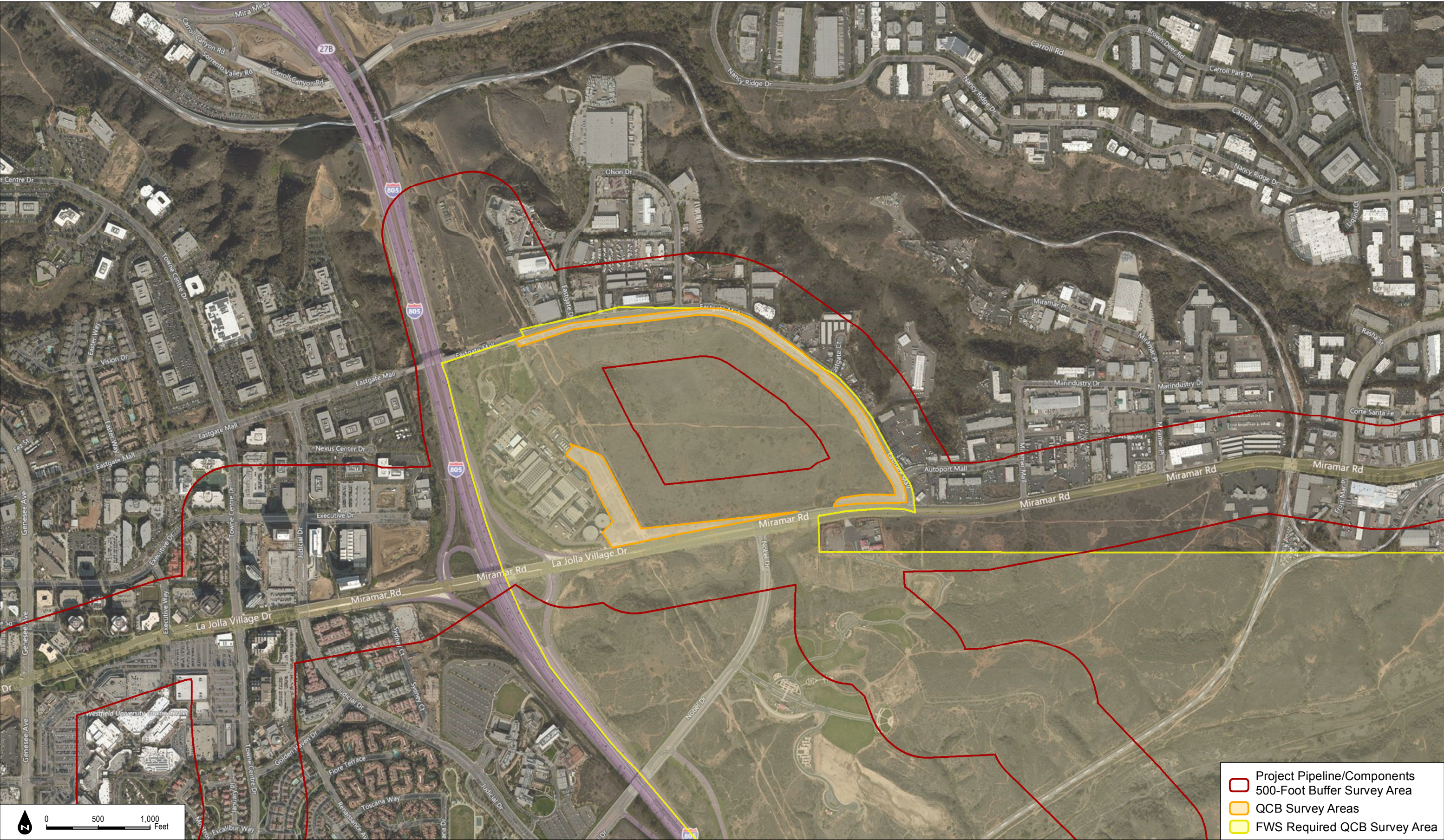
SOURCE: City San Diego 2016; Bing Maps 2016

**DUDEK**

Pure Water San Diego Program North City Projects

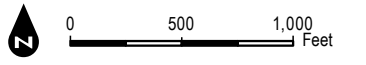
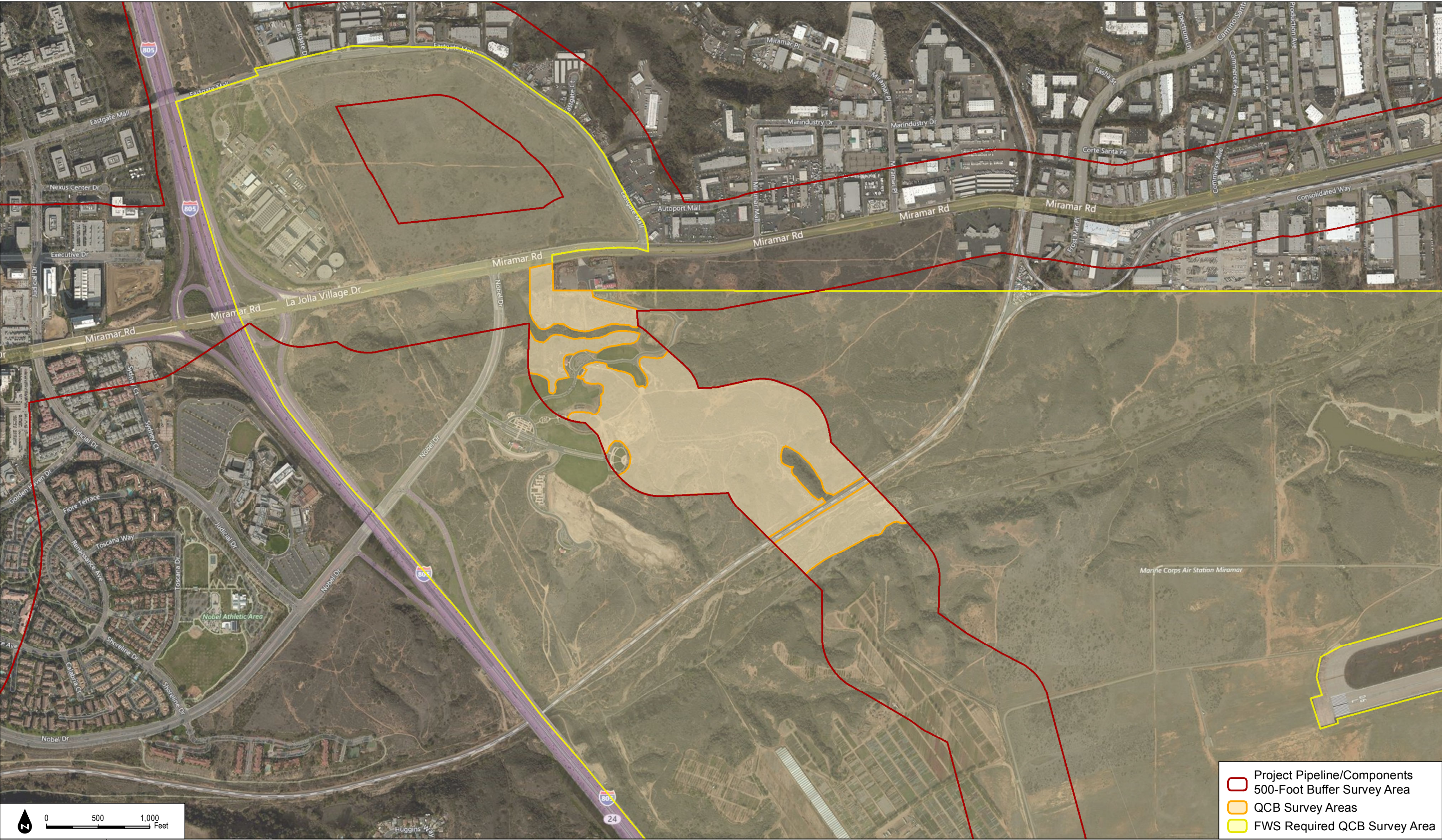
**FIGURE 4**  
Survey Areas





- Project Pipeline/Components
- 500-Foot Buffer Survey Area
- QCB Survey Areas
- FWS Required QCB Survey Area





- Project Pipeline/Components
- 500-Foot Buffer Survey Area
- QCB Survey Areas
- FWS Required QCB Survey Area

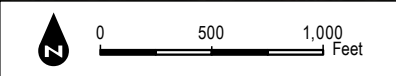
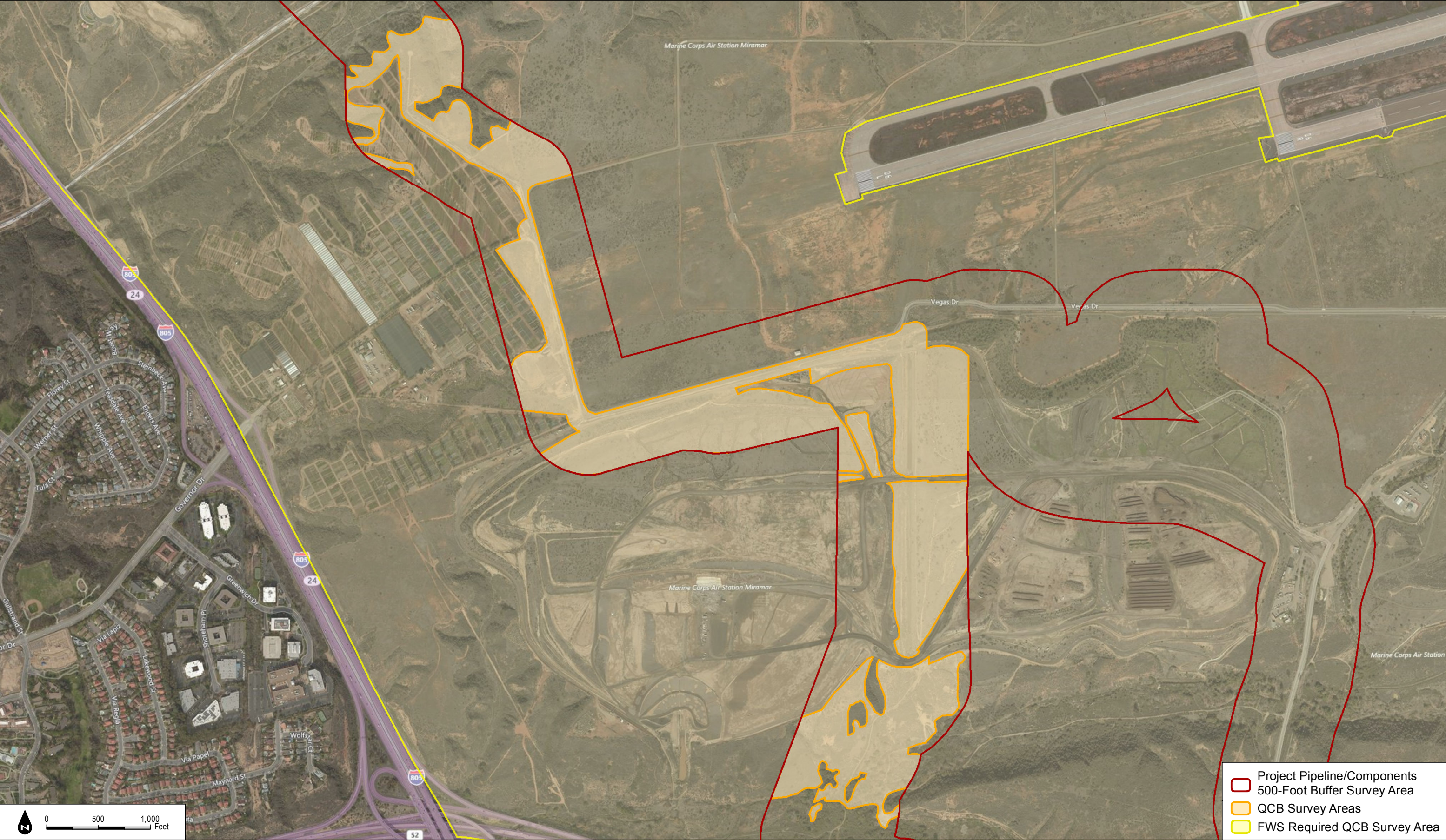
DUDEK

SOURCE: City San Diego 2016; Bing Maps 2016

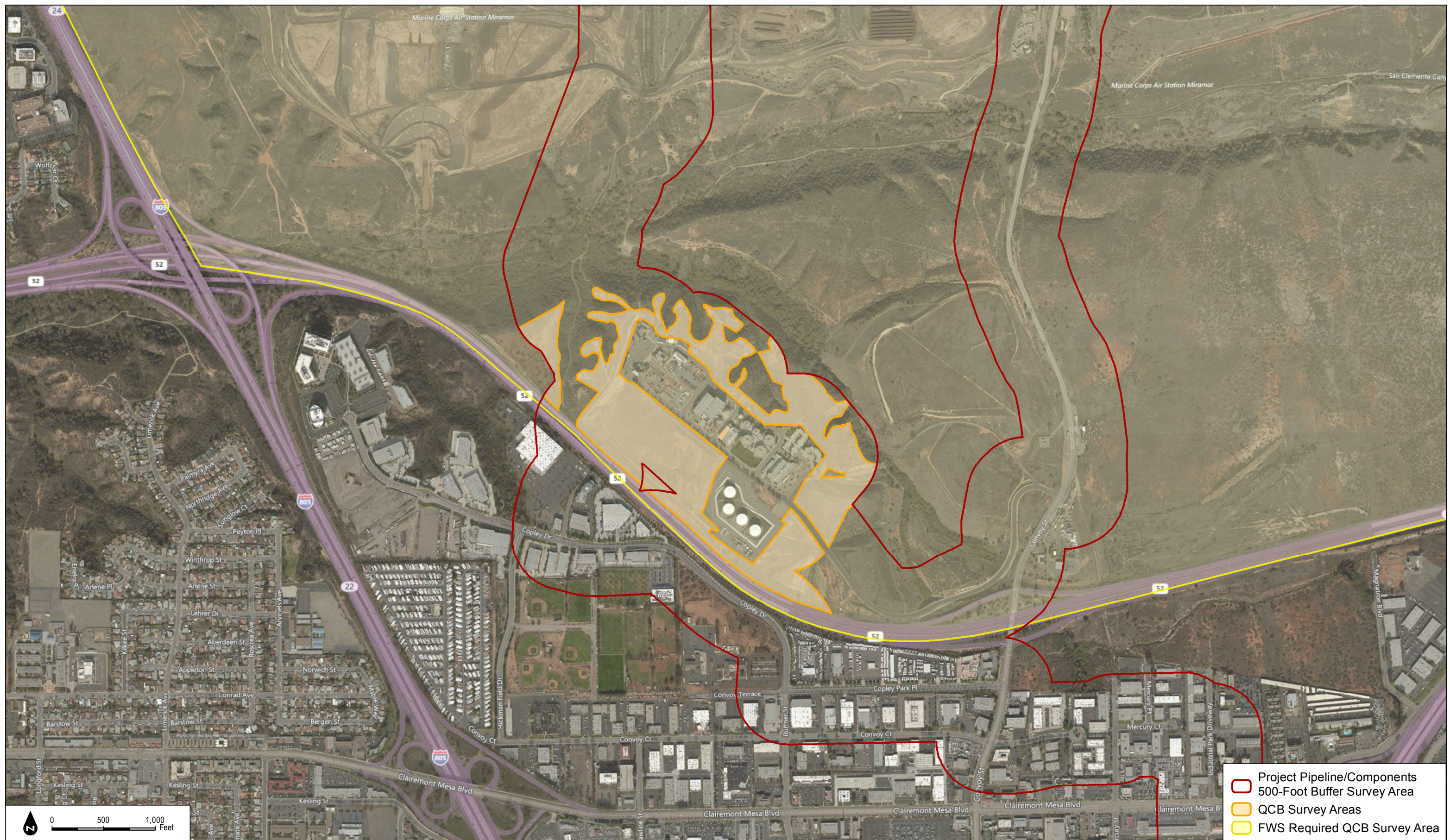
Pure Water San Diego Program North City Projects

**FIGURE 4B**  
Survey Areas













A horizontal scale bar with tick marks at 0, 500, and 1,000 feet. The word "Feet" is written at the right end of the bar.

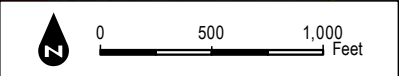
DUDEK

SOURCE: City San Diego 2016; Bing Maps 2016

## Pure Water San Diego Program North City Projects

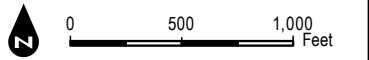
**FIGURE 4E**  
Survey Areas





- Project Pipeline/Components
- 500-Foot Buffer Survey Area
- QCB Survey Areas
- FWS Required QCB Survey Area





- Project Pipeline/Components
- 500-Foot Buffer Survey Area
- QCB Survey Areas
- FWS Required QCB Survey Area



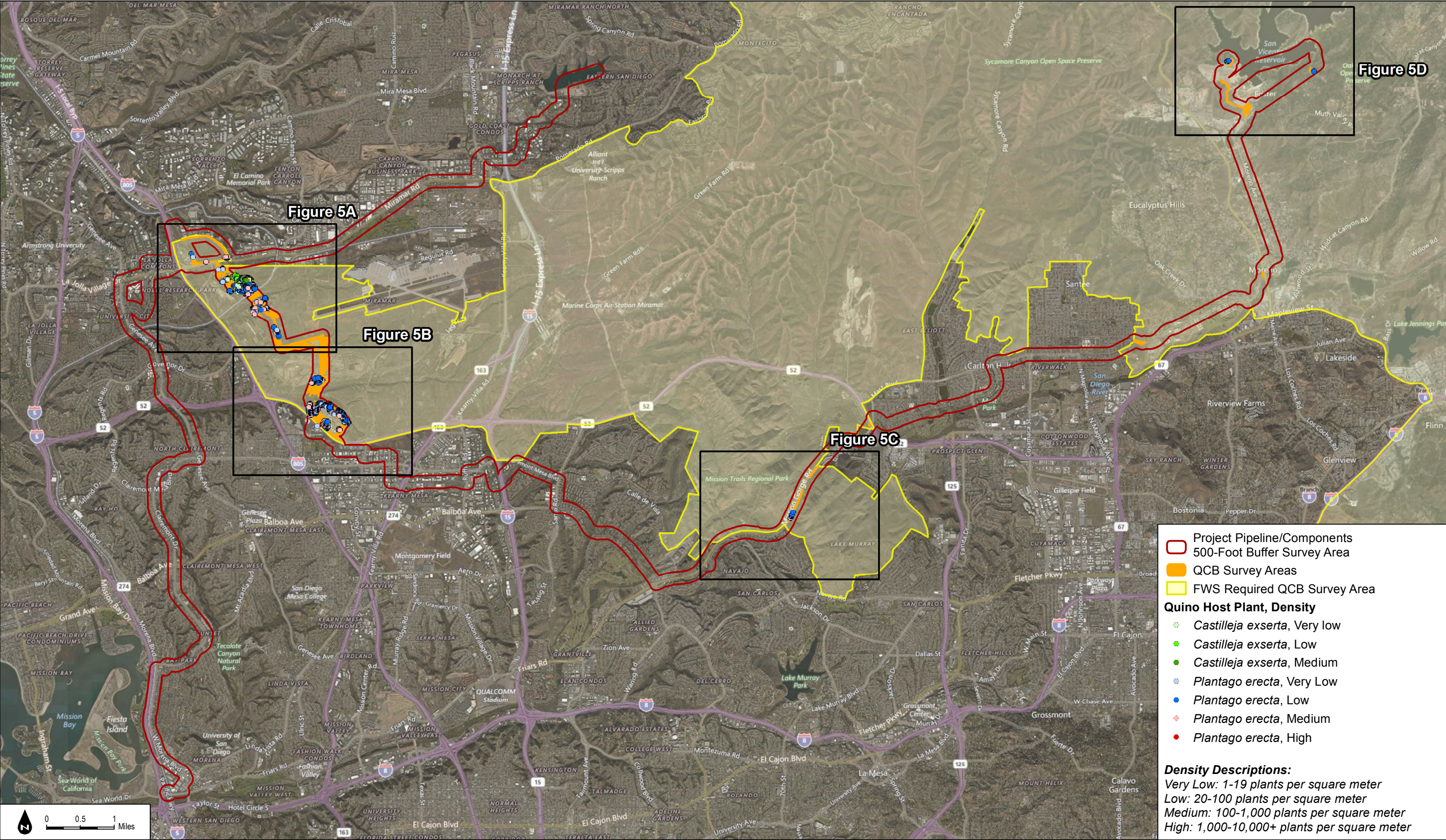


Figure 5D

Figure 5A

Figure 5B

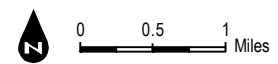
Figure 5C

- Project Pipeline/Components
- 500-Foot Buffer Survey Area
- QCB Survey Areas
- FWS Required QCB Survey Area

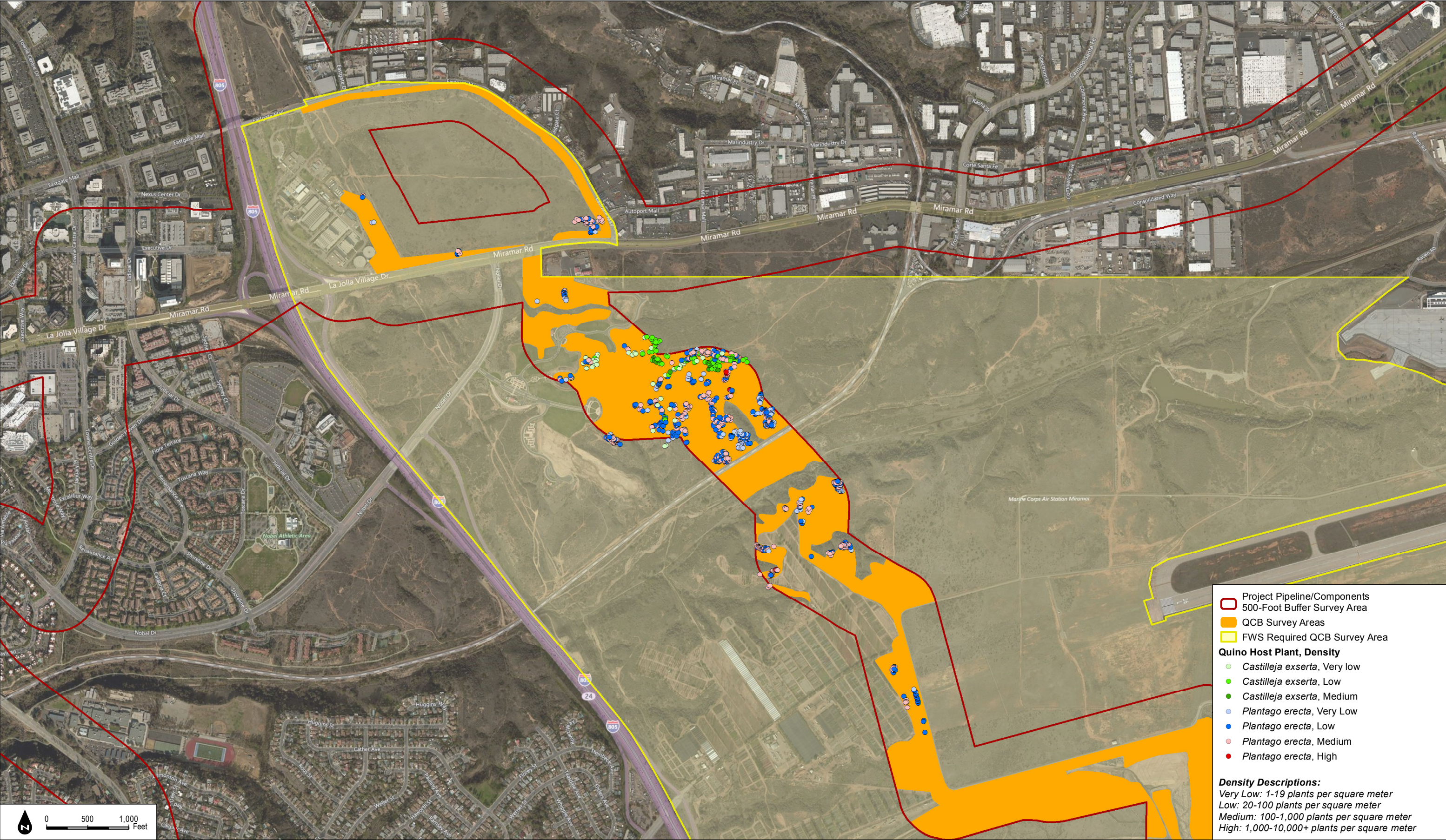
**Quino Host Plant, Density**

- Castilleja exserta*, Very low
- Castilleja exserta*, Low
- Castilleja exserta*, Medium
- Plantago erecta*, Very Low
- Plantago erecta*, Low
- Plantago erecta*, Medium
- Plantago erecta*, High

**Density Descriptions:**  
Very Low: 1-19 plants per square meter  
Low: 20-100 plants per square meter  
Medium: 100-1,000 plants per square meter  
High: 1,000-10,000+ plants per square meter







Project Pipeline/Components

500-Foot Buffer Survey Area

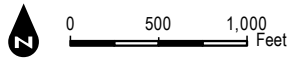
QCB Survey Areas

FWS Required QCB Survey Area

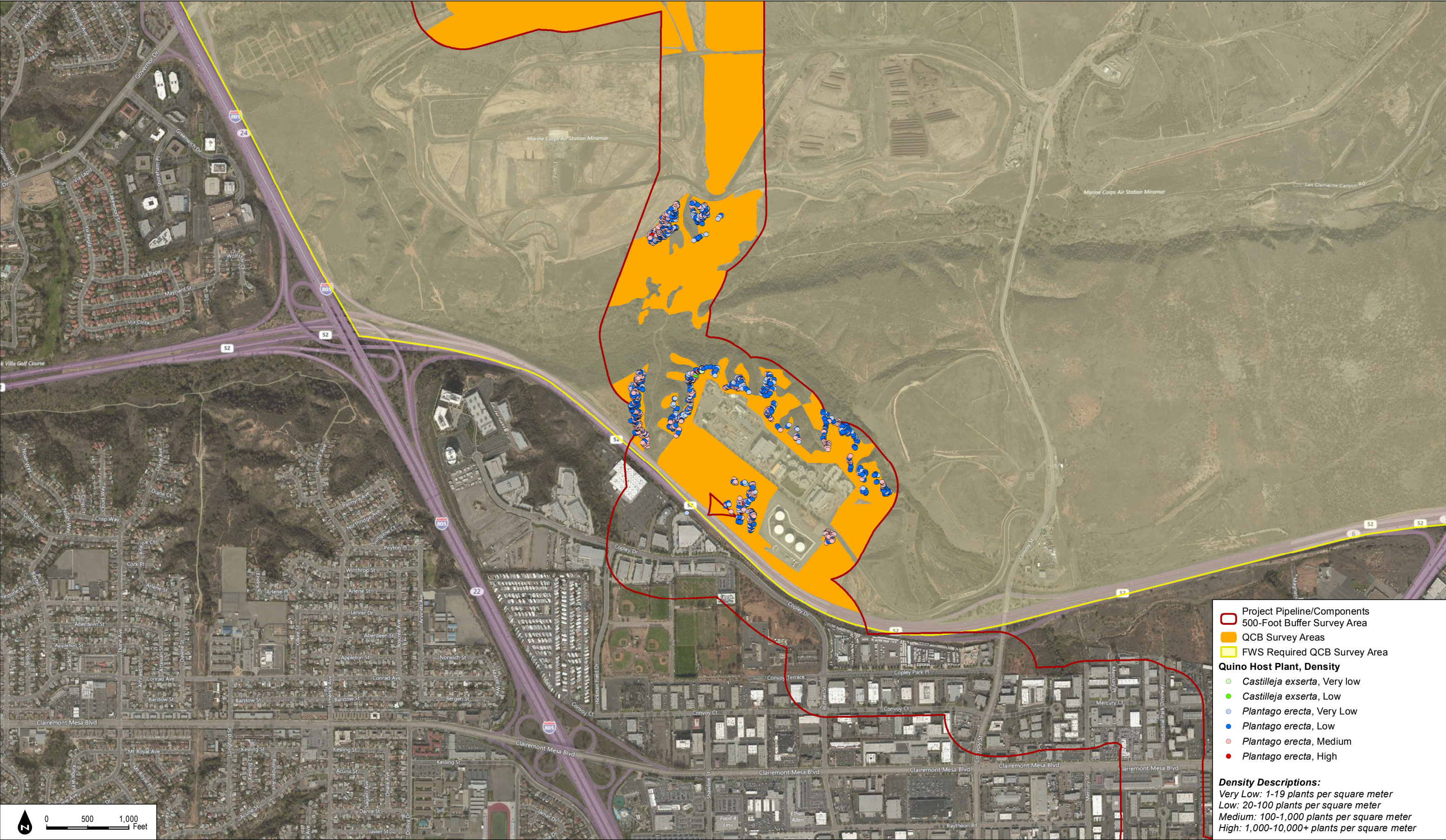
**Quino Host Plant, Density**

- Castilleja exserta*, Very low
- Castilleja exserta*, Low
- Castilleja exserta*, Medium
- Plantago erecta*, Very Low
- Plantago erecta*, Low
- Plantago erecta*, Medium
- Plantago erecta*, High

**Density Descriptions:**  
Very Low: 1-19 plants per square meter  
Low: 20-100 plants per square meter  
Medium: 100-1,000 plants per square meter  
High: 1,000-10,000+ plants per square meter







Project Pipeline/Components

500-Foot Buffer Survey Area

QCB Survey Areas

FWS Required QCB Survey Area

**Quino Host Plant, Density**

*Castilleja exserta*, Very low

*Castilleja exserta*, Low

*Plantago erecta*, Very Low

*Plantago erecta*, Low

*Plantago erecta*, Medium

*Plantago erecta*, High

**Density Descriptions:**

Very Low: 1-19 plants per square meter

Low: 20-100 plants per square meter

Medium: 100-1,000 plants per square meter

High: 1,000-10,000+ plants per square meter

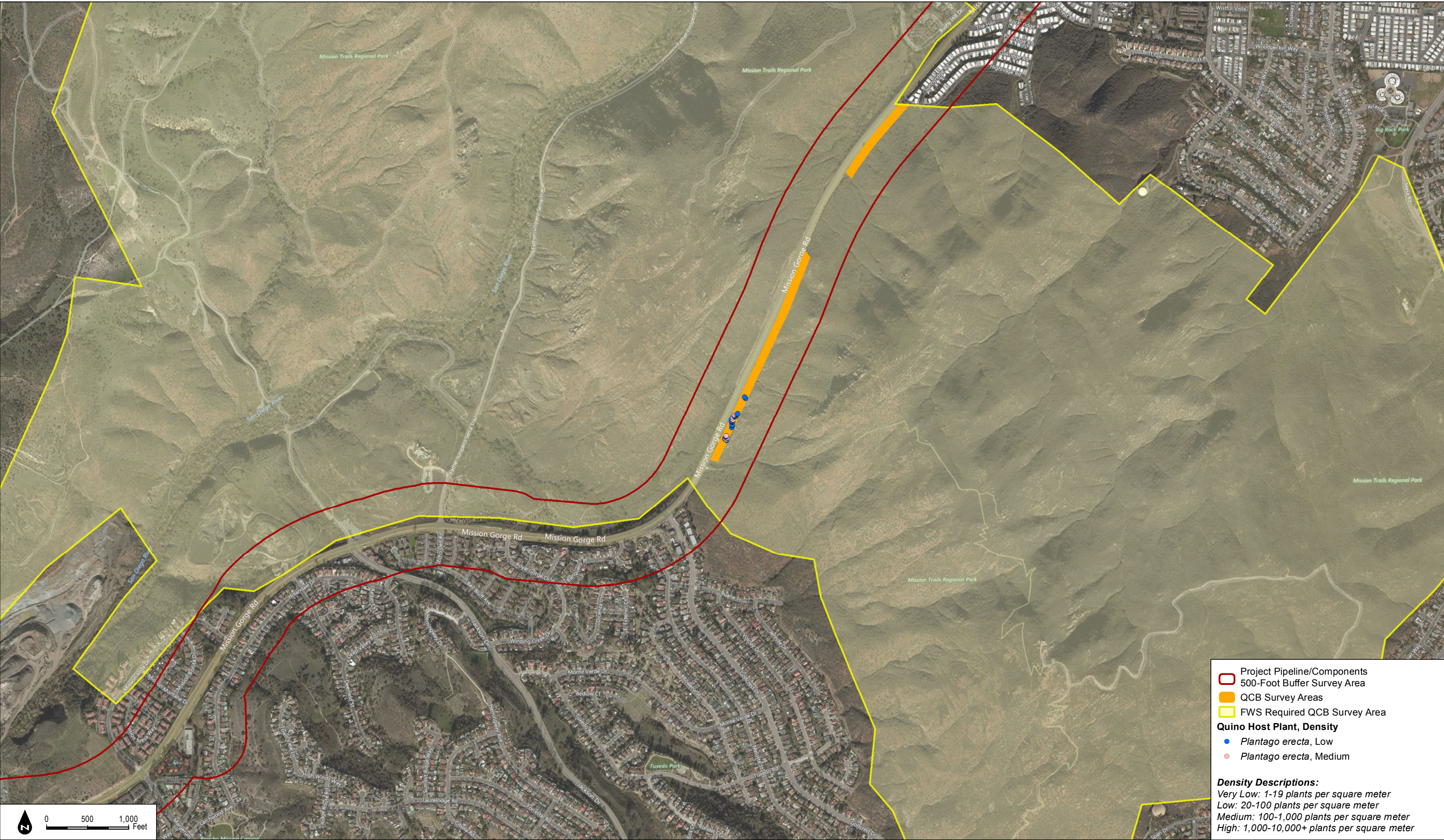
DUDEK

SOURCE: City San Diego 2016; Bing Maps 2016

Pure Water San Diego Program North City Projects

**FIGURE 5B**  
Quino Host Plant Locations





Project Pipeline/Components

500-Foot Buffer Survey Area

QCB Survey Areas

FWS Required QCB Survey Area

**Quino Host Plant, Density**

*Plantago erecta*, Low

*Plantago erecta*, Medium

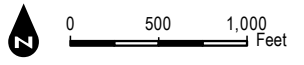
**Density Descriptions:**

Very Low: 1-19 plants per square meter

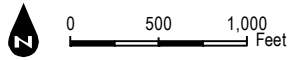
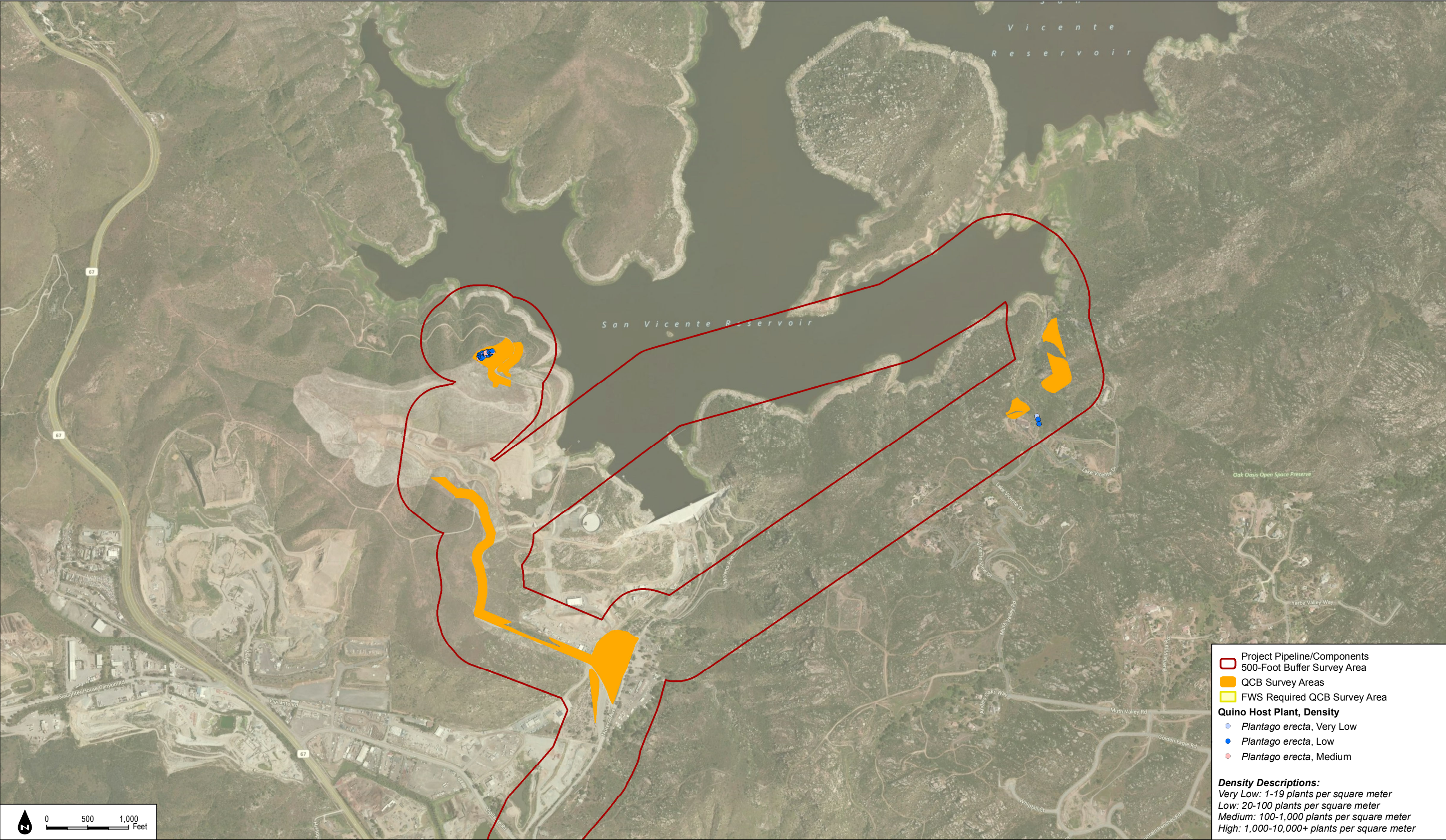
Low: 20-100 plants per square meter

Medium: 100-1,000 plants per square meter

High: 1,000-10,000+ plants per square meter











# **APPENDIX A**

*2016 Pure Water Program  
Quino Survey Field Notes*





## Quino Checkerspot General Form

Adult Survey

Location PUREWATER / NURSERY AREASurvey Segment AREA 2Surveyor ARIEL CHATMANDate 21 May 2016Survey Week Number (12)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_

Portion Surveyed: \_\_\_\_\_

Elevation: Max \_\_\_\_\_

Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	50%	clear <u>patchy</u> overcast drizzle shower	4-6 mph	69°F
11:00	40%	clear <u>patchy</u> overcast drizzle shower	4-6 mph	70°F
12:00	30%	clear <u>patchy</u> overcast drizzle shower	5-6 mph	70°F
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 13:00	25%	clear <u>patchy</u> overcast drizzle shower	5-7 mph	71°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	3	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	2	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	5	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	6	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	2	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	2		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	1		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <i>Hemiargus ceraunus</i> <i>gyas</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			( <i>Ceraunus blue</i> )		
<i>Ochlodes agricola</i> (Rural Skipper)			<i>Euphilotes bernardino</i>	5	
<b>Lycaenidae (Hairstreaks)</b>			( <i>Bernardino blue</i> )		
<i>Atliodes halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	4				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHATMAN

Segment # AREA 2

Date: 21 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present: Plantago erecta

Nectar Plants Present: BRASSICA, BUCKWHEAT, ASTERACEAE's

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



## Quino Checkerspot General Form

Adult Survey

Location PURE WATER / NURSERY AREASurvey Segment AREA 2Surveyor GREG CHATMANDate 23 May 2016 Survey Week Number (12)Survey Partner(s) THE POWELL'S

Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 11:30	30%	clear	patchy	overcast	drizzle	shower	2-4 mph	71°F
12:00	25%	clear	patchy	overcast	drizzle	shower	4-6 mph	73°F
13:00	20%	clear	patchy	overcast	drizzle	shower	3-6 mph	74°F
14:00	20%	clear	patchy	overcast	drizzle	shower	4-6 mph	73°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 15:00	20%	clear	patchy	overcast	drizzle	shower	4-7 mph	73°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	10	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	5	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	2		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	10	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	3		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b> <i>Adelpha bredowii</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			(California sister)		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>			<i>Euphilotes bernardino</i>	3	
<i>Attilides halesus</i> (Great Purple Hairstreak)			(Bernardino blue)		
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	6				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icaricia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg CHATMAN

Segment # AREA (B)

Date: 23 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

~~Castell~~ *Plantago erecta*

Nectar Plants Present:

*Buckwheat, Asteraceae, cryptantha,*

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-21
Biologist(s)	Brock Ortega
Survey Area	1
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:12:00	70		0	1-3	clear	
End	12:50:00	75		0	1-3	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (4)	common buckeye (4)	painted lady (3)
Behr's metalmark (5)	Pacific sara orangetip (15)	queen (1)

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

INCIDENTAL PLANT LIST		
(none)		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-08
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	1
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:10:00	60		0	1-2	clear	
	10:00:00	60		0	1-2	clear	
End	10:45:00	63			2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
funereal duskywing (1)	Mormon metalmark (2)	western pygmy-blue (2)
monarch (1)	painted lady (1)	white checkered-skipper (3)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Encelia spp.</i>	<i>Plantago erecta</i>
<i>Cryptantha spp.</i>	<i>Lasthenia spp.</i>	<i>Yerba santa</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-13
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	1
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00		63	20	1-2	patchy	
	10:00:00		66	0	1-2	clear	
End	11:00:00		68	0	1-2	clear	
	12:00:00		68	0	1-2	clear	
	13:00:00		68	0	4-6	clear	
End	13:45:00		68	0	4-6	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
anise swallowtail (1+)	fiery skipper (2)	southern blue (6)
California sister (1+)	Mormon Metalmark (3)	western pygmy-blue (5)
common california ringlet (1)	Pacific sara orangetip (4)	

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-08
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	2
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:00:00	65		0	4-6	clear	
	12:00:00	65		0	4-6	clear	
End	13:00:00	66		0	6-9	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common california ringlet (1)	Mormon metalmark (3)	white checkered-skipper (2)
fiery skipper (2)	southern blue (5)	
funereal duskywing (1)	western pygmy-blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Encelia spp.</i>	<i>Yerba santa</i>
<i>Cryptantha spp.</i>	<i>Lasthenia spp.</i>	
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-13
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	2
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	14:15:00		68		4-6	clear	
	15:00:00		69		4-6	clear	
	16:00:00		67		4-6	clear	
End	16:45:00		66		4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
fiery skipper (2)	Pacific sara orangetip (6)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-08
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	3
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:40:00	64		0	6-9	clear	
	14:00:00	64		0	6-9	clear	
	15:00:00	71		0	2-4	clear	
	16:00:00	69		0	6-9	clear	
End	16:30:00	68		0	6-9	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
common california ringlet (1)	Pacific sara orangetip (2)	western pygmy-blue (3)
Mormon metalmark (4)	southern blue (3)	

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

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Encelia spp.</i>	<i>Yerba santa</i>
<i>Cryptantha spp.</i>	<i>Lasthenia spp.</i>	
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-09
Biologist(s)	Greg Chatman
Survey Area	3
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:00:00		71	0	2-4	clear	
End	11:50:00		71	0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
anise swallowtail (1)	white checkered-skipper (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma capitatum</i>	<i>Yerba santa</i>
<i>Cryptantha sp.</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-09
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	3
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	15:00:00		68	10	4-8	clear	
	16:00:00		67	10	4-6	clear	
End	16:30:00		66	10	4-6	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
funereal duskywing (1)		

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

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma capitatum</i>	<i>Yerba santa</i>
<i>Chamise</i>	<i>Plantago erecta</i>	
<i>Cryptantha</i>	<i>Rhus</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-09
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	4
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:15:00		71	0	2-4	clear	
	13:00:00		71	0	2-4	clear	
	14:00:00		71	10	2-4	clear	
End	15:00:00		70	10	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
California sister (1)	Pacific sara orangetip (2)	
Mormon Metalmark (3)	southern blue (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Encelia</i>	<i>Yerba santa</i>
<i>Cryptantha</i>	<i>Lasthenia</i>	
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-10
Biologist(s)	Greg Chatman
Survey Area	4
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	15:30:00		70	0	2-4	clear	
	16:00:00		68	0	2-4	clear	
End	16:45:00		67	0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
funereal duskywing (1)	Pacific sara orangetip (1)	

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-22
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	4
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:00:00		63	30	6-10	patchy	
	13:00:00		65	20	6-10	patchy	
	14:00:00		67	20	5-7	clear	
	15:00:00		67	20	4-8	clear	
End	16:00:00		65	10	4-8	clear	

BUTTERFLY LIST SPECIES (COUNT)		
California sister (2)	funereal duskywing (3)	southern blue (1)
common buckeye (2)	Mormon Metalmark (5)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>
<i>Cryptantha sp.</i>	<i>Lasthenia sp.</i>	<i>Yerba santa sp.</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-10
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	5
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00		68	0	1-2	clear	
	10:00:00		73	0	1-2	clear	
	11:00:00		75	0	4-6	clear	
End	11:30:00		75	0	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
cloudless sulphur (1)	funereal duskywing (1)	western pygmy-blue (6)
fiery skipper (2)	Pacific sara orangetip (2)	white checkered-skipper (5)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Buckwheat sp.</i>	<i>Dichelostemma capitatum</i>	<i>Rhus.</i>
<i>Chamise sp.</i>	<i>Encelia sp.</i>	<i>Yerba santa</i>
<i>Cryptantha sp.</i>	<i>Plantago ssp. (English plantago)</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-10
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	7
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:00:00		76	0	4-6	clear	
	13:00:00		72	0	2-4	clear	
End	14:00:00		70	0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Mormon Metalmark (2)	painted lady (1)	white checkered-skipper (2)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Buckwheat sp.</i>	<i>Cryptantha sp.</i>	<i>Rhus sp.</i>
<i>Castilleja exserta</i>	<i>Dichelostemma capitatum</i>	<i>Yerba santa</i>
<i>Chamise sp.</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-15
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	7
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00		65	0	1-2	clear	
	10:00:00		69	0	1-2	clear	
	11:00:00		73	0	2-3	clear	
End	11:30:00		75	0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
California sister (1)	orange sulphur (3)	southern blue (2)
fiery skipper (2)	Pacific sara orangetip (6)	
funereal duskywing (3)	red admiral (1)	

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

INCIDENTAL PLANT LIST		
(none)		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-15
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	7
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00		65	0	1-2	clear	
	10:00:00		69	0	1-2	clear	
	11:00:00		73	0	2-3	clear	
End	11:30:00		75	0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
California sister (1)	orange sulphur (3)	southern blue (2)
fiery skipper (2)	Pacific sara orangetip (6)	
funereal duskywing (3)	red admiral (1)	

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-23
Biologist(s)	Greg Chatman
Survey Area	7
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:00:00		63	0	1-2	clear	
	11:00:00		68	0	1-2	clear	
End	12:00:00		73	0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
common buckeye (2)	Mormon Metalmark (10)	Pacific sara orangetip (20)
funereal duskywing (4)	northern white-skipper (10)	

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

INCIDENTAL PLANT LIST		
<i>Buckwheat sp.</i>	<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>
<i>Castilleja exserta</i>	<i>Encelia sp.</i>	
<i>Cryptantha sp.</i>	<i>Lasthenia sp.</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-11
Biologist(s)	Greg Chatman
Survey Area	8
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	08:30:00		64		1-2		
	09:00:00		65		1-2		
End	10:00:00		70	0	2-4	clear	
	12:00:00		70	0	2-4	clear	
	13:00:00		71	0	4-8	clear	
	14:00:00		72	0	4-8	clear	
End	14:30:00		71	0	4-8	clear	

BUTTERFLY LIST SPECIES (COUNT)		
checkered white (3)	Pacific sara orangetip (15)	red admiral (1+)
funereal duskywing (4)	painted lady (1+)	
Mormon Metalmark (10)	pale swallowtail (2)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-15
Biologist(s)	Greg Chatman
Survey Area	8
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:30:00		74	0	2-4	clear	
	13:00:00		76	0	2-4	clear	
	14:00:00		78	0	4-6	clear	
	14:50:00		78	0	4-6	clear	
End	15:30:00		78	0	4-6	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (1)	Mormon Metalmark (15)	western tiger swallowtail (1)
common buckeye (3)	northern white-skipper (5)	
fiery skipper (2)	Pacific sara orangetip (9)	

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-16
Biologist(s)	Greg Chatman
Survey Area	8
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:30:00		71	0	1-2	clear	
	11:00:00			0	1-2	clear	
	12:00:00			0	2-3	clear	
	13:00:00			0	2-4	clear	
	14:00:00			0	1-2	clear	
	15:00:00			0	1-2	clear	
End	16:45:00			0	2-3	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
checkered white (6)	Mormon Metalmark (20)	west coast lady (1)
dainty sulphur (1)	Pacific sara orangetip (20)	
funereal duskywing (4)	southern blue (2)	

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

INCIDENTAL PLANT LIST		
(none)		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-21
Biologist(s)	Greg Chatman
Survey Area	8
Survey Pass	4

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:00:00		62	0	1-2	clear	
	10:45:00		64	0	1-3	clear	
	11:15:00		76	0	4-6	clear	
	12:30:00		76	0	4-6	clear	
	13:00:00		78	0	4-7	clear	
	14:00:00		78	0	6-8	clear	
End	14:30:00		76	0	5-7	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common buckeye (1)	Mormon Metalmark (12)	white checkered-skipper (1)
funereal duskywing (6)	Pacific sara orangetip (20)	
gray hairstreak (2)	pale swallowtail (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma capitatum</i>	<i>Lasthenia sp.</i>
<i>Cryptantha sp.</i>	<i>Eriogonum sp.</i>	<i>Plantago erecta</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-28
Biologist(s)	Brock Ortega
Survey Area	Far eastern
Survey Pass	2

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	13:10:00	76		20	3-5	patchy	
End	15:20:00	77		20	3	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (3)	common california ringlet (1)	southern blue (2)
Behr's metalmark (8)	Pacific sara orangetip (7)	western tiger swallowtail (1)
common buckeye (2)	painted lady (1)	white checkered-skipper (1)

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-05
Biologist(s)	Brock Ortega
Survey Area	Far eastern
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	65		20	3-5	patchy	
End	10:00:00	67		30	3-5	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (5)	checkered white (1)	painted lady (1)
anise swallowtail (1)	common buckeye (3)	southern blue (3)
Behr's metalmark (2)	Pacific sara orangetip (13)	Sulphur (1)

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-13
Biologist(s)	Brock Ortega
Survey Area	Mission Gorge Rd, Far eastern
Survey Pass	3

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:45:00	71		20	3-5	patchy	
End	15:20:00	73		30	5	patchy	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
Acmon blue (8)	common buckeye (7)	painted lady (7)
Behr's metalmark (24)	common california ringlet (1)	western tiger swallowtail (2)
California patch (1)	monarch (1)	white checkered-skipper (2)
checkered white (5)	Pacific sara orangetip (16)	

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

INCIDENTAL PLANT LIST		
(none)		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-29
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NE Miramar Rd & I 805 intersection, 1
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	63		0	2-4	clear	
End	10:00:00	64		0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
western pygmy-blue (2)		

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

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>		



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-29
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NE Miramar Rd & I805 intersection, 1
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	63		0	2-4	clear	
End	10:00:00	64		0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
western pygmy-blue (2)		

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

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.		

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NE of Landfill, 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	68		0	2-4	clear	
End	11:00:00	74		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
fiery skipper (1)	Pacific sara orangetip (3)	white checkered-skipper (2)
funereal duskywing (3)	southern blue (2)	
gray hairstreak (1)	western pygmy-blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> sp.	<i>Eriodictyon</i> sp.	<i>Plantago erecta</i>
<i>Dichelostemma</i> sp.	<i>Lasthenia</i> sp.	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-28
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NW Miramar Rd & I 805 intersection, 1
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:00:00	68		0	1-3	clear	
End	11:15:00	70		0	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Acmon blue (1)	Mormon metalmark (3)	white checkered-skipper (2)
funereal duskywing (1)	western pygmy-blue (4)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>	<i>Encelia sp.</i>	<i>Plantago erecta</i>
<i>Dichelostemma sp.</i>	<i>Eriodictyon sp.</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-28
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NW Miramar Rd & I 805 intersection, 2
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:15:00	70		0	4-6	clear	
End	14:45:00	71		0	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common california ringlet (1)	fiery skipper (1)	southern blue (3)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>	<i>Encelia sp.</i>	<i>Lasthenia sp.</i>
<i>Dichelostemma sp.</i>	<i>Eriodictyon sp.</i>	<i>Plantago erecta</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-28
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NW Miramar Rd & I805 intersection, 2
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:15:00	70		0	4-6	clear	
Temp check	12:00:00	70		0	4-6	clear	
Temp check	13:00:00	70		0	4-6	clear	
Temp check	14:00:00	71		0	4-6	clear	
End	14:45:00	71		0	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common california ringlet (1)	fiery skipper (1)	southern blue (3)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.	<i>Golden yarrow</i>	<i>Yerba santa</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia</i> spp.	
<i>Encelia</i> spp.	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NW of MCAS runways, 4
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	16:00:00	72		20	4-6	clear	
End	17:00:00	69		20	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Pacific sara orangetip (1)	southern blue (2)	western pygmy-blue (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> sp.	<i>Eriodictyon</i> sp.	<i>Plantago erecta</i>
<i>Dichelostemma</i> sp.	<i>Lasthenia</i> sp.	



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	NW of MCAS runways, 4
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	16:00:00	72		10	4-6	clear	
End	17:00:00	69		10	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
Pacific sara orangetip (1)	southern blue (2)	western pygmy-blue (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.	<i>Lasthenia</i> spp.	<i>Yerba santa</i>
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	Near southern treatment plant, 7
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:30:00	80		20	4-6	clear	
End	15:00:00	75		20	4-6	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
fiery skipper (1)	orange sulphur (1)	southern blue (3)
funereal duskywing (2)	Pacific sara orangetip (5)	western pygmy-blue (2)
Mormon metalmark (3)	red admiral (1)	

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

INCIDENTAL PLANT LIST		
<i>Cryptantha sp.</i>	<i>Eriodictyon sp.</i>	<i>Plantago erecta</i>
<i>Dichelostemma sp.</i>	<i>Lasthenia sp.</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	Near southern treatment plant, 7
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	12:30:00	80		10	4-6	clear	
Temp check	13:00:00	77		10	4-6	clear	
Temp check	14:00:00	78		10	4-6	clear	
End	15:00:00	75		10	4-6	clear	

BUTTERFLY LIST <small>SPECIES (COUNT)</small>		
fiery skipper (1)	orange sulphur (1)	southern blue (3)
funereal duskywing (2)	Pacific sara orangetip (5)	western pygmy-blue (2)
Mormon metalmark (3)	red admiral (1)	

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

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.	<i>Lasthenia</i> spp.	<i>Yerba santa</i>
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	Northeast of landfill, 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	68		0	2-4	clear	
Temp check	10:00:00	70		0	2-4	clear	
End	11:00:00	74		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
fiery skipper (1)	Pacific sara orangetip (3)	white checkered-skipper (2)
funereal duskywing (3)	southern blue (2)	
gray hairstreak (1)	western pygmy-blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha spp.</i>	<i>Goldfields</i>	<i>Yerba santa</i>
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-09
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	North of East Gate Mall Rd, 1
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:15:00	65		0	1-2	clear	
	10:00:00	67		0	1-2	clear	
End	11:00:00	71		0	1-2	clear	

BUTTERFLY LIST SPECIES (COUNT)		
funereal duskywing (1)	Pacific sara orangetip (1)	
monarch (1)	painted lady (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha spp.</i>	<i>Dichelostemma capitatum</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-02
Biologist(s)	Greg Chatman
Survey Area	North of MCAS runway, 4
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	70			1-2	clear	
Temp check	10:00:00	72			1-2	clear	
Temp check	11:00:00	75			2-4	clear	
Temp check	12:00:00	78			2-4	clear	
Temp check	13:00:00	78			2-4	clear	
Temp check	14:00:00	77			3-5	clear	
End	15:30:00	73			3-5	clear	

BUTTERFLY LIST SPECIES (COUNT)		
cabbage white (1)	Mormon metalmark (5)	western pygmy-blue (2)
funereal duskywing (3)	Pacific sara orangetip (10)	western tiger swallowtail (1)
gray hairstreak (1)	southern blue (5)	white checkered-skipper (2)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>
<i>Cryptantha spp.</i>	<i>Goldfields</i>	<i>Yerba santa</i>



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-02
Biologist(s)	Greg Chatman
Survey Area	North of MCAS runways, 4
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	70			1-2	clear	
End	15:30:00	73			3-5	clear	

BUTTERFLY LIST SPECIES (COUNT)		
cabbage white (1)	Mormon metalmark (5)	western pygmy-blue (2)
funereal duskywing (3)	Pacific sara orangetip (10)	western tiger swallowtail (1)
gray hairstreak (1)	southern blue (5)	white checkered-skipper (2)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma sp.</i>	<i>Lasthenia sp.</i>
<i>Cryptantha sp.</i>	<i>Eriodictyon sp.</i>	<i>Plantago erecta</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-28
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	SE Miramar Rd & I 805 intersection, 3
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	15:00:00	70		10	4-6	clear	
End	16:45:00	67		20	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
funereal duskywing (2)	Pacific sara orangetip (1)	white checkered-skipper (1)
gray hairstreak (1)	southern blue (4)	
Mormon metalmark (2)	western pygmy-blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Acmispon glaber</i>	<i>Dichelostemma sp.</i>	<i>Eriodictyon sp.</i>
<i>Cryptantha sp.</i>	<i>Encelia sp.</i>	<i>Plantago erecta</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-28
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	SE Miramar Rd & I805 intersection, 3
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	15:00:00	70		0	4-6	clear	
Temp check	16:00:00	69		10	4-6	clear	
End	16:45:00	67		10	4-6	clear	

BUTTERFLY LIST SPECIES (COUNT)		
funereal duskywing (2)	Pacific sara orangetip (1)	white checkered-skipper (1)
gray hairstreak (1)	southern blue (4)	
Mormon metalmark (2)	western pygmy-blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Acmispon glaber</i>	<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>
<i>Cryptantha spp.</i>	<i>Encelia spp.</i>	<i>Yerba santa</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-29
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	SE Miramar Rd & I 805 intersection, 3
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:00:00	69		0	4-6	clear	
End	14:15:00	72		10	6-8	clear	

BUTTERFLY LIST SPECIES (COUNT)		
funereal duskywing (3)	Mormon metalmark (3)	southern blue (4)
gray hairstreak (1)	Pacific sara orangetip (5)	western pygmy-blue (3)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Encelia sp.</i>	<i>Plantago erecta</i>
<i>Cryptantha sp.</i>	<i>Eriodictyon sp.</i>	
<i>Dichelostemma sp.</i>	<i>Lasthenia sp.</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-29
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	SE Miramar Rd & I805 intersection, 3
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	10:00:00	69		0	4-6	clear	
Temp check	11:00:00	67		0	4-6	clear	
Temp check	12:00:00	71		0	6-8	clear	
Temp check	13:00:00	71		0	6-8	clear	
Temp check	14:00:00	72		0	6-8	clear	
End	14:15:00	72		0	6-8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
funereal duskywing (3)	Mormon metalmark (3)	southern blue (4)
gray hairstreak (1)	Pacific sara orangetip (5)	western pygmy-blue (3)

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

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Encelia spp.</i>	<i>Yerba santa</i>
<i>Cryptantha spp.</i>	<i>Lasthenia spp.</i>	
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-04
Biologist(s)	Greg Chatman
Survey Area	SE Miramar Rd & I805 intersection. Widened area., 3, 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	66		0	2-4	clear	
Temp check	10:00:00	67		0	2-4	clear	
Temp check	11:00:00	68		0	2-4	clear	
End	11:30:00	69		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
anise swallowtail (1)	Mormon metalmark (3)	
funereal duskywing (2)	southern blue (3)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.	<i>Goldfields</i>	<i>Yerba santa</i>
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	



## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-04
Biologist(s)	Greg Chatman
Survey Area	Sae Miramar Rd & I 805 intersection, 3, 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:30:00	66		0	2-4	clear	
End	11:30:00	69		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
anise swallowtail (1)	Mormon metalmark (3)	
funereal duskywing (2)	southern blue (3)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> sp.	<i>Eriodictyon</i> sp.	<i>Plantago erecta</i>
<i>Dichelostemma</i> sp.	<i>Lasthenia</i> sp.	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-03
Biologist(s)	Greg Chatman
Survey Area	San Diego River/San Vicente Res., 8
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	67		0	2-4	clear	
End	17:00:00	68		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common buckeye (2)	Pacific sara orangetip (15)	southern blue (6)
Mormon metalmark (5)	pale swallowtail (1)	west coast lady (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Castilleja exserta</i>	<i>Dichelostemma sp.</i>	<i>Plantago erecta</i>
<i>Cryptantha sp.</i>	<i>Eriodictyon sp.</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-03
Biologist(s)	Greg Chatman
Survey Area	San Diego River/San Vicente Res., 8
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	09:00:00	67		0	2-4	clear	
Temp check	10:00:00	68		0	2-4	clear	
Temp check	11:00:00	72		0	2-4	clear	
Temp check	12:00:00	74		0	2-4	clear	
Temp check	13:00:00	73		0	4-6	clear	
Temp check	16:00:00	70		0	4-6	clear	
End	17:00:00	68		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common buckeye (2)	Pacific sara orangetip (15)	southern blue (6)
Mormon metalmark (5)	pale swallowtail (2)	west coast lady (1)

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.	<i>Plantago erecta</i>	
<i>Dichelostemma capitatum</i>	<i>Yerba santa</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-29
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	Villace Nursery Area, 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	14:30:00	72		10	6-8	clear	
End	15:15:00	71		10	6-8	clear	

BUTTERFLY LIST SPECIES (COUNT)		
funereal duskywing (1)	Pacific sara orangetip (2)	western pygmy-blue (2)
Mormon metalmark (1)	southern blue (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> sp.	<i>Encelia</i> sp.	
<i>Dichelostemma</i> sp.	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-02-29
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	Villace nursery area, 5
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	14:30:00	72		10	6-8	clear	
Temp check	15:00:00	71		10	6-8	clear	
End	15:15:00	71		10	6-8	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
funereal duskywing (1)	Pacific sara orangetip (2)	western pygmy-blue (2)
Mormon metalmark (1)	southern blue (1)	

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

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> spp.	<i>Encelia</i> spp.	
<i>Dichelostemma capitatum</i>	<i>Plantago erecta</i>	

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	West & south of landfill, 6
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:00:00	71		0	2-4	clear	
Temp check	12:00:00	74		0	2-4	clear	
End	12:30:00	76		0	2-4	clear	

BUTTERFLY LIST <i>SPECIES (COUNT)</i>		
cloudless sulphur (2)	orange sulphur (1)	western pygmy-blue (3)
common buckeye (1)	southern blue (4)	western tiger swallowtail (1)

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

INCIDENTAL PLANT LIST		
<i>Cryptantha spp.</i>	<i>Encelia spp.</i>	<i>Plantago erecta</i>
<i>Dichelostemma capitatum</i>	<i>Lasthenia spp.</i>	<i>Yerba santa</i>

## Quino Checkerspot Butterfly Survey Data Form

GENERAL SURVEY INFORMATION	
Project Name	Pure Water Program
Survey Date	2016-03-01
Biologist(s)	Dale Powell, Greg Chatman, June Powell
Survey Area	West and South of landfill, 6
Survey Pass	1

SURVEY CONDITIONS							
Status	Time	Air Temp. (F)	Ground Temp. (F)	Cloud Cover (%)	Wind (mph)	Sky	Notes
Start	11:00:00	71		0	2-4	clear	
End	12:30:00	76		0	2-4	clear	

BUTTERFLY LIST SPECIES (COUNT)		
common buckeye (1)	western pygmy-blue (3)	
southern blue (4)	western tiger swallowtail (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

INCIDENTAL PLANT LIST		
<i>Cryptantha</i> sp.	<i>Encelia</i> sp.	<i>Lasthenia</i> sp.
<i>Dichelostemma</i> sp.	<i>Eriodictyon</i> sp.	<i>Plantago erecta</i>



Quino Checkerspot General Form

Adult Survey

Location NOAH CEMETERY (MCAS) Survey Segment ELIWA AREA (3)  
 Surveyor COLE CHAMPA Date 09 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) THE POWERS  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24-hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>11:50</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>71° F</u>
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop <u>11:50</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>71° F</u>

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

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

Surveyor GILCH CHADMAN

Segment # SUNNY AREA (3)

Date: 09 MAR 2016

Comments:

Plant Communities and Habitat Information:

SEE SUNNY WEEK (1)

Host Plants Present:

Plantago erecta, Castilleja erecta

Nectar Plants Present:

cryptantha, GERARDIA SAXATA, BLUE DICKS

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location NARR COMOTERY (MCAS) Survey Segment SURVEY AREA (4)  
 Surveyor ALBERT CHITTENDEN Date 09 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) THE POWERS  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 12:15	<del>0</del>	<u>clear</u> patchy overcast drizzle shower	2-4 mph	71° F
13:00	<del>0</del>	<u>clear</u> patchy overcast drizzle shower	2-4 mph	71° F
14:00	10%	<u>clear</u> patchy overcast drizzle shower	2-4 mph	71° F
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 15:00	10%	<u>clear</u> patchy overcast drizzle shower	2-4 mph	70° F

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

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

Surveyor GRET CHITMAN

Segment # SURVEY AREA (4)

Date: 09 MAR 2016

Comments:

\* GOOD PATCHES OF PLANTAGO IN OPEN AREAS  
NORTHEAST MCAS RUNWAYS.

Plant Communities and Habitat Information:

SBE SURVEY AREA (1)

Host Plants Present:

Plantago erecta, Castilleja erecta

Nectar Plants Present:

YERBA SANTA, CYRTANDRA, EUCLELIA, BLUEBERRIES, LUSTRONIA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location NEAR VILLAGE NURSERY Survey Segment SULCA AREA (3)  
 Surveyor COB-CHAMAN Date 09 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) THE POWERS  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 15:00	10%	clear	patchy	overcast	drizzle	shower	4-8 mph	68°F
16:00	10%	clear	patchy	overcast	drizzle	shower	4-6 mph	67°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 16:30	10%	clear	patchy	overcast	drizzle	shower	4-6 mph	66°F

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

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

Surveyor GREG CHATMAN

Segment # SURVEY AREA (3)

Date: 9 MAR 2016

Comments:

\* GOOD PATCHES OF PLANTAGO IN OPEN AREAS EAST OF VILLAGE ROADSIDE.

Plant Communities and Habitat Information:

YERBA SANTA, CHAMIS, RHUS

Host Plants Present:

Plantago erecta, Castilleja erecta

Nectar Plants Present:

YERBA SANTA, CRYPTANTHUS, BUELLIA,

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location EAST OF LAND FILL Survey Segment SURVEY AREA (5)  
 Surveyor GRETT CHATMAN Date 10 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) THE POWELL'S  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>9:15</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>68° F</u>
<u>10:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>73° F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>75° F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>11:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>75°</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	<u>6</u>	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)		
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>2</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	<u>2</u>		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	<u>5</u>		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
	<u>1</u>		<b>OTHERS:</b>		
<i>Erynnis tristis</i> (Mourning Duskywing)			<u>Phoebus sennae</u>		
<i>Erynnis propertius</i> (Propertius Duskywing)			<u>(cloudless sulphur)</u>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopteryx lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor APRIL CHATMAN

Segment # SURVEY AREA (5)

Date: 10 MAR 2016

Comments:

Plant Communities and Habitat Information:

NON-NATIVE GRASSES + FORBES  
CHAMISE, REHUS, YERBA SANTA, DUCKWEEDS

Host Plants Present:

Plantago spp. (English Plantago)

Nectar Plants Present:

CRYPTANTHA, YERBA SANTA, EUCALYPTA, BLUE DICKS

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location NEAR SOUTHERN TREATMENT PLANT Survey Segment SUNNOY AREA (7)  
 Surveyor GOEL CHATMAN Date 10 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) THE POWELL'S  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 12:00		clear patchy overcast drizzle shower	4-6 mph	76°F
13:00		clear patchy overcast drizzle shower	2-4 mph	72°F
14:00		clear patchy overcast drizzle shower	2-4 mph	70°F
↑		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 14:00		clear patchy overcast drizzle shower		

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

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

Surveyor GREG CHATMAN

Segment # SURVEY AREA (7)

Date: 10 MAR 2016

Comments:

Plant Communities and Habitat Information:

YERBA SANTA, CHAMISE, RITUS, BUCKWHEATS

Host Plants Present:

Plantago erecta, Castilleja exaltata

Nectar Plants Present:

YERBA SANTA, CRYPTANTHA, BLUE RICKS

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location NORTH OF (MCAS) RUNWAYS Survey Segment SURVEY AREA (4)  
 Surveyor COEL CHATMAN Date 10 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>15:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>70° F</u>
<u>16:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>68° F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>16:45</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>67° F</u>

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

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



Surveyor GABRIEL CHATMAN Segment # SURVEY AREA (4) Date: 10 MAR 2016

Comments:

\* GOOD PATCHES OF PLANTAGO NORTH OF  
NACAS MIRAMAR RUNWAYS.

Plant Communities and Habitat Information: CHAMISE, YERBA SANTA, RHUS

Host Plants Present: Plantago erecta, Castilleja erecta

Nectar Plants Present: CARYPTANTHA, LUPININIA, YERBA SANTA, BLUE ADICKS

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location SANDIEGO RIVER / SAN VICENTE RES. Survey Segment SURVEY AREA (8)  
 Surveyor GREG CHATMAN Date 11 MAR 2016 Survey Week Number (2)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>08:30</u>	<u>Hazy</u>	clear	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>64° F</u>
<u>09:00</u>	<u>Hazy</u>	clear	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>65° F</u>
<u>10:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>70° F</u>
<u>12:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>70° F</u>
<u>13:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-8 mph</u>	<u>71° F</u>
<u>14:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-8 mph</u>	<u>72° F</u>
Stop <u>14:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-8 mph</u>	<u>71° F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Evers amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)	<u>2</u>	
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)	<u>1</u>		<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)	<u>1</u>		<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>15</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	<u>3</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>4</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icaricia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor GREG CHATMAN

Segment # SURVEY AREA (R)

Date: 11 MAR 2016

Comments:

\* GOOD HABITAT NEAR WEST SIDE OF SAN VICENTE RES.  
*Plantago erecta* + good nectar sources

Plant Communities and Habitat Information: - NON-NATIVE GRASS + FORBS ALONG  
 SAN DIEGO RIVER COURSE AREAS.  
 - CHAMISE, RHUS, BUCKWHEAT NEAR  
 SAN VICENTE RES.

Host Plants Present:

*Plantago erecta* + *Castilleja exerta*

Nectar Plants Present:

*Croptanthus*, Bluebirds, *Lathenium*,

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location N.W. MIRAMAR RD + I805 JUNCTION Survey Segment SURVEY AREA 1  
 Surveyor OREL CHATMAN Date 13 MAR 2016 Survey Week Number (3)  
 Survey Partner(s) THE POWELL'S  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 09:30	20%	clear	patchy	overcast	drizzle	shower	1-2 mph	67°F
10:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	66°F
11:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	68°F
12:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	68°F
13:00	0	clear	patchy	overcast	drizzle	shower	4-6 mph	68°F
		clear	patchy	overcast	drizzle	shower		
Stop 13:45		clear	patchy	overcast	drizzle	shower	4-6 mph	68°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	6	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	3	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)	1	
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	4	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	2		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)	1	
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b> <i>Californis sister</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Ailides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)	6				
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Curran

Segment # Survey Area 1

Date: 13 Mar 2016

**Comments:**

**Plant Communities and Habitat Information:**

**Host Plants Present:**

Plantago erecta, Castilleja exalt

**Nectar Plants Present:**

YERBA SANTA, CRYPTANTHA, BLUE DICKS, LASTHENIA, ENCELIA

☐ **Quino Sighting**

**Date:**

**GPS Location:**

**Photographs Taken:**

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



## Quino Checkerspot General Form

## Adult Survey

Location NEAR (MCAS) CEMETERY Survey Segment SURVEY AREA (2)  
 Surveyor GREG CHAPMAN Date 13 MAR 2016 Survey Week Number (3)  
 Survey Partner(s) THE POWELL'S  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24-hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>14:15</u>		<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>68°F</u>
<u>15:00</u>		<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>69°F</u>
<u>16:00</u>		<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>67°F</u>
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop <u>16:45</u>		<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>66°F</u>

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

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

Surveyor GREG CURTISMAN

Segment # SURVEY AREA (2) Date: 13 MAR 2016

**Comments:**

\* GOOD HABITAT IN OPEN AREAS S.E. OF MCAS COMBURY.  
- Plantago + Castilleja in open area on bluff tops

**Plant Communities and Habitat Information:**

**Host Plants Present:**

*Plantago erecta*, *Castilleja exerta*

**Nectar Plants Present:**

*Cryptantha*, *Lasthenis*, *Blue dicks*,

☐ Quino Sighting

Date:

GPS Location:

**Photographs Taken:**

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

Quino Checkerspot General Form

Adult Survey

Location NEAR SOUTHERN TREATMENT PLANT Survey Segment SURVEY AREA (7)  
 Surveyor GREG CHATMAN Date 15 MAR 2016 Survey Week Number (3)  
 Survey Partner(s) THE POWELL'S  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>09:15</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>65°F</u>
<u>10:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>69°F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-3 mph</u>	<u>73°F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>11:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>75°F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)		
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)	<u>1</u>		<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>6</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	<u>3</u>	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	<u>2</u>		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>3</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b> <u>California sifter</u>	<u>1</u>	
<i>Erynnis propertius</i> (Propertius Duskywing)			<u>(Adelpha bredawii californica)</u>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)	<u>2</u>				
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor GRET CHAMMAN

Segment # SURVEY AREA (7)

Date: 15 MAR 2016

Comments:

Plant Communities and Habitat Information: \* BLACK SAGE & HOLY-LEAVED SCRUB-OAK

Host Plants Present:

Plantago erecta in openings on bluffs  
Castilleja exata also sprinkled in

Nectar Plants Present:

LESTHANIA, YERBA SANTA, CRYPTANTHA, BLUE-DICKS,  
STACHYS MELIFERA.

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location MISSION GLEN RD. + RANCHO TOWER Survey Segment SURVEY AREA (8)  
 Surveyor ALAN CHAMMAN Date 15 MAR 2016 Survey Week Number (3)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky				Wind (range)	Temp (F)
Start <u>12:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>74°F</u>
<u>13:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>76°F</u>
<u>14:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>78°F</u>
<u>14:50</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>78°F</u>
		clear	patchy	overcast	drizzle	shower	
<u>15:00 - 15:30</u>		clear	patchy	overcast	drizzle	shower	
Stop <u>15:50</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>78°F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>15</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	<u>3</u>		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)	<u>1</u>	
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>9</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)	<u>5</u>		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	<u>2</u>		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)	<u>1</u>				
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor WILL CHATMAN Segment # SURVEY AREA(8) Date: 15 MAR 2016

Comments:

\* GOOD HILLTOPS (small) WITH ROCKY OUTCROPS,  
CRYPTOGAMIC SOILS, HOST PLANTS + METAL SOURCES.

Plant Communities and Habitat Information: CHAMISE, RHUS, SALVIA, BUCKWHEAT,

Host Plants Present:

Plantago erecta + Castilleja exerta

Nectar Plants Present:

Lasthenis, Cryptantha, Blue-dicks, BUCKWHEAT

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



## Quino Checkerspot General Form

## Adult Survey

Location SAN DIEGO RIVER / SAN VICENTE RES / RES Survey Segment SURVEY AREA (8)  
 Surveyor GREEN CHATMAN Date 16 MAR 2016 Survey Week Number (3)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>10:30</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>1-2 mph</u>	<u>71°F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>1-2 mph</u>	
<u>12:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-3 mph</u>	
<u>13:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	
<u>14:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>1-2 mph</u>	
<u>15:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>1-2 mph</u>	
Stop <u>16:45</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-3 mph</u>	

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>20</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)	<u>1</u>		<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>20</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	<u>6</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>4</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b> <u>Dainty</u>		
<i>Erynnis propertius</i> (Propertius Duskywing)			<u>Dainty sulphur</u>	<u>1</u>	
<i>Ochlodes agricola</i> (Rural Skipper)			<u>(Nathalis iole)</u>		
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)	<u>2</u>				
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHATMAN Segment # SURVEY AREA (8) Date: 16 MAR 2016

Comments:

~~IF~~ SURVEYED PLANTAGO PATCHES MORE THOROUGHLY

~~IF~~ NO QUINO OBSERVED

Plant Communities and Habitat Information: SEE PRIOR WEEKS

Host Plants Present:

Plantago erecta  
Castilleja erecta

Nectar Plants Present:

Lactuca, Cryptantha, YERBA SANTA, BUCKWHEAT, BLUE-POSS  
ONCELA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location SAN VICENTE RES. / SAN DIEGO RIVER AREAS Survey Segment SURVEY AREA (8)  
 Surveyor GREG CHAPMAN Date 21 MAR 2016 Survey Week Number (4)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	62°F
10:45	0	clear	patchy	overcast	drizzle	shower	1-3 mph	64°F
11:15	0	clear	patchy	overcast	drizzle	shower	4-6 mph	76°F
12:30	0	clear	patchy	overcast	drizzle	shower	4-6 mph	76°F
13:00	0	clear	patchy	overcast	drizzle	shower	4-7 mph	78°F
14:00	0	clear	patchy	overcast	drizzle	shower	6-8 mph	78°F
Stop 14:30	0	clear	patchy	overcast	drizzle	shower	5-7 mph	76°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	12	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	1		<i>Papilio eurymedon</i> (Pale Swallowtail)	1	
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	20+	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	1		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	6		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atlides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	2				
<i>Glaucopsyche hydamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor GRET CHITMAN

Segment # SURVEY AREA (P)

Date: 21 MAR 2016

Comments:

*Plantago* doing better after week ago rain!

*BUCKWHEAT* COMING INTO BLOOM

*BLACK SAGE* BLOOMING

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* + *Castilleja erecta*

Nectar Plants Present:

*Cryptantha*, *Lasthenia*, Blue-dicks, *Buckwheat*

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location Southern Tanager Point Survey Segment SURVEY AREA (4)  
 Surveyor GREG CHATMAN Date 22 MAR 2016 Survey Week Number (4)  
 Survey Partner(s) THE POWERS  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	clear	patchy	overcast	drizzle	shower	Wind (range)	Temp (F)
Start 12:00	25%	clear	patchy	overcast	drizzle	shower	6-10 mph	63°F
13:00	20%	clear	patchy	overcast	drizzle	shower	6-10 mph	65°F
14:00	15%	clear	patchy	overcast	drizzle	shower	5-7 mph	67°F
15:00	15%	clear	patchy	overcast	drizzle	shower	4-8 mph	67°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 16:00	10%	clear	patchy	overcast	drizzle	shower	4-8 mph	65°F

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

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

Surveyor Gabe Carranza

Segment # Sankey Mesa (4)

Date: 22 MAR 2016

Comments:

\* Plantago doing better after last week rain!

\* Castilleja more obvious with blooms apparent.

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* + *Castilleja exata*

Nectar Plants Present:

*Cryptantha*, *Lasthenia*, Blue-dicks, *YOLBA SANTA*

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



## Quino Checkerspot General Form

## Adult Survey

Location MISSION ORIOB AREASurvey Segment SURVY AREA (7)Surveyor ARRE CHAPMANDate 23 MAR 16 Survey Week Number (4)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>10:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>67°</u>
<u>11:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>68°</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>12:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>73°</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10+</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	<u>2</u>		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>20+</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)	<u>10+</u>		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>4</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor KEEL CHAFFIN Segment # SURVEY AREA (7) Date: 23 MAR 2016

Comments:

*Plantago* & *Castilleja* in openings around hilltops  
cryptogamic soils.

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* & *Castilleja exalt*

Nectar Plants Present:

*Lasthenis*, *Encelia*, *Cryptantha*, *Buckwheat*, *Blue-decks*

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location NORTH OF MCAS RUNWAYSSurvey Segment QCB SURVEY AREA (4)Surveyor WILL CHAMMANDate 02 FEB 2016Survey Week Number (1)

Survey Partner(s) \_\_\_\_\_

Total Acres: 78 Portion Surveyed: \_\_\_\_\_Elevation: Max 4004. Min 2804.

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 09:30		<u>clear</u>	patchy	overcast	drizzle	shower	1-2 mph	70°F
10:00		<u>clear</u>	patchy	overcast	drizzle	shower	1-2 mph	72°F
11:00		<u>clear</u>	patchy	overcast	drizzle	shower	2-4 mph	75°F
12:00		<u>clear</u>	patchy	overcast	drizzle	shower	2-4 mph	78°F
13:00		<u>clear</u>	patchy	overcast	drizzle	shower	2-4 mph	78°F
14:00		<u>clear</u>	patchy	overcast	drizzle	shower	3-5 mph	77°F
Stop 15:30		<u>clear</u>	patchy	overcast	drizzle	shower	3-5 mph	73°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	2	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	5	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	1		<i>Papilio eurymedon</i> (Pale Swallowtail)	1	
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)	5		<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	10	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)	1	
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	2		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	3		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Ailides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	1				
<i>Glaucopsyche lygdamus</i> (Southern Blue)	5				
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor GREG CHADMAN

Segment # SURVEY AREA 4

Date: \_\_\_\_\_

Comments:

\* GOOD PATCHES OF PLANTAGO NORTH WEST OF  
MCAS MIRAMAR

\* LOTS OF PLANTAGO IN OPEN AREAS

Plant Communities and Habitat Information:

CHAMISE, RHUS, BUCKWHEAT, RHAMNUS,  
DEERWEED.

Host Plants Present:

Plantago erecta, Castilleja exulta

Nectar Plants Present:

CRYPTANTHA, YERBA SANTA, GOLDFIELDS, BLUE DICKS.

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SAN DIEGO RIVER / SAN VICENTE RES. Survey Segment QCB SURVEY AREA (8)  
 Surveyor LOUI CHATMAN Date 03 MAR 2016 Survey Week Number (1)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: 49 Portion Surveyed: \_\_\_\_\_ Elevation: Max 880 ft Min 300 ft

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 09:00	0	clear patchy overcast drizzle shower	2-4 mph	67°
10:00	0	clear patchy overcast drizzle shower	2-4 mph	68°
11:00	0	clear patchy overcast drizzle shower	2-4 mph	72°
12:00	0	clear patchy overcast drizzle shower	2-4 mph	74°
13:00	0	clear patchy overcast drizzle shower	4-6 mph	73°
16:00	0	clear patchy overcast drizzle shower	4-6 mph	70°
Stop 17:00	0	clear patchy overcast drizzle shower	2-4 mph	68°

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides nylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemis mormo</i> (Mormon Metalmark)	5	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)	2	
<i>Vanessa annabella</i> (West Coast Lady)	1		<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	15	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atilides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)	6				
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHATMAN

Segment # SURVEY AREA (8) Date: 03 MAR 2016

Comments:

\* GOOD PATCHES OF PLANTAGO WEST OF  
SAN VICENTE RESERVOIR.

\* SMALL SURVEY AREAS ALONG SAN DIEGO RIVER  
POOR HABITAT

Plant Communities and Habitat Information: CHAMISE, BUCKWHEAT, YERBA SANTA,

\* CRYPTOMELIC SOILS w/ PLANTAGO

Host Plants Present:

Plantago erecta

Nectar Plants Present:

CRYPTANTHA, YERBA SANTA, BLUE DICKS

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



Quino Checkerspot General Form

Adult Survey

Location SE MIRAMAR RD + I-805 intersection Survey Segment QCB Survey Area (3)(5) WINDY AREA  
 Surveyor GABE CHATMAN Date 04 MAR 2016 Survey Week Number (1)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: 61 Portion Surveyed: \_\_\_\_\_ Elevation: Max 4004 Min 3904.

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>09:30</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>66°F</u>
<u>10:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>67°F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>68°F</u>
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop <u>11:30</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>69°F</u>

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

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

WIRED AREA

Surveyor GRE CHATMAN

Segment # SURVEY AREA (3)(5) Date: 04 MAR 2016

Comments:

★ GOOD HABITAT FIRST OF NURSERY - SEVERAL  
AREAS OF PLANTAGO IN DREW AREAS

Plant Communities and Habitat Information:

CHAMISE, YERBA SANTA, RHUS,  
BUCKWHEAT, DEERWEED, EUCALYPT

Host Plants Present:

*Plantago erecta*

Nectar Plants Present:

YERBA SANTA, CRYPTANTHA, GOLD-FIELD, BLUE DICKS

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location NW MIRAMAR RD & I 805 intersection Survey Segment OCB SURVEY AREA (2)  
 Surveyor GREG CHATMAN Date 28 FEB 2016 Survey Week Number (1)  
 Survey Partner(s) DALE + SUNE POWELL  
 Total Acres: 86 acres Portion Surveyed: \_\_\_\_\_ Elevation: Max 3804 Min 3204

Time (24-hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>11:15</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>70°F</u>
<u>12:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>70°F</u>
<u>13:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>70°F</u>
<u>14:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>71°F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>14:45</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>71°F</u>

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

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



Surveyor GREG CHATMANSegment # AREA 2 (WEEK 1)Date: 28 FEB 2016

## Comments:

TWO AREAS WITHIN AREA TWO(2) HAVE GOOD PATCHES OF PLANTAGO.

MOSTLY NON-NATIVE GRASSES + FORBS

\* DESCENT PATCHES OF PLANTAGO BUT ISOLATED FROM OTHER HOST'S DUE TO HABITAT FRAGMENTATION.

## Plant Communities and Habitat Information:

NON-NATIVE GRASSES W/ MIXED  
RHUS SPECIES, COMMON BUCKWHEAT, DEERWEED,  
CHAMISE,

\* CRYPTOGRAMMIC SOILS WITH PLANTAGO.

## Host Plants Present:

PLANTAGO erecta

## Nectar Plants Present:

YERBA SANTA, LASTAENA, CRYPTANTHA, BRICELIA, BLUE DICKS,  
GOLDEN YARROW,

☐ Quino Sighting

Date:

GPS Location:

## Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SE MICAWAR RD + I805 intersection Survey Segment QCB GRADING AREA (3)  
 Surveyor GREG CHATMAN Date 28 FEB 2016 Survey Week Number (1)  
 Survey Partner(s) DAVE + SUNG POWELL  
 Total Acres: 85 Portion Surveyed: \_\_\_\_\_ Elevation: Max 3904ft Min 2604ft

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>15:00</u>	<u>5%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>70°F</u>
<u>16:00</u>	<u>10%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>69°F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>16:45</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>67°F</u>

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

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

Surveyor ANNE CHAMMAN

Segment # SURVEY AREA (3)

Date: 28 FEB 2016

Comments:

\* *Plantago erecta* in open areas but not in abundance!  
- a little here, a little there!

Plant Communities and Habitat Information:

NON-NATIVE GRASSES + FORBS

BUCKWHEAT, CHAMISE, LIME BELL, SYCAMORES,  
RHUS SPECIES, NEEDLEWEED

Host Plants Present:

*Plantago erecta*

Nectar Plants Present:

DEBBERS, BLUEGRASSES, CRYPTANTHA, GERDA SANTA, ENCELIA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



## Quino Checkerspot General Form

## Adult Survey

Location NE MIRAMAR RD. & I-805 intersection Survey Segment QCB Survey Area (1)  
 Surveyor ARIEL CHARTMAN Date 29 MAR 2016 Survey Week Number (1)  
 Survey Partner(s) DAVE & JUNG POWELL  
 Total Acres: 85 Portion Surveyed: 1 Acre Elevation: Max 3804 Min 3804

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>9:15</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>63° F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>10:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>64° F</u>

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

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

Surveyor WNE CHATMAN Segment # SURVEY AREA (1) Date: 29 FEB 2016

Comments:

~~1~~ 1 ACRE THAT COULD NOT BE ACCESSED ON PREVIOUS  
Day.

Plant Communities and Habitat Information:

~~SAME AS~~ NON-NATIVE GRASSES &  
FORBES

Host Plants Present:

Nectar Plants Present:

CRYPTANTHA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SE meadow rd + I-805 intersection Survey Segment QCB survey AREA (3)  
 Surveyor ALBERT CHATMAN Date 29 FEB 2016 Survey Week Number (1)  
 Survey Partner(s) DALE + JUNE POWELL  
 Total Acres: 85 Portion Surveyed: \_\_\_\_\_ Elevation: Max 300 ft. Min 700 ft.

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>69° F</u>
11:00	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>67° F</u>
12:00	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>71° F</u>
13:00	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>71° F</u>
14:00	<u>5%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>72° F</u>
		clear	patchy	overcast	drizzle	shower		
Stop 14:15	<u>5%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>72° F</u>

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

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



Surveyor GREG CATHMAN

Segment # SURVEY AREA (3)

Date: 29 FEB 2016

Comments:

\* NICE PATCHES OF PLANTAGO ALL ALONG ROAD ~~SE~~ SE  
OF MCHS Cemetery. GOOD NECTAR SOURCES NEARBY

Plant Communities and Habitat Information:

CHAMISE, RHUS, BUCKWHEAT, RHAMNUS,

NON-NATIVE GRASSES + FORBS

\* CRYPTOGAMIC SOILS WITH PLANTAGO!

Host Plants Present:

Plantago erecta, Castilleja erecta

Nectar Plants Present:

Cryptantha, Encelia, YORBA SALTA, BLUE DICKS, LASTHENIA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location Village Nursery Area

Survey Segment QCB Survey Area ~~2005~~ (5)

Surveyor DAVE CHATMAN

Date 29 Feb 2016

Survey Week Number (1)

Survey Partner(s) THE POWELL'S

Total Acres: 77 Portion Surveyed: \_\_\_\_\_

Elevation: Max 4000ft Min 4000ft

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>14:30</u>	<u>10%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>72°F</u>
<u>15:00</u>	<u>10%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>71°F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>15:15</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>6-8 mph</u>	<u>71°F</u>

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

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

Surveyor WES CHATMAN

Segment # SURVEY AREA (5)

Date: 29 FEB 2016

Comments: - NOMINAL HABITAT ALONG THIS SECTION OF AREAS -  
\* VERY LITTLE PLANTAGO IN OPEN AREAS ALONG ROAD  
NEAR VILLAGE NURSERY.

Plant Communities and Habitat Information: DEERWEED, CHAMISE, RHUS, BUCKWHEAT  
NON-NATIVE GRASSES + FORBES

Host Plants Present: Plantago erecta

Nectar Plants Present: Cryptantha, EUCELIA, BLUE RICKS

☐ Quino Sighting                      Date:                      GPS Location:

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



Quino Checkerspot General Form

Adult Survey

Location NORTH EAST OF LANDFILL Survey Segment NCB SURVEY AREA (5)  
 Surveyor GREG CHATMAN Date 01 MAR 2016 Survey Week Number (1)  
 Survey Partner(s) THE POWELL'S  
 Total Acres: 77 Portion Surveyed: \_\_\_\_\_ Elevation: Max 4004 Min 3804

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 9:30	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>68°F</u>
10:00	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>70°F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 11:00	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>74°F</u>

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

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

Surveyor GRET CHATMANSegment # 5 SURVEY AREA (5)Date: 01 MARCH 2016

## Comments:

~~\* HABITAT ALONG ROAD WEST OF LANDFILL~~  
~~BEHIND POWER PLANT~~

\* NOMINAL HABITAT ALONG EASTERN SIDE OF LANDFILL

## Plant Communities and Habitat Information:

CHAMISE, RHUS, BUCKWHEAT, YERBA SANTA,  
 RED WEED

## Host Plants Present:

PLANTAGO erecta - very little amount along  
 roads

## Nectar Plants Present:

YERBA SANTA, CRYPTANTHA, GOLDFIELDS, BLUE PICKS

☐ Quino Sighting

Date:

GPS Location:

## Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location WEST & SOUTH OF LANDFILL

Survey Segment QCB SURVEY AREA (B) (6)

Surveyor ALBERT CHITMAN

Date 6/MAY 2016 Survey Week Number (1)

Survey Partner(s) THE POWELL'S

Total Acres: 70 Portion Surveyed: \_\_\_\_\_

Elevation: Max 3904' Min 2604'

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>11:00</u>	<u>5</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>71° F</u>
<u>12:00</u>	<u>5</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>74° F</u>
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop <u>12:30</u>	<u>5</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>76° F</u>

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

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



Surveyor GREG CHATMAN

Segment # SURVEY AREA (6) Date: 01 MAR 2016

Comments:

\* GOOD HABITAT ALONG WESTERN SIDE OF LANDFILL  
- OPEN AREAS AND ACCESS ROADS WITH ~~WATER~~ ~~PLANT~~  
PLANTAGO

Plant Communities and Habitat Information:

CHAMISE, YERBA SANTA, RHUS,  
BUCKWHEAT, DEERWEED

\* CRYPTOGAMIC SOILS w/ Plantago

Host Plants Present:

Plantago erecta

Nectar Plants Present:

BLUE BUCKLES, CRYPTANTHA, LASTHENIA, YERBA SANTA  
ENCCELIA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

## Quino Checkerspot General Form

## Adult Survey

Location NEAR SOUTHERN TREATMENT PLANTSurvey Segment QCB SURVEY AREA (7)Surveyor GOEB CHAFFMANDate 01 MAR 2016Survey Week Number (1)Survey Partner(s) THE POWELL'STotal Acres: 69

Portion Surveyed: \_\_\_\_\_

Elevation: Max 3904ft Min 2604ft

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>12:30</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>80° F</u>
<u>13:00</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>79° F</u>
<u>14:00</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>78° F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>15:00</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>75° F</u>

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

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

Surveyor GREG CHATMAN

Segment # SURVEY AREA (7)

Date: 01 MAR 2016

Comments:

SK GOOD PATCHES OF PLANTAGO NORTH OF TREATMENT FACILITY.

Plant Communities and Habitat Information:

CHAMISE, YERBA SANTA, RHUS, BUCKWHEAT  
DEERWEED

Host Plants Present:

Plantago erecta

Nectar Plants Present:

YERBA SANTA, CRYPTANTHA, BLUE DICKS, LASTHENIA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



Quino Checkerspot General Form

Adult Survey

Location N.W. of MCAB pathways Survey Segment QCD survey area (4)  
 Surveyor GREG CHAFFMAN Date 01 MAR 2016 Survey Week Number (1)  
 Survey Partner(s) THE POWERS  
 Total Acres: 28 ACRES Portion Surveyed: \_\_\_\_\_ Elevation: Max 400 ft Min 280 ft

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>16:00</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>72° F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>17:00</u>	<u>15%</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>4-6 mph</u>	<u>69° F</u>

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

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

Surveyor GOEL CHITMAN Segment # SURVEY AREA (4) Date: 01 MAR 2016

Comments:

\* GOOD PATCHES OF PLANTAGO JUST SOUTH OF  
MIRAMAR RD.

Plant Communities and Habitat Information: CHAMISE, RHUS, BUCKWHEAT, DEERWEED

\* CRYPTO GAMIC SOILS w/ PLANTAGO

Host Plants Present: PLANTAGO erecta

Nectar Plants Present: Lasthenia, cryptantha, YERBA SANTA, BLUE ACKERS.

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

(38)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 10/12 Site Visit Number 1  
 Site Name Salina 8 Site Location La Grana  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1'25'

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1430	clear	100 % cloud cover	hazy	1/3	70°
1555	clear	50 % cloud cover	hazy	2/4	70°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Anthriscum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:





(36)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 2/10/16 Site Visit Number 172  
 Site Name Maf 5 Site Location Mica area  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:15

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>0800</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>2/4</u>	<u>70°</u>
<u>0800</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>2/4</u>	<u>75°</u>
<u>1100</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>4/7</u>	<u>75°</u>
<u>1130</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>4/6</u>	<u>70°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources.

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





(37)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 10/16 Site Visit Number 42  
 Site Name Map 6 Site Location Chaparral  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1:50

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1200	<u>clear</u>	% cloud cover	hazy	5/8	78°
1300	<u>clear</u>	% cloud cover	hazy	2/4	73°
1350	<u>clear</u>	% cloud cover	hazy	5/7	74°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

(37)

[illegible]

34

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 3/9/16 Site Visit Number 1  
 Site Name Map 3 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4511

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1110	<del>clear</del>	% cloud cover	hazy	3/5	75°
1155	<del>clear</del>	% cloud cover	hazy	3/5	71°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources.

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:



34

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyniula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiope</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	<b>Lycaenidae (Hairstreaks)</b>
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funealis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

(27)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 2/10/16 Site Visit Number 1+2  
 Site Name Map 5 Site Location Map 5  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:15

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0900	clear	% cloud cover	hazy	4/7	70
	clear	% cloud cover	hazy	4/7	70
1100	clear	% cloud cover	hazy	4/7	70
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

~~Plantago erecta~~, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

25

[illegible]



(28)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 3/16/16 Site Visit Number 1+2  
 Site Name Chap 6 Site Location Marathon  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1:58

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>12:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>		
<u>12:30</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>2/4</u>	<u>23°</u>
<u>1:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

**COMMENT:**



(29)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 3/10/16 Site Visit Number 1  
 Site Name 1142 Site Location Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.25

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>1130</u>	clear	<u>100%</u> cloud cover	<u>hazy</u>	<u>12</u>	<u>70</u>
<u>1155</u>	clear	<u>100%</u> cloud cover	<u>hazy</u>	<u>2</u>	<u>70</u>
	clear	% cloud cover	hazy	-	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources,

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

**COMMENT:**





(24)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/9/16 Site Visit Number 1 (New)  
 Site Name Maui Site Location Mauka  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1:15

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0915	<del>clear</del>	% cloud cover	hazy	113	67°
1000	clear	% cloud cover	hazy	315	70°
1100	<del>clear</del>	% cloud cover	hazy	114	75°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





(25)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/16/12 Site Visit Number 1  
 Site Name Map 2 Site Location Mission  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4.5

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1110	<del>clear</del>	% cloud cover	hazy	3/5	75°
1155	<del>clear</del>	% cloud cover	hazy	3/5	71°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:



## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 2/2/16 Site Visit Number 4 (New)  
 Site Name Map 1 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1'45'

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>0915</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>13</u>	<u>67°</u>
<u>1000</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>25</u>	<u>70°</u>
<u>1100</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>24</u>	<u>75°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources,

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 3/8/16 Site Visit Number 2  
 Site Name Map 2 Site Location Mesa m. cr.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2'45"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1045	<del>clear</del>	% cloud cover	hazy	1/3	65°
1200	<del>clear</del>	% cloud cover	hazy	3/5	66°
1340	<del>clear</del>	% cloud cover	hazy	4/6	66°
1430	<del>clear</del>	% cloud cover	hazy	5/8	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

131

[illegible]



32

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jun Powell Date 3/8/16 Site Visit Number 2  
 Site Name Map 3 Site Location Miravalles  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:50"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1340	<del>clear</del>	% cloud cover	hazy	6/9	64°
1400	<del>clear</del>	% cloud cover	hazy	4/6	70°
1500	<del>clear</del>	% cloud cover	hazy	2/4	71°
1630	<del>clear</del>	% cloud cover	hazy	3/6	62°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

(32)

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

(21)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/8/16 Site Visit Number 2  
 Site Name Map 1 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1:30

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
07:15	clear	% cloud cover	hazy	7/14	65
07:45	clear	% cloud cover	hazy	12	63
10:45	clear	% cloud cover	hazy	15	62
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:





(22)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 3/8/16 Site Visit Number 2  
 Site Name Map 2 Site Location Marathon  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1045	<del>clear</del>	% cloud cover	hazy	1/2	65°
1200	<del>clear</del>	% cloud cover	hazy	3/5	66°
1300	<del>clear</del>	% cloud cover	hazy	4/6	65°
1330	<del>clear</del>	% cloud cover	hazy	5/8	64°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

**COMMENT:**





(23)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/2/16 Site Visit Number 2  
 Site Name Map 2 Site Location Mucamar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:50"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
10:40	<u>clear</u>	% cloud cover	hazy	6/9	67°
11:00	<u>clear</u>	% cloud cover	hazy	4/6	70°
11:20	<u>clear</u>	% cloud cover	hazy	2/6	71°
16:20	<u>clear</u>	% cloud cover	hazy	2/6	62°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:



(26)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 2/6/96 Site Visit Number 2  
 Site Name Mt 4 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3 1/4

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>12:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>4/6</u>	<u>71°</u>
<u>13:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>4/6</u>	<u>71°</u>
<u>14:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>5/7</u>	<u>68°</u>
<u>15:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>3/6</u>	<u>67°</u>
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources,

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:



26

Nymphalidae (Brush Footed Butterflies)	Lycanidae (Blues)
Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorquini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)	Hemiargus ceraunus gyas (Edward's Blue)
Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acmon (Acmon Blue)
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiopa (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylytta Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lycenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atilides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophys perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfyn)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Papilionidae (Swallowtails)
Danaus gilippus (Queen)	Papilio eurymedon (Pale Swallowtail)
Danaus plexippus (Monarch)	Papilio rutulus (Western Tiger Swallowtail)
	Papilio zelicaon (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
Erynnyx funerals (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Helioptes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
Hylephila phylaenus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordti (Harford's Sulfur)
	Euchloe hyantis lotia (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwarf Yellow)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
Riodinidae (Metalmarks)	
Apodemia mormo virguliti (Behr's Metalmark)	
Calephelis wrighti (Wright's Metalmark)	
Satyridae (Satyrids)	
Coenonympha californica (California Ringlet)	
OTHER:	

(39)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 3/8/16 Site Visit Number 2  
 Site Name Map 1 Site Location Mission  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1:35

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0915	clear	% cloud cover	hazy	2/11	61.0
1000	clear	% cloud cover	hazy	13	65
1045	clear	% cloud cover	hazy	13	65.0
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

30

[illegible]



(35)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Jon Powell Date 3/9/16 Site Visit Number 2  
 Site Name Map 4 Site Location \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2.45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1215	<del>clear</del>	% cloud cover	hazy	4/6	71°
1300	<del>clear</del>	% cloud cover	hazy	4/6	71°
1400	<del>clear</del>	% cloud cover	hazy	5/7	68°
1500	clear	% cloud cover	<del>hazy</del>	2/4	68°
1600	clear	% cloud cover	<del>hazy</del>	3/6	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

**COMMENT:**



(39)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 2/13/16 Site Visit Number 3  
 Site Name Maf 1 Site Location Mina...  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:15

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
9:30	clear	% cloud cover	hazy	0/0	65.0
10:00	clear	% cloud cover	hazy	2/4	70.0
10:30	clear	% cloud cover	hazy	3/5	69.0
11:00	clear	% cloud cover	hazy	5/5	60.0
11:30	clear	% cloud cover	hazy		
12:00	clear	% cloud cover	hazy		
12:30	clear	% cloud cover	hazy		
13:00	clear	% cloud cover	hazy		
13:30	clear	% cloud cover	hazy		
14:00	clear	% cloud cover	hazy		
14:30	clear	% cloud cover	hazy		
15:00	clear	% cloud cover	hazy		
15:30	clear	% cloud cover	hazy		
16:00	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:





40

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/2/16 Site Visit Number 3  
 Site Name Map 4 Site Location Mesa Verde  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2/30"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
10:00	clear	% cloud cover	hazy	5/12	60.5
11:00	clear	% cloud cover	hazy	7/12	60.5
12:00	clear	% cloud cover	hazy	7/10	60.5
13:00	clear	% cloud cover	hazy	6/10	60.5
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:



## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: Dale Powell Date: 3/14/16 Site Visit Number: 3  
 Site Name: Map 4 Site Location: Mine Run  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.15

Time (24 hr)	Wind	Temp (°F)
13:15	clear 50% cloud cover hazy	70
14:00	clear 70% cloud cover hazy	72
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

(41)

Nymphalidae (General Wooded Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basillarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides nylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe-Fritillary)	
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	
<i>Vanessa annabella</i> (West Coast Lady)	
<i>Vanessa atalanta</i> (Red Admiral)	
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Lycaenidae (Hairstreaks)
<i>Danaus gilippus</i> (Queen)	<i>Altides halesus</i> (Great Purple Hairstreak)
<i>Danaus plexippus</i> (Monarch)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown-Elfin)
	<i>Strymon melinus</i> (Gray Hairstreak)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopsis ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
OTHER:	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)



## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/15/16 Site Visit Number 3  
 Site Name Map 3 Site Location M. W. & M. S.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.35

Time (2 hrs)	Wind	Temp (F)
1320	clear % cloud cover hazy	75°
1400	clear % cloud cover hazy	74°
1455	clear % cloud cover hazy	70°
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Anitrrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

Nymphalidae (Buckeyes, Checkerspot, etc.)		Lycaenidae (Blues)	
Euphydryas editha quino (Quino Checkerspot)			Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)			Celastrina ladon echo (Echo Blue)
Basilarchia lorquini (Lorquin's Admiral)			Everes amytula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)			Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)			Hemiargus ceraunus gyas (Edward's Blue)
Euphydryas chalcedona hennel (Henne's Checkerspot)			Icarcia acmon (Acmon Blue)
	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
Nymphalis antiopa (Mourning Cloak)			Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)			Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)			
Polygonia satyrus (Satyr Anglewing)			
Speyeria callippe (Callippe Fritillary)			
Thessalia leanira wrighti (Leanira Checkerspot)			
Vanessa annabella (West Coast Lady)			
Vanessa atalanta (Red Admiral)			
Vanessa cardui (Painted Lady)			
Vanessa virginiensis (Virginia Lady)			
Danaus (Milkweed Butterflies)		Lycaenidae (Hairstreaks)	
Danaus gilippus (Queen)			Atlides halesus (Great Purple Hairstreak)
Danaus plexippus (Monarch)			Callophrys perplexa = dumetorum (Perplexing Hairstreak)
			Incisalia augustinus (Brown-Elfin)
			Strymon melinus (Gray Hairstreak)
Papilionidae (Swallowtails)		Papilionidae (Swallowtails)	
			Papilio eurymedon (Pale Swallowtail)
			Papilio rutubus (Western Tiger Swallowtail)
			Papilio zelicaon (Anise Swallowtail)
Hesperiidae (Milkweed Butterflies)		Hesperiidae (Milkweed Butterflies)	
	Erynnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)
Heliopetes ericetorum (Great White Skipper)			Anthocharis lanceolata (Grinnell's Marble)
Hylephila phyleus (Fiery Skipper)			Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)			Artogeia rapae (Cabbage White)
			Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
			Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
			Nathalis iole (Dwarf Yellow)
			Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
Riodinidae (Metalmarks)		Riodinidae (Metalmarks)	
			Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrighti (Wright's Metalmark)
Saturniidae (Saturnids)		Saturniidae (Saturnids)	
			Coenonympha californica (California Ringlet)



Nymphalidae (Brush-footed Butterflies)	Lycaenidae (Gossamer-winged Butterflies)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarhchia laquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown-Elfin)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
<b>Danaidae (Milkweed Butterflies)</b>	
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutubus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae (Gulfwing Butterflies)</b>	
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Protoparce (Metalmark Butterflies)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Neonympha (Ringlet Butterflies)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: Dale A Powell Date: 3/13/16 Site Visit Number: 3  
 Site Name: Map Site Location: Miner  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:30

Time (24hr)	Weather	% cloud cover	hazy		
1445	clear	15	hazy	5/8	670
1500	clear	15	hazy	4/5	700
1500	clear	15	hazy	3/6	620
1600	clear	15	hazy	3/6	620
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:



50

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: Don Powell Date: 3/15/16 Site Visit Number: 3  
 Site Name: Map 6 Site Location: M. w. m. w.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:15

Time	Weather	% cloud cover	hazy	Temp	Humidity
0915	clear	15	hazy	1/3	64°
1000	clear	% cloud cover	hazy	3/5	67°
1100	clear	% cloud cover	hazy	1/3	74°
1130	clear	% cloud cover	hazy	4/6	71°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

50

Nymphalidae (Browns and Blues)		Lycaenidae (Blues)	
<i>Euphydryas editha quino</i> (Quino Checkerspot)		<i>Brephidium exilis</i> (Pygmy Blue)	
<i>Adelpha bredowii californica</i> (California Sister)		<i>Celastrina ladon echo</i> (Echo Blue)	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)		<i>Everes amyntula</i> (Western Tailed Blue)	
<i>Charidryas gabbii</i> (Gabb's Checkerspot)		<i>Glaucopsyche lygdamus australis</i> (Southern Blue)	
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)		<i>Hemiargus ceraunus gyas</i> (Edward's Blue)	
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)		<i>Icarcia acmon</i> (Acmon Blue)	
<i>Junonia coenia</i> (Buckeye)		<i>Leptotes marina</i> (Marine Blue)	
<i>Nymphalis antiopa</i> (Mourning Cloak)		<i>Philotes sonorensis</i> (Sonoran Blue)	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>Plebejus melissa</i> (Melissa Blue)	
<i>Phycoides mylitta</i> (Mylitta Crescent)			
<i>Polygonia satyrus</i> (Satyr Angletwing)			
<i>Speyeria callippe</i> (Callippe Fritillary)			
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)		<i>Atlides halesus</i> (Great Purple Hairstreak)	
<i>Vanessa annabella</i> (West Coast Lady)		<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Incisalia angustinus</i> (Brown-Elfin)	
<i>Vanessa cardui</i> (Painted Lady)		<i>Strymon melinus</i> (Gray Hairstreak)	
<i>Vanessa virginiensis</i> (Virginia Lady)			
Danaidae (Swallowtails)		Papilionidae (Swallowtails)	
<i>Danaus gilippus</i> (Queen)		<i>Papilio eurymedon</i> (Pale Swallowtail)	
<i>Danaus plexippus</i> (Monarch)		<i>Papilio rutubus</i> (Western Tiger Swallowtail)	
		<i>Papilio zelicaon</i> (Anise Swallowtail)	
Hesperiidae (Mantids)		Hesperiidae (Mantids)	
<i>Erynnis funeralis</i> (Funeral Dusky-wing)		<i>Anthocharis cethura</i> (Felder's Orangetip)	
<i>Heliopetes ericetorum</i> (Great White Skipper)		<i>Anthocharis lanceolata</i> (Grinnell's Marble)	
<i>Hylephila phyleus</i> (Fiery Skipper)		<i>Anthocharis sara</i> (Sara Orangetip)	
<i>Pyrgus albescens</i> (Checkered Skipper)		<i>Artogeia rapae</i> (Cabbage White)	
		<i>Colias eurytheme</i> (Alfalfa Butterfly)	
		<i>Colias harfordis</i> (Harford's Sulfur)	
		<i>Euchloe hyantis lotta</i> (Southern Marble)	
		<i>Eurema nicippe</i> (Sleepy Orange)	
		<i>Nathalis iole</i> (Dwarf Yellow)	
		<i>Pontia protodice</i> (Common White)	



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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: Dale Powell Date: 3/15/16 Site Visit Number: 3  
 Site Name: Map 5 Site Location: Mineral  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.00

Time	Wind	Slr	Wind	Temp (F)
1200	clear	% cloud cover	hazy	4/6 74°
1300	clear	% cloud cover	hazy	5/7 77°
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	
	clear	% cloud cover	hazy	

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Anthrimum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:



(52)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 3/15/16 Site Visit Number 3  
 Site Name Map 3 Site Location Mudmar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1'35"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>1320</u>	<del>clear</del>	% cloud cover	hazy	<u>8/8</u>	<u>75°</u>
<u>1400</u>	<del>clear</del>	% cloud cover	hazy	<u>4/6</u>	<u>74°</u>
<u>1455</u>	<del>clear</del>	% cloud cover	hazy	<u>5/7</u>	<u>70°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Casilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





49

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: Dale Powell Date: 3/15/16 Site Visit Number: 3  
 Site Name: Map 5 Site Location: Mine Run  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1'00"

Time (24 hrs)	Skv	Wind	Temp (F)
15:00	clear % cloud cover hazy	56	74°
15:30	clear % cloud cover hazy	57	77°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

(44)

[illegible]

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: S. Powell Date: 3/15/16 Site Visit Number: 3  
 Site Name: Map 6 Site Location: M. W. M. M. V.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:15

Time	Weather	% cloud cover	Notes
07:5	clear	15	hazy
10:00	clear	% cloud cover	hazy
11:00	clear	% cloud cover	hazy
12:00	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy
	clear	% cloud cover	hazy

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

[illegible]



## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/14/06 Site Visit Number 3  
 Site Name Map 6 Site Location Barro Colorado  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:30

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1430	clear	40 % cloud cover	hazy	5/7	68°
1500	clear	40 % cloud cover	hazy	4/6	70°
1600	clear	50 % cloud cover	hazy	3/6	68°
1700	clear	30 % cloud cover	hazy	3/5	68°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Anthriscum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

Nymphalidae (Brush Footed Butterflies)	Lycanidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycanidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus erictorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo vireulii</i> (Behr's Metalmark)

Satyridae (Satyrids)

*Commonlypha californica* (California Fungus)

(49)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor: Dale Powell Date: 3/1/16 Site Visit Number:           
 Site Name: Map Site Location: M. 10.4 km N  
 Total Acres:          Total Acres Surveyed:          Elevation: Max          Min           
 Hours Surveyed: 2:30

Time	Weather	Cloud Cover	Humidity	Wind	Temp	Notes
1:00	clear	10% cloud cover	hazy			
1:20	clear	10% cloud cover	hazy			
1:40	clear	10% cloud cover	hazy			
1:50	clear	10% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush-footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemitarus ceratimus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Aitides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumeretorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
<b>Danainae (Milkweed Butterflies)</b>	
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutubus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae (Gulf and Texas Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orange-tip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orange-tip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Symphyla (Sawflies)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



(48)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 2/14/16 Site Visit Number 3  
 Site Name Map 4 Site Location Marathon  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.5

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1315	clear	% cloud cover	hazy	3/6	70°
1400	clear	% cloud cover	hazy	3/6	72°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Anthriscum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

[illegible]

(53)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jay Powell Date 3/20/16 Site Visit Number 4  
 Site Name Map 3 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:00"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1000	clear	70 % cloud cover	hazy	1/3	61°
1030	clear	20 % cloud cover	hazy	1/3	61°
1100	clear	% cloud cover	hazy	1/3	61°
1200	clear	% cloud cover	hazy	2/5	75°
1300	clear	% cloud cover	hazy	3/4	76°
1400	clear	% cloud cover	hazy	3/5	76°
1500	clear	% cloud cover	hazy	4/6	76°
1600	clear	% cloud cover	hazy	3/5	77°
1700	clear	% cloud cover	hazy	5/8	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





(54)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 3/27/16 Site Visit Number 4  
 Site Name Map 3, 4, 5 Site Location Highway 1  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
15:00	clear	5 % cloud cover	hazy	3/6	57°
15:30	clear	5 % cloud cover	hazy	2/4	53°
16:00	clear	5 % cloud cover	hazy	3/5	50°
16:30	clear	5 % cloud cover	hazy	4/7	52°
17:00	clear	5 % cloud cover	hazy	4/8	50°
17:00	clear	5 % cloud cover	hazy	4/6	52°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:



55

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Jun Powell Date 3/22/16 Site Visit Number 4  
 Site Name Maf 5 Site Location Micromer  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1000	clear	60 % cloud cover	hazy	6/7	64°
1100	clear	35 % cloud cover	hazy	5/9	62°
1200	clear	40 % cloud cover	hazy	5/6	70°
1300	clear	15 % cloud cover	hazy	4/6	72°
1345	clear	10 % cloud cover	hazy	5/9	70°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

**COMMENT:**

55

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<del>HT</del> <i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celustrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	Lycaenidae (Hairstreaks)
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<del>HT</del> <i>Erynnis funerals</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<del>HT</del> <i>Hylephila phyleus</i> (Fiery Skipper)	<del>HT</del> <i>Anthocharis sara</i> (Sara Orangetip)
<del>HT</del> <i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurycle</i> (California Dogface)
	Riodinidae (Metalmarks)
	<del>HT</del> <i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	



(56)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Jon Powell Date 3/22/16 Site Visit Number 4  
 Site Name Map 6 Site Location Mirawap  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.5

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1400	clear	5 % cloud cover	hazy	5/8	67°
1515	clear	15 % cloud cover	hazy	6/9	68°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

**COMMENT:**



(57)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 3/25/16 Site Visit Number 4  
 Site Name Map 1 + 2 Site Location Muir  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1200	clear	70% cloud cover	hazy	10	80
1230	clear	80% cloud cover	hazy	10	80
1300	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
1245	clear	% cloud cover	hazy		75
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

**COMMENT:**





(58)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/26/16 Site Visit Number 4  
 Site Name Map 3 Site Location Mojave  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:5"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1255	<del>clear</del>	% cloud cover	hazy	3/4	75°
1400	<del>clear</del>	% cloud cover	hazy	3/5	76°
1500	<del>clear</del>	% cloud cover	hazy	4/6	75°
1600	<del>clear</del>	% cloud cover	hazy	3/5	72°
1700	<del>clear</del>	% cloud cover	hazy	5/8	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

58

[illegible]

(59)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/27/16 Site Visit Number 4  
 Site Name Maps 3, 4, 5 Site Location Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:00

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
1200	clear 65 % cloud cover hazy	3/6	67°
1300	clear 10 % cloud cover hazy	2/4	67°
1400	clear 5 % cloud cover hazy	2/4	67°
	clear 15 % cloud cover hazy	4/6	67°
1500	clear 15 % cloud cover hazy	4/6	67°
1700	clear 5 % cloud cover hazy	4/6	62°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources.

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

[illegible]



6

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/22/16 Site Visit Number 4  
 Site Name Map 5 Site Location Myrauear  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:45

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
	clear 67 % cloud cover hazy		70
	clear 50 % cloud cover hazy	10	68
	clear 40 % cloud cover hazy	5/7	70
	clear 10 % cloud cover hazy	4/6	75
	clear 10 % cloud cover hazy		75
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:



(61)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/22/16 Site Visit Number 4  
 Site Name Mag Site Location Mirador  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1.33

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>1400</u>	clear	<u>5</u> % cloud cover	hazy	<u>5.7</u>	<u>52</u>
<u>1515</u>	clear	<u>0</u> % cloud cover	hazy	<u>6.9</u>	<u>52</u>
	clear	<u>0</u> % cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

61

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycanidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopteryx lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiope</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calophelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE RES. - SAN DIEGO RIVER MON Survey Segment SURVEY AREA (8)  
 Surveyor GREG CHATMAN Date 30 MAR 2016 Survey Week Number (5)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 09:30	0	clear patchy overcast drizzle shower	2-4 mph	61°F
10:00	0	clear patchy overcast drizzle shower	2-4 mph	63°F
11:00	0	clear patchy overcast drizzle shower	3-5 mph	68°F
12:00	15%	clear patchy overcast drizzle shower	2-5 mph	67°F
13:00	20%	clear patchy overcast drizzle shower	2-6 mph	68°F
14:00	20%	clear patchy overcast drizzle shower	2-5 mph	67°F
Stop 15:45	25%	clear patchy overcast drizzle shower	3-5 mph	67°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)	1	
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	15	X
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	6	X
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	1		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	1	X			
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHAMMAN

Segment # SURVEY AREA (8)

Date: 30 MARCH 2016

Comments:

- \* *Apodemis mormo* in peak flight (Lots of fresh females)
- \* Possible start of 2nd brood of *Anthocharis sara*  
(much larger individuals)

Plant Communities and Habitat Information:

Host Plants Present: *Plantago erecta* + *Castilleja erecta*

Nectar Plants Present: *Buckwheat* + *Black-sage* now blooming

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SOUTH TREATMENT FACILITY Survey Segment SURVEY AREA (4)  
 Surveyor GREG CHAMMAN Date 31 MAR 2016 Survey Week Number (5)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>09:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>1-2 mph</u>	<u>61° F</u>
<u>10:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>1-2 mph</u>	<u>64° F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>67° F</u>
<u>12:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>72° F</u>
<u>13:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>5-7 mph</u>	<u>74° F</u>
<u>14:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>74° F</u>
Stop <u>15:30</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>5-7 mph</u>	<u>73° F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	<u>1</u>	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	<u>8</u>		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	<u>1</u>		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	<u>1</u>		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	<u>2</u>		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>1</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <i>Adelpha bradlowii californica</i> ( <u>1</u> )		
<i>Erynnis propertius</i> (Propertius Duskywing)			<i>(California sister)</i>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atlides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Ellin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Lisa Chaman Segment # SURVEY AREA (4) Date: 31 MARCH 2016

Comments:

\* BUCKEYE'S IN PEAK FLIGHT

Plant Communities and Habitat Information:

Host Plants Present: Plantago erecta + Castilleja exerta

Nectar Plants Present: Buckwheat + Black sage blooming now!

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



Quino Checkerspot General Form

Adult Survey

Location MISSION GORGE AREA Survey Segment SURVEY AREA (7)  
 Surveyor LOREL CHAPMAN Date 02 APR 2016 Survey Week Number (5)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	71°F
11:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	76°F
12:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	81°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 13:00	0	clear	patchy	overcast	drizzle	shower	3-5 mph	83°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	3	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	3	+	<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	12	+
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)	8		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	2		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	1		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atlides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHATMAN

Segment # SURVEY AREA (7) Date: 02 APRIL 2016

Comments:

\* *Apodemia mormo* in peak flight

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* & *Castilleja erecta*

Nectar Plants Present:

Buckwheat & Black sage now blooming!

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

(62)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 2-14-15 Site Visit Number 5  
 Site Name 170 Site Location Miramar  
 Total Acres:        Total Acres Surveyed:        Elevation: Max        Min         
 Hours Surveyed: 2:45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0915	clear	60 % cloud cover	hazy	25	65°
1000	clear	% cloud cover	hazy	25	63°
1030	clear	% cloud cover	hazy	26	70°
1100	clear	% cloud cover	hazy	25	55°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





(63)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 3/27/16 Site Visit Number 5  
 Site Name Mt P3 Site Location Mica mar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1215	clear	% cloud cover	hazy	3/5	70°
1305	clear	15 % cloud cover	hazy	2/4	70°
1400	clear	% cloud cover	hazy	2/4	70°
1500	clear	% cloud cover	hazy	2/4	70°
1600	clear	% cloud cover	hazy	3/5	70°
1715	clear	% cloud cover	hazy	2/5	60°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar-sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

63

<b>Nymphalidae</b> (Brush Footed Butterflies)		<b>Lycaenidae</b> (Blues)	
<i>Euphydryas editha quino</i> (Quino Checkerspot)		<i>Brephidium exilis</i> (Pygmy Blue)	
<i>Adelpha bredowii californica</i> (California Sister)		<i>Celastrina ladon echo</i> (Echo Blue)	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)		<i>Everes amyntula</i> (Western Tailed Blue)	
<i>Charidryas gabbii</i> (Gabb's Checkerspot)		<i>Glaucopsyche lygdamus australis</i> (Southern Blue)	
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)		<i>Hemiargus ceraunus gyas</i> (Edward's Blue)	
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)		<i>Icarcia acmon</i> (Acmon Blue)	
<i>Junonia coenia</i> (Buckeye)		<i>Leptotes marina</i> (Marine Blue)	
<i>Nymphalis antiopa</i> (Mourning Cloak)		<i>Philotes sonorensis</i> (Sonoran Blue)	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>Plebejus melissa</i> (Melissa Blue)	
<i>Phycoides nylitta</i> (Mylitta Crescent)			
<i>Polygonia satyrus</i> (Satyr Anglewing)		<b>Lycaenidae</b> (Hairstreaks)	
<i>Speyeria callippe</i> (Callippe Fritillary)		<i>Atilides halesus</i> (Great Purple Hairstreak)	
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)		<i>Callophyrs perplexa = dumetorum</i> (Perplexing Hairstreak)	
<i>Vanessa annabella</i> (West Coast Lady)		<i>Incisalia augustinus</i> (Brown Elfyn)	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Strymon melinus</i> (Gray Hairstreak)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)			
<b>Danaidae</b> (Milkweed Butterflies)		<b>Papilionidae</b> (Swallowtails)	
<i>Danaus gilippus</i> (Queen)		<i>Papilio eurymedon</i> (Pale Swallowtail)	
<i>Danaus plexippus</i> (Monarch)		<i>Papilio rutulus</i> (Western Tiger Swallowtail)	
		<i>Papilio zelicaon</i> (Anise Swallowtail)	
<b>Hesperidae</b>		<b>Pieridae</b> (Whites and Orangetips)	
<i>Erynnis funeralis</i> (Funeral Dusky-wing)		<i>Anthocharis cethura</i> (Felder's Orangetip)	
<i>Heliopetes ericetorum</i> (Great White Skipper)		<i>Anthocharis lanceolata</i> (Grinnell's Marble)	
<i>Hylephila phyleus</i> (Fiery Skipper)		<i>Anthocharis sara</i> (Sara Orangetip)	
<i>Pyrgus albescens</i> (Checkered Skipper)		<i>Artogeia rapae</i> (Cabbage White)	
		<i>Colias eurytheme</i> (Alfalfa Butterfly)	
		<i>Colias harfordii</i> (Harford's Sulfur)	
		<i>Euchloe hyantis lotta</i> (Southern Marble)	
		<i>Eurema nicippe</i> (Sleepy Orange)	
		<i>Nathalis iole</i> (Dwarf Yellow)	
		<i>Phoebeis sennae</i> (Cloudless sulfur)	
		<i>Pontia protodice</i> (Common White)	
		<i>Zerene eurydice</i> (California Dogface)	
		<b>Riodinidae</b> (Metalmarks)	
		<i>Apodemia mormo virgulti</i> (Behr's Metalmark)	
		<i>Calephelis wrighti</i> (Wright's Metalmark)	
		<b>Satyridae</b> (Satyrids)	
		<i>Coenonympha californica</i> (California Ringlet)	
<b>OTHER:</b>			

(64)

Surveyor Dale Powell Date 2/29/16 Site Visit Number 5  
 Site Name Map 3 Site Location Wigwag  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1'25"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1100	clear	20 % cloud cover	hazy	3/5	68°
1225	clear	10 % cloud cover	hazy	2/4	69°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

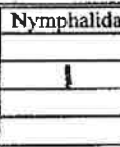
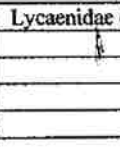
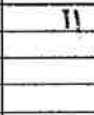
Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

(64)

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
 <i>Euphydryas editha quino</i> (Quino Checkerspot)	 <i>Brevithidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	 <i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	



(65)

Surveyor Dale Powell Date 2/10/16 Site Visit Number 5  
 Site Name Mt. 4+5 Site Location 117-11-11-11  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2' 45"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1245	clear	15 % cloud cover	hazy	46	72°
1300	clear	20 % cloud cover	hazy	51	71
1330	clear	25 % cloud cover	hazy	47	69
1400	clear	35 % cloud cover	hazy	51	69
1530	clear	40 % cloud cover	hazy	51	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

65

[illegible]

(66)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/1/16 Site Visit Number 5  
 Site Name Map 5 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3/00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>1030</u>	<del>clear</del>	% cloud cover	hazy	<u>1/2</u>	<u>66°</u>
<u>1130</u>	<del>clear</del>	% cloud cover	hazy	<u>2/4</u>	<u>69°</u>
<u>1200</u>	<del>clear</del>	% cloud cover	hazy	<u>3/6</u>	<u>71°</u>
	<del>clear</del>	% cloud cover	hazy	<u>5/7</u>	<u>71°</u>
<u>1330</u>	<del>clear</del>	% cloud cover	hazy	<u>5/7</u>	<u>72°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:





(67)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/1/16 Site Visit Number 5  
 Site Name Map 6 Site Location Mesa Verde  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 45"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>1245</u>	<del>clear</del>	% cloud cover	<u>hazy</u>	<u>5/9</u>	<u>68</u>
<u>1430</u>	<del>clear</del>	% cloud cover	<u>hazy</u>	<u>5/2</u>	<u>70°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycanidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycanidae (Hairstreaks)</b>
<i>Thestalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atilides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Caltophyrs perplexa = dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
<b>Danaidae (Milkwed Butterflies)</b>	<b>Papilionidae (Swallowtails)</b>
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

(6.8)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 3/27/16 Site Visit Number 5  
 Site Name Maf3 Site Location Mira mar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 8:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
08:15	clear	60 % cloud cover	hazy	1/3-	65°
10:00	clear	25 % cloud cover	hazy	0/0	68°
11:00	clear	% cloud cover	hazy	3/6	70°
12:00	clear	% cloud cover	hazy	3/5	70°
13:00	clear	15 % cloud cover	hazy	2/4	74°
14:00	clear	% cloud cover	hazy	2/4	76°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
17:15	clear	% cloud cover	hazy	3/5	69°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiops</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	<b>Lycaenidae (Hairstreaks)</b>
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Calliphrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurycle</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgultii</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



(69)

Surveyor Dan Powell Date 3/29/16 Site Visit Number 5  
 Site Name Map 3 Site Location Miravaca  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 1'25"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1100	clear	20 % cloud cover	hazy	3/5	67.0
1225	clear	10 % cloud cover	hazy	2/4	63.0
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

59

[illegible]

(71)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Sue Powell Date 4/1/16 Site Visit Number 5  
 Site Name MafS Site Location Mower  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1030	clear	% cloud cover	hazy	1/3	66°
1100	clear	% cloud cover	hazy	2/4	68°
1200	clear	% cloud cover	hazy	3/6	71°
1300	clear	% cloud cover	hazy	5/7	71°
1400	clear	% cloud cover	hazy	5/7	72°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

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Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilaria lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiarctus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	Lycaenidae (Hairstreaks)
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Styrmon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	



(72)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Don Powell Date 4/1/16 Site Visit Number 5  
 Site Name Mac 6 Site Location Mexico  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4.5

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1345	<u>clear</u>	% cloud cover	hazy	<u>5/6</u>	<u>58</u>
1430	<u>clear</u>	% cloud cover	hazy	<u>5/6</u>	<u>58</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla.

\*20 second period, mph

COMMENT:

72)

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	Lycaenidae (Hairstreaks)
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophyrs perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch).	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeratis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotia</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemus mormo virgulit</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

(70)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 3/29/16 Site Visit Number 5  
 Site Name Mesa 4-5 Site Location Pinon Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>12:45</u>	clear	<u>15</u> % cloud cover	<u>hazy</u>	<u>4/6</u>	<u>72°</u>
<u>1:00</u>	clear	<u>20</u> % cloud cover	<u>hazy</u>	<u>5/8</u>	<u>70°</u>
<u>1:10</u>	clear	<u>25</u> % cloud cover	<u>hazy</u>	<u>4/7</u>	<u>69°</u>
<u>1:30</u>	clear	<u>25</u> % cloud cover	<u>hazy</u>	<u>5/8</u>	<u>68°</u>
<u>1:50</u>	clear	<u>40</u> % cloud cover	<u>hazy</u>	<u>5/8</u>	<u>67°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilaria lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiope</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	<b>Lycaenidae (Hairstreaks)</b>
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgultii</i> (Behr's Metalmark)
	<i>Calephelis wrightii</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE RES. / SAN DIEGO RIVER AREA'S Survey Segment SURVEY AREA (B)  
 Surveyor GAEL CHATMAN Date 04 APR 2016 Survey Week Number (6)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	0	clear patchy overcast drizzle shower	3-5 mph	76°F
11:00	0	clear patchy overcast drizzle shower	3-6 mph	79°F
12:00	0	clear patchy overcast drizzle shower	3-6 mph	81°F
13:00	0	clear patchy overcast drizzle shower	4-6 mph	83°F
14:00	0	clear patchy overcast drizzle shower	4-7 mph	84°F
15:00	0	clear patchy overcast drizzle shower	3-6 mph	83°F
Stop 16:45	0	clear patchy overcast drizzle shower	4-6 mph	80°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	2	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	1	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	2		<i>Apodemia mormo</i> (Mormon Metalmark)	8	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	3		<i>Papilio eurymedon</i> (Pale Swallowtail)	1	x
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	20	x
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	6	x
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	1	x
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			OTHERS: <i>Nathalis iole</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			( <i>Dainty sulphur</i> )		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycacnidae (Hairstreaks)</b>			<i>Leucodica atala</i>	1	
<i>Atides halesus</i> (Great Purple Hairstreak)			( <i>Emphala skipper</i> )		
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Styrmon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Lina Chapman

Segment # SURVEY AREA (8)

Date: 04 APRIL 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Plantago erecta + Castilleja exerta

Nectar Plants Present:

Bluedicks, Cryptantha, Lathenia, Buckwheat, Black-sage, Eucelia

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot General Form

## Adult Survey

Location SOUTHERN TREATMENT PLANTSurvey Segment SURVEY AREA (4)Surveyor LURE CHATMANDate 05 APR 2016Survey Week Number (6)

Survey Partner(s) \_\_\_\_\_

05 APR 2016

Total Acres: \_\_\_\_\_

Portion Surveyed: \_\_\_\_\_

Elevation: Max \_\_\_\_\_

Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	Hazy	clear	patchy	overcast	drizzle	shower	0	70°F
11:00	Hazy	clear	patchy	overcast	drizzle	shower	0	74°F
12:00	Hazy	clear	patchy	overcast	drizzle	shower	1-2 mph	79°F
13:00	Hazy	clear	patchy	overcast	drizzle	shower	2-3 mph	83°F
14:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	84°F
15:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	83°F
Stop 16:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	82°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	2	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	4		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	1	+	<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	8	+
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	1	
<i>Heliopterus erictorum</i> (Northern White-Skipper)	3		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	1		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	2	+	<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycanidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	1				
<i>Glaucopsyche hydamus</i> (Southern Blue)	1				
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor AND CHAFFMAN

Segment # SURVEY AREA (4)

Date: 05 APRIL 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Plantago erecta + Castilleja exerts

Nectar Plants Present:

Cryptantha, Lasthenia, Encelia, Blue-dicks, Buckwheat,  
Salvia melifera, YERBA SANTA

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



Quino Checkerspot General Form

Adult Survey

Location MISSION GORGE AREA Survey Segment SURVEY AREA (7)  
 Surveyor GAIL CHAPMAN Date 06 APR 2016 Survey Week Number (6)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>09:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>75° F</u>
<u>10:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>1-2 mph</u>	<u>78° F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>80° F</u>
<u>12:00</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>83° F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>12:30</u>	<u>0</u>	<u>clear</u>	patchy	overcast	drizzle	shower	<u>2-4 mph</u>	<u>85° F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	<u>2</u>	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	<u>1</u>	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemis mormo</i> (Mormon Metalmark)	<u>12</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	<u>2</u>	<u>x</u>	<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>12</u>	<u>x</u>
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	<u>4</u>	<u>x</u>
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	<u>1</u>	
<i>Heliopterus ericetorum</i> (Northern White-Skipper)	<u>8</u>	<u>x</u>	<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	<u>1</u>		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>1</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	<u>1</u>	<u>x</u>			
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHAFFIN Segment # SURVEY AREA (7) Date: 06 APRIL 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

~~But~~ *Plantago erecta* + *Castilleja exata*

Nectar Plants Present:

*Buckwheat* + *Black-sage* now blooming!

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/10/16 Site Visit Number 6  
 Site Name Mt 1+2 Site Location Mission  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: \_\_\_\_\_

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
6:00	clear	% cloud cover	hazy	2/5	68
6:50	clear	% cloud cover	hazy	2/5	70
7:20	clear	% cloud cover	hazy	2/5	70
7:50	clear	% cloud cover	hazy	2/5	70
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*.

\*20 second period, mph

COMMENT:

(73)

[illegible]



(74)

Surveyor Dale Powell Date 4/3/16 Site Visit Number 6  
 Site Name Map 3 Site Location Maricao  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:15

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
15	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**



79

Surveyor Dale Powell Date 4/10/16 Site Visit Number 6  
 Site Name Mesa 4+ Site Location 1/1/1/1/1/1  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:15

Time (24hr)	Weather	Sky	Wind	Temp (F)
0915	clear	% cloud cover hazy	6/0	62°
1000	clear	% cloud cover hazy	1/1	61°
1030	clear	% cloud cover hazy	8/0	67°
1100	clear	% cloud cover hazy	1/0	68°
1130	clear	% cloud cover hazy	2/1	70°
1200	clear	% cloud cover hazy	1/1	79°
1230	clear	% cloud cover hazy	1/1	79°
1300	clear	% cloud cover hazy	1/1	79°
1330	clear	% cloud cover hazy	1/1	79°
1400	clear	% cloud cover hazy	1/1	79°
1430	clear	% cloud cover hazy	1/1	79°
1500	clear	% cloud cover hazy	1/1	79°
1530	clear	% cloud cover hazy	1/1	79°
1600	clear	% cloud cover hazy	1/1	79°
1630	clear	% cloud cover hazy	1/1	79°
1700	clear	% cloud cover hazy	1/1	79°
1730	clear	% cloud cover hazy	1/1	79°
1800	clear	% cloud cover hazy	1/1	79°
1830	clear	% cloud cover hazy	1/1	79°
1900	clear	% cloud cover hazy	1/1	79°
1930	clear	% cloud cover hazy	1/1	79°
2000	clear	% cloud cover hazy	1/1	79°
2030	clear	% cloud cover hazy	1/1	79°
2100	clear	% cloud cover hazy	1/1	79°
2130	clear	% cloud cover hazy	1/1	79°
2200	clear	% cloud cover hazy	1/1	79°
2230	clear	% cloud cover hazy	1/1	79°
2300	clear	% cloud cover hazy	1/1	79°
2330	clear	% cloud cover hazy	1/1	79°
2400	clear	% cloud cover hazy	1/1	79°

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

[illegible]



76

Surveyor D. A. Powell Date 4/5/16 Site Visit Number 3  
 Site Name 1/1/1 Site Location V. 1/1/1  
 Total Acres: 1/1/1 Total Acres Surveyed: 1/1/1 Elevation: Max 1/1/1 Min 1/1/1  
 Hours Surveyed: 2/30

Time (24hr)	21	22	Sky	Wind (layer / max)	Temp (F)
0000	clear	10	% cloud cover hazy	1/1	57
0100	clear	10	% cloud cover hazy	1/1	57
0200	clear	10	% cloud cover hazy	1/1	57
0300	clear	10	% cloud cover hazy	1/1	57
0400	clear	10	% cloud cover hazy	1/1	57
0500	clear	10	% cloud cover hazy	1/1	57
0600	clear	10	% cloud cover hazy	1/1	57
0700	clear	10	% cloud cover hazy	1/1	57
0800	clear	10	% cloud cover hazy	1/1	57
0900	clear	10	% cloud cover hazy	1/1	57
1000	clear	10	% cloud cover hazy	1/1	57
1100	clear	10	% cloud cover hazy	1/1	57
1200	clear	10	% cloud cover hazy	1/1	57
1300	clear	10	% cloud cover hazy	1/1	57
1400	clear	10	% cloud cover hazy	1/1	57
1500	clear	10	% cloud cover hazy	1/1	57
1600	clear	10	% cloud cover hazy	1/1	57
1700	clear	10	% cloud cover hazy	1/1	57
1800	clear	10	% cloud cover hazy	1/1	57
1900	clear	10	% cloud cover hazy	1/1	57
2000	clear	10	% cloud cover hazy	1/1	57
2100	clear	10	% cloud cover hazy	1/1	57
2200	clear	10	% cloud cover hazy	1/1	57
2300	clear	10	% cloud cover hazy	1/1	57

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:



(77)

Surveyor Tim Powell Date 4/3/16 Site Visit Number 6  
 Site Name Map 3 Site Location Myra Creek  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:15

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1000	clear	% cloud cover	hazy	2/5	68°
1100	clear	% cloud cover	hazy	2/5	70°
1200	clear	% cloud cover	hazy	2/6	75°
1300	clear	% cloud cover	hazy	2/9	73°
1400	clear	% cloud cover	hazy	3/4	75°
1500	clear	% cloud cover	hazy	3/6	77°
1600	clear	% cloud cover	hazy	3/5	78°
1715	clear	% cloud cover	hazy	3/5	74°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

77

Nymphalidae (Brush Footed Butterflies)		Lycanidae (Blues)	
Euphydryas editha quino (Quino Checkerspot)		Brephidium exilis (Pygmy Blue)	
Adelpha bredowii californica (California Sister)		Celastrina ladon echo (Echo Blue)	
I I Basilarchia lorquini (Lorquin's Admiral)		Everes amyntula (Western Tailed Blue)	
Charidryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Blue)	
Euphydryas chalcedona chalcadone		Hemiargus ceraunus gyas (Edward's Blue)	
(Chalcedon Checkerspot)			
Euphydryas chalcedona hennei		Icaria acmon (Acmon Blue)	
(Henne's Checkerspot)			
III Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)	
Nymphalis antiopa (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)	
Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)	
Phycoides mylitta (Mylytta Crescent)			
Polygonia satyrus (Satyr Anglewing)		Lycanidae (Hairstreaks)	
Speyeria callippe (Callippe Fritillary)		Atilides halesus (Great Purple Hairstreak)	
Thessalia leanira wrighti (Leanira Checkerspot)		Callophys perplexa = dumetorum	
Vanessa annabella (West Coast Lady)		(Perplexing Hairstreak)	
		Incisalia augustinus (Brown Elf)	
Vanessa atalanta (Red Admiral)		Strymon melinus (Gray Hairstreak)	
Vanessa cardui (Painted Lady)			
Vanessa virginiensis (Virginia Lady)			
Danaidae (Milkweed Butterflies)		Papilionidae (Swallowtails)	
Danaus gilippus (Queen)		Papilio eurymedon (Pale Swallowtail)	
Danaus plexippus (Monarch)		Papilio rutulus (Western Tiger Swallowtail)	
		Papilio zelicaon (Anise Swallowtail)	
Hesperidae		Pieridae (Whites and Orangetips)	
U Erynnis funeralis (Funeral Dusky-wing)		Aniocharis cethura (Felder's Orangetip)	
Heliopeies ericetorum (Great White Skipper)		Aniocharis lanceolata (Grinnell's Marble)	
III Hylephila phyllaeus (Fiery Skipper)		Aniocharis sara (Sara Orangetip)	
IV Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)	
		Colias eurytheme (Alfalfa Butterfly)	
		Colias harfordii (Harford's Sulfur)	
		Euchloe hyantis lotta (Southern Marble)	
		Eurema nicippe (Sleepy Orange)	
		Nathalis iole (Dwarf Yellow)	
		Phoebis sennae (Cloudless sulfur)	
		Pontia protodice (Common White)	
		Zerene eurydice (California Dogface)	
Riodinidae (Metalmarks)			
Apodemaria mormo virgulati (Behr's Metalmark)			
Calephelis wrighti (Wright's Metalmark)			
Satyridae (Satyrids)			
Coenonympha californica (California Ringlet)			
OTHER:			



(78)

Surveyor Tina Powell Date            Site Visit Number             
 Site Name            Site Location             
 Total Acres:            Total Acres Surveyed:            Elevation: Max            Min             
 Hours Surveyed: 7:15

Time (24hr)		Sky		Wind	Temp (F)
				(AVG-MAX)	
7:15	clear	% cloud cover	hazy	0/0	62°
7:30	clear	% cloud cover	hazy	1/3	74°
7:45	clear	% cloud cover	hazy	2/5	77°
8:00	clear	% cloud cover	hazy	1/3	78°
8:15	clear	% cloud cover	hazy	2/4	80°
8:30	clear	% cloud cover	hazy	3/6	80°
8:45	clear	% cloud cover	hazy	4/6	78°
9:00	clear	% cloud cover	hazy	3/7	77°
9:15	clear	% cloud cover	hazy	3/4	74°
9:30	clear	% cloud cover	hazy		
9:45	clear	% cloud cover	hazy		
10:00	clear	% cloud cover	hazy		
10:15	clear	% cloud cover	hazy		
10:30	clear	% cloud cover	hazy		
10:45	clear	% cloud cover	hazy		
11:00	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

Nymphalidae (Brush Footed Butterflies)	Glycerini
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceramunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia saryrus</i> (Satyr Angleming)	
<i>Speyeria callippe</i> (Callippe Fritillary)	
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	
<i>Vanessa annabella</i> (West Coast Lady)	
<i>Vanessa atalanta</i> (Red Admiral)	
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Dryadinae (Hairstreaks)
<i>Danaus gilippus</i> (Queen)	<i>Athides halesus</i> (Great Purple Hairstreak)
<i>Danaus plexippus</i> (Monarch)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown Elf)
	<i>Strymon melinus</i> (Gray Hairstreak)
	Papilionidae (Swallowtails)
	<i>Papilio eurymedon</i> (Pale Swallowtail)
	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orange-tips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemina mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

79

Surveyor Dan Powell Date 4/5/16 Site Visit Number 6  
 Site Name Map 5 Site Location 17/10/16  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:30

Time (24hr)	Wind (aver/max)	Temp (F)
0900	clear 10 % cloud cover hazy	70
1000	clear 10 % cloud cover hazy	70
1100	clear % cloud cover hazy	70
1200	clear % cloud cover hazy	70
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	
	clear % cloud cover hazy	

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

(79)

<b>Nymphalidae (Brush-Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Lepiotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Angewing)	<b>Lycaenidae (Hairstreaks)</b>
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orange-tips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orange-tip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orange-tip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE RES. / SAN DIEGO RIVER AREA Survey Segment SURVEY AREA (8)  
 Surveyor GABE CHAMMAN Date 13 APR 2016 Survey Week Number (7)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>10:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>67° F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>71° F</u>
<u>12:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>75° F</u>
<u>13:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>76° F</u>
<u>14:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>5-7 mph</u>	<u>76° F</u>
<u>15:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>3-6 mph</u>	<u>78° F</u>
Stop <u>16:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-6 mph</u>	<u>77° F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10+</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)	<u>1</u>		<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>20+</u>	<u>X</u>
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)	<u>10+</u>	<u>X</u>
<i>Danaus plexippus</i> (Monarch)	<u>1</u>		<i>Pontia protodice</i> (Checkered White)	<u>2</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	<u>2</u>		<i>Eurema nicippe</i> (Sleepy Orange)	<u>1</u>	
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycanidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	<u>2</u>				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Chapman

Segment # SURVEY AREA (8)

Date: 13 APR 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Plantago erecta

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SOUTH TREATMENT FACILITY Survey Segment SURVEY AREA (4)  
 Surveyor ARIEL CHAMMAN Date 14 APR 2016 Survey Week Number (7)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 9:30	0	clear patchy overcast drizzle shower	1-2 mph	69°F
11:00	0	clear patchy overcast drizzle shower	1-2 mph	71°F
12:00	0	clear patchy overcast drizzle shower	2-4 mph	72°F
13:00	0	clear patchy overcast drizzle shower	2-4 mph	73°F
14:00	0	clear patchy overcast drizzle shower	3-5 mph	74°F
15:00	0	clear patchy overcast drizzle shower	4-6 mph	74°F
Stop 15:45	0	clear patchy overcast drizzle shower	4-7 mph	72°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	4	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	2		<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	8		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)	1	+	<i>Papilio zelicaon</i> (Anise Swallowtail)	1	x
<i>Vanessa cardui</i> (Painted Lady)	1		<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	2	x	<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	3	x
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Ficry Skipper)	1		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <u>Cloudless sulphur</u>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			<u>(Phoebastria senae)</u>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Chomura

Segment # Survey AREA (4)

Date: 14 APR 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* + *Castilleja erecta*

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



## Quino Checkerspot General Form

## Adult Survey

Location MISSION GORGE AREASurvey Segment SURVEY AREA (7)Surveyor ARIEL CHAFMANDate 15 APR 2016 Survey Week Number (7)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	72° F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
11:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	77° F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 12:00	0	clear	patchy	overcast	drizzle	shower	2-4 mph	79° F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	3	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilaria lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	10	X
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)	1		<i>Pontia protodice</i> (Checkered White)	6	X
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)	2		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	2		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Allides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icaricia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Gabe Curran Segment # SWING AREA (7) Date: 15 APR 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* + *Castilleja erecta*

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

(80)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/1/16 Site Visit Number 7  
 Site Name Map 1 + 2 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
11:15	clear	50 % cloud cover	hazy	2/5	74°
12:00	clear	40 % cloud cover	hazy	3/6	73°
12:30	clear	40 % cloud cover	hazy	3/6	74°
13:00	clear	50 % cloud cover	hazy		69°
13:15	clear	70 % cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:





(81)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/11/16 Site Visit Number 7  
 Site Name Map 3 Site Location M. r. g. m. r.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2.45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1430	clear	% cloud cover	hazy	3/6	69°
1500	clear	% cloud cover	hazy	4/6	69°
1530	clear	% cloud cover	hazy	2/4	72°
1545	clear	% cloud cover	hazy	3/5	71°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:



(82)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/12/16 Site Visit Number 7  
 Site Name Map Site Location Mesa Verde  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:00"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
9:45	clear	0% cloud cover	hazy	0/0	77
10:00	clear	0% cloud cover	hazy	0/0	78
10:30	clear	0% cloud cover	hazy	0/0	77
11:00	clear	0% cloud cover	hazy	0/0	75
11:30	clear	0% cloud cover	hazy	0/0	74
12:00	clear	0% cloud cover	hazy	0/0	74
12:30	clear	0% cloud cover	hazy	0/0	75
1:00	clear	0% cloud cover	hazy	0/0	75
1:30	clear	0% cloud cover	hazy	0/0	75
2:00	clear	0% cloud cover	hazy	0/0	75
2:30	clear	0% cloud cover	hazy	0/0	75
3:00	clear	0% cloud cover	hazy	0/0	75
3:30	clear	0% cloud cover	hazy	0/0	75
4:00	clear	0% cloud cover	hazy	0/0	75
4:30	clear	0% cloud cover	hazy	0/0	75
5:00	clear	0% cloud cover	hazy	0/0	75
5:30	clear	0% cloud cover	hazy	0/0	75
6:00	clear	0% cloud cover	hazy	0/0	75

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<del>1</del> <i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<del>1</del> <i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<del>1</del> <i>Junonia coenia</i> (Buckeye)	<del>1</del> <i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	<b>Lycaenidae (Hairstreaks)</b>
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<del>1</del> <i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elf)
<del>1</del> <i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<del>1</del> <i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	



(82)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 4/11/16 Site Visit Number 7  
 Site Name Mooz Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1115	clear	60 % cloud cover	hazy	2/5	72°
1200	clear	70 % cloud cover	hazy	3/6	70°
1300	clear	70 % cloud cover	hazy	3/5	74°
1400	clear	70 % cloud cover	hazy	3/6	68°
1500	clear	70 % cloud cover	hazy	4/6	69°
1600	clear	60 % cloud cover	hazy	2/5	72°
1715	clear	35 % cloud cover	hazy	3/5	70°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:



54

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jun Powell Date 4/2/16 Site Visit Number 7  
 Site Name May 3-4-5 Site Location Mira  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:00"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
945	clear	60 % cloud cover	hazy	0/0	67°
1100	clear	30 % cloud cover	hazy	0/0	70°
1200	clear	15 % cloud cover	hazy	1/3	71°
1300	clear	5 % cloud cover	hazy	2/5	75°
1400	clear	5 % cloud cover	hazy	3/6	74°
1500	clear	15 % cloud cover	hazy	5/8	74°
1600	clear	25 % cloud cover	hazy	4/7	63°
1645	clear	25 % cloud cover	hazy	3/6	60°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:





(65)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 4/13/16 Site Visit Number 7  
 Site Name Map 5 Site Location Mifanade  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:30"

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
10:20	clear	70 % cloud cover	hazy	5/1	67°
11:00	clear	70 % cloud cover	hazy		
12:00	clear	% cloud cover	hazy	2/4	72°
13:00	clear	% cloud cover	hazy	2/6	74°
14:00	clear	% cloud cover	hazy	2/4	74°
15:00	clear	% cloud cover	hazy	3/5	76°
16:30	clear	% cloud cover	hazy	3/6	76°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	
<i>Junonia coenia</i> (Buckeye)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE RES. / SAN DIEGO RIVER AREA Survey Segment SURVEY AREA (8)  
 Surveyor GREG CHAMMAN Date 20 APRIL 2016 Survey Week Number (8)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start <u>10:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>77° F</u>
<u>11:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-3 mph</u>	<u>80° F</u>
<u>12:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>3-5 mph</u>	<u>85° F</u>
<u>13:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>87° F</u>
<u>14:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>2-4 mph</u>	<u>89° F</u>
<u>15:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>3-6 mph</u>	<u>92° F</u>
Stop <u>16:00</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower	<u>4-7 mph</u>	<u>88° F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	<u>2</u>	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	<u>1</u>		<i>Apodemia mormo</i> (Mormon Metalmark)	<u>5</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)	<u>1</u>	
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	<u>10</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atlides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor APOL CHATMAN

Segment # SURVEY ALONG (8)

Date: 20 APR 2016

Comments:

\* SARA ORANGE TIP SECOND BROOD WINDING DOWN

\*

Plant Communities and Habitat Information:

Host Plants Present:

*Cassia exaltata*

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

1.

2.

3.

4.

5.

6.

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10.

11.

12.



## Quino Checkerspot General Form

## Adult Survey

Location SOUTH TREATMENT PLANTSurvey Segment SURVEY AREA (4)Surveyor AREL CITAHMANDate 21 APR 2016 Survey Week Number (8)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky						Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower		4-6 mph	74° F
11:00	0	clear	patchy	overcast	drizzle	shower		4-7 mph	77° F
12:00	0	clear	patchy	overcast	drizzle	shower		5-8 mph	79° F
13:00	0	clear	patchy	overcast	drizzle	shower		6-9 mph	81° F
14:00	0	clear	patchy	overcast	drizzle	shower		6-9 mph	83° F
15:00	0	clear	patchy	overcast	drizzle	shower		5-8 mph	81° F
Stop 16:00	0	clear	patchy	overcast	drizzle	shower		6-9 mph	79° F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	6	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	+10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	2		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)		
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescent</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <i>cloudless sulphur</i> <i>(Phoebus sennae)</i>	2	
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Allides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	8				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Lisa Christian

Segment # Survey Area (4)

Date: 21 MAR 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta*, *Castilleja exalta*

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location MISSION GARDENS AREA Survey Segment SURVEY AREA (7)  
 Surveyor WRECH CHAMMAN Date 22 APRIL 2016 Survey Week Number (8)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	0	clear patchy overcast drizzle shower	1-24	69°F
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
11:00	0	clear patchy overcast drizzle shower	2-44	72°F
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 12:00	0	clear patchy overcast drizzle shower	2-44	73°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	4	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	+20	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	2	✓
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	2	✓
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)	2		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	1		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atlides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	2				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Carol Chatman

Segment # Swamp Area (7)

Date: 22 April 2016

Comments:

\* SECOND BROOD OF MORMON METALMARK APPARENT

Plant Communities and Habitat Information:

Host Plants Present:

*Plantago erecta* + *Castilleja exata*

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/17/15 Site Visit Number 8  
 Site Name M. C. 102 Site Location Vicinity  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2.45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
11:00	<del>clear</del>	% cloud cover	hazy	5/8	85.0
12:00	<del>clear</del>	% cloud cover	hazy	3/4	85.0
13:00	<del>clear</del>	% cloud cover	hazy	3/6	90.0
14:00	<del>clear</del>	% cloud cover	hazy	5/2	90.0
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:



87

Surveyor Dale Powell Date 4/17/16 Site Visit Number 3  
 Site Name Map 3 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3.00

Time (24hr)	Clear	% cloud cover	hazy	Wind (mph, max)	Temp (F)
1400	clear	% cloud cover	hazy	5/8	90°
1500	clear	% cloud cover	hazy	5/8	90°
1600	clear	% cloud cover	hazy	5/8	89°
1700	clear	% cloud cover	hazy	6/9	85°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

37

Nymphalidae (Brush Footed Butterflies)		Lycaenidae (Blues)	
	<i>Euphydryas editha quino</i> (Quino Checkerspot)	✓	<i>Brephidium exilis</i> (Pygmy Blue)
	<i>Adelpha bredowii californica</i> (California Sister)		<i>Celastrina ladon echo</i> (Echo Blue)
	<i>Basilarchia lorquini</i> (Lorquin's Admiral)		<i>Everes amyntula</i> (Western Tailed Blue)
	<i>Charidryas gabbii</i> (Gabb's Checkerspot)		<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
	<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)		<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
	<i>Euphydryas chalcedona hennei</i> (Heane's Checkerspot)		<i>Icarcia acmon</i> (Acmon Blue)
III	<i>Junonia coenia</i> (Buckeye)		<i>Leptotes marina</i> (Marine Blue)
	<i>Nymphalis antiopa</i> (Mourning Cloak)		<i>Philotes sonorensis</i> (Sonoran Blue)
	<i>Nymphalis californica</i> (California Tortoiseshell)		<i>Plebejus melissa</i> (Melissa Blue)
	<i>Phycoides mylitta</i> (Mylitta Crescent)		
	<i>Polygonia satyrus</i> (Satyr Anglewing)		
	<i>Speyeria callippe</i> (Callippe Fritillary)		
	<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)		
I	<i>Vanessa annabella</i> (West Coast Lady)		
	<i>Vanessa atalanta</i> (Red Admiral)		
	<i>Vanessa cardui</i> (Painted Lady)	✓	
III	<i>Vanessa virginiensis</i> (Virginia Lady)	✓	
Danaidae (Milkweed Butterflies)		Lycaenidae (Hairstreaks)	
	<i>Danaus gilippus</i> (Queen)		<i>Atides halesus</i> (Great Purple Hairstreak)
	<i>Danaus plexippus</i> (Monarch)		<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
			<i>Incisalia augustinus</i> (Brown Elfin)
			<i>Strymon melinus</i> (Gray Hairstreak)
Hesperiidae		Papilionidae (Swallowtails)	
	<i>Erynnis funeralis</i> (Funeral Dusky-wing)		<i>Papilio eurymedon</i> (Pale Swallowtail)
	<i>Heliopetes ericetorum</i> (Great White Skipper)		<i>Papilio rutulus</i> (Western Tiger Swallowtail)
I	<i>Hylephila phyleus</i> (Fiery Skipper)		<i>Papilio zelicaon</i> (Anise Swallowtail)
II	<i>Pyrgus albescens</i> (Checkered Skipper)		
Hesperiidae		Pieridae (Whites and Orange-tips)	
			<i>Anthocharis cethura</i> (Felder's Orangetip)
			<i>Anthocharis lanceolata</i> (Grinnell's Marble)
		✓ III	<i>Anthocharis sara</i> (Sara Orangetip)
			<i>Artogeia rapae</i> (Cabbage White)
			<i>Colias eurytheme</i> (Alfalfa Butterfly)
			<i>Colias harfordii</i> (Harford's Sulfur)
			<i>Euchloe hyantis lotta</i> (Southern Marble)
			<i>Eurema nicippe</i> (Sleepy Orange)
			<i>Nathalis iole</i> (Dwarf Yellow)
			<i>Phoebis sennae</i> (Cloudless sulfur)
			<i>Pontia protodice</i> (Common White)
			<i>Zerene eurydice</i> (California Dogface)
OTHER:		Riodinidae (Metalmarks)	
			<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
			<i>Calephelis wrighti</i> (Wright's Metalmark)
OTHER:		Satyridae (Satyrids)	
			<i>Coenonympha californica</i> (California Ringlet)



(93)

Surveyor Dale Powell Date 4/17/16 Site Visit Number 8  
 Site Name Mesa Site Location Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2.5

Time (2 hr)	clear	% cloud cover	hazy	Wind (aver, max)	Temp (F)
8:00	clear	% cloud cover	hazy	1/2	75.0
10:00	clear	% cloud cover	hazy	1/2	75.0
11:00	clear	% cloud cover	hazy	1/2	75.0
12:00	clear	% cloud cover	hazy	1/2	75.0
13:00	clear	% cloud cover	hazy	1/2	75.0
14:00	clear	% cloud cover	hazy	1/2	75.0
15:00	clear	% cloud cover	hazy	1/2	75.0
16:00	clear	% cloud cover	hazy	1/2	75.0
17:00	clear	% cloud cover	hazy	1/2	75.0
18:00	clear	% cloud cover	hazy	1/2	75.0
19:00	clear	% cloud cover	hazy	1/2	75.0
20:00	clear	% cloud cover	hazy	1/2	75.0
21:00	clear	% cloud cover	hazy	1/2	75.0
22:00	clear	% cloud cover	hazy	1/2	75.0
23:00	clear	% cloud cover	hazy	1/2	75.0
24:00	clear	% cloud cover	hazy	1/2	75.0

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:



(29)

Surveyor Dale Powell Date 4/19/16 Site Visit Number 2  
 Site Name Map 3 Site Location 1/1/10/10/10  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: \_\_\_\_\_

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0700	clear	% cloud cover	hazy	0/0	82°
0800	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		82°
1200	clear	% cloud cover	hazy		
1300	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:





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**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Jay Powell Date 4/1/16 Site Visit Number 8  
 Site Name Maps 3 Site Location Miravilla  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1100	<del>clear</del>	% cloud cover	hazy	5/7	86°
1200	<del>clear</del>	% cloud cover	hazy	4/7	89°
1300	<del>clear</del>	% cloud cover	hazy	3/6	90°
1400	clear	% cloud cover	hazy	5/8	90°
1500	clear	% cloud cover	hazy	4/7	89°
1600	clear	% cloud cover	hazy	3/5	85°
1700	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona henneli</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Ptebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Attilides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Papilionidae (Swallowtails)
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis celthura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalls iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

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Surveyor Jun Powell Date 4/2/16 Site Visit Number 8  
 Site Name Mof 345 Site Location Mojave  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:30

Time (24hr)	Sky		Wind (aver / max)	Temp (F)
855	<del>clear</del>	% cloud cover hazy	1/3	79°
1000	<del>clear</del>	% cloud cover hazy	3	85°
1100	<del>clear</del>	% cloud cover hazy	2/5	91°
1200	<del>clear</del>	% cloud cover hazy	4/7	89°
1300	<del>clear</del>	% cloud cover hazy	3/6	90°
1400	<del>clear</del>	% cloud cover hazy	4/7	90°
1500	<del>clear</del>	% cloud cover hazy	5/9	86°
1600	<del>clear</del>	% cloud cover hazy	4/7	83°
1625	<del>clear</del>	% cloud cover hazy	5/9	77%
	clear	% cloud cover hazy		
	clear	% cloud cover hazy		
	clear	% cloud cover hazy		
	clear	% cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Anfirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

<p><b>Euphydryas</b> (Checkerspot)</p> <p>III <i>Euphydryas editha quino</i> (Quino Checkerspot)</p> <p><i>Adelpha bredowii californica</i> (California Sister)</p> <p><i>Basilarchia lorquini</i> (Lorquin's Admiral)</p> <p><i>Charidryas gabbii</i> (Gabb's Checkerspot)</p> <p><i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)</p> <p><i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)</p> <p>III IV <i>Junonia coenia</i> (Buckeye)</p> <p><i>Nymphalis antiope</i> (Mourning Cloak)</p> <p><i>Nymphalis californica</i> (California Tortoiseshell)</p> <p><i>Phycoides mylitta</i> (Mylitta Crescent)</p> <p><i>Polygonia satyrus</i> (Satyr Anglewing)</p> <p><i>Speyeria callippe</i> (Callippe Fritillary)</p> <p><i>Thessalia leanira wrighti</i> (Leanira Checkerspot)</p> <p>III IIII <i>Vanessa annabella</i> (West Coast Lady)</p> <p><i>Vanessa atalanta</i> (Red Admiral)</p> <p><i>Vanessa cardui</i> (Painted Lady)</p> <p><i>Vanessa virginiensis</i> (Virginia Lady)</p>	<p><b>Lycastidae</b> (Blues)</p> <p>III III <i>Brephidium exilis</i> (Pygmy Blue)</p> <p><i>Celastrina ladon echo</i> (Echo Blue)</p> <p><i>Evers amyntula</i> (Western Tailed Blue)</p> <p><i>Glaucopsyche lygdamus australis</i> (Southern Blue)</p> <p><i>Hemiargus ceraunus gyas</i> (Edward's Blue)</p> <p><i>Icaricia acmon</i> (Acmon Blue)</p> <p><i>Leptotes marina</i> (Marine Blue)</p> <p><i>Philotes sonorensis</i> (Sonoran Blue)</p> <p><i>Plebejus melissa</i> (Melissa Blue)</p> <p><b>Lycaenidae</b> (Hemlock)</p> <p><i>Atlides halesus</i> (Great Purple Hairstreak)</p> <p><i>Callophrys perplexa = dunetorum</i> (Perplexing Hairstreak)</p> <p><i>Incisalia augustinus</i> (Brown Elfin)</p> <p><i>Strymon melinus</i> (Gray Hairstreak)</p>
<p><b>Danaus</b> (Monarchs)</p> <p><i>Danaus gilippus</i> (Queen)</p> <p><i>Danaus plexippus</i> (Monarch)</p>	<p><i>Papilio eurymedon</i> (Pale Swallowtail)</p> <p><i>Papilio rutulus</i> (Western Tiger Swallowtail)</p> <p><i>Papilio zelicaon</i> (Anise Swallowtail)</p>
<p><b>Hesperia</b></p> <p>III <i>Erynnis funeralis</i> (Funeral Dusky-wing)</p> <p><i>Heliopterus ericetorum</i> (Great White Skipper)</p> <p>III <i>Hylephila phyleus</i> (Fiery Skipper)</p> <p><i>Pyrgus albescens</i> (Checkered Skipper)</p>	<p><i>Anthocharis cethura</i> (Felder's Orangetip)</p> <p><i>Anthocharis lanceolata</i> (Grinnell's Marble)</p> <p>III <i>Anthocharis sara</i> (Sara Orangetip)</p> <p><i>Artogeia rapae</i> (Cabbage White)</p> <p>III <i>Colias eurythemo</i> (Alfalfa Butterfly)</p> <p><i>Colias harfordii</i> (Harford's Sulfur)</p> <p><i>Euchloe hyantis lotta</i> (Southern Marble)</p> <p><i>Eurema nicippe</i> (Sleepy Orange)</p> <p>III <i>Nathalis iole</i> (Dwarf Yellow)</p> <p><i>Phoebis sennae</i> (Cloudless sulfur)</p> <p><i>Pontia protodice</i> (Common White)</p> <p><i>Zerene erydice</i> (California Dogface)</p>
	<p><b>Riodinidae</b> (Metalmarks)</p> <p>III <i>Apodemia mormo virgulti</i> (Behr's Metalmark)</p> <p><i>Calephelis wrighti</i> (Wright's Metalmark)</p>
	<p><b>Satyridae</b> (Satyrids)</p> <p><i>Coenonympha californica</i> (California Ringlet)</p>
OTHER:	



Surveyor Dale Powell Date 11/17/16 Site Visit Number 2  
 Site Name Map 3 Site Location Murphy  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:30

Time (24hr)	Sky			Wind (aver./max)	Temp (F)
0900	clear	% cloud cover	hazy	2/8	82°
1000	clear	% cloud cover	hazy	2/8	89°
1100	clear	% cloud cover	hazy	2/4	90°
1200	clear	% cloud cover	hazy	3/5	89°
1300	clear	% cloud cover	hazy	3/5	91°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

Nymphalidae (Brush-Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Angletwing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescent</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Atlatla Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodonia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE RES. / SAN DIEGO RIVER AREAS Survey Segment QCB SURVEY AREA (8)  
 Surveyor GREG CHATMAN Date 26 APRIL 2016 Survey Week Number (9)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	40%	clear	patchy	overcast	drizzle	shower	4-6 mph	66°F
11:00	20%	clear	patchy	overcast	drizzle	shower		67°F
12:00	10%	clear	patchy	overcast	drizzle	shower		68°F
13:00	10%	clear	patchy	overcast	drizzle	shower		69°F
14:00	10%	clear	patchy	overcast	drizzle	shower		70°F
15:00	10%	clear	patchy	overcast	drizzle	shower		70°F
Stop 15:30	20%	clear	patchy	overcast	drizzle	shower		68°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	1		<i>Apodemia mormo</i> (Mormon Metalmark)	15	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	6	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)	1		<i>Pontia protodice</i> (Checkered White)	20	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	2		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			OTHERS: <i>Lupine blue</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			<i>Icaricia lupini</i>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Alides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	5				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icaricia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GREG CHATMAN

Segment # DCB SURVEY AREA (8)

Date: 26 APR 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Plantago erecta

Nectar Plants Present:

Cryptantha, Lathenra, Duckweeds, Bluedicks,

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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



# Quino Checkerspot General Form

# Adult Survey

Location TREATMENT PLANT Survey Segment SURVEY AREA (4)  
 Surveyor GRET CHANNAN Date 27 APRIL 2016 Survey Week Number (9)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	25%	clear	patchy	overcast	drizzle	shower	6-8 mph	65°F
11:00	25%	clear	patchy	overcast	drizzle	shower	6-8 mph	66°F
12:00	25%	clear	patchy	overcast	drizzle	shower		67°F
13:00		clear	patchy	overcast	drizzle	shower		68°F
14:00		clear	patchy	overcast	drizzle	shower		68°F
15:00		clear	patchy	overcast	drizzle	shower		69°F
Stop 16:00		clear	patchy	overcast	drizzle	shower		68°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	6	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	8	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	5	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	1	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Allides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)	1				
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	6				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Chapman

Segment # Survey Area (4)

Date: 27 April 2016

**Comments:**

**Plant Communities and Habitat Information:**

**Host Plants Present:**

Plantago erecta / Castilleja exserta

**Nectar Plants Present:**

Cryptantha, Lathyrus, buckwheat, Encelia

☐ Quino Sighting

Date:

GPS Location:

**Photographs Taken:**

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

Quino Checkerspot General Form

Adult Survey

Location Mission Gorge AREA's Survey Segment SURVY AREA (7)  
 Surveyor ALICE CHARTMAN Date 29 APRIL 2016 Survey Week Number (9)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	10%	clear	patchy	overcast	drizzle	shower	6-8 up	65°F
11:00	10%	clear	patchy	overcast	drizzle	shower	6-8 up	66°F
12:00	10%	clear	patchy	overcast	drizzle	shower	6-8 up	66°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 13:00	10%	clear	patchy	overcast	drizzle	shower	6-8 up	68°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	7	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basiliarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)	1		<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)	2	
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	5	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)	2		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	1		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atilides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	2				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor LUKE CHATMAN

Segment # SURVEY AREA (7)

Date: 29 APRIL 2016

**Comments:**

**Plant Communities and Habitat Information:**

**Host Plants Present:** Plantago erecta

**Nectar Plants Present:** Cryptantha, Blue-dicks, Lathunia, Buckwheat

☐ **Quino Sighting**

**Date:**

**GPS Location:**

**Photographs Taken:**

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



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**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor S. Powell Date 4/6/12 Site Visit Number 10  
 Site Name Manzanita Site Location 1/2 mi. S. of  
 Total Acres:            Total Acres Surveyed:            Elevation: Max            Min             
 Hours Surveyed: 2:45

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
	clear	% cloud cover	hazy		72
11:00	clear	% cloud cover	hazy	4/6	72
12:00	clear	% cloud cover	hazy	5/7	76
13:00	clear	% cloud cover	hazy	1/5	71
13:15	clear	% cloud cover	hazy	6/7	72
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**

93

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes mynitus</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa amabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Fuchsiae hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 7/5/16 Site Visit Number 9  
 Site Name Mt. ... Site Location Mt. ...  
 Total Acres: ... Total Acres Surveyed: ... Elevation: Max ... Min ...  
 Hours Surveyed: 6:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
10:30	clear	75 % cloud cover	hazy	6/10	63°
11:00	clear	70 % cloud cover	hazy	7	63°
12:00	clear	50 % cloud cover	hazy	4/7	63°
13:00	clear	55 % cloud cover	hazy	4/8	67°
14:00	clear	75 % cloud cover	hazy	7	72°
15:00	clear	50 % cloud cover	hazy	4/6	70°
16:00	clear	50 % cloud cover	hazy	2/5	67°
16:30	clear	50 % cloud cover	hazy	5/9	66°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

95

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Angletwing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrightii</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
	<i>Anthocharis leucolara</i> (Grinnell's Marble)



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**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 4/24/16 Site Visit Number 9  
 Site Name Map 5 3, 4 Site Location Mission  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 0.55

Time (24hr)	Sky			Wind (aver <sup>2</sup> /max)	Temp (F)
	clear	% cloud cover	hazy		
10:00	clear	% cloud cover	hazy	3/5	72°
11:00	clear	% cloud cover	hazy	3/5	72°
12:00	clear	5 % cloud cover	hazy	4/6	77°
13:00	clear	5 % cloud cover	hazy	4/6	77°
14:00	clear	5 % cloud cover	hazy	5/6	77°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**



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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 6/27/16 Site Visit Number 9  
 Site Name Map 3 Site Location Mutemut  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
10:15	<del>clear</del>	% cloud cover	hazy	3/5	70°
11:50	<del>clear</del>	% cloud cover	hazy	4/6	72°
12:50	<del>clear</del>	% cloud cover	hazy	5/7	76°
1:10	<del>clear</del>	% cloud cover	hazy	4/7	75°
1:40	<del>clear</del>	% cloud cover	hazy	5/7	75°
2:00	clear 10	% cloud cover	hazy	5/7	74°
2:50	clear 10	% cloud cover	hazy	5/7	74°
3:10	clear 10	% cloud cover	hazy	5/7	74°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

77

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Evers amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbi</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiarctus cernuus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	Lycaenidae (Hairstreaks)
<i>Speyeria callippe</i> (Callippe Fritillary)	<i>Atides halesus</i> (Great Purple Hairstreak)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Papilionidae (Swallowtails)
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis semae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	



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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 4/25/16 Site Visit Number 9  
 Site Name Maps 3, 4, 5 Site Location Miguel  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:05

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>10:30</u>	clear	<u>75</u> % cloud cover	<u>hazy</u>	<u>6/10</u>	<u>62°</u>
<u>11:00</u>	clear	<u>70</u> % cloud cover	<u>hazy</u>	<u>4/7</u>	<u>67°</u>
<u>12:00</u>	clear	<u>50</u> % cloud cover	<u>hazy</u>	<u>4/7</u>	<u>69°</u>
<u>13:00</u>	clear	<u>35</u> % cloud cover	<u>hazy</u>	<u>4/8</u>	<u>69°</u>
<u>14:00</u>	clear	<u>25</u> % cloud cover	<u>hazy</u>	<u>3/5</u>	<u>75°</u>
<u>15:00</u>	clear	<u>50</u> % cloud cover	<u>hazy</u>	<u>4/6</u>	<u>70°</u>
<u>16:00</u>	clear	<u>60</u> % cloud cover	<u>hazy</u>	<u>2/5</u>	<u>62°</u>
<u>16:50</u>	clear	<u>50</u> % cloud cover	<u>hazy</u>	<u>5/9</u>	<u>63°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

[illegible]

(99)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 4/26/16 Site Visit Number 9  
 Site Name Maps 3.4 Site Location M. Va. univ  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:30

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0900	<del>clear</del>	% cloud cover	hazy	3/5	67°
1000	<del>clear</del>	% cloud cover	hazy	3/5	68°
1100	<del>clear</del>	% cloud cover	hazy	2/4	73°
1200	clear	5 % cloud cover	hazy	4/6	77°
1300	clear	5 % cloud cover	hazy	4/7	76°
1400	clear	5 % cloud cover	hazy	3/5	74°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

Nymphalidae (Brush Footed Butterflies)	Lycenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbi</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiarctus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Papilionidae (Swallowtails)
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebastria sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemis mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	



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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 4/24/16 Site Visit Number 9  
 Site Name Map 3 Site Location Migamon  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1300	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>4/7</u>	<u>75.0</u>
1400	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>5/11</u>	<u>76.0</u>
1500	<u>clear</u>	<u>10</u> % cloud cover	<u>hazy</u>	<u>5/11</u>	<u>74.0</u>
1530	<u>clear</u>	<u>45</u> % cloud cover	<u>hazy</u>	<u>5/11</u>	<u>68.0</u>
1615	<u>clear</u>	<u>60</u> % cloud cover	<u>hazy</u>	<u>6/10</u>	<u>65.0</u>
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		
	<u>clear</u>	% cloud cover	<u>hazy</u>		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources, 4

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE AB. / SAN DIEGO RIVER AREA Survey Segment SURVY AREA (8)  
 Surveyor ALBERT CHATMAN Date 2 May 2016 Survey Week Number (10)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	0	clear patchy overcast drizzle shower	6-8 mph	67°F
11:00	2	clear patchy overcast drizzle shower	6-8 mph	69°F
12:00	0	clear patchy overcast drizzle shower	6-9 mph	71°F
13:00	0	clear patchy overcast drizzle shower	7-10 mph	72°F
14:00	0	clear patchy overcast drizzle shower	6-9 mph	73°F
15:00	2	clear patchy overcast drizzle shower	6-8 mph	73°F
Stop 16:00	0	clear patchy overcast drizzle shower	7-9 mph	71°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)		
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)			<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaiidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	6	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	10	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <i>Bernardinia blue</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			<i>Euphydryas bernardino</i>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	4				
<i>Glauropsyche lydamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Charnal

Segment # Survey Area (8)

Date: 2 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present: Plantago erecta

Nectar Plants Present: Lasthenia, Cryptantha, Buckwheat, Blue-dicks

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SOUTH MOUNTAIN PLANT Survey Segment SURVEY AREA (4)  
 Surveyor ALAN CHATMAN Date 3 May 2016 Survey Week Number (10)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower	4-6 mph	69°F
11:00	0	clear	patchy	overcast	drizzle	shower	↓	72°F
12:00	0	clear	patchy	overcast	drizzle	shower	↓	75°F
13:00	↓	clear	patchy	overcast	drizzle	shower	↓	76°F
14:00	↓	clear	patchy	overcast	drizzle	shower	6-8 mph	77°F
15:00	↓	clear	patchy	overcast	drizzle	shower	↓	77°F
Stop 16:00	↓	clear	patchy	overcast	drizzle	shower	↓	76°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	10	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	2	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)	1	x
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	3	x	<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)	1		<i>Pontia protodice</i> (Checkered White)	10	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)	3	
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b> <i>Californis Sister</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			<i>(Adelpha bradlowii californica)</i>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atlides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	8				
<i>Glaucopsyche hydamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)	1				
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor Gabe Chomel

Segment # swamp area (4)

Date: 03 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Plantago erecta, Castilleja exerta

Nectar Plants Present:

Cryptantha, Lasthenia, Buckwheat, Blue-dicks

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location MISSION GORGE AREA Survey Segment SURVY AREA (7)  
 Surveyor ALAN CHATMAN Date 4 May 2016 Survey Week Number (10)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	0	clear patchy overcast drizzle shower	2-4 mph	68° F
11:00		clear patchy overcast drizzle shower	2-4 mph	71° F
12:00		clear patchy overcast drizzle shower	4-6 mph	74° F
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 13:00		clear patchy overcast drizzle shower	4-6 mph	75° F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	5	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	+10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	1	✓	<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	2		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaldae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	1	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	3	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)	1		<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	1		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	1		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)			<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Allides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	2				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icaricia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor ALAN CHAPMAN

Segment # Survey Area (7)

Date: 4 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present: ~~est~~ Plantago erecta

Nectar Plants Present: Lasthenia, Croptanthus, Buckwheat, Blue-dicks

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/1/16 Site Visit Number 10  
 Site Name Mesa 1-2 Site Location Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2.0

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1115	clear	70 % cloud cover	hazy	1/3	67
1200	clear	90 % cloud cover	hazy	2/4	70
1300	clear	40 % cloud cover	hazy	4/7	72
1400	clear	10 % cloud cover	hazy	3/6	72
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:



<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche hygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calophelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

(101)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 6/14/16 Site Visit Number 10  
 Site Name Maps 3 Site Location Mipamav  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3 1/2

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1410	clear	% cloud cover	hazy	1/3	67°
1500	clear	% cloud cover	hazy	2/4	70°
1600	clear	% cloud cover	hazy	4/7	72°
1700	clear	% cloud cover	hazy	3/6	73°
1725	clear	% cloud cover	hazy	3/5	78°
	clear	% cloud cover	hazy	3/5	77°
	clear	% cloud cover	hazy	4/5	73°
	clear	% cloud cover	hazy	3/5	75°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:



(102)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/2/16 Site Visit Number 10  
 Site Name Maps 3, 4, 5 Site Location Mission  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0720	<u>clear</u>	% cloud cover	hazy	1/3	67°
	<u>clear</u>	% cloud cover	hazy	3/4	72°
	<u>clear</u>	% cloud cover	hazy	5/7	74°
	<u>clear</u>	% cloud cover	hazy	5/6	75°
	<u>clear</u>	% cloud cover	hazy	4/4	77°
	<u>clear</u>	% cloud cover	hazy	5/7	77°
1000	clear	10 % cloud cover	hazy	5/7	77°
1200	clear	5 % cloud cover	hazy	4/6	77°
1400	clear	25 % cloud cover	hazy	4/6	77°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:





103

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/3/16 Site Visit Number 10  
 Site Name Map 3 Site Location Murder  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>7:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>3/12</u>	<u>72°</u>
<u>10:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>4/17</u>	<u>74°</u>
<u>12:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>3/16</u>	<u>75°</u>
<u>1:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>5/17</u>	<u>81°</u>
<u>1:30</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>3/5</u>	<u>78°</u>
<u>2:00</u>	<u>clear</u>	% cloud cover	<u>hazy</u>	<u>3/5</u>	<u>75°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:



104

Surveyor Dale Powell Date 5/1/16 Site Visit Number 10  
 Site Name Map Site Location Mirador  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:10

Time (24hr)	Sky	Wind (aver/max)	Temp (F)
11:15	clear 90 % cloud cover hazy	1/3	67°
12:00	clear 90 % cloud cover hazy	2/4	70°
13:00	clear 40 % cloud cover hazy	4/7	73°
14:00	clear 10 % cloud cover hazy	3/6	73°
15:00	clear % cloud cover hazy		
16:00	clear % cloud cover hazy		
17:00	clear % cloud cover hazy		
17:25	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:



(102)

Nymphalidae (Brush-footed Butterflies)		Lycanidae (Bugs)	
<i>Euphydryas editha quino</i> (Quino Checkerspot)		<i>Brephidium exilis</i> (Pygmy Blue)	
<i>Adelpha bredowii californica</i> (California Sister)		<i>Celastrina ladon echo</i> (Echo Blue)	
<i>Basilaria torquatus</i> (Torquatus Admiral)		<i>Evers antynula</i> (Western Tailed Blue)	
<i>Charidryas gabbii</i> (Gabb's Checkerspot)		<i>Glaucopsyche hygdamus australis</i> (Southern Blue)	
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)		<i>Hemiargus ceratunus gyas</i> (Edward's Blue)	
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)		<i>Icarcia acmon</i> (Acmon Blue)	
<i>Junonia coenia</i> (Buckeye)		<i>Leptotes marina</i> (Marine Blue)	
<i>Nymphalis antiopa</i> (Mourning Cloak)		<i>Philotes sonorensis</i> (Sonoran Blue)	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>Plebejus melissa</i> (Melissa Blue)	
<i>Phycoides mylitta</i> (Mylitta Crescent)			
<i>Polygonia satyrus</i> (Satyr Anglewing)			
<i>Speyeria callippe</i> (Callippe Fritillary)			
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)			
<i>Vanessa annabella</i> (West Coast Lady)			
<i>Vanessa atalanta</i> (Red Admiral)			
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)			
Danaidae (Milkweed Butterflies)		Lycaenidae (Hairy Blues)	
<i>Danaus gilippus</i> (Queen)		<i>Ailides halesus</i> (Great Purple Hairstreak)	
<i>Danaus plexippus</i> (Monarch)		<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)	
		<i>Incisalia augustinus</i> (Brown Elf)	
		<i>Strymon melinus</i> (Gray Hairstreak)	
Hesperiidae (Skipper Butterflies)		Papilionidae (Swallowtails)	
<i>Erynnis funeralis</i> (Funeral Dusky-wing)		<i>Papilio eurymedon</i> (Pale Swallowtail)	
<i>Heliopetes ericetorum</i> (Great White Skipper)		<i>Papilio rutulus</i> (Western Tiger Swallowtail)	
<i>Hylephila payleus</i> (Fiery Skipper)		<i>Papilio zelicaon</i> (Anise Swallowtail)	
<i>Pyrgus albescent</i> (Checkered Skipper)			
Pieridae (White and Orange Butterflies)		Riodinidae (Metalmarks)	
<i>Anthocharis cethura</i> (Felder's Orangetip)		<i>Apodemia mormo virgulti</i> (Behr's Metalmark)	
<i>Anthocharis lanceolata</i> (Grinnell's Marble)		<i>Calephelis wrighti</i> (Wright's Metalmark)	
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Artogeia rapae</i> (Cabbage White)			
<i>Colias eurytheme</i> (Alfalfa Butterfly)			
<i>Colias harfordii</i> (Harford's Sulfur)			
<i>Euchloe hyantis lotta</i> (Southern Marble)			
<i>Eurema nicippe</i> (Sleepy Orange)			
<i>Nathalis iole</i> (Dwarf Yellow)			
<i>Phoebis sennae</i> (Cloudless sulfur)			
<i>Pontia protodice</i> (Common White)			
<i>Zerene eurydice</i> (California Dogface)			
OTHER:		Satyridae (Satyrids)	
		<i>Coanonympha californica</i> (California Ringlet)	

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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dan Powell Date 5/2/16 Site Visit Number 10  
 Site Name Maps 3, 4, 5 Site Location M. v. g. m. s.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 7:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
0920	<del>clear</del>	% cloud cover	hazy	1/3	67.0
1000	<del>clear</del>	% cloud cover	hazy	3/6	71.0
1100	<del>clear</del>	% cloud cover	hazy	5/7	74.0
1200	<del>clear</del>	% cloud cover	hazy	5/8	77.0
1300	<del>clear</del>	% cloud cover	hazy	3/4	75.0
1400	<del>clear</del>	% cloud cover	hazy	4/8	78.0
1500	clear	10 % cloud cover	hazy	5/9	78.0
1600	clear	25 % cloud cover	<del>hazy</del>	4/8	77.0
1620	clear	30 % cloud cover	<del>hazy</del>	3/6	76.0
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

105

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebastria sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

(106)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jon Powell Date 5/3/16 Site Visit Number 10  
 Site Name Mt. 3 Site Location Mojave  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
<u>7:15</u>	<del>clear</del>	% cloud cover	hazy	<u>3/5</u>	<u>72°</u>
<u>7:30</u>	<del>clear</del>	% cloud cover	hazy	<u>4/7</u>	<u>74°</u>
<u>7:45</u>	<del>clear</del>	% cloud cover	hazy	<u>3/6</u>	<u>75°</u>
<u>8:00</u>	<del>clear</del>	% cloud cover	hazy	<u>5/7</u>	<u>75°</u>
<u>8:15</u>	<del>clear</del>	% cloud cover	hazy	<u>3/5</u>	<u>78°</u>
<u>8:30</u>	<del>clear</del>	% cloud cover	hazy	<u>3/5</u>	<u>78°</u>
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:





Quino Checkerspot General Form

Adult Survey

Location MISSION GORGE AREA

Survey Segment SURVEY AREA (7)

Surveyor ARON CHATMAN

Date 8 May 2016

Survey Week Number (11)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_

Portion Surveyed: \_\_\_\_\_

Elevation: Max \_\_\_\_\_

Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>11:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower		
<u>12:00</u>	<u>10%</u>	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower		
<u>13:00</u>	<u>20%</u>	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>14:00</u>	<u>20%</u>	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower		

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	<u>6</u>	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	<u>1</u>		<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	<u>1</u>		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	<u>2</u>		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>1</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	<u>4</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	<u>1</u>	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	<u>1</u>		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>1</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Allides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	<u>2</u>				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Loret Chapman

Segment # Sunny Area (7)

Date: 08 May 2016

**Comments:**

**Plant Communities and Habitat Information:**

**Host Plants Present:** Plantago erecta

**Nectar Plants Present:** Cryptantha, Lathraea, Duckworts

☐ **Quino Sighting**

**Date:**

**GPS Location:**

**Photographs Taken:**

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

## Quino Checkerspot General Form

## Adult Survey

Location SOUTH TREATMENT PLANTSurvey Segment SURVEY AREA (4)Surveyor CHRISTOPHER CHATMANDate 9 May 2016Survey Week Number (11)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_

Portion Surveyed: \_\_\_\_\_

Elevation: Max \_\_\_\_\_

Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>10:00</u>	<u>40%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>4-7 mph</u>	<u>65°F</u>
<u>11:00</u>	<u>30%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>4-6 mph</u>	<u>66°F</u>
<u>12:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>5-8 mph</u>	<u>69°F</u>
<u>13:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>5-9 mph</u>	<u>71°F</u>
<u>14:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>4-7 mph</u>	<u>70°F</u>
<u>15:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>4-9 mph</u>	<u>70°F</u>
Stop <u>16:06</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>6-9 mph</u>	<u>69°F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	<u>10</u>	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	<u>2</u>		<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)	<u>1</u>		<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)	<u>2</u>	
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	<u>3</u>		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>1</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)	<u>1</u>		<i>Pontia protodice</i> (Checkered White)	<u>4</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	<u>2</u>	
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	<u>2</u>		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)	<u>1</u>		<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>1</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS: <u>California sister</u></b>		
<i>Erynnis propertius</i> (Propertius Duskywing)			<b>(<u>Adelpha bredowii californica</u>)</b>		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycanidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	<u>10</u>				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor GREG CHATMAN

Segment # SURVEY AREA (4)

Date: 09 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present: Plantago erecta, Castilleja erecta

Nectar Plants Present: SAME AS LAST WEEK

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE RES. / SAN ALDO RIVER AREA'S Survey Segment SURVEY AREA (8)  
 Surveyor GREG CHAPMAN Date 10 May 2016 Survey Week Number (11)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 11:00	25%	clear	<u>patchy</u>	overcast	drizzle	shower	2-4 mph	69°F
12:00	20%	clear	<u>patchy</u>	overcast	drizzle	shower	2-5 mph	72°F
13:00	20%	clear	<u>patchy</u>	overcast	drizzle	shower	3-7 mph	75°F
14:00	10%	<u>clear</u>	patchy	overcast	drizzle	shower	3-6 mph	76°F
15:00	10%	<u>clear</u>	patchy	overcast	drizzle	shower	2-6 mph	77°F
		clear	patchy	overcast	drizzle	shower		
Stop 16:00	10%	<u>clear</u>	patchy	overcast	drizzle	shower	4-6 mph	76°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	4	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)	1		<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	2		<i>Papilio eurymedon</i> (Pale Swallowtail)	1	
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	3		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	1	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)	1		<i>Pontia protodice</i> (Checkered White)	6	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)	2	
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	2		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <i>Californica sister</i>	1	
<i>Erynnis propertius</i> (Proportius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	3				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Chomard

Segment # Survey Area (8)

Date: 10 May 2016

**Comments:**

**Plant Communities and Habitat Information:**

**Host Plants Present:**

Plantago erecta

**Nectar Plants Present:**

SAME AS BEFORE!

☐ **Quino Sighting**

**Date:**

**GPS Location:**

**Photographs Taken:**

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

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Surveyor Dale Powell Date 5/1/00 Site Visit Number 11  
 Site Name Mar 1, 2 Site Location Mar 1, 2  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:45

Time (2 hr)	Sky			Wind (aver / max)	Temp (F)
11:30	clear	30% cloud cover	hazy	5/9	72°
12:00	clear	25% cloud cover	hazy	4/8	70°
12:30	clear	10% cloud cover	hazy	4/10	70°
1:00	clear	25% cloud cover	hazy	3/6	72°
1:30	clear	25% cloud cover	hazy	3/6	72°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:





108

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/8/16 Site Visit Number 11  
 Site Name Mex 3 Site Location Muiramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 3:57

Time (24hr)	Sky			Wind (aver / max)	Temp (F)
1425	clear	25 % cloud cover	hazy	4/7	73°
1500	clear	25 % cloud cover	hazy	5/9	74°
1600	clear	15 % cloud cover	hazy	4/7	73°
1630	clear	5 % cloud cover	hazy	5/9	71°
1700	clear	5 % cloud cover	hazy	5/9	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Anitrrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

108

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurycle</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgultii</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

(109)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 5/9/16 Site Visit Number 11  
 Site Name M+Ps 4.5 Site Location Mimosa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5'10"

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
1140	clear 75 % cloud cover hazy	2/4	67°
1200	clear 80 % cloud cover hazy	3/6	58°
1300	clear 65 % cloud cover hazy	4/7	71°
1400	clear 40 % cloud cover hazy	5/8	73°
1500	clear 25 % cloud cover hazy	4/8	71°
1600	clear 15 % cloud cover hazy	5/8	73°
1650	clear 10 % cloud cover hazy	4/7	70°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**





(110)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 5/2/16 Site Visit Number 11  
 Site Name Mesa Site Location Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:45

Time (24hr)	Sky	Wind (aver./max)	Temp (F)
11:30	clear 75 % cloud cover hazy		
12:00	clear 75 % cloud cover hazy		
12:30	clear 70 % cloud cover hazy		72
13:00	clear 70 % cloud cover hazy		72
13:30	clear 70 % cloud cover hazy		72
14:00	clear 70 % cloud cover hazy		72
14:30	clear 70 % cloud cover hazy		72
15:00	clear 70 % cloud cover hazy		72
15:30	clear 70 % cloud cover hazy		72
16:00	clear 70 % cloud cover hazy		72
16:30	clear 70 % cloud cover hazy		72
17:00	clear 70 % cloud cover hazy		72
17:30	clear 70 % cloud cover hazy		72
18:00	clear 70 % cloud cover hazy		72
18:30	clear 70 % cloud cover hazy		72
19:00	clear 70 % cloud cover hazy		72
19:30	clear 70 % cloud cover hazy		72
20:00	clear 70 % cloud cover hazy		72
20:30	clear 70 % cloud cover hazy		72
21:00	clear 70 % cloud cover hazy		72
21:30	clear 70 % cloud cover hazy		72
22:00	clear 70 % cloud cover hazy		72
22:30	clear 70 % cloud cover hazy		72
23:00	clear 70 % cloud cover hazy		72
23:30	clear 70 % cloud cover hazy		72
24:00	clear 70 % cloud cover hazy		72

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:



(111)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/2/16 Site Visit Number 11  
 Site Name Map 3 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 6:00

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1130	clear	30 % cloud cover	hazy	5/9	72°
1200	clear	25 % cloud cover	hazy	4/9	70°
1230	clear	40 % cloud cover	hazy	4/9	70°
1300	clear	25 % cloud cover	hazy	3/6	72°
1330	clear	25 % cloud cover	hazy	5/9	74°
1400	clear	15 % cloud cover	hazy	4/7	73°
1430	clear	5 % cloud cover	hazy	5/9	69°
1500	clear	5 % cloud cover	hazy	4/6	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Gordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Evers amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thestalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
Danaidae (Milkweed Butterflies)	Papilionidae (Swallowtails)
<i>Danaus gilippus</i> (Queen)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemis mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

(112)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/2/16 Site Visit Number 11  
 Site Name Mapa 4.5 Site Location Mira mar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5/10"

Time (24hr)	Sky			Wind (aver / max)	Temp (F)
1140	clear	25 % cloud cover	hazy	2/4	67°
1200	clear	80 % cloud cover	hazy	3/6	69°
1300	clear	65 % cloud cover	hazy	4/7	71°
1400	clear	40 % cloud cover	hazy	5/8	73°
1500	clear	25 % cloud cover	hazy	4/8	71°
1600	clear	15 % cloud cover	hazy	5/8	73°
1650	clear	10 % cloud cover	hazy	4/7	70°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:



(112)

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
III <i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
II <i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atides halesus</i> (Great Purple Hairstreak)
II <i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	II <i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
I <i>Danaus plexippus</i> (Monarch)	III <i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
II <i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
III <i>Pyrgus albescens</i> (Checkered Skipper)	I <i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	III <i>Phoebis sennae</i> (Cloudless sulfur)
	III <i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	III <i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jay Powell Date 5/10/16 Site Visit Number 11  
 Site Name M. p. 2.12.5 Site Location LA 1000000  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:45

Time (24hr)	Sky			Wind (aver./max)	Temp (F)
1100	clear	95 % cloud cover	hazy	2/6	62°
1200	clear	85 % cloud cover	hazy	2/4	65°
1300	clear	10 % cloud cover	hazy	3/5	72°
1400	clear	5 % cloud cover	hazy	4/6	72°
1500	clear	5 % cloud cover	hazy	4/6	73°
1600	clear	35 % cloud cover	hazy	3/5	73°
1700	clear	50 % cloud cover	hazy	4/6	68°
1715	clear	50 % cloud cover	hazy	4/6	69°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:

Quino Checkerspot General Form

Adult Survey

Location MISSION LODGE AREA

Survey Segment SURVEY AREA (7)

Surveyor CAROL CHATMAN

Date 15 May 2016

Survey Week Number (12)

Survey Partner(s) \_\_\_\_\_

Total Acres: \_\_\_\_\_

Portion Surveyed: \_\_\_\_\_

Elevation: Max \_\_\_\_\_

Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start <u>11:00</u>	<u>30%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>2-3 mph</u>	<u>67°F</u>
<u>12:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>2-5 mph</u>	<u>69°F</u>
<u>13:00</u>	<u>20%</u>	clear	<u>patchy</u>	overcast	drizzle	shower	<u>3-5 mph</u>	<u>70°F</u>
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop <u>14:00</u>	<u>10%</u>	<u>clear</u>	<u>patchy</u>	overcast	drizzle	shower	<u>4-6 mph</u>	<u>73°F</u>

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	<u>10</u>	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	<u>10</u>	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	<u>1</u>	<u>X</u>	<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	<u>2</u>		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)	<u>1</u>	
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)			<i>Pontia protodice</i> (Checkered White)	<u>4</u>	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Heliopterus ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	<u>2</u>		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mourning Duskywing)			<b>OTHERS:</b>		
<i>Erynnis propertius</i> (Propertius Duskywing)					
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Ailides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	<u>4</u>				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor Greg Chapman

Segment # Swamp Area (7)

Date: 15 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Plantago erecta

Nectar Plants Present:

same as before

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

Quino Checkerspot General Form

Adult Survey

Location SAN VICENTE DES. / SAN DIEGO MOUNTAIN Survey Segment SUAVE MOUNTAIN (8)  
 Surveyor ARIEL CHATMAN Date 16 May 2016 Survey Week Number (12)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 11:00	30%	clear	patchy	overcast	drizzle	shower	3-6 mph	64° F
12:00	30%	clear	patchy	overcast	drizzle	shower	3-6 mph	66° F
13:00	20%	clear	patchy	overcast	drizzle	shower	4-6 mph	67° F
14:00	20%	clear	patchy	overcast	drizzle	shower	5-7 mph	68° F
15:00	20%	clear	patchy	overcast	drizzle	shower	5-8 mph	68° F
		clear	patchy	overcast	drizzle	shower		
Stop 16:00	20%	clear	patchy	overcast	drizzle	shower	6-8 mph	67° F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	7	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)		
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	+10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)			<i>Papilio eurymedon</i> (Pale Swallowtail)	1	+
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	2		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)		
<i>Danaus plexippus</i> (Monarch)	1		<i>Pontia protodice</i> (Checkered White)	+10	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	3	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)			<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	1		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			OTHERS: <i>Phoebastria sennae</i>	1	
<i>Erynnis propertius</i> (Propertius Duskywing)			(cloudless sulphur)		
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elf)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	5				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					



Surveyor G.A. CANTU Segment # SUNNY AREA (8) Date: 16 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present: Plantago erecta

Nectar Plants Present: SAME AS BEFORE

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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Quino Checkerspot General Form

Adult Survey

Location SOUTH TREATMENT PLANT Survey Segment SUNNY AREA (4)  
 Surveyor LOREY CHATMAN Date 18 May 2016 Survey Week Number (12)  
 Survey Partner(s) \_\_\_\_\_  
 Total Acres: \_\_\_\_\_ Portion Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_

Time (24 hr)	% Cloud	Sky					Wind (range)	Temp (F)
Start 10:00	25%	clear	patchy	overcast	drizzle	shower	4-6 mph	66°F
11:00	25%	clear	patchy	overcast	drizzle	shower	4-6 mph	66°F
12:00	15%	clear	patchy	overcast	drizzle	shower	7-9 mph	68°F
13:00	15%	clear	patchy	overcast	drizzle	shower	6-9 mph	70°F
14:00	15%	clear	patchy	overcast	drizzle	shower	5-8 mph	71°F
15:00	25%	clear	patchy	overcast	drizzle	shower	6-9 mph	71°F
Stop 16:00	25%	clear	patchy	overcast	drizzle	shower	6-9 mph	70°F

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

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
<b>Nymphalidae (Brush Footed Butterflies)</b>			<i>Leptotes marina</i> (Marine Blue)	10	
<i>Euphydryas editha quino</i> (Quino Checkerspot)			<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Euphydryas chalcedona</i> (Chalcedon Checkerspot)			<i>Plebejus melissa</i> (Melissa Blue)		
<i>Charidryas gabbii</i> (Gabb's Checkerspot)			<i>Everes amyntula</i> (Western Tailed-Blue)		
<i>Phycoides mylitta</i> (Mylitta Crescent)			<i>Brephidium exilis</i> (Western Pygmy-Blue)	2	
<i>Thessalia leanira</i> (Leanira Checkerspot)			<b>Riodinidae (Metalmarks)</b>		
<i>Nymphalis antiopa</i> (Mourning Cloak)			<i>Apodemia mormo</i> (Mormon Metalmark)	10	
<i>Basilarchia lorquini</i> (Lorquin's Admiral)			<b>Papilionidae (Swallowtails)</b>		
<i>Junonia coenia</i> (Common Buckeye)	1		<i>Papilio eurymedon</i> (Pale Swallowtail)		
<i>Vanessa annabella</i> (West Coast Lady)			<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Papilio zelicaon</i> (Anise Swallowtail)	1	✓
<i>Vanessa cardui</i> (Painted Lady)			<b>Pieridae (Whites and Orangetips)</b>		
<i>Vanessa virginiensis</i> (American Lady)	5		<i>Anthocharis cethura</i> (Desert Orangetip)		
<b>Danaiidae</b>			<i>Anthocharis sara</i> (Sara's Orangetip)		
<i>Danaus gilippus</i> (Queen)			<i>Pieris rapae</i> (Cabbage White)	2	
<i>Danaus plexippus</i> (Monarch)	1		<i>Pontia protodice</i> (Checkered White)	6	
<b>Hesperiidae</b>			<i>Colias eurytheme</i> (Orange Sulphur)	2	
<i>Heliopetes ericetorum</i> (Northern White-Skipper)			<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Hylephila phyleus</i> (Fiery Skipper)	3		<i>Eurema nicippe</i> (Sleepy Orange)		
<i>Pyrgus albescens</i> (White Checkered-Skipper)			<b>Satyridae (Satyrids)</b>		
<i>Erynnis funeralis</i> (Funereal Duskywing)	2		<i>Coenonympha californica</i> (Common California Ringlet)		
<i>Erynnis tristis</i> (Mournful Duskywing)			<b>OTHERS:</b> <i>Calceana Ginter</i>		
<i>Erynnis propertius</i> (Propertius Duskywing)			<i>(Adelpha bredowii californica)</i>	1	
<i>Ochlodes agricola</i> (Rural Skipper)					
<b>Lycaenidae (Hairstreaks)</b>					
<i>Atides halesus</i> (Great Purple Hairstreak)					
<i>Incisalia augustinus</i> (Western Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)	10				
<i>Glaucopsyche lygdamus</i> (Southern Blue)					
<i>Icarcia acmon</i> (Acmon Blue)					
<i>Celastrina ladon</i> (Echo Blue)					

Surveyor GABRIEL CHAPMAN

Segment # SWAMP AREA (4)

Date: 18 May 2016

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Nectar Plants Present:

☐ Quino Sighting

Date:

GPS Location:

Photographs Taken:

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

113

[illegible]

114

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/15/16 Site Visit Number 12  
 Site Name Mesa 12 Site Location Mesa 12  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 55

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
12:05	clear	75 % cloud cover	hazy	4/7	71°
	clear	75 % cloud cover	hazy	5/9	70°
	clear	% cloud cover	hazy	4/8	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:





(15)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/15/16 Site Visit Number 12  
 Site Name Map 3 Site Location 11.3 av. av.  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 2:00

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
1505	clear 50 % cloud cover hazy	5/7	72°
1600	clear 65 % cloud cover hazy	3/6	69°
1705	clear 55 % cloud cover hazy	3/5	69°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

COMMENT:



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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/16/16 Site Visit Number 12  
 Site Name Mesa 4.5 Site Location Chiricahua  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:15

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
1145	clear 90 % cloud cover hazy	2/7	67°
1200	clear 90 % cloud cover hazy	2/7	68°
1300	clear 85 % cloud cover hazy	3/6	70°
1500	clear 60 % cloud cover hazy	3/5	69°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

## COMMENT:

1015-1145 Spring following survey

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Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes anyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atitides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurycle</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia marmo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	



(117)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Dale Powell Date 5/7/16 Site Visit Number 12  
 Site Name Map 314 Site Location Miramar  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 12:45

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
12:45	clear 05 % cloud cover hazy	2/4	70°
12:45	clear 2 % cloud cover hazy	2/4	69°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**

12:00-12:45 Spina Follies Survey  
 12:45-1:00

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[illegible]

118

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Jim Powell Date 5/15/16 Site Visit Number 12  
 Site Name Map 2 Site Location Miramonte  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:05

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
12:00	clear	70 % cloud cover	hazy	4/7	71°
13:00	clear	75 % cloud cover	hazy	5/9	70°
14:00	clear	60 % cloud cover	hazy	4/8	71°
15:00	clear	50 % cloud cover	hazy	5/8	72°
16:00	clear	40 % cloud cover	hazy	3/5	67°
17:05	clear	55 % cloud cover	hazy	2/3	67°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

**COMMENT:**

118

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes anyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceratulus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icarcia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

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## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jim Powell Date 5/16/16 Site Visit Number 12  
 Site Name Map 3.15 Site Location M 100 m 20  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 5:15

Time (24hr)	Sky			Wind (aver <sup>2</sup> /max)	Temp (F)
1145	clear	00 % cloud cover	hazy	5/9	59°
1200	clear	00 % cloud cover	hazy	2/7	58°
1215	clear	00 % cloud cover	hazy	3/6	70°
1500	clear	00 % cloud cover	hazy	3/6	69°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus,  
Antirrhinum coulterianum, Collinsia heterophylla

\*20 second period, mph

## COMMENT:

1015-1145

Sp. 11/16/16 Survey



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Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarctia lorquini</i> (Lorquin's Admiral)	<i>Everes amyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sonorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	
<i>Polygonia satyrus</i> (Satyr Anglewing)	
<i>Speyeria callippe</i> (Callippe Fritillary)	Lycaenidae (Hairstreaks)
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atlides halesus</i> (Great Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa</i> = <i>dumetorum</i> (Perplexing Hairstreak)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Incisalia augustinus</i> (Brown Elfin)
<i>Vanessa cardui</i> (Painted Lady)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa virginiensis</i> (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
Hesperiidae	Pieridae (Whites and Orangetips)
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopetes ericetorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lotta</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	Riodinidae (Metalmarks)
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrighti</i> (Wright's Metalmark)
	Satyridae (Satyrids)
	<i>Coenonympha californica</i> (California Ringlet)
OTHER:	

(120)

**Quino Checkerspot Survey Form****Adult Assessment**

Surveyor Tun Powell Date 5/17/16 Site Visit Number 12  
 Site Name Maps 3,4 Site Location 1/17/16  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 100

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1245	clear	95 % cloud cover	hazy	2/4	70
1345	clear	95 % cloud cover	hazy	3/5	69
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

**COMMENT:**

1280-1345 Spring Redberry Survey  
 1445-1600

120

Nymphalidae (Brush Footed Butterflies)	Lycanidae (Blues)
Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorquini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)	Hemiargus ceraunus gyas (Edward's Blue)
Euphydryas chalcedona hennei (Henne's Checkerspot)	Icaricia acmon (Acmon Blue)
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiopa (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylytta Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lycanidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Incisalia augustinus (Brown Elf)
Vanessa atalanta (Red Admiral)	Strymon melinus (Gray Hairstreak)
Vanessa cardui (Painted Lady)	
Vanessa virginiensis (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetips)
Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudless sulfur)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
	Riodinidae (Metalmarks)
	Apodemus mormo virgulii (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
OTHER:	

(121)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/23/16 Site Visit Number 12  
 Site Name Mesa Site Location Mesa  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:30

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
11:30	clear 20 % cloud cover hazy	3/5	74.0
12:00	clear 10 % cloud cover hazy	3/4	74.0
12:30	clear 10 % cloud cover hazy	2/4	75.0
13:00	clear 10 % cloud cover hazy	2/6	75.0
15:00	clear 10 % cloud cover hazy	3/6	75.0
15:30	clear 5 % cloud cover hazy	2/4	72.0
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

(121)

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Dale Powell Date 5/23/16 Site Visit Number 12  
 Site Name Wapiti Site Location Mwanga  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: \_\_\_\_\_

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1130	clear	20 % cloud cover	hazy	3/5	70°
1200	clear	10 % cloud cover	hazy	3/5	74°
1230	clear	10 % cloud cover	hazy	3/4	75°
1300	clear	10 % cloud cover	hazy	3/5	75°
1330	clear	10 % cloud cover	hazy	3/5	75°
1400	clear	10 % cloud cover	hazy	3/5	75°
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

*Plantago erecta*, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:





122

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jun Powell Date 5/23/16 Site Visit Number 12  
 Site Name Map 3.4 Site Location Mirna  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: 4:30

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
1130	clear 20 % cloud cover hazy	3/5	74°
1200	clear 15 % cloud cover hazy	3/6	74°
1300	clear 10 % cloud cover hazy	2/4	75°
1400	clear 10 % cloud cover hazy	3/6	76°
1500	clear 10 % cloud cover hazy	3/6	75°
1600	clear 5 % cloud cover hazy	2/4	72°
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

~~Plantago erecta~~, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

122

## Quino Checkerspot Survey Form

## Adult Assessment

Surveyor Jun Powell Date 5/23/16 Site Visit Number 12  
 Site Name Map 3.4 Site Location Mivqua  
 Total Acres: \_\_\_\_\_ Total Acres Surveyed: \_\_\_\_\_ Elevation: Max \_\_\_\_\_ Min \_\_\_\_\_  
 Hours Surveyed: \_\_\_\_\_

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)
1130	clear	20 % cloud cover	hazy	3/5	740
1200	clear	15 % cloud cover	hazy	3/6	740
1300	clear	10 % cloud cover	hazy	2/4	75
1400	clear	10 % cloud cover	hazy	3/6	76°
1445	clear	10 % cloud cover	hazy	3/6	750
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		

Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

~~Plantago erecta~~, *Plantago patagonica*, *Castilleja exserta*, *Cordylanthus rigidus*,  
*Antirrhinum coulterianum*, *Collinsia heterophylla*

\*20 second period, mph

COMMENT:

<b>Nymphalidae (Brush Footed Butterflies)</b>	<b>Lycaenidae (Blues)</b>
<i>Euphydryas editha quino</i> (Quino Checkerspot)	<i>Brephidium exilis</i> (Pygmy Blue)
<i>Adelpha bredowii californica</i> (California Sister)	<i>Celastrina ladon echo</i> (Echo Blue)
<i>Basilarchia lorquini</i> (Lorquin's Admiral)	<i>Everes anyntula</i> (Western Tailed Blue)
<i>Charidryas gabbii</i> (Gabb's Checkerspot)	<i>Glaucopsyche lygdamus australis</i> (Southern Blue)
<i>Euphydryas chalcedona chalcedona</i> (Chalcedon Checkerspot)	<i>Hemiargus ceraunus gyas</i> (Edward's Blue)
<i>Euphydryas chalcedona hennei</i> (Henne's Checkerspot)	<i>Icaricia acmon</i> (Acmon Blue)
<i>Junonia coenia</i> (Buckeye)	<i>Leptotes marina</i> (Marine Blue)
<i>Nymphalis antiopa</i> (Mourning Cloak)	<i>Philotes sanorensis</i> (Sonoran Blue)
<i>Nymphalis californica</i> (California Tortoiseshell)	<i>Plebejus melissa</i> (Melissa Blue)
<i>Phycoides mylitta</i> (Mylitta Crescent)	<i>Euphilotes bernardina</i> (S.B. Blue)
<i>Polygonia satyrus</i> (Satyr Angleming)	
<i>Speyeria callippe</i> (Callippe Fritillary)	<b>Lycaenidae (Hairstreaks)</b>
<i>Thessalia leanira wrighti</i> (Leanira Checkerspot)	<i>Atides halesus</i> (Groat Purple Hairstreak)
<i>Vanessa annabella</i> (West Coast Lady)	<i>Callophrys perplexa = dumetorum</i> (Perplexing Hairstreak)
	<i>Incisalia augustinus</i> (Brown Elf)
<i>Vanessa atalanta</i> (Red Admiral)	<i>Strymon melinus</i> (Gray Hairstreak)
<i>Vanessa cardui</i> (Painted Lady)	
<i>Vanessa virginiensis</i> (Virginia Lady)	
	<b>Papilionidae (Swallowtails)</b>
<b>Danaidae (Milkweed Butterflies)</b>	<i>Papilio eurymedon</i> (Pale Swallowtail)
<i>Danaus gilippus</i> (Queen)	<i>Papilio rutulus</i> (Western Tiger Swallowtail)
<i>Danaus plexippus</i> (Monarch)	<i>Papilio zelicaon</i> (Anise Swallowtail)
<b>Hesperiidae</b>	<b>Pieridae (Whites and Orangetips)</b>
<i>Erynnis funeralis</i> (Funeral Dusky-wing)	<i>Anthocharis cethura</i> (Felder's Orangetip)
<i>Heliopterus erictorum</i> (Great White Skipper)	<i>Anthocharis lanceolata</i> (Grinnell's Marble)
<i>Hylephila phyleus</i> (Fiery Skipper)	<i>Anthocharis sara</i> (Sara Orangetip)
<i>Pyrgus albescens</i> (Checkered Skipper)	<i>Artogeia rapae</i> (Cabbage White)
	<i>Colias eurytheme</i> (Alfalfa Butterfly)
	<i>Colias harfordii</i> (Harford's Sulfur)
	<i>Euchloe hyantis lota</i> (Southern Marble)
	<i>Eurema nicippe</i> (Sleepy Orange)
	<i>Nathalis iole</i> (Dwarf Yellow)
	<i>Phoebis sennae</i> (Cloudless sulfur)
	<del>X</del> <i>Pontia protodice</i> (Common White)
	<i>Zerene eurydice</i> (California Dogface)
	<b>Riodinidae (Metalmarks)</b>
	<i>Apodemia mormo virgulti</i> (Behr's Metalmark)
	<i>Calephelis wrightii</i> (Wright's Metalmark)
	<b>Satyridae (Satyrids)</b>
	<i>Coenonympha californica</i> (California Ringlet)
<b>OTHER:</b>	

# **APPENDIX B**

*Wildlife Species Observed during the  
2016 Pure Water Program Quino Survey*





**APPENDIX B**  
**Wildlife Species Observed during the**  
**2016 Pure Water Program Quino Survey**

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**INVERTEBRATE**

**BUTTERFLIES**

***LYCAENIDAE—BLUES, HAIRSTREAKS, AND COPPERS***

*Callophrys augustinus*—brown elfin  
*Euphilotes battoides bernardino*—Bernardino square-spotted blue  
*Glaucopsyche lygdamus australis*—southern blue  
*Hemiargus ceraunus*—Ceraunus blue  
*Hemiargus ceraunus gyas*—Edward’s blue  
*Leptotes marina*—marine blue  
*Plebejus acmon*—Acmon blue  
*Plebejus lupini*—lupine blue  
*Strymon melinus*—gray hairstreak  
*Brephidium exile*—western pygmy-blue

***NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES***

*Adelpha bredowii*—California sister  
*Chlosyne californica*—California patch  
*Coenonympha tullia californica*—common californica ringlet  
*Danaus gilippus*—queen  
*Junonia coenia*—common buckeye  
*Limenitis lorquini*—Lorquin’s admiral  
*Nymphalis antiopa*—mourning cloak  
*Vanessa annabella*—west coast lady  
*Vanessa atalanta*—red admiral  
*Vanessa cardui*—painted lady  
*Vanessa virginiensis*—American lady  
*Danaus plexippus*—monarch

***RIODINIDAE—METALMARKS***

*Apodemia mormo virgulti*—Behr’s metalmark  
*Apodemia mormo*—Mormon Metalmark

***HESPERIIDAE—SKIPPERS***

*Erynnis funeralis*—funereal duskywing  
*Heliopetes ericetorum*—northern white-skipper  
*Hylephila phyleus*—fiery skipper

## APPENDIX B (Continued)

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*Lerodea eufala*—Eufala skipper

*Pyrgus albescens*—white checkered-skipper

### ***PAPILIONIDAE—SWALLOWTAILS***

*Papilio eurymedon*—pale swallowtail

*Papilio rutulus*—western tiger swallowtail

*Papilio zelicaon*—anise swallowtail

### ***PIERIDAE—WHITES AND SULFURS***

*Anthocharis cethura*—desert orangetip

*Anthocharis sara sara*—Pacific sara orangetip

*Colias eurytheme*—orange sulphur

*Colias harfordii*—Harford's sulphur

*Eurema nicippe*—sleepy orange

*Nathalis iole*—dainty sulphur

*Phoebis sennae*—cloudless sulphur

*Pieris rapae*—cabbage white

*Pontia protodice*—checkered white