APPENDIX D

2016 Focused Quino Checkerspot Butterfly Survey Report



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August 22, 2016

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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)

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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).

DUDEK

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).

Vegetation Community/Land Cover	Acres
Suitable Quino Habitat	
Southern Mixed Chaparral	88.7
Coast Live Oak Woodland	1.2
Coastal Sage Scrub1	164.1
Disturbed Coastal Sage Scrub1	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
Suitable Quino Habitat Total ²	429.3
Excluded Quino Survey Areas	
Agriculture	6.0
Open Water	1.1
Developed Land	13.7
Excluded Quino Survey Area Total2	20.8
Grand Total ²	450.1

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

Notes:

¹ Coastal Sage Scrub subtotal is 195.1 acres.

² 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 nonnative 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*),

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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 (*Centaurium 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, broadleaved, 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.

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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 spikemoss (*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-leafed, 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).

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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

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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.

Date	Hours	Personnel	Survey Hours ¹	Conditions			
Survey Pass $1^2 - 80$ Survey Hours Total							
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			
		Survey Pass	s 2 – 67 Surv	vey Hours Total			
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			
Survey Pass 3 – 51 Survey Hours Total							
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 2Schedule of Focused Quino Surveys

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Date	Hours	Personnel	Survey Hours ¹	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		
		Survey Pass	4 – 55:30 Su	rvey Hours Total		
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		
		Survey Pass 5	53 — 46:45 Si	irvey Hours Total		
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		
Survey Pass 6 – 47:15 Survey Hours Total						
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		
		Survey Pass	7 – 46:15 Su	rvey Hours Total		
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		
		Survey Pass	s 8 – 47 Surv	vey Hours Total		
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 2Schedule of Focused Quino Surveys

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

Date	Hours	Personnel	Survey Hours ¹	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
		Survey Pass S	9 – 46:45 Su	rvey Hours Total
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
		Survey Pass	10 – 49 Sur	vey Hours Total
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
		Survey Pass 1	1 – 48:30 Sı	irvey Hours Total
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
		Survey Pass	12 – 56.5 Su	rvey Hours Total
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

Table 2Schedule of Focused Quino Surveys

Notes:

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. ² 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.

³ 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.

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

Table 3Schedule of Host Plant Mapping Surveys

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

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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.

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

Table 4aButterflies Observed On Site during Survey Passes 1–7

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

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

Table 4aButterflies Observed On Site during Survey Passes 1–7

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

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

Table 4aButterflies Observed On Site during Survey Passes 1–7

Table 4bButterflies Observed On Site during Survey Passes 8–12

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

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

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

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

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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	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp.
2	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp., Eriophyllum confertiflorum
3	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp., Rhus spp., Acmispon glaber
4	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp., Eriogonum spp., Salvia spp.
5	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp., Rhus spp., Eriogonum spp.
6	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp.
7	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp., Rhus spp., Eriogonum spp., Salvia spp.
8	Cryptantha spp., Dichelostemma capitatum, Encelia spp., Lasthenia spp., Eriodictyon spp., Eriogonum spp., Salvia 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, if you have any questions regarding the contents of this report.

Sincerely,

Brock Ortega

Brock Ortega Permit #TE813545-6

Dale A Powell

Dale Powell Permit #TE006559-6

Greg Chatman Permit #TE075112-2

Paurel

Jun Powell Permit #TE006559-6

DUDEK

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

- 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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	Revue Center Dr Becuttive Dr Becuttive Dr Becuttive Dr
	La Jolla Village Dr La Jolla Village Dr
	SOURCE: City San Diego 2016: Bing Maps 2016 Pure Water San Diego Program North City Projects



Survey Areas

East9	Marindustry Dr La Handel La Handel Autoport Mall Miramar Rd Miramar Rd
Executive Dr	Miramar Rd Miramar Rd Miramar Rd Miramar Rd
	Rabel Athenic Ares
Nobel Dr	
	1,000 Feet Z3 SOURCE: City San Diego 2016: Bing Maps 2016
	Pure water San Diego Program North City Projects



Survey Areas













	Namar Rd Namar Rd Dia Jolia Village Dr
La Jolla Village D	
	SOURCE: City San Diego 2016; Bing Maps 2016

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

FIGURE 5A Quino Host Plant Locations


	Mission Trails Regional Park Mission Trails Regional Park
	Mission Gorge Rd Mission Gorge Rd
	Long provide the second se
DODER	Pure Water San Diego Program North City Projects



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

FIGURE 5C Quino Host Plant Locations

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	1,000 Feet	Call of
DUDEK	SOURCE: City San Diego 2016; Bing Maps 2016	
	Pure Water San Diego Program North City Projects	



- FWS Required QCB Survey Area

Quino Host Plant, Density

- Plantago erecta, Very Low
- 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

FIGURE 5D

Quino Host Plant Locations

APPENDIX A

2016 Pure Water Program Quino Survey Field Notes

Quino Checkerspot General Form

Adult Survey

2

Location PUREWATER NERSERY AREA	Survey Segment
Surveyor anet CHAMAN	Date 21may 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 /0:00	50%	clear patchy overcast drizzle shower	4-6 mph	69° F
11:00	40%	clear patchy overcast drizzle shower	4-6 mph	70%=
17:00	30%	clear patchy overcast drizzle shower	5-bugh	70°F
10.00		clear patchy overcast drizzle shower	1	
		clear patchy overcast drizzle shower		1
		clear patchy overcast drizzle shower		
Stop /2:00	25%	clear patchy overcast drizzle shower	5-74th	TIPE

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

community.			
*			
Plant Communities and H	1		
hant communities and Ha	bitat Information:		
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Host Plants Present:	Plantaso erecta		
Host Plants Present:	Plantaso erecta		
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Host Plants Present:	Plantaso erecta Prassica, Buckwitters, 6	STERALEHE'S	
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Host Plants Present: A Interview B Interview B	Plantaso erecta Prassica , Buckwitters, e Date:	GPS Location:	
Host Plants Present:	Plantaso erecta Prassica Buckwitters B Date:	GPS Location:	
Host Plants Present:	Date:	GPS Location:	
Host Plants Present:	Date:	GPS Location:	

Quino Checkerspot General Form

Adult Survey

Location DURE WATER	MURESETY AREA	Survey Segment	ALEA ()
Surveyor GRET	CHATMAN	Date 23 man 2016 Su	rvey Week Number (12)
Survey Partner(s) 74	E POWERL'S	/	
Total Acres: P	ortion Surveyed:	Elevation:	Max Min

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start //:30	30%	clear patchy overcast drizzle shower	2-Jup	TIOF
12:00	25%	clear patchy overcast drizzle shower	4-6.p	73°F
13:00	20%	clear datchy overcast drizzle shower	3-6 m	7405
14:00	20%	clear patche overcast drizzle shower	4-Gyle	73°F
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 15:00	20%	clear patchy overcast drizzle shower	4-7 cm	73°F

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

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	+10	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	120	
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	5	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)		-	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	21 23	1-1-1	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	2		Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	+10	17.
Hesperidae			Colias eurytheme (Orange Sulphur)		1 3
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	3		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS: Adeloha brodowii	1	
Erynnis propertius (Propertius Duskywing)			(California sister)		
Ochlodes agricola (Rural Skipper)					-
Lycaenidae (Hairstreaks)		-	Eulhilotes Dernardino	3	
Atlides halesus (Great Purple Hairstreak)			(Bernardino blue)		
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	6				
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)	-			-	

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Host Plants Present:	Date: 2. 5. 8.	Cryptantha, GPS Location:	

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 SPECIES (COUNT)				
Acmon blue (4)	common buckeye (4)	painted lady (3)			
Behr's metalmark (5)	Pacific sara orangetip (15)	queen (1)			

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST				
(none)				

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					
Castilleja exserta	Encelia spp.	Plantago erecta			
Cryptantha spp.	Lasthenia spp.	Yerba santa			

(none)

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 SPECIES (COUNT)					
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 SPECIES (COUNT)					
(none)					
INCIDENTAL PLANT LIST					

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					
Castilleja exserta	Encelia spp.	Yerba santa			
Cryptantha spp.	Lasthenia spp.				
Dichelostemma capitatum	Plantago erecta				

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)				

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 SPECIES (COUNT)				
common california ringlet (1)	Pacific sara orangetip (2)	western pygmy-blue (3)			
Mormon metalmark (4)	southern blue (3)				

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)				
(none)				

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

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				
Castilleja exserta	Dichelostemma capitatum	Yerba santa		
Cryptantha sp.	Plantago erecta			

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 SPECIES (COUNT)				
funereal duskywing (1)					

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST		
Castilleja exserta	Dichelostemma capitatum	Yerba santa
Chamise	Plantago erecta	
Cryptantha	Rhus	

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)	

INCIE	ENTAL WILDLIFE LIST SPECIES (C	OUNT)
(none)		

INCIDENTAL PLANT LIST			
Castilleja exserta	Encelia	Yerba santa	
Cryptantha	Lasthenia		
Dichelostemma capitatum	Plantago erecta		

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 SPECIES (COUNT)	
funereal duskywing (1)	Pacific sara orangetip (1)	

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)		
(none)		

	INCIDENTAL PLANT LIST	
(none)		

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					
Castilleja exserta	Dichelostemma capitatum	Plantago erecta			
Cryptantha sp.	Lasthenia sp.	Yerba santa sp.			

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					
Buckwheat sp.	Dichelostemma capitatum	Rhus.			
Chamise sp.	Encelia sp.	Yerba santa			
Cryptantha sp.	Plantago ssp. (English plantago)				

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					
Buckwheat sp.	Cryptantha sp.	Rhus sp.			
Castilleja exserta	Dichelostemma capitatum	Yerba santa			
Chamise sp.	Plantago erecta				

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 SPECIES (COUNT)					
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 SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST				
(none)				

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 SPECIES (COUNT)					
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 SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST				
(none)				

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 SPECIES (COUNT)				
common buckeye (2)	Mormon Metalmark (10)	Pacific sara orangetip (20)		
funereal duskywing (4)	northern white-skipper (10)			

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST					
Buckwheat sp.	Dichelostemma capitatum	Plantago erecta			
Castilleja exserta	Encelia sp.				
Cryptantha sp.	Lasthenia sp.				

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)				

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 SPECIES (COUNT)					
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 SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST				
(none)				

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 SPECIES (COUNT)						
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 SPECIES (COUNT)					
(none)					

INCIDENTAL PLANT LIST					
(none)					

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			
Castilleja exserta	Dichelostemma capitatum	Lasthenia sp.	
Cryptantha sp.	Eriogonum sp.	Plantago erecta	

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 SPECIES (COUNT)	
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 SPECIES (COUNT)		
(none)		

	INCIDENTAL PLANT LIST	
(none)		

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 SPECIES (COUNT)	
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 SPECIES (COUNT)		
(none)		
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	INCIDENTAL PLANT LIST	
(none)		

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 SPECIES (COUNT)				
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 SPECIES (COUNT)				
(none)				

	INCIDENTAL PLANT LIST	
(none)		

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 SPECIES (COUNT)	
western pygmy-blue (2)		

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)					
(none)					

INCIDENTAL PLANT LIST					
Cryptantha sp.					

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 SPECIES (COUNT)	
western pygmy-blue (2)		

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)				
(none)				

INCIDENTAL PLANT LIST				
Cryptantha spp.				

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			
Cryptantha sp.	Eriodictyon sp.	Plantago erecta	
Dichelostemma sp.	Lasthenia sp.		
GENERAL SURVEY INFORMATION			
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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								
StatusTimeAir Temp. (F)Ground Temp. (F)Cloud Cover (%)Wind (mph)SkyNotes								
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				
Cryptantha sp.	Encelia sp.	Plantago erecta		
Dichelostemma sp.	Eriodictyon sp.			

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								
StatusTimeAir Temp. (F)Ground Temp. (F)Cloud Cover (%)Wind (mph)SkyNotes								
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				
Cryptantha sp.	Encelia sp.	Lasthenia sp.		
Dichelostemma sp.	Eriodictyon sp.	Plantago erecta		

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					
Cryptantha spp.	Golden yarrow	Yerba santa			
Dichelostemma capitatum	Lasthenia spp.				
Encelia spp.	Plantago erecta				

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					
Cryptantha sp.	Eriodictyon sp.	Plantago erecta			
Dichelostemma sp.	Lasthenia sp.				

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	
Cryptantha spp.	Lasthenia spp.	Yerba santa
Dichelostemma capitatum	Plantago erecta	

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 SPECIES (COUNT)	
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 SPECIES (COUNT)		
(none)		

	INCIDENTAL PLANT LIST	
Cryptantha sp.	Eriodictyon sp.	Plantago erecta
Dichelostemma sp.	Lasthenia sp.	

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 SPECIES (COUNT)	
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 SPECIES (COUNT)		
(none)		

	INCIDENTAL PLANT LIST	
Cryptantha spp.	Lasthenia spp.	Yerba santa
Dichelostemma capitatum	Plantago erecta	

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					
Cryptantha spp.	Goldfields	Yerba santa			
Dichelostemma capitatum	Plantago erecta				

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				
Cryptantha spp.	Dichelostemma capitatum			

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				
Castilleja exserta	Dichelostemma capitatum	Plantago erecta		
Cryptantha spp.	Goldfields	Yerba santa		

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				
Castilleja exserta	Dichelostemma sp.	Lasthenia sp.		
Cryptantha sp.	Eriodictyon sp.	Plantago erecta		

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				
Acmispon glaber	Dichelostemma sp.	Eriodictyon sp.		
Cryptantha sp.	Encelia sp.	Plantago erecta		

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				
Acmispon glaber	Dichelostemma capitatum	Plantago erecta		
Cryptantha spp.	Encelia spp.	Yerba santa		

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 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				
Castilleja exserta	Encelia sp.	Plantago erecta		
Cryptantha sp.	Eriodictyon sp.			
Dichelostemma sp.	Lasthenia sp.			

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 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				
Castilleja exserta	Encelia spp.	Yerba santa		
Cryptantha spp.	Lasthenia spp.			
Dichelostemma capitatum	Plantago erecta			

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					
Cryptantha spp.	Goldfields	Yerba santa			
Dichelostemma capitatum	Plantago erecta				

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	
Cryptantha sp.	Eriodictyon sp.	Plantago erecta
Dichelostemma sp.	Lasthenia sp.	

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)	

INCIE	DENTAL WILDLIFE LIST SPECIES (C	OUNT)
(none)		

	INCIDENTAL PLANT LIST	
Castilleja exserta	Dichelostemma sp.	Plantago erecta
Cryptantha sp.	Eriodictyon sp.	

GENERAL SURVEY INFORMATION		
Project Name	Pure Water Program	
Survey Date	2016-03-03	
Biologist(s)	Greg Chatman	
Survey Area	San Diego River/San Vincente 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		
Cryptantha spp.	Plantago erecta	
Dichelostemma capitatum	Yerba santa	

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					
Cryptantha sp.	Encelia sp.				
Dichelostemma sp.	Plantago erecta				

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 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					
Cryptantha spp.	Encelia spp.				
Dichelostemma capitatum	Plantago erecta				

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 SPECIES (COUNT)				
cloudless sulphur (2)	orange sulphur (1)	western pygmy-blue (3)			
common buckeye (1)	southern blue (4)	western tiger swallowtail (1)			

INCIDENTAL WILDLIFE LIST SPECIES (COUNT)					
(none)					

INCIDENTAL PLANT LIST				
Cryptantha spp.	Encelia spp.	Plantago erecta		
Dichelostemma capitatum	Lasthenia spp.	Yerba santa		

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				
Cryptantha sp.	Encelia sp.	Lasthenia sp.		
Dichelostemma sp.	Eriodictyon sp.	Plantago erecta		

Quino Ch	eckerspot	General Form					Adult Survey
Location Surveyor Survey Par	the AR COA	COMETERY CHARM	(mcas)	Survey Segment Date 09 mail 2016 Surv	ELMION AL	264 (3) mber (2)	E
Total Acre	s:	Portion Surve	yed:	Elevation: N	lax	Min	

Time (24 hr)	% Cloud	the state	ar	Sky			Wind (range)	Temp (F)
Start // :00	Ð	clear	patchy	overcast	drizzle	shower	2-4 mph	- 10 F
		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 11:50	Ð	clear	patchy	overcast	drizzle	shower	Z-4 up	71° F

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

Butterfly Species	Count. (Total)	Hill-	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)	-		Plebejus melissa (Melissa Blue)	1.1	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)	1000		Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)	1		Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)		1	Apodemia mormo (Mormon Metalmark)		1
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		C
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	1.00	
Vanessa atalanta (Red Admiral)	11		Papilio zelicaon (Anise Swallowtail)	1	Mar. 201
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae	1		Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)	1		Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		1
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		1.00
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	2	1	Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)		-	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)					1
Allides halesus (Great Purple Hairstreak)				1	1
Incisalia augustinus (Western Brown Elfin)		1			2
Callophrys perplexa (Perplexing Hairstreak)					1
Strymon melinus (Gray Hairstreak)					1
Glaucopsyche lygdamus (Southern Blue)		1			
Icarcia acmon (Acmon Blue)				2.1	
Celastrina ladon (Echo Blue)					

Commontes			
omments:			
		P	
Plant Communities and	Habitat Information:	SURICI WEEK (1)	
		0 ,	
Host Plants Present:	Planter precto	Put 1162 ever	
Host Plants Present:	Plantago precta,	Castilleza exeta	
Host Plants Present:	Plantago precta,	Custilleza exetta	
Host Plants Present:	Plantago precta,	Castilleja exetta	
Host Plants Present:	Plantago precta,	Castilleja exetta	
Host Plants Present:	Plantago precta,	Castilleja exetta	
Host Plants Present:	Plantago orecta,	Castilleza exetta	
Host Plants Present:	Plantago precta,	Custilleza exerta Station, BLUE BICKS	
Host Plants Present:	Plantago precta,	Castilleza exerta Station, BLUE SICKS	
Host Plants Present:	Plantago orecta,	Castilleza exerta SHATOR, BLUE DICKS	
Host Plants Present:	Plantago orecta,	Castilleja exerta SHATTOR, BLUE SICKS	
Host Plants Present:	Plantaso orecta,	Castilleza exerta	
Host Plants Present:	Plantago orecta, cryptautha, gores Date:	Custillezz exets Statut & Blue Bless GPS Location:	
Host Plants Present:	Plantago orecta, cryptantha, gogeon Date:	Castillezz exets Station: GPS Location:	
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken:	Plantago orecta, cryptantka, gollor Date:	Castillezz exerts Statut Blue BICKS GPS Location:	
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1.	Plantago orecta, cryptauthy, gogese Date: 2.	Castillezz exets Statut ; But SICKS GPS Location: 3.	
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4.	Plantago orecta, cryptantha j gollon Date: 2. 5.	Castillezz exerts Statillezz exerts GPS Location: 3. 6.	
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4. 7.	Plantago orecta, cryptautha, gores Date: 2. 5. 8.	Custilleja exet/a 1 Sitatok j Blue Alcus GPS Location: 3. 6. 9.	

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Quino Checkerspot General Form	Adult Survey
Location NEXA COMOTON (MCHS)	Survey Segment SURVED Alen (4)
Surveyor Clet Clarman	Date 09 man 2016 Survey Week Number (2)

Survey Partner(s) //// Total Acres: Porti

Portion Surveyed:

Elevation: Max _____ Min ____

Time (24 hr) K Cloud Wind (range) Temp (F) SKY Start 12:15 71° F 0 clear patchy drizzle shower 2-4 mp overcast JOF 13:00 -0 clear patchy drizzle shower overcast Zum 10%0 71°F clear 14:00 drizzle shower patchy overcast Mith clear patchy drizzle shower overcast drizzle shower clear patchy overcast clear patchy overcast drizzle shower TOOF 10% clear) patchy shower 2-4 apr Stop 15:00 overcast drizzle

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

Butterfly Species	Count. (Total)	Hill-	Bútterfly Species	Count, (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1	1.2.2.
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)		-	Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		<u> </u>	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	1	15-14
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	3	1
Basilarchia lorquini (Lorquin's Admiral)	2	-	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)	1	
Vanessa virginiensis (American Lady)	1	1000	Anthocharis cethura (Desert Orangetip)	1	
Danaidae			Anthocharis sara (Sara's Orangetip)	2	
Dangus gilippus (Queen)	100		Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)	1	
Hesperidae	1.00		Colias eurytheme (Orange Sulphur)	1	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	1	
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)	1	
Erynnis tristis (Mournful Duskywing)			OTHERS: CALIFORNIAN SISTER		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)				$\theta \in A$	
Lycaenidae (Hairstreaks)					1.000
Allides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)	1				
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)	2	i		1	
Icarcia acmon (Acmon Blue)		1			
Celastring ladon (Echo Blue)		1	V		-

		0
Comments:		
	# GOOD PATCHES	OF PLANETAGO IN DEEN ALENS
	MORTHOR MCH	3 Rund levers
		U
		f
Plant Communities and	d Habitat Information:	SBE SURICE UTOK (1)
		8 2,
		*
Host Plants Present:	plantage erec	ta, Castillers every
Host Plants Present:	plan-tago erec	ta, Castilleze exerta
Host Plants Present:	Plan. tago erec	ta, Castillezs exeAz
Host Plants Present:	plan-tago erec	ta, Castillezs excerta
Host Plants Present:	Plan tago erec	ta, Castillezs exeAz
Host Plants Present:	plan-tago erec	ta, Castillezs exerta
Host Plants Present:	Plan tago erec	ta, Castilleys excerta
Host Plants Present:	Plantago erec UERBA SATUT, CUP	ta Castilleza ecceAz
Host Plants Present:	Plan tago erec UERBA Sprant, ayr	ta , Castilleys excerta minut, Ewienas, Buences, Lustiter
Host Plants Present:	Plan tago erec YERBA SATATI GYP	ta , Castilleze exerta Mandel, ENCEN 04, BCUENCES, LUSTION
Host Plants Present:	Plantago erec YERBA SATATI GYP	ta , Castilleys ecceAz
Host Plants Present: Nectar Plants Present:	Plantago ercc YERBA SATUTI GYP Date:	Az Castillezs eventz Mandel, ENCENNE, BULEACES, LUSTHER GPS Location:
Host Plants Present: Nectar Plants Present: Quino Sighting	Plan tago erec YERBA SATERY ayp Date:	Ha , Castilleze events minut, Ewieun, Burenuces, Lusmen GPS Location:
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken:	Plan tago erec YERBA SATATI CYA Date:	Az Castillezs ever Mandel, ENCLEUM, BULENCUS, LUSTHEM GPS Location:
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1.	Plan Fago erec YEABA SATERY GYA Date: -	Az Castilleze eventz TANTAM ENCENNY BULENCUS, LUSTHER GPS Location: 3.
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4.	Plan tago erec ytan tago erec ytan tago ytan tago Date: 2. 5.	At Castilless events Mindel Ewieums Beneneces, Lusmiter GPS Location: 3. 6.
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4. 7.	РІан Тазо егес УЕКВА Spt257-1 суд Date: 	Az Castillez eventz Mandel ENCEN of Beneficels, Lustiton GPS Location: 3. 6. 9.

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Quino Checkerspot General Form	Adult Survey
Location MEAR VILLAGE MURSERY Surveyor COEP-CHEMAN	Date 09 mar 2016 Survey Week Number (2)
Total Acres: Portion Surveyed:	Elevation: Max Min

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1.1

Time (24 hr)	% Cloud	Instr	in an	Sky			Wind (range)	Temp (I)
Start 15:00	\$10%	clear	patchy	overcast	drizzle	shower	4-8 m/h	68°F
16:00	100	clear	D patchy	overcast	drizzle	shower	4-bah	672
		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 apr	66° F

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

Butterfly Species	Count (Total)	io Hill-	Butterfly Species	Count. (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)	1		Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)) <u> </u>
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		-	Brephidium exilis (Western Pygmy-Blue)		1
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	1	
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)		1	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	19.00	1.1	Anthocharis cethura (Desert Orangetip)		1
Danaidae			Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)	1		Pieris rapae (Cabbage White)		A
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		h
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	1	1	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					1.1
Ochlodes agricola (Rural Skipper)		-			1
Lyczenidze (Hairstreaks)				-	
Allides halesus (Great Purple Hairstreak)	1.1				· · · · · ·
Incisalia augustinus (Western Brown Elfin)					1
Callophrys perplexa (Perplexing Hairstreak)					1
Strymon melinus (Gray Hairstreak)					1
Glaucopsyche lygdamus (Southern Blue)					1
Icarcia acmon (Acmon Blue)					1
Celastrina ladon (Echo Blue)		1			1
					1

Surveyor <u>aller Cliffmand</u> Segment # Sales Alor (3) Date: <u>9 man 2016</u> **Comments:** OF VILLAGE ADURION. Plant Communities and Habitat Information: YBRDA SHAPPA, CHANNE PHUS Plantago erecta, Castilleja conta **Host Plants Present:** Nectar Plants Present: 4500A Starth Cherry But BUCKS, **GPS Location: Quino Sighting** Date: **Photographs Taken:** 3. 2. 1. 6. 5. 4. 9. 8. 7. 12. 11. 10.

1.1

Quino Checkerspot General Form		~
Location FAST OF LAUDFILL	Survey Segment SURVE	AREA(5)
Surveyor GREE Cutomman	Date 10 mar 2016 Survey Week	Number (2)
Survey Partner(s) THE Paweu's		
Total Acres: Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	*% Cloud		Sk	ý ·		Wind (range)	Temp (F)
Start G:15	0	clear pate	chy overca	ast drizzle	shower	1-2 m/h	68° F
10:00	D.	clear) pate	chy overca	ast drizzle	shower	1-2 mph	73° F
11:00	-	clean pate	chy overca	ast drizzle	shower	4-6 mgh	75° F
		clear pate	chy overca	ast drizzle	shower		
		clear pate	chy overca	ast drizzle	shower		100000000000000000000000000000000000000
		clear pate	chy overca	ast drizzle	shower		
Stop 11:30	e	clean pat	chy overca	ast drizzle	shower	4-6ugh	75

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

Butterfly Species	Count. (Total)	Hill-	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	1.1	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1.00	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	1.	Y
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	110-12	
Phycoides mylitta (Mylitta Crescent)	12		Brephidium exilis (Western Pygmy-Blue)	6	1.22.21
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		$1 \le 7$
Nymphalis antiopa (Mourning Cloak)	10.25		Apodemia mormo (Mormon Metalmark)	1	1
Basilarchia lorquini (Lorquin's Admiral)	10.00		Papilionidae (Swallowtails)		- T.
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		Y
Danaidae	1		Anthocharis sara (Sara's Orangetip)	2	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae	-		Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)).
Hylephila phyleus (Fiery Skipper)	2		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	5		Satyridae (Satyrids)		100.00
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:	12-14	1000
Erynnis propertius (Propertius Duskywing)			Phoebus seanae		
Ochlodes agricola (Rural Skipper)			(cloudless sylpher)		
Lycaenidae (Hairstreaks)		1			
Atlides halesus (Great Purple Hairstreak)					1
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					1
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)		·		1721	
Celastrina ladon (Echo Blue)					1
	-				1

Adult Survey

Surveyor and Chamman Segment # SURVEY AREA (3) Date: 10 man 2016

Plant Communities and Habitat Information: USW - MATTINE ALASSES + FOLLES CHANNIE, RANS, YELLAS, YELLA SHATA, DUCKAUCRAS Nost Plants Present: Plantago < . (English Plantago)<br Vector Plants Present: Cay trace Child, YELLA full flantago) Vector Plants Present: Cay traceChild, YELLA full flantago) Vector Plants Present: Cay traceChild, YELLA full flantago Vector Plantago Vector Plantago V	Comments:			
Iant Communities and Habitat Information: MAN - MATTINE ALLASSES + FOLLES Characle , Rehis , getter Stard, Ducklanders Characle , Rehis , getter Stard, Ducklanders Iost Plants Present: Plantago seft. (English Plantago) ieetar Plants Present: Characle , getter Plantago) ieetar GPS Location: ieetar Plantago) ieetar Plantago , getter ,				
lant Communities and Habitat Information: 1000 - NATIVE ALLESSES 7 FOREES CHEMALIE , RELES, SEERA SEATA, FACELAL iost Plants Present: Plantago see. (English Plantago) ectar Plants Present: Cay Frenchild, Speaker Search, enclosed, Reat Births ectar Plants Present: Cay Frenchild, Speaker Search, enclosed, Reat Births Quino Sighting Date: GPS Location: hotographs Taken: 2. 5. 6. 3. 5. 6.				
lant Communities and Habitat Information: USN - MATTINE GEASTES + ForeBES Clintonull , Rehe S, Gebela Statul, Fackautones Iost Plants Present: Plantago sep. (English Plantago) iectar Plants Present: Conference of general definition of the second for the seco				
Plant Communities and Habitat Information: USN - MATTINE GEASSES + FOREES Clinewell, Rehas, Gebess, Geard, Forees Nost Plants Present: Plantago < . (English Plantago)<br Nost Plants Present: Plantago < . (English Plantago)<br Nost Plants Present: Control of generated for the forees Noter Plants Present: Control of generated forees Noter Plants Present: Control of generated for the forees Noter Plants Plants Present: Control of generated for the forees Noter Plants				
lant Communities and Habitat Information: 1000 - 1007746 6645345 + ForeES Clinton 16 , Reha S , Strich S foreA, ForeES Clinton 16 , Reha S , Strich S foreA, ForeEs tost Plants Present: Plantago scf. (English flantago) iectar Plants Present: Conference for the flantago) iectar Plants Present: Conference for the flantago Quino Sighting Date: GPS Location: hotographs Taken: 2. 3. 5. 6. 8. 9.	2.42			
lant Communities and Habitat Information: NAN - NATIVE CLASSES + FOLES Class Class (Class ; Gella Starra), Duckautous Iost Plants Present: Plantago scf. (English Plantago) iectar Plants Present: Cay Provinted, Gella Starra, enclosed, Rine Biths Iour Sighting Date: GPS Location: hotographs Taken: 2. 3. 5. 6. 8. 9.				
Iant Communities and Habitat Information: MAN - MATINE ALASSES + FordES CHAMULE, Redust, yorder Starray, Duckautres Ost Plants Present: Plantago sep. (English Plantago) iectar Plants Present: Cay Provinced, yorder Starray encoded , Rive bicks Quino Sighting Date: GPS Location: • - 5. 6. • 8. 9. 9.				
lant Communities and Habitat Information: MAN - MATTINE GLASSES + FORES Classes Classes (Redus , Grades Started, Forestates Tost Plants Present: Plantago sep. (English Plantage) Tectar Plantago sep				
Iant Communities and Habitat Information: HON - MATTLE GLASSES + FOLGES Clintwill , links ; gettle start, for classes Clintwill , links ; gettle start, for clint for start, for classes Iost Plants Present: Plantego sef. (English flantago) iectar Plants Present: Clintwille, gettle start, for all start blacks Iouno Sighting Date: GPS Location: iectar Plants Taken: 2. 3. iectar = 1 3. 3. iectar = 1 3. 3. iectar = 1 3. 3.			÷	
lant Communities and Habitat Information: NAN - MATINE ALLESSES + Forders Clinewill, Rehals, yealder Statut, Buckey,				
lant Communities and Habitat Information: HANN - MATTINE GRASSES + FORES CHAMMIE Reduct Iost Plants Present: Plantago Iectar Plants Present: Carter Plantago Iectar Plantago Plantago Iectar Plantago Iectar Plantago Iectar Plantago Iectar Plantago Iectar Plantago Iec				
Plant Communities and Habitat Information: <u>NAN - MATTINE ARASSES + FORBES</u> Otherwelle, Rehals, Grades StarnA, Buckauthers Nost Plants Present: <u>Plantago <<f. (english="" plantago<="" u="">) lectar Plants Present: <u>Confinence for the second</u> lectar Plants Present: <u>Plantar Plantar</u> lectar Plantar Pla</f.></u>				
Plant Communities and Habitat Information: 1101 - 1107 - 1107 - 1107 - 1107 - 1000000 Clotheral C, Robert S, Gordon Starting, Bucklauthers Host Plants Present: Plantz go <cf. (english="" plantzgo)<br="">iectar Plants Present: CzyProsection good of the start of the start</cf.>				
Plant Communities and Habitat Information: <u>NAN - NATIVE GLASSES + FordEES</u> CHARAULE, Redu S, GEBA SANTA, Duckourtes Inost Plants Present: <u>Plantago sep. (English Plantago</u>) Nectar Plants Present: <u>Cay Provintical</u> , gebeat Santa, pulcar a, River Bicks Nectar Plants Present: <u>Cay Provintical</u> , gebeat Santa, pulcar a, River Bicks Quino Sighting <u>Date:</u> GPS Location: - hotographs Taken: - - - - - - - - - - - - -				
Plant Communities and Habitat Information: <u>NAN - NATIVE GRASSES + ForBES</u> CHAMILE, RANS, GRADA, DUCKAURAE Nost Plants Present: <u>Plantago <cf. (english="" plantago<="" u="">) Nectar Plants Present: <u>Cay MANTAGA</u>, YOUGHA, FULCELA, RUKE UCKS Vectar Plants Present: <u>Cay MANTAGA</u>, YOUGHA, FULCELA, RUKE UCKS Quino Sighting <u>Date</u>: GPS Location: - hotographs Taken: - - - - - - - - - - - - -</cf.></u>				
Intervention ALAN - MATIVE ALASSES + Fortes CHAMMIE, Rehas, StarrA, Buckautter Othermile, Rehas, StarrA, Buckautter Iost Plants Present: Plantago <<	lent Communities and Hab	itat Information.	Sector States Sector	
Otherwise, Rehus, gesting Stand, Bucklunthetes Nost Plants Present: Plantago sch. (English Plantago) Nectar Plantago sch. (English Plantago) Plantago sch. (English Plantago) Nectar Plantago sch. (English Plantago) Plantago sch. (English Plantago) Nectar Plant	lant Communities and Hab		DN - NATIVE W	LASSES 7 FORBES
Iost Plants Present: Plantago <		Chan	NISE, REHAS, GER	BA SMATTA, BUCKWIRGATS
Host Plants Present: Plantago < <pre> English Plantago Vectar Plants Present: Cay Prove NiA ; you can A ; and a factor for the second seco</pre>				
Vectar Plants Present: Cay (Than Ald) You (a) R (a) E (a) Quino Sighting Date: GPS Location: 'hotographs Taken: - 2. 3. 5. 6. 1. 1.	Host Plants Present:	Plantaso ssp.	(English Plantage	.)
Vectar Plants Present: Cup (TANTILA YEABA S ANTA) ENICEDIA RIAE NICKS] Quino Sighting Date: GPS Location: Photographs Taken: . . . 2. 3. . 5. 6. . 8. 9. . 10 10				
Nectar Plants Present: Cay Provided ; yould for the provide for				
Nectar Plants Present: Cay Provided ; yould ; guar bidly Quino Sighting Date: GPS Location: Photographs Taken: - . 2. 3. . 5. 6. . 8. 9. . 10 10				
Quino Sighting Date: GPS Location: Photographs Taken: 2. 3. . . 6. . . .			the second	
Quino Sighting Date: GPS Location: 'hotographs Taken: - - · 2. 3. · 5. 6. · 8. 9.	Nectar Plants Present:	Cay MANTALA, YORBA	- SARA ENCOUR	, RIGE DICKS
Quino Sighting Date: GPS Location: Photographs Taken: - - · 2. 3. · 5. 6. · 8. 9. · 10 10				
Quino Sighting Date: GPS Location: Photographs Taken: - - · 2. 3. · 5. 6. · 8. 9. · 11 12				
Quino Sighting Date: GPS Location: Photographs Taken: - - . 2. 3. . 5. 6. . 8. 9. . 11 10				
Photographs Taken: 2. 3. . 2. 3. . 5. 6. . 8. 9.	Ouino Sighting	Date:	GPS Location	
hotographs Taken: 2. 3. . 5. 6. . 8. 9.	1		01 0 200mil01	
2. 3. . 5. . 8. 9.	hotographs Taken:	•		
5. 6. . 8. 9. 0 11 10	-0L + #######	2.		3.
8. 9. . 11		5.		6.
0		8.		9.
11, 12.	0.	11.		12.

Quino Checkerspot General Form

Location NEAR	SOUTHON	TREMPHONET	PLANT	Survey Segment	SURVOY	AREA (7)
Surveyor GREL	CILAMA	2	Date	10 m AR2016 Sur	vey Week	Number (Z)
Survey Partner(s)	THE POW	EL'S				
Total Acres:	Portion Surve	yed:		Elevation: 1	Max	Min

Time (24 hr)	% Cloud	- That is a second	an a	Sky		and a start	Wind (range)	Temp (I)
Start 12:00	¢	clear	patchy	overcast	drizzle	shower	4-6 mlh	76°F
17:00	4	clear	patchy	overcast	drizzle	shower	7 yuph	7205
14:00		clear	patchy	overcast	drizzle	shower	2 M mth	70° F
•	1	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, Gordylanthus, Antirrhinum, nectar sources.

Butterfly Species	(Total)	Hill-	Butterfly Species	Counts (Total)	F.Huil-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)	2		Philotes sonorensis (Sonoran Blue)		1000
Euphydras chalcedona (Chalcedon Checkerspot)	11.15		Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1.1	
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		1
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	2	1
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		1
Vanessa annabella (West Coast Lady)	1		Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)	1.0		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	1		Picridae (Whites and Orangetips)	1	
Vanessa virginiensis (American Lady)	1		Anthocharis cethura (Desert Orangetip)	12.0	1
Danaidae		1	Anthocharis sara (Sara's Orangetip)	1.01	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	1	
Danaus plexippus (Monarch)	100	1	Pontia protodice (Checkered White)		
Hesperidae	1-2		Colias eurytheme (Orange Sulphur)		1.
Heliopetes ericetorum (Northern White-Skipper)	1		Colias harfordii (Harford's Sulphur)	1	
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	2		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		12.1
Erynnis tristis (Mournful Duskywing)	1.000		OTHERS:		
Erynnis propertius (Propertius Duskywing)	2.1				1
Ochlodes agricola (Rural Skipper)			1-	1.	
Lyczenidze (Hairstreaks)	1			1	
Allides halesus (Great Purple Hairstreak)	1				
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)	0	1			
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)				1	
Celastrina ladon (Echo Blue)	1	1			
	1.				A

Surveyor	WEL	CHATMAN

Segment # SURVEY ANDA (7) Date: 10 with 2016

Comments:			
		-	
(.)			
Plant Communities and Habi	tat Information.		the set of a beauty
	90	a many ca	the second
Host Plants Present.	of 1 and	C.1.11.	aret
Trost Flams Fresent.	Plantago preoto	, Castilleja	CX all 1
		and the second second	
Nectar Plants Present: 45	LBA SAWTA, CRYPTA	NALA, BLAE ALCA	Ч
v			
Ouino Sighting	Date:	GPS Location	
		CI O LOURION	
Photographs Taken:			
1.	2.		3.
4.	5.		6.
7.	8.		9.
10.	11.		12.

Quino Che	ckerspot	General Form					Adult Survey
Location	GREL	OF (MCAS) CHATMAN	Runcass	Survey Segn Date 10 mar. 2014	nent <u>Sulue</u> Survey Wee	z AREN(4) ek Number (Z)	-
Survey Part	ner(s)						-
Total Acres	:	Portion Survey	/ed:	Elevati	ion: Max	Min	2

Time (24 hr)	% Cloud:	The course	Sky	and the second	store -	Wind (range)	Temp (F)
Start /5 - 70	0	clear) patch	y overcast	drizzle	shower	2-4 nh	70° F
16:00	0	clear patch	y overcast	drizzle	shower	Zulath	68° F
		clear patch	y overcast	drizzle	shower		
		clear patch	y overcast	drizzle	shower		
		clear patch	y overcast	drizzle	shower		
		clear patch	y overcast	drizzle	shower		
Stop 16:45	0	clear patch	y overcast	drizzle	shower	24 mp	67°F

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

Butterfly Species	Count. (Total)	Hill-	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	t=0	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		0
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		1.8
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		1
Vanessa atalanta (Red Admiral)		()	Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	1	1
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	1	1
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae	15.1		Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		(
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)	1				- 11 C
Ochlodes agricola (Rural Skipper)		1			
Lycaenidae (Hairstreaks)		· 1			
Atlides halesus (Great Purple Hairstreak)					0
Incisalia augustinus (Western Brown Elfin)		1			1
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)		(i)			1
Icarcia acmon (Acmon Blue)				5	Q
Celastrina ladon (Echo Blue)		1		1000	
				1.201	1

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Surveyor 412 CUATMAN Segment # SURVEY HALA (4) Date: 10 man 2016

Comments:	TOD PHITHE AR	PLANETAGO NO,	174 OF
И	ucas miraman	Run arrys.	
1			
()			
Plant Communities and Hab	itat Information: CHAN	NISE, GERBA SHA	ma, Ritus
		, ,	
Host Plants Present:	Plantage erects 10	achille's exista	
sta-			
Nectar Plants Present:	4. DAMATAR LIARDARD	1.A. LARBA SH	WAA, BLUE BICKS
	Age man and con mar	- J - Johnson	
Quino Sighting	Date:	GPS Location:	
	•		
Photographs Taken:			
1.	2.	3.	
1. 4.	5.	3. 6.	
1. 4. 7.	2. 5. 8.	3. 6. 9.	

Quino Checkerspot General Form

Location <u>SANACE</u> Surveyor <u>Clet</u> Survey Partner(s)	CHATMAN	5 CES. Survey Segment <u>SURVE</u> Date <u>Ilmar 2016</u> Survey Week	AREA (8) Number (2)
Total Acres:	Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	% Cloud	i make in		Sky		- 66 . C.M	Wind (range)	Temp (F)
Start 08:30	HARY	clear	patchy	overcast	drizzle	shower	1-2 mph	640 P
09:00	HAY	clear	patchy	overcast	drizzle	shower	1-2 m/m	650 F
10:00	6	clean	patchy	overcast	drizzle	shower	2-4 mill	700 12
12:00	0-	clear	patchy	overcast	drizzle	shower	2-4 m/h	70° F
13:00	0	clear	patchy	overcast	drizzle	shower	4-8 mph	TOE
14:00	0	clear	patchy	overcast	drizzle	shower	4-8mg	72°E
Stop 14:70	2	clear	patchy	overcast	drizzle	shower	4-8 mk	7107=

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

Butterfly Species	Count (Total)	Hill-	Butterfly Species	County (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1	1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		12.0
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		()
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		12.5
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	1	1	Apodemia mormo (Mormon Metalmark)	10	1
Basilarchia lorquini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)		1 - L	Papilio eurymedon (Pale Swallowtail)	2	1211
Vanessa annabella (West Coast Lady)	(1.1.1	Papilio rutulus (Western Tiger Swallowtail)	120.21	1
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridac (Whites and Orangetips)	153	1.000
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)	1	5
Danaidae	1	1	Anthocharis sara (Sara's Orangetip)	15	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		10.000
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	3	1.1.1
Hesperidae			Colias eurytheme (Orange Sulphur)	1	21.2.4
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)	0.775	220
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	4		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		1	OTHERS:		
Erynnis propertius (Propertius Duskywing)	1				
Ochlodes agricola (Rural Skipper)					1.000
Lycaenidae (Hairstreaks)					-
Atlides halesus (Great Purple Hairstreak)				1	1.000
Incisalia augustinus (Western Brown Elfin)					1.1.1.1
Callophrys perplexa (Perplexing Hairstreak)	0	8			1
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)	b = 1	1			1.1
Icarcia acmon (Acmon Blue)		1		1	
Celastrina ladon (Echo Blue)		-			
Surveyor ales CHATMAN Segment # SURVE ALEA (B) Date: 1/1042 2016

Comments: 😽	6000 MARBINAT NEAR	WET SIDE OF SAN V	ICOURT RE.
	Franking		
		//·	
		in it is a start i make	And
'lant Communities and H	abitat Information: - NON	-MATTUE ARASSE + PALDES	ri censo
	SKRI	TELO RIVER COURSO ACONS	
	- Clham	SE IRITUS, BUCKLETTERS	UEAAL
	SANW	ICOUTE RES.	
Host Plants Present:	Plantino erecta	+ Castille's exerta	
	0	. 0	
(
Nectar Plants Present:	Coptanta, Blue die	Ks, La Ghenia	
	0 .		
	Data	GPS Location:	
Quino Sighting	Date:	GI S Location.	
	•		
Photographs Taken:	1.	0	
1.	2.	3.	
4.	5.		
7.	8.	<u>9</u> ,	
		1 12.	

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Location N.w.	MIRAMAR RD + 188	Junchow Survey Segment SURV	EZ AREA ME
Surveyor One	2 CUMANMAN	Date 13mar 2016 Survey We	k Number (3)
Survey Parmer(s)	THE FOWERS		
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	et.	clear patchy overcast drizzle shower	1-2 m/h	66°F
11:00	ø	clean patchy overcast drizzle shower	1-2 mph	68° F
12:00	0	elear patchy overcast drizzle shower	1-2 m/m	6802
13:00	A	clear patchy overcast drizzle shower	4-bush	68° P
		clear patchy overcast drizzle shower	1	
Stop /3:45		clear patchy overcast drizzle shower	4-6 mm	68° F
abitat onsite (circle as astilleja, Cordylanthu	applicable) s, Antirrhinum	nilitops ridges rock outcrops open soils soil cr	usta Clay soils old ro	ads, Plantago,

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count, (Total)	Hill- topping:
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)	1201	2-21	Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)	-		Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)	-		Brephidium exilis (Western Pygmy-Blue)	6	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	1	1
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	3	
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)	· · · · ·	
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)		i=i
Vanessa annabella (West Coast Lady)		1.0	Papilio rutulus (Western Tiger Swallowtail)	10. I.V.	1
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)	1.15		Anthocharis cethura (Desert Orangetip)		
Danaidae		-	Anthocharis sara (Sara's Orangetip)	4	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		12001
Danaus plexippus (Monarch)		0.000	Pontia protodice (Checkered White)		1.1
Hesperidae	2		Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)	2		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1	
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)	1	
Erynnis tristis (Mournful Duskywing)	1		OTHERS: California sister	1	
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)				1	
Lycaenidae (Hairstreaks)					
Allides halesus (Great Purple Hairstreak)	lange and			1	
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)				the sta	
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)	6				= -1
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)	N. N.				

Surveyor CREV CHARMAN Segment # SURVEY AREN 1 Date: 13 MAR 2016

Comments:			
-1	in the second		
		and the second se	
		14	
lant Communities and Habi	tat Information:		
		Contract of the second second	
Host Plants Present:	Plantan erector (astilleia exata	
	rianingo er cora y c		
Nectar Plants Present: 4PM	BA SMAT (0107A	MA BLUE ALLICS	LASTITENIA, ENCELA
04	they they they	(#)	, ,
Quino Sighting	Date:	GPS Location	
Photographs Takan	•		
notographs taken:	9		3.
l			6.
4.			Q.
7.	8.		7.
10.	11.		14,

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1.0

Location NEAR (MCAS) COMETERY	Survey Segment Survey	HREA (2)
Surveyor GREG CHATMAN O	Date 13 mAR Zold Survey Week Nu	(3)
Survey Partner(s) THE POWER'S		
Total Acres: Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	Cloud	Sky	Wind (range)	Temp:(F)
Start 14:15	clean patchy over	ercast drizzle shower	4-6 miles	68°F
15:00	clean patchy over	rcast drizzle shower	4-6 uppn	690F
16:00	clear patchy over	rcast drizzle shower	4-6 mpr	67°E
	clear patchy ove	rcast drizzle shower		
	clear patchy ove	rcast drizzle shower		
	clear patchy ove	rcast drizzle shower		
Stop 16:45	clear patchy ove	rcast drizzle shower	4-6 mpa	66° F

Habitat onsite (circle as applicable): hilltops, ridges, ock outcrops open soils, oil cruss, clay soils, old roads Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar source.

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count (Total)	HIL-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)		1940	Philotes sonorensis (Sonoran Blue)	1	1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		110001
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		C
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		1
Thessalia leanira (Leanira Checkerspot)	1		Riodinidae (Metalmarks)		[*****
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		
Basilarchia lorquini (Lorquin's Admiral)	1.1		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)		1.000	Pieridae (Whites and Orangetips)		1.00
Vanessa virginiensis (American Lady)	122		Anthocharis cethura (Desert Orangetip)	1.0	
Danaidae			Anthocharis sara (Sara's Orangetip)	6	1
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		1
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		1.
Hesperidae		14-2272	Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)		1	Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Fiery Skipper)	2		Eurema nicippe (Sleepy Orange)	1	
Pyrgus albescens (White Checkered-Skipper)		1	Satyridae (Satyrids)	1	
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		1	OTHERS:		
Erynnis propertius (Propertius Duskywing)		V			1
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)				1.0	1 <u></u>
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)				1100	
Callophrys perplexa (Perplexing Hairstreak)		1			
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdanius (Southern Blue)					115
Icarcia acmon (Acmon Blue)		1			
Celastrina ladon (Echo Blue)					
	1			1	and the second second

Surveyor Gla CUATMAN

Segment # <u>fulley AREA (2)</u> Date: 13 MAR 2016

\$ 60	DOD HAD THAT IN OPEN A	HERS S.E. OF MCAS COMETERY
- pi	antago + Castilleja in op	en arey on bluff tops
	· · · · · · · · · · · · · · · · · · ·	
Plant Communities and Hab	itat Information:	
Host Plants Present:	Plantaco erecta Citill	e: evorta
most i mito i resenti	Flantago Crean Castin	ery cherry
	-	
Nectar Plants Present:	notasta la America Blu	edicks,
Nectar Plants Present:	ryptanthe, Lasthenic, Blue	edicks,
Nectar Plants Present:	ryptanthe, Lasthenic, Blu,	edicks,
Nectar Plants Present:	ryptantha, Lasthenis, Blu,	edicks,
Nectar Plants Present:	ryptantha, Lasthenia, Blu,	edicks;
Nectar Plants Present:	nyptantha, Lasthenis, Blus Date: G	e dicks; PS Location:
Nectar Plants Present: ()	ryptantka, Lasthenis, Blu Date: G	e dicks; PS Location:
Nectar Plants Present:	nyptantha, La stheair, Blu Date: G	e dicks; PS Location:
Nectar Plants Present:	Date: G.	PS Location:
Nectar Plants Present:	Date: G.	e dicks ; PS Location: 3. 6.
Nectar Plants Present:	Date: G:	e dicks; PS Location: 3. 6. 9.

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Location NEM2	SOUTHOW TO ENTMANT	PLANT	Survey Segn	ent SURVE	THE AREA (7)
Surveyor 612	6 CHARMAN	Date	Smar ZOIG	Survey Weel	(Number (3)
Survey Partner(s)	THE POWER'S				
Total Acres:	Portion Surveyed:		Elevati	on: Max	Min

Time (24 hr)	-% Cloud	et ihete	AND IN COMPANY	Sky		in and	Wind (range)	Temp (F)
Start 09:15	Ð	clear	patchy	overcast	drizzle	shower	1-2 m/h	65°F
10:00	0	clear) patchy	overcast	drizzle	shower	1-2 mg/m	69° F
11:00	0	clear	patchy	overcast	drizzle	shower	2-3 mgs	73°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		-
Stop //:30	0-	ctear	patchy	overcast	drizzle	shower	2-Yall	75°F

Habitat onsite (circle as applicable): hilltops, ridges rock outcrops, open soils, oll crusts, olay soils old roads Plantago Castillejo, Cordylanthus, Antirrhinum mectar sources.

Butterfly Species	Count (Total)	- Hill-	Butterfly Species	Count. (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)	1		Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		1
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		1
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)		11
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		1
Vanessa atalanta (Red Admiral)	11		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	- 1	· · · · · · ·	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		(
Danaidae			Anthocharis sara (Sara's Orangetip)	6	N.
Danaus gilippus (Queen)		1	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		V
Hesperidae		4	Colias eurytheme (Orange Sulphur)	3	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		-
Hylephila phyleus (Fiery Skipper)	2		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)	3		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Moumful Duskywing)	12.11	(C.A.)	OTHERS: Cal Agenia sitter	1.	N
Erynnis propertius (Propertius Duskywing)			(Adelona predavii ralitor	NICA)
Ochlodes agricola (Rural Skipper)					
Lyczenidze (Hairstreaks)		1			
Atlides halesus (Great Purple Hairstreak)				1771	
Incisalia augustinus (Western Brown Elfin)		1.000			
Callophrys perplexa (Perplexing Hairstreak)	1				1
Strymon melinus (Gray Hairstreak)		1			
Glaucopsyche lygdamus (Southern Blue)	2				
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)		_			
					1

Surveyor Ger Citremon Segment # SURVEY ALEN (7) Date: 15 mm 2016 **Comments:** Plant Communities and Habitat Information: # BLACK SHEE + How - Comer SCRUB-CAK Plantago erecta in opening's on bluffs Castilleja exacta also sprinklad in **Host Plants Present:** LASTHANIG , YERDA SANTA, CENTRATHA, BLUE-BICKS, SHOULD MELIFERA. **Nectar Plants Present: GPS** Location: **Quino Sighting** Date: **Photographs Taken:** 3. 2. 1. 6. 5. 4. 9. 8. 7. 12. 11. 10.

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Adult Survey

Location	MISSIN	water RD.+	RAASIN TOG	Survey Segn	nent SURVES	ARCA- (8)
Surveyor	heer	CHAMMAN	_	Date 15 mar 2016	Survey Week	Number (3)
Survey Pa	artner(s)					
Total Acr	es:	Portion Surveyed:		Elevati	on: Max	Min

Time (24 hr)	% Cloud	· methe Shape	a space of	Ský		and a state	Wind (range)	Temp (F)
Start /2:30	9	clear pa	tchy	overcast	drizzle	shower	Z-4 mph	740 F
13:00	0	creary pa	tchy	overcast	drizzle	shower	Zulash	760P
14:00	8	clean pa	tchy	overcast	drizzle	shower	4-bush	7803
14:50	P	clear pa	tchy	overcast	drizzle	shower	4.6 m	ZCP
		clear pa	tchy	overcast	drizzle	shower		
15:00-		clear pa	tchy	overcast	drizzle	shower		
Stop	0	clear) pa	tchy	overcast	drizzle	shower	4-6mph	78°F

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

Butterfly Species	Count (Total)	io Hill-	Butterfly Species	Count, (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		-
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	1	1
Thessalia leanira (Leanira Checkerspot)		1	Riodinidae (Metalmarks)	1	
Nymphalis antiopa (Mourning Cloak)	1		Apodemia mormo (Mormon Metalmark)	15	
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	3		Papilio eurymedon (Pale Swallowtail)		1.
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	1	
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)		N L	Pieridae (Whites and Orangetips)	1.1.1	
Vanessa virginiensis (American Lady)		2	Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	9	Q
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	1.1	1
Danaus plexippus (Monarch)	1.	1000	Pontia protodice (Checkered White)	()	
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)	5	1	Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)	2	1	Eurema nicippe (Sleepy Orange)	(3	V
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)		-	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)	(
Lyczenidze (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					14 T
Callophrys perplexa (Perplexing Hairstreak)					1
Strymon melinus (Gray Hairstreak)					-
Glaucopsyche lygdamus (Southern Blue)					I Constant
Icarcia acmon (Acmon Blue)	1				
Celastrina ladon (Echo Blue)	1				

Surveyor GRED CHATMAN Segment # SURVEY AVEN(8) Date: 15 MAR 2016 A GODD HALTOPS (SWAR) MOITH POCKY OUTLANDS, CRYTOGRAMIC SOILS, HOST PLANDS & METTAL SUCRES. **Comments:** Plant Communities and Habitat Information: CHARMISE, RITUS, SHLVIA, BUCKLITERT, Plantap erects + Castilleja exerta **Host Plants Present:** Lasturnis, Cryptantica, Blue-dicks, Buckwooder **Nectar Plants Present: GPS** Location: Quino Sighting Date: **Photographs Taken:** 3. 2. 1. 6. 5. 4. 9. 8. 7. 12. 11. 10.

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Location SANDIER	RIVER	SAN VICENTE	RES	REF.	Survey Segn	nent Surv	ET AREA (8)
Surveyor Geen	Cutat	mart	I	Date	16 mar 2016	Survey We	ek Number (3)
Survey Partner(s)							tax
Total Acres:	Portion	n Surveyed:			Elevat	ion: Max	Min

Time (24 hr)	% Cloud	the stand	Sky	annan a staat	and and	Wind (range)	Temp (F)
Start/0: 30	0	clean patchy	overcast	drizzle	shower	1-2 m/h	7100
11:00	-0-	clear patchy	overcast	drizzle	shower	1-2 m/h	
12:00	0	clear patchy	overcast	drizzle	shower	2-3 mlh	VC
13:00	0	clear) patchy	overcast	drizzle	shower	7-4 all	
14:00	2	clear patchy	overcast	drizzle	shower	1-2 m/h	
15.00	0	clear) patchy	overcast	drizzle	shower	1-2 mlh	
Stop 16:45	0	clear patchy	overcast	drizzle	shower	2-3 all	

Habitat onsite (circle as applicable) hillions ridges, ock outcrops open soil soil crusts, chy soil old roads, Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources.

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)	1	1.1.1.1.1	Leptotes marina (Marine Blue)		-
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		1
Euphydras chalcedona (Chalcedon Checkerspot)	1		Plebejus melissa (Melissa Blue)	1000	
Charidryas gabbii (Gabb's Checkerspot)	1	10000	Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Bluc)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	n	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		-
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)		2.1
Vanessa annabella (West Coast Lady)	1		Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)	-	1	Papilio zelicaon (Anise Swallowtail)		-
Vanessa cardui (Painted Lady)	1.00	1	Pieridae (Whites and Orangetips)	1	
Vanessa virginiensis (American Lady)	1		Anthocharis cethura (Desert Orangetip)	1	
Danaidae	1		Anthocharis sara (Sara's Orangetip)	70	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)	1	1	Pontia protodice (Checkered White)	6	
Hesperidae			Colias eurytheme (Orange Sulphur)	-	1
Heliopetes ericetorum (Northern White-Skipper)		1	Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)		1	Eurema nicippe (Sleepy Orange)	-	1
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	4		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)			A Dainty culdured	1	
Ochlodes agricola (Rural Skipper)		1	(Nathalis iole)	1	100
Lycaenidae (Hairstreaks)	1	P	(144.0000 1-10)		
Atlides halesus (Great Purple Hairstreak)					1
Incisalia augustinus (Western Brown Elfin)	100			lease 1	
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)	2				
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)					1
					· · · · · · · · · · · · · · · · · · ·

Surveyor GRED CHATMAN Segment # SURVEY ARCH (8) Date: 16 MAR ZOIL # SURNO ED PLANTAGO PATCHES MORE THOURSALY **Comments:** & NO QUINO DOSDENES Plant Communities and Habitat Information: SEE PRION WEEKS Plantaso erecta Castilleza exerta **Host Plants Present:** L'arthrenia, Cryptanter, youba smath, BUCKWARDE, BUE-NOSS Nectar Plants Present: ONCOUR **GPS** Location: Date: Quino Sighting Photographs Taken: 3. 2. 1. 6. 5. 4. 9. 8. 7. 12. 11. 10.

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Location SAN INCEA	TE RES.	SAN ARDO RASER	ALEAS	Survey Segment Survey	AREA-(8)
Surveyor ales	CHEMA	1	Date 2	Iman Zor G Survey Week	Number (4)
Survey Partner(s)			- 141 -		
Total Acres:	Portion St	urveyed:		Elevation: Max	Min

Time (24 hr)	% Cloud	and the second	Sky	tion of the second	stern and	Wind (range)	Temp (F)
Start 10:00	0	clear patchy	overcast	drizzle	shower	1-2mph	62°F
10:45	0-	clear patchy	overcast	drizzle	shower	1-3 mph	640%
11:15	0	clear patchy	overcast	drizzle	shower	4-6 mp	7607
12:30	0	clear patchy	overcast	drizzle	shower	4-but	7602
13:00	Ø	clear patchy	overcast	drizzle	shower	4-Turk	78°F
14:00	0	clear patchy	overcast	drizzle	shower	6-8ik	78°F
Stop 14:30	0	clear patchy	overcast	drizzle	shower	5-7mp	76%=

Habitat onsite (circle as applicable): Inilitope) ridges, jock outcrops, open soils on crusts riay soils old roads Plantago, Castillejo, Cordylanthus, Antirrhinum, nectar sources

Butterfly Species	Count (Total)	io Hill-	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)		1.00	Leptotes marina (Marine Blue)		5
Euphydras editha guino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	1	1.2.31
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		(
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	12	
Basilarchia lorguini (Lorquin's Admiral)	1	1.000	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)	1	
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)	1.0	
Vanessa virginiensis (American Lady)		· · · · · · · ·	Anthocharis cethura (Desert Orangelip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	20+	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)	1.1	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)	1	
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)	2	
Erynnis funeralis (Funereal Duskywing)	6		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1	1	OTHERS:		
Erynnis propertius (Propertius Duskywing)		1			(
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)					
Allides halesus (Great Purple Hairstreak)		1		1	141 N
Incisalia augustinus (Western Brown Elfin)	1.1.1				1.000
Callophrys perplexa (Perplexing Hairstreak)				1.000	
Strynnon melinus (Gray Hairstreak)	2			1.000	1.5.1
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)					1.5.5.17
Celastrina ladon (Echo Blue)	1				
	199			1	

mmcmcs.		
Planteg	doing better Ater we	et ago rain!
Buck with	T Comme into BLODIN	
BLACK SI	165 BLOOM MG-	
	1	
Plant Communities and Habi	tat Information:	
Host Plants Present:	Olandago ercita + Ca	stilleza exeta
Host Plants Present:	Plantago erecta + Ca	stilleza exeta
Host Plants Present:	OlanAzzo ercita + Ca	stilleza exeta
Host Plants Present:	Plantago ercita + Ca	stilleza exeta
Host Plants Present:	OlanAzgo ercita + Ca	stilleza exeta
Host Plants Present:	Plantago creita + Ca	stilleza exeta
Host Plants Present:	Plantago ercita + Ca	stilleza exeta Ri hur D. Kuhat
Host Plants Present:	Plantago ercita + Ca y tantas, Lastacia,	Stilleza exeta Blue-dels, Buck wheat
Host Plants Present:	Plantago ercita + Ca y tantas, Lastacia,	stilleza exeta Blue-duls, Budlukast
Host Plants Present:	Plantago ercita + Ca Vitantas, Lastenia,	stilleza exeta Blue-duls, Budlaheat
Host Plants Present:	Plantago ercita + Ca y tantas, Lastacia,	stilleja exeta Blue-duls, Buck ukast
Host Plants Present:	Olandago ercita + Ca y tantas, Lasthenia, Date:	Stilleza exeta Blue - dicts, Buck wheat GPS Location:
Host Plants Present:	Plantago ercita + Ca y tantas, Lastania, Date:	Stilleza exeta Blue-dels, Bull wheat GPS Location:
Host Plants Present:	Olandago ercita + Ca y tantas, Lasthenia, Date:	Stilleza exeta Blue - dicts, Buck wheat GPS Location:
Host Plants Present:	Plantago ercita + Ca y tanta , Lasthenia ; Date: 2.	Stilleza exeta Blue-duls ; Budlukast GPS Location: 3.
Host Plants Present:	Olandago ercita + Ca y tantas ; Lastacia ; Date: 	Stilleza exerta Blue - duts , Budl about GPS Location: 3. 6.
Host Plants Present:	Plantago ercita + Car Vitantas, Lasthenia, Date: 2. 5. 8.	Stilleza exeta Blue dels ; Budlaheat GPS Location: 3. 6. 9.

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Location Sought	TREPRICE PLANT	Survey Segment Suluc	Z AREN (4)
Survey Partner(s)	THE POWER'S	Date 22 mar 2016 Survey Wee	Number (9)
Total Acres:	Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	% Cloud	· (http://www.itematic	Sky		and the second	Wind (range)	Temp.(E)
Start 12:00	25 %	clear patchy	overcast	drizzle	shower	6-10 mgh	63° F
13:00	20%	clear patchy	overcast	drizzle	shower	6-10 mp	LEOF
14:00	15%	clean patchy	overcast	drizzle	shower	5-7 uh	6TF
15:00	15%	ctean patchy	overcast	drizzle	shower	4-8 up	67%
		clear patchy	overcast	drizzle	shower		
		clear patchy	overcast	drizzle	shower	1	
Stop 16:00	10%	clear patchy	overcast	drizzle	shower	4-8 mp	65°P

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

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		CALC PROVEN
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)	1.0	15.5
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		1
Charidryas gabbii (Gabb's Checkerspot)		1.2	Everes amyntula (Western Tailed-Blue)	1	
Phycoides mylitta (Mylitta Crescent)		100 A	Brephidium exilis (Western Pygmy-Blue)	1	1
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	1	1.11
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	5	· · · · ·
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2		Papilio eurymedon (Pale Swallowtail)		1
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)		(Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	1	1000
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)		
Hesperidae		1	Colias eurytheme (Orange Sulphur)	1	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)		1.000	Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)	3	111	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)			Calternia Sister	2	
Ochlodes agricola (Rural Skipper)	0		(Adelete bredawii califara	(a)	
Lycaenidae (Hairstreaks)	5.00			-	
Atlides halesus (Great Purple Hairstreak)	1000				
Incisalia augustinus (Western Brown Elfin)	1.				
Callophrys perplexa (Perplexing Hairstreak)		1			
Strymon melinus (Gray Hairstreak)	2				
Glaucopsyche lygdamus (Southern Blue)	1				-
Icarcia acmon (Acmon Blue)	1				
Celastrina ladon (Echo Blue)	2-1				
					1.00

Surveyor GAEL CHATTMAN Segment # Scales HARTA (4) Date: 22 MAR 2016 **Comments:** * Plantago doing better Ater last week rain! & Castillieja nore obvious with blooms apparat. Plant Communities and Habitat Information: Plantago erecta + Castilleia exeta **Host Plants Present:** Constantly, Lasthenis, Blue-decks, yours sample **Nectar Plants Present: GPS Location: Quino Sighting** Date: Photographs Taken: 2. 3. 1. 6. 5. 4-9. 8. 7. 12. 11. 10.

Location MISSI	ON LORDS MAER	Survey Segment SURVER AREA (7)				
Survey Partner(s)	Cliffman	Date 22 MAR 16 Survey Weel	Number (4)			
Total Acres:	Portion Surveyed:	Elevation: Max	Min			

Time (24 hr)	% Cloud	- 19(株本小)	allie	Sky		Centi	Wind (range)	Temp (E)
Start /0:00	0	Clean	patchy	overcast	drizzle	shower	1-2 mph	630
17:00	0	Clear	patchy	overcast	drizzle	shower	1-Zugh	680
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		1
		clear	patchy	overcast	drizzle	shower		/
Stop 12:00	0	clear	patchy	overcast	drizzle	shower	Zuk	730

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

Butterfly Species	Count, (Total)	Hill-	Butterfly Species	Count. (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	1000	S
Euphydras editha quino (Quino Checkerspot)	1	1	Philotes sonorensis (Sonoran Blue)		0
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	1.22
Phycoides mylitta (Mylitta Crescent)	200		Brephidium exilis (Western Pygmy-Blue)		1000
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		1
Nymphalis antiopa (Mourning Cloak)			Apodenia mormo (Mormon Metalmark)	lot	1
Basilarchia lorquini (Lorquin's Admiral)	1.1		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2		Papilio eurymedon (Pale Swallowtail)		-
Vanessa annabella (West Coast Lady)		(Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)	2.1.8		Papilio zelicaon (Anise Swallowtail)	1.5	1
Vanessa cardui (Painted Lady)			Picridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae	-	1	Anthocharis sara (Sara's Orangetip)	Zot	17-22-3
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		0
Hesperidae			Colias eurytheme (Orange Sulphur)		1
Heliopetes ericetorum (Northern White-Skipper)	10+	-	Colias harfordii (Harford's Sulphur)	1	5
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)	1.000	1
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		1.1
Erynnis funeralis (Funereal Duskywing)	4		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		10 k m	OTHERS:	10.11	
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)	1				
Lycaenidae (Hairstreaks)					1
Atlides halesus (Great Purple Hairstreak)		1. 2.1			
Incisalia augustinus (Western Brown Elfin)		1			1
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)		1			1.1.1.1
Glaucopsyche lygdamus (Southern Blue)		1			1-1-1
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)					

omments:		C 1.1 5	The second second	0.1	111 Lar
	Planttago 4	Castilleza in	openags	avour	Mar 173
	conto gamic	soils.			
			*		
-					
7					
Plant Communiti	es and Habitat Infor	mation:			
Host Plants Pres	ent: Plantais	erecta +	Castilleia	exets	
			U		
No star Dioreto Da	aconti 1 6	Carlia	Custot	Reket	at Blue-ducks
Nectar Plants Pr	esent: Lacheuis	+ Encelia ;	Cryptanthe	, Buckers	at , Blue-ducks
Nectar Plants Pr	esent: Lachenis	1 Encelia 1	Cosptantes	, Buckerk	et ; Blue-ducks
Nectar Plants Pr	esent: <i>Lacturai</i> s	+ Encelia _t	Cryptantha	, Buckersk	at , Blue-ducks
Nectar Plants Pr	esent: <i>Lachenis</i>	1 Encelia 1	Cryptanth	, Buckerk	et ; Blue-ducks
Nectar Plants Pr	esent: <i>Lachemi</i> r g	<u>, Encelia</u> , Date:	Copperates GPS Lo	, Buckesk	et Blue-ducks
Nectar Plants Pr	esent: <i>Lacheais</i> g	<u>, Encelia</u> , Date:	Cryptanter GPS Lo	, Buckerk	et Blue-duks
Nectar Plants Pr	esent: Lachenir g	<u>(Encelia (</u> Date:	Copplantly GPS Lo	H Buckesk	et Blue-ducks
Nectar Plants Pr Quino Sightin Photographs Take	esent: Lactheair g	<i>f Encelia f</i> Date:	Crypt satter GPS Lo	, Buckusk	est ; Blue-ducks
Nectar Plants Pr Quino Sightim Photographs Take 1. 4.	esent: Lachenir g	/ Encelia / Date: 2. 5.	Copplantly GPS Lo	+ Buckersk ocation: 3. 6.	est ; Blue-ducks

Location NORTH OF MCAS RUMAN	Survey Segment OCB SURVEY AREA (4)
Surveyor all channed	Date 02 FEB 20/6 Survey Week Number (1)
Survey Partner(s)	
Total Acres: 78 Portion Surveyed:	Elevation: Max 4004. Min 2804.

Time (24 hr)	% Cloud	and the second s	Sky		. <u>1</u> 2-18	Wind (range)	Femp (F)
Start 09:30		clear patchy	overcast	drizzle	shower	1-2 mph	TOF
10:00	1	clear patchy	overcast	drizzle	shower	1-2 mm	72°F
11:00		clear) patchy	overcast	drizzle	shower	2-4 mgh	75°F
12:00		clear) patchy	overcast	drizzle	shower	24 mph	78°F
13:00		clear patchy	overcast	drizzle	shower	24	78°F
14:00		clear patchy	overcast	drizzle	shower	3-SAM	TTF
Stop 15:30		clear patchy	overcast	drizzle	shower	3-Sign	73°F

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

Butterfly Species	Connt. (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping,
Nymphalidae (Brush Footed Butterflies)	12.22		Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1 3	
Euphydras chalcedona (Chalcedon Checkerspot)	1.1.1		Plebejus melissa (Melissa Blue)	1000	1
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	2	1000
Thessalia leanira (Leanira Checkerspot)	1		Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	V		Apodemia mormo (Mormon Metalmark)	5	1
Basilarchia lorquini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	10%		Papilio eurymedon (Pale Swallowtail)	Re	
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	1	5 <u> </u>
Vanessa atalanta (Red Admiral)	\$		Papilio zelicaon (Anise Swallowtail)		1
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	10	
Danaus gilippus (Queen)	1.27		Pieris rapae (Cabbage White)	1	
Danaus plexippus (Monarch)	1		Pontia protodice (Checkered White)		
Hesperidae	1.11		Colias eurytheme (Orange Sulphur)		17
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	1.1	
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		1
Pyrgus albescens (White Checkered-Skipper)	2		Satyridae (Satyrids)	1 million (1997)	1
Erynnis funeralis (Funereal Duskywing)	3		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1		OTHERS:		1
Erynnis propertius (Propertius Duskywing)		1		-	
Ochlodes agricola (Rural Skipper)				1	1
Lycaenidae (Hairstreaks)					1
Atlides halesus (Great Purple Hairstreak)					1
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	11				1
Glaucopsyche lygdamus (Southern Blue)	5				
Icarcia acmon (Acmon Blue)	1				1
Celastrina ladon (Echo Blue)					, i

Surveyor LRED CHATMAN Segment # SULVEY AVER 4 Date: **Comments:** It GOOD PATCHES OF PLANTAGO NORTH WEST OF MCAS MIRAMAR * LOTS OR PLANETAGO WE OPEN ARENS Plant Communities and Habitat Information: CHAMSE, RHUS, BUCKWHENT RHAMMUS, DEDRUGED Plantago erecta, Castilleja exerta **Host Plants Present:** CRYPTANTILA, YERBA SMUTH, COLDERDS, BLUE DICKS. Nectar Plants Present: **Quino Sighting** Date: **GPS Location:** . **Photographs Taken:** 1. 2. 3. 6. 4. 5. 8. 9. 7+ 12. 11. 10.

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Quino Checkerspot General Form		Adult Survey
Location SHAN DIETO RIVER SHANNICE	TE RET. Survey Segment	QCB SUMMER AREA (8)
Surveyor LIDEL CHARMA	Date 03 mare 2016 Surv	vey Week Number
Survey Partner(s)		

Total Acres: <u>49</u> Portion Surveyed:

Elevation: Max 80 4 Min 300 ft.

Time (24 hr)	% Cloud	- the second	Ský			Wind (range)	Temp:(F)
Start 09:00	B	ctear) patchy	overcast	drizzle	shower	ZManph	670
10:00	D	clear patchy	overcast	drizzle	shower	2-4 mp	680
11:00	Ø	clear patchy	overcast	drizzle	shower	7. Man	720
12:00	8	clear patchy	overcast	drizzle	shower	Zutah	740
13:00	0	clear patchy	overcast	drizzle	shower	4-bur	730
16:00	e	clear patchy	overcast	drizzle	shower	4-buch	700
Stop /7:00	10 0	clear patchy	overcast	drizzle	shower	24 mpc	680

Habitat onsite (circle as applicable): hilltons, ridges rock outerops open soils soil crusts, slay soils old roads, Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources

Butterfly Species	(Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	10.00	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	1	1.1
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		1
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	5	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2	1	Papilio eurymedon (Pale Swallowtail)	2	10-01
Vanessa annabella (West Coast Lady)	1		Papilio rutulus (Western Tiger Swallowtail)		1.0
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		I I
Vanessa cardui (Painted Lady)		1	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	15	
Danaus gilippus (Queen)	1.7		Pieris rapae (Cabbage White)		
Dangus plexippus (Monarch)		- 11 F	Pontia protodice (Checkered White)		12-2-4
Hesperidae			Colias eurytheme (Orange Sulphur)		5.000
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		L
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)	1.1	
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	· · · · ·	
Erynnis funeralis (Funereal Duskywing)		-	Coenonympha californica (Common California Ringlet)		1 -
Erynnis tristis (Mournful Duskywing)			OTHERS:		1
Erynnis propertius (Propertius Duskywing)	112.2	·			
Ochlodes agricola (Rural Skipper)				1	
Lyczenidae (Hairstreaks)				11.	
Ailides halesus (Great Purple Hairstreak)				1.0	
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)		-			
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)	6				-
Icarcia acmon (Acmon Blue)				1	
Celastrina ladon (Echo Blue)	N.				
				100	

Surveyor	CINED	CHAM	A

Segment # SUMON MEA(R) Date: 03 MAR 2016

Comments: SAN VICENTE RESERVOIR. A SMALL RURIO AREA'S ALONG SHAN DIETO RIVER POOR HADITAT Plant Communities and Habitat Information: CHAMISE, BUCKWHEAT, YELBA SALTA, # CRYPTO WINCE SOILS W/ PUMPTHED **Host Plants Present:** Plantago erceta cryptonothe, yERBA SANTA, BULE DICKS **Nectar Plants Present: Quino Sighting** Date: **GPS Location:** ٠ **Photographs Taken:** 1. 2. 3. 4. 5. 6. 8. 7. 9. 12, 10. 11.

AREX

Location	SE	MIRAY
Surveyor	GAR	CHAR
Survey Pa	rtner((s)
Total Acro	es: Z	61

mAL RS ≠ I-805 inforsection Survey Segment <u>ACB survey</u> Anow (3)(5) THIMI Date <u>04 mar 2016</u> Survey Week Number (1)

Portion Surveyed: _____

Elevation: Max 400 44 Min 39044.

Time (24 hr)	% Claud	and a second	Sky			Wind (range)	Temp (F)
Start 09:30	6	clear pat	chy overcast	drizzle	shower	Z-4 mpl	66°F
10:00	0	Clear pat	chy overcast	drizzle	shower	ZHUR	67°F
11:00	Ð	clear pat	chy overcast	drizzle	shower	Zulan	68°F
		clear pat	chy overcast	drizzle	shower		
		clear pat	chy overcast	drizzle	shower		
		clear pat	chy overcast	drizzle	shower		
Stop //: 30	0	clear pat	chy overcast	drizzle	shower	Zulagh	69°F

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

Butterfly Species	Count. (Total)	Hill-	Butterfly Species	(Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		200
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	-	
Phycoides mylitta (Mylitta Crescent)		1	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	3	1
Basilarchia lorquini (Lorquin's Admiral)	1	10.000	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1	1	Papilio eurymedon (Pale Swallowtail)		100
Vanessa annabella (West Coast Lady)		1	Papilio rutulus (Western Tiger Swallowtail)		7
Vanessa atalanta (Red Admiral)		2	Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)	(incl)	
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae	6 a	l	Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)		1	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)	<u></u>	
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	2		Coenonympha californica (Common California Ringlet)	1	<u> </u>
Erynnis tristis (Mournful Duskywing)			OTHERS:	1	
Erynnis propertius (Propertius Duskywing)		1.00			
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)	1.	_			
Atlides halesus (Great Purple Hairstreak)					T
Incisalia augustinus (Western Brown Elfin)	(
Callophrys perplexa (Perplexing Hairstreak)	1				
Strymon melinus (Gray Hairstreak)	1	1			1
Glaucopsyche lygdamus (Southern Blue)	3				1000
Icarcia acmon (Acmon Blue)					1
Celastrina ladon (Echo Blue)					

WINENED ARCH Surveyor and alter more Segment # Survey Alter (3)(5) Date: 04 more 2016 **Comments:** A GOOD HABITAT EXIST OF MURSERY - SEVERAL AREAS OF PLANTAGO IN DEEN AREAS CHAMISE, GERBA SANTA, RHUS, BUCKWHENT, DEERWEEN, ENCELIA Plant Communities and Habitat Information: Plantago erecta **Host Plants Present: Nectar Plants Present:** YEAR SANTA, CARETANTHA GONDFIELD, BLUE DICKS **Quino Sighting GPS Location:** Date: **Photographs Taken:** 1. 2. 3. 4. 6. 5. 7. 8. 9. 10. 11. 12.

1

T

2)

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Location NW MIRAMAR PD + I 805 intersection Surveyor GEREG CUMPTYMAN Date 2876B 2016 Survey Week Number (1 Survey Partner(s) DALE + SUNE POWELL Total Ac

otal Acres: 86400	S Portion Surv	veyed:	_	E	levation: N	Aax 30044 Min	3204+
Time (24 hr)	% Cloud		Sky	and a second		Wind (range)	Temp ()
Start 11:15	0	clear patchy	overcast	drizzle	shower	4-6 mp	70°F
12:00	0	clear patchy	overcast	drizzle	shower	4-6 aph	70°F
13:00	0	clear patchy	overcast	drizzle	shower	4-6 mph	70°F
14:00	0	clear patchy	overcast	drizzle	shower	4-6 ml	7107

		clear	patchy	overcast	drizzle	shower		1.
		clear	patchy	overcast	drizzle	shower		
Stop 14:45	0	clear	patchy	overcast	drizzle	shower	4-6 uph	71°F
Habitat onsite (circle	as applicable):	hilltops.	ridges, ro	ock outcrop	s open se	oils soil cr	usts clay soils old	Troads Plantago,

Castilleja, Cordylanthus, Antirrhinum nectar sources.

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- wippinge
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)	12 22 22		Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)	J	1.2-11	Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	2-0	·
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)		1	Apodemia mormo (Mormon Metalmark)		
Basilarchia lorquini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)	2	1.1
Junonia coenia (Common Buckeye)		1000	Papilio eurymedon (Pale Swallowtail)	1	
Vanessa annabella (West Coast Lady)	10.23	5. T	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)	1		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	1	1	Pieridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)	1		Anthocharis cethura (Desert Orangetip)	1.00	
Danaidae	1.011	11000	Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)		L.	Pieris rapae (Cabbage White)		1.5
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		_
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	11.1	
Hylephila phyleus (Fiery Skipper)	1		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)	1	
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)	1	
Erynnis tristis (Mournful Duskywing)			OTHERS:	1.00	
Erynnis propertius (Propertius Duskywing)		-			
Ochlodes agricola (Rural Skipper)		1			1999
Lycaenidae (Hairstreaks)		1			11.1
Atlides halesus (Great Purple Hairstreak)		1		1	
Incisalia augustinus (Western Brown Eltin)					(C)
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)	3				
Icarcia acmon (Acmon Blue)		1			
Celastrina ladon (Echo Blue)		1			1.1.1.1
				1.00	1

Surveyor GAEL CHATMAN Segment # ALEAL (WEEKI) Date: 28 FEB ZO16 TWO AREAS WITHIN AREA TWO(2) HAVE WOOD PATCHES **Comments:** OF PLANETATO. NOSTLY NON- NATIVE CANGES + FORGES * DESCENT PATCHES OF PLANTAGO BUT ISOLATED FROM OTHER HOST'S AUE TO HABITAT PRESMENATIONS. Plant Communities and Habitat Information: NOW - NATIVE MASSES W/ MINED RHUS SPECIES, COMMON BUCKLEITER, DEDRUEED, Citamist, H CRYPTOGAMIC SOILS WITH PLANOTACO. PLANTAGO erecta **Host Plants Present:** Nectar Plants Present: 45000 SANTA, LASTA ENA, CRYPTANTHA, BRICELIA, BLUE DICKS, 60 LNON (HRROW) **Quino Sighting** Date: **GPS Location:** . **Photographs Taken:** 1. 2. 3. 6. 4. 5. 8. 7. 9. 10. 11. 12.

Location SE MICAMAR NO + I805 interso	tion_ Survey Segment QCB EDAUG, ANGA (3)
Surveyor GARD CHARMAN	Date 28 FEB 2016 Survey Week Number (1)
Survey Partner(s) DAVE + JUNG POWEL	
Total Acres: 85 Portion Surveyed:	Elevation: Max 3904. Min 7.604.

Time (24 hr)	+% Cloud		Sky			Wind (range)	Temp:(F)
Start 15:00	5%	clear patch	ny overcast	drizzle	shower	4-6 mg/k	70° F
16:00	10%	clear patcl	ny overcast	drizzle	shower	4-but	69°F
		clear patcl	ny overcast	drizzle	shower		1
		clear patch	ny overcast	drizzle	shower		
	1	clear patcl	ny overcast	drizzle	shower		
		clear patch	hy overcast	drizzle	shower		
Stop 16: 45	15%	clear patch	hy overcast	drizzle	shower	4-buth	67°F

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

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	(Total)	Hill- topping-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)		1
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)	-	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1.00	
Phycoides mylitta (Mylitta Crescent)	1.1.1		Brephidium exilis (Western Pygmy-Blue)	1	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	L .	
Nymphalis antiopa (Mourning Cloak)	1.00		Apodemia mormo (Mormon Metalmark)	2	
Basilarchia lorquini (Lorquin's Admiral)		_	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)	1.5		Papilio rutulus (Western Tiger Swallowtail)		· · · · · ·
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	1	1	Pieridae (Whites and Orangetips)		100.00
Vanessa virginiensis (American Lady)		1	Anthocharis cethura (Desert Orangetip)	(
Danaidae			Anthocharis sara (Sara's Orangetip)	1	
Danaus gilippus (Queen)	1		Pieris rapae (Cabbage White)		DT E.
Danaus plexippus (Monarch)	12.2		Pontia protodice (Checkered White)		11.71
Hesperidae		1.0	Colias eurytheme (Orange Sulphur)		1
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)		112	Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		1.2.2
Erynnis funeralis (Funereal Duskywing)	2	1	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1.		OTHERS:		21.2
Erynnis propertius (Propertius Duskywing)		1			
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)		-			1.
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	1				1
Glaucopsyche lygdamus (Southern Blue)	4			1	
Icarcia acmon (Acmon Blue)				1	
Celastrina ladon (Echo Blue)					
				1	1

Surveyor <u>hAEr CHAMAN</u> Segment # <u>SURVE</u> AREA(3) Date: <u>287662016</u> omments: <u># PLANETATO evecta in open areas but not in abundance!</u> - a little here; a little there! **Comments:** Plant Communities and Habitat Information: NON -NATIVE GAMSSES + FORDES BUCKWHENT, CHAMISE, JANE Ochly, Sycanones (RHUS SPECIES, DEDRUGED Plantago orecta **Host Plants Present:** Nectar Plants Present: ABBRIDS, BLUGBICKS, CALPTANTHA, GERBA SANTA, ENCELIA **Quino Sighting** Date: **GPS Location:** • **Photographs Taken:** 1. 2. 3. 6. 4. 5. 8. 7. 9. 10. 12. 11.

.

Location NE MIRA	MMAR RD. 4	I-805 interse	tion Surv	ey Segment _	QCB BUR	NOT AREA (1)
Surveyor GREF-(HATMAN		Date 29 MAR	2016 Surv	vey Week Nur	mber (1)
Survey Partner(s)	ALE + JUNE	POWER			A	
Total Acres: 85	Portion Survey	ed: Acl	6	Elevation: N	lax 37044	Min 38077

Time (24 hr)	% Cloud		States Alter	Sky			Wind (range)	Temps(F)
Start 9:15	0	clear	patchy	overcast	drizzle	shower	2-4 mp	63° F
	1	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 10:00	0	clear	patchy	overcast	drizzle	shower	2.4 mgh	64° 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	Connt (Total) t	Hill- opping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	1	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	1	(
Charidryas gabbii (Gabb's Checkerspot)	1 - 1		Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	Z	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	1	
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	-	1000
Basilarchia lorquini (Lorquin's Admiral)	1		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	Sec. 1	_	Papilio eurymedon (Pale Swallowtail)	1	1
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		· · · · ·
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	7	
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		12.1
Danaidae			Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)	10010		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1	
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)		- 3			
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					-
Strymon melinus (Gray Hairstreak)				1	
Glaucopsyche lygdamus (Southern Blue)		1000			
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)	12.				

Surveyor CAED OHNERMAN Segment # SURVEY AREA (1) Date: 29 FEB 2016

Comments:			
X	LACRE THAT CO	ULD NOT BE	ACCESSED ON PREVIOUS
	DAy.		
	0		
		ж.	
Plant Communities and Habi	tat Information: <	ATTAC IS A	IDN - KOATING WARCES +
			TARET
		ſ	DICIPEZ
Host Plants Presents			
lost riants rresent:			
Nectar Plants Present:	CALOTANTIKE		
Quino Sighting	Date:	GPS Locati	on:
	•		
Photographs Taken:			
	2.		3.
4-	5.		6.
7.	8.		9.
10.	11.		12.

Adult Survey

Location 55 millamon es + I-805 introsection	Survey Segment <u>QCB survey</u> ALEH (3)
Surveyor little chamman	Date 29 FEB 2016 Survey Week Number (1)
Survey Partner(s) AALE + JUNE POWELL	
Total Acres: 25 Portion Surveyed:	Elevation: Max 300 Ft. Min 700 ft.

Time (24 hr)	% Cloud	A Design of the second	Sky			Wind (range)	Temp (F)
Start 10= 00	e	ctear patchy	overcast	drizzle	shower	46mph	69° F
11:00	0	clear patchy	overcast	drizzle	shower	4-lo appa	670 F
12:00	0	clear patchy	overcast	drizzle	shower	lo-8 mph	TIOF
13:00	0	clear patchy	overcast	drizzle	shower	68 mph	71° F
14:00	5%	clear patchy	overcast	drizzle	shower	6-8 uph	TZOF
		clear patchy	overcast	drizzle	shower	1	
Stop 14:15	5%	clear patchy	overcast	drizzle	shower	6-8mph	TOF

Habitat onsite (circle as applicable): hilltops fidges, rock outcrops, open soils foil crusts clay soils fold roads Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping-
Nymphalidae (Brush Footed Butterflies)	Line I.		Leptotes marina (Marine Blue)		1000
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		-
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	3	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	3	1
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)	-	Fig. 22.
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		11.
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	11.2	2
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)		1	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	5	
Danaus gilippus (Queen)	1		Pieris rapae (Cabbage White)		10.000
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae	1		Colias eurytheme (Orange Sulphur)		11111
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		3
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyryus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)	1	7 = 1
Erynnis funeralis (Funereal Duskywing)	3		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		1000
Erynnis propertius (Propertius Duskywing)					1.
Ochlodes agricola (Rural Skipper)	1.1				
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					1
Callophrys perplexa (Perplexing Hairstreak)	1				
Strymon melinus (Gray Hairstreak)	1	1			
Glaucopsyche lygdamus (Southern Blue)	4				
Icarcia acmon (Acmon Blue)	1	1			
Celastrina ladon (Echo Blue)	1				
					1.5

Surveyor 6AED CIHAMAN Segment # SURVEY AREA (3) Date: 29 FEB 2016 A NICE PATCHES OF PLANETAGO ALL ALUNG ROND THE SE OF MCAS Cemetery. GODA NECTOR SULLES NEARBY **Comments:** 1 Plant Communities and Habitat Information: CHAMISE , RHUS , BUCKWHENT , RITAM NUS , NON-LOATINE PRACES + FORBES H CRYPTDONNAS SOILS WITH PLANTADO! Plantago erecta (Castileia exerta **Host Plants Present:** Cryptantin, Encelia, yours SARTA, BLUE DICKS, LASTHEANA **Nectar Plants Present: Quino Sighting** Date: **GPS Location: Photographs Taken:** 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12,

Location VILLAGE	NURSON AROA
Surveyor lines	CHAMIAN
Survey Partner(s)	THE POWER'S
Total Acres: 77	Portion Surveyed:

Survey Segn	nent	QCB	survey	AREA	200(5)
Date 29 Fas 2016	Sur	vey Wee	k Numbe	r(i)	. L -

Elevation: Max 400 ft Min 400ft

Time (24 fir)	% Cloud	i an	and the second	Sky			Wind (range)	Temp (F)
Start 14:30	10%	clear	patchy	overcast	drizzle	shower	68 mp	72°F
15:00	10%	clear	>patchy	overcast	drizzle	shower	6-8 mph	71°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 15=15	15%	clear	patchy	overcast	drizzle	shower	6-8 mph	71°F

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

Butterfly Species	Connt (Total)	Hill- topping	Butterfly Species	Count (Total)	topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)	1		Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)	1	1
Charidryas gabbii (Gabb's Checkerspot)	1		Everes amyntula (Western Tailed-Blue)	1	
Phycoides mylitta (Mylitta Crescent)		2	Brephidium exilis (Western Pygmy-Blue)	2	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		1
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	1	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		1
Junonia coenia (Common Buckeye)	1100		Papilio eurymedon (Pale Swallowtail)		1
Vanessa annabella (West Coast Lady)	l.		Papilio rutulus (Western Tiger Swallowtail)		1000
Vanessa atalanta (Red Admiral)	12	1	Papilio zelicaon (Anise Swallowtail)	-	1 41.
Vanessa cardui (Painted Lady)		S	Pieridae (Whites and Orangetips)	1	1
Vanessa virginiensis (American Lady)	N=		Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	2	
Danaus gilippus (Oucen)	11	-	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)	0025	
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	12-1	
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	12.7		Satyridae (Satyrids)	1000	
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:	-	
Erynnis propertius (Propertius Duskywing)				1	2.00
Ochlodes agricola (Rural Skipper)				2-2	
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)				-	
Strymon melinus (Gray Hairstreak)				1	
Glaucopsyche lygdamus (Southern Blue)	T				
Icarcia acmon (Acmon Blue)				-	
Celastrina ladon (Echo Blue)				-	
				1	

Surveyor WER CHATMAN Segment # SURVEY AREA (5) Date: 29 FEB 2016 - NOMINAR HABITAT ALONE THIS SECTION OF ARENS-**Comments:** VERY LITTLE PLANTAGES IN UPEN ARENS MOME ROAD **Plant Communities and Habitat Information:** DEERWEED, CHAMISE, RHUS, BUCKWEEN NON - MATINE GRACES + FURBES Plantaço erecta **Host Plants Present: Nectar Plants Present:** copperation , excernt, BLUE DICKS **Quino Sighting GPS Location:** Date: . **Photographs Taken:** 1. 2. 3. 6. 4. 5. 7. 8. 9. 10. 11. 12.

Location	MORTHERST	OF	LANDFUL
	the second s		

Date <u>OlmAR Zoll</u> Survey Week Number (1)

Survey Partner(s) <u>THE Power's</u> Total Acres: <u>77</u> Portion Surveyed: _____

Elevation: Max 40044 Min 38044

Time (24 hr)	- % Cloud	1. C.	and in the second	Sky			Wind (range)	Temp:(F)
Start 9:30	0	clear	Dpatchy	overcast	drizzle	shower	2-4 mp	68° F
10:00	0	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		
		clear	patchy	overcast	drizzle	shower		
Stop //:00	0 (clear) patchy	overcast	drizzle	shower	2-11 mph	74°F

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	Buterfly Species	(Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	1	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		
Basilarchia lorquini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)		-
Junonia coenia (Common Buckeye)	1		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		<u>.</u> 1
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		1
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	3	
Danaus gilippus (Queen)	1		Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Fiery Skipper)	1		Eurema nicippe (Sleepy Orange)	-	
Pyrgus albescens (White Checkered-Skipper)	2		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	3		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		12.575	OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)					1 2 1
Lycaenidae (Hairstreaks)	_			1.1	
Allides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)]]
Strymon melinus (Gray Hairstreak)	1				1000
Glaucopsyche lygdamus (Southern Blue)	2				
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)				10.00	·
	1		a construction of the second se	(t	

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Surveyor <u>CARE CHATMAN</u> Segment # <u>54 RVEY AREA (B)</u>Date: <u>01 march 2016</u>

Comments: - alder Branch Harden port diet all mes and *-NOMINAL HABITHE ALONG EXSTERN X SIDE OF CANDFILL **Plant Communities and Habitat Information:** CHAMISE, RITUS, BUCKWHENT, YELBA SMATH, NERCHEED PLANTADO erecta - very little amount along roads **Host Plants Present: Nectar Plants Present:** YERBA STATA, CRYPTANTHA, GOLDFIELDS, BEGE PICKS **Quino Sighting** Date: **GPS Location:** . Photographs Taken: 1. 2. 3. 6. 5. 4. 8. 9. 7. 11. 12. 10.

Location WET + SOUGH OF LANDFILL

Survey Segn	nent QCB sugues reart (2)(6))
Date Of mar 2016	Survey Week Number (1)	

Surveyor <u>Caller Caller Man</u> Survey Partner(s) <u>The Power's</u> Total Acres: <u>70</u> Portion Surveyed:

Min 260At. Elevation: Max 39044

Time (24 hr)	% Cloud	ange	an e la la martina de la m An e la martina de la martina	Sky			- Wind (range)	Temps(F)
Start //:00	ø	clear	patchy	overcast	drizzle	shower	Z-4 mph	710F
12:00	6	clear	patchy	overcast	drizzle	shower	2-4 m/m	74°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
	1	clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop /2-20	Ø	clear	patchy	overcast	drizzle	shower	2-4 44	76°F

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

Butterfly Species	Count (Total)	Hill- copping	Butterfly Species	(Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)	1.		Leptotes marina (Marine Blue)	11-12	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1.1	
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)	1	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	3	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		-
Basilarchia lorquini (Lorquin's Admiral)	1	2	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1	1	Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)	1	1	Papilio rutulus (Western Tiger Swallowtail)	11	
Vanessa atalanta (Red Admiral)	1.		Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)		-	Pieridae (Whites and Orangetips)	100	
Vanessa virginiensis (American Lady)		Sec. 1	Anthocharis cethura (Desert Orangetip)		
Danaidae	1.1.1.1		Anthocharis sara (Sara's Orangetip)		1.2.29
Dangus gilippus (Queen)		N	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)	1.		Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)	1	1
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1.000	1	Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)	1	11.00			
Ochlodes agricola (Rural Skipper)	2	1	Phoebus sennae	2	
Lycaenidae (Hairstreaks)			(Cloudless sulphur)		
Atlides halesus (Great Purple Hairstreak)		1.5 - 1			
Incisalia augustinus (Western Brown Elfin)				1.	
Callophrys perplexa (Perplexing Hairstreak)					-
Strymon melinus (Gray Hairstreak)	in the state			1	
Glaucopsyche lygdamus (Southern Blue)	4				
Icarcia acmon (Acmon Blue)	1.			1-00	
Celastrina ladon (Echo Blue)		-		-	
	-	A		_	
Surveyor Web CHATMAN Segment # SURVEY AREA (6) Date: 01 mar 2016 **Comments:** AF ROOD HABITAT AZONEC WESTERN SIDE OF LAWAFILL - OPEN ARENS ATHED ACCESS ROADS WITH ARABE STORE PLANAGO CHAMISE, YERDA SANTA, RHUS, BUCKWHENT, DEDRUEED Plant Communities and Habitat Information: * CRYPTOGAMIC SOILS W/Plantago Plantago erecta **Host Plants Present:** BLUE DICIES, CRYPTANTHA, LASTITENIA, YERBA SAWTA ENCELIA **Nectar Plants Present: Quino Sighting GPS Location:** Date: **Photographs Taken:** 3. 2. 1. 6. 5. 4. 8. 9. 7. 11. 12. 10.

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Location	NEAR	SOUTHERN	TREATMONT	PLANT	
~			1	D :	

Date <u>Ol mare 2016</u> Survey Week Number (7)

Surveyor <u>GOED</u> CHARMAN Survey Partner(s) <u>THE POWEN'S</u> Total Acres: <u>69</u> Portion Surveyed:

Elevation: Max 39044 Min 24044

Time (24 hr)	% Cloud	2	1. 	Sky			Wind (range)	Temp (F)
Start / 2:30	15%	clear	patchy	overcast	drizzle	shower	4-6 mph	80° F
13:00	15%	clear	patchy	overcast	drizzle	shower	4-6 m/h	TPF
14:00	15%	clear 1	patchy	overcast	drizzle	shower	4-6 mph	78°F
		clear j	patchy	overcast	drizzle	shower		
		clear j	patchy	overcast	drizzle	shower		
		clear p	patchy	overcast	drizzle	shower		
Stop 15:00	15%	clear)	patchy	overcast	drizzle	shower	4-6 upp	75%

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

Butterfly Species	Count (Total)	Hill- topping	Buiterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		1
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Bluc)	2	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	U.S.	
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	3	
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)	ų 🖂	2000
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		1.
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)	1.1	i
Vanessa cardui (Painted Lady)	1		Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	5	
Danaus gilippus (Queen)		1	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)	1	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)	I		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	2		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)	1,514				
Ochlodes agricola (Rural Skipper)					()
Lycaenidae (Hairstreaks)	1.44	1			
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)		-			
Glaucopsyche lygdamus (Southern Blue)	3				(m)
Icarcia acmon (Acmon Blue)	1	1			
Celastrina ladon (Echo Blue)					

Comments:								
5	4 Good	DETHES	OF	PLANTAKO	MORAT	OF	REAME	T
	EALI	ITL		TERRITOR	Noi-II.			
	Tricic							
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	0.200							
Plant Communities	and Habitat	Information:	C	HAMISE, UFR	BA SAUN	4, R/	tus, Bur	440
			AT	FRI FED		/	/	
Host Plants Present	:	Planta	'go	orecta				
Host Plants Present	:	Planta	'go	orecta				
Host Plants Present	:	Planta	'go	orecta				
Host Plants Present	: nt: <u>ye</u>	Planta RBA-SANT	1go 194, C	orecta	BLUE DIC	(CS, 1	LASTITENIA	4
Host Plants Present	: nt: ye	Planta Planta	190 74, C	orecta Alprantita,	BLUE DIC	ies, i	LASTHENIA	4
Host Plants Present	: nt: <i>ye</i>	Planta RBA-SANT	'go 14, C	orecta Azerrannia,	BLUE DIC	ics, i	LASTITENIA	4
Host Plants Present	: nt: ye	Planta Planta PBA-SANT Date:	'go 74, C	orecta ChypTANTA, A GPS Loca	<i>Βιαξ Δις</i> tion:	(CS - 1	LASTHENIA	4
Host Plants Present Nectar Plants Prese Quino Sighting Photographs Taken:	: nt: <i>ye</i>	Planta Planta Planta Date:	2go 24, C	orecta Azerannia, GPS Loca	BLUE AIC	165 j 1	LASTHENIA	4
Host Plants Present Nectar Plants Prese Quino Sighting Photographs Taken: 1.	: nt: <i>ye</i>	Planta RBA-SANT Date: 2.	'go 14, C	or ecta Azerrannia, GPS Loca	<u>Βιαε Δις</u> tion:	(CS / 1	LASTHENIA	4
Host Plants Present Nectar Plants Prese Quino Sighting Photographs Taken: 1. 4.	: nt: ye	Planta Planta PBA-SANT Date: 2. 5.	'go '4, C	or ecta Ayonannua, GPS Loca	BULE DIC	165 j 1	LASTHENIA	+
Host Plants Present Nectar Plants Prese Quino Sighting Photographs Taken: 1. 4. 7	: nt: ye	Planta Pl	2go 24, C	or ecta Ayprantita, GPS Loca	But E Aic.		LASTHENIA	4
Host Plants Present Nectar Plants Prese Quino Sighting Photographs Taken: 1. 4. 7. 10	: nt: ye	Planta Pla Planta Planta Planta Planta Planta Planta Planta Planta Plant	'go 14, C	orecta Azerannia, GPS Loca	BLUE AIC tion: 3. 6. 9.		LASTHENIA	4

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Quino Checkerspot General Form

4)

Location	NW.	of MCAS	purentys
	110	all Dia A	1

Date Ol mar 2016 Survey Week Number (1)

Surveyor GREG CHARMAN Survey Partner(s) THE POLIEUS Total Acres: 78 Kale Portion Surveyed:

Elevation: Max 400# Min 280 44

Time (24 hr)	% Cloud	1	. Sector	Sky			Wind (range)	Temp (F)
Start /6:00	150/0	clear pa	tchy	overcast	drizzle	shower	4-buth	720 F
		clear pa	tchy	overcast	drizzle	shower		
	10	clear pa	tchy	overcast	drizzle	shower		
		clear pa	tchy	overcast	drizzle	shower		
		clear pa	atchy	overcast	drizzle	shower		p
		clear pa	atchy	overcast	drizzle	shower		
Stop (7:00	15%	clear) pa	atchy	overcast	drizzle	shower	4-bush	69°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	Conut (Total)	Hill- topping	Butterfly Species	(Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	-	- 1 - L - L - L
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)	1	1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		_
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	1	1
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)	-	_
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)		
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		1.000
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	-	
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	1.1.4		Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Dapaidae		1.000	Anthocharis sara (Sara's Orangetip)	1	
Danaus gilippus (Queen)	1	-	Pieris rapae (Cabbage White)		L
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	-	
Hesperidae			Colias eurytheme (Orange Sulphur)		(5.1
Heliopetes ericetorum (Northern White-Skipper)	11-12		Colias harfordii (Harford's Sulphur)		()
Hylephila phyleus (Fiery Skipper)	1		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1.0		OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)	1.				
Lycaenidae (Hairstreaks)					
Allides halesus (Great Purple Hairstreak)				-	
Incisalia augustinus (Western Brown Elfin)				-	
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	1				
Glaucopsyche lygdamus (Southern Blue)	2			1-1	-
Icarcia acmon (Acmon Blue)				-	
Celastrina ladon (Echo Blue)			Maria and a second s	-	
	1			1	

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Surveyor ane Chaman Segment # Survey Anex (4) Date: 0/ 1100 2016

Comments:			
*	GOOD PATCHES OF P	LAMTAGO JUST SOUTH O	2
· · · · · · · · · · · · · · · · · · ·	URAMAR RD.		
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		*	
lant Communities and Ha	bitat Information: 644	MISE, RHUS, BUCKLUKEAT.	DEPRIED
	1 - 20:000	church sould be the Pitter	ATA
	A Clear TO	ATTAC SOLOS OF TOTAL	100
		-/	
Iost Plants Present:	pliminaco en	een	
	1 14 1	A	- ALCKE
Nectar Plants Present:	Lasthenia , crypta	willy, gerapher somer A; isc	ue news.
Outro Stating	Dates	GPS Location:	
I Quino Signung	Date.		
	•		
notographs laken:			
		9	
l.	2.	3.	
4.	2. 5.	3. 6.	
1. 4. 7.	2. 5. 8.	3. 6. 9.	



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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	JUL POUL	Date 10. Site Visit Number 1	-
Site Name	Mart 8	Site Location	_
Total Acres:	Total Acres Survey	ed: Elevation: Max Min	
Hours Surveyed:	1251		

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1430	clear 100 % cl	oud cover	hazy	13	700
1555	clear S() % cl	oud cover	hazy	2/4	700
	clear % cl	loud cover	hazy	1	
	clear % cl	oud cover	hazy		
	clear % cl	oud cover	hazy		
	clear % cl	oud cover	hazy		
	clear % cl	loud cover	hazy		
	clear % cl	loud cover	hazy		
	clear % cl	loud cover	hazy		
	clear % cl	oud cover	hazy		
	clear % cl	oud cover	hazy		
	clear % cl	loud cover	hazy		
	clear % cl	loud cover	hazy	1	and an any come

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

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

*20 second period, mph



Numphalidae /	Anish Footed Butterflies)	Lycaenidae (Blues)
Tymphanoae (1	Funkydryas editha avine (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
	Adalpha bradowii californica (California Sister)	Celostring ladon echo (Echo Blue)
	Basilarchia loravini (Loravin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Cabh's Checkerspot)	Glauconsyche lygdamus australis (Southern Bluc)
	Euphydryas chalcedona chalcedona	Hemiarous ceraynus gyas (Edward's Blue)
	(Chalcedon Checkersnot)	Towner San on annua Stan (Source & Direc)
1	Fughidrigs chalcedong hennei	learcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
	Junonia cognia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebeius melissa (Melissa Blue)
	Phycoides mulitta (Mulitta Crescent)	
a nonestationeste - to	Polygonia saturus (Satur Anglewing)	
	Speweria callinne (Callinne Fritillary)	Lycaepidae (Hairstreaks)
	These alia leaving wright (Leaving Checkersnot)	Atlides balesus (Great Purple Hairstreak)
	Vauessa annahella (West Coast Lady)	Callophyrs perplaya = dumetorum
L	ranessa annabena (West Coust Eddy)	(Perplexing Hairstreak)
0	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Milk	weed 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)
	Henopeles ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
	Hytephila phyteus (Fiery Skipper)	Anthocharis sara (Sara Urangetip)
	Pyrgus aloescens (Uncckered Skipper)	Artogeia rapae (Cabbage White)
		Collas eurytheme (Atlanta Bouterily)
		Conas narjoral (Hariora's Sultur)
	to contract the second se	Euchioe hydriis lolla (Southern Marole)
	restances in the second	Eurema nicippe (Sleepy Orange)
		Nathalis tole (Dwarl Yellow)
	test vorte	Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
		Riodinidae (Metalmarks)
	Manual	Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		the second se
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
OTHER		
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	NUG	Paull	Date 2/10/11	Site Visit	Number 1+2
Site Name	11/1 4	.5	Site Location	Miraw	<u>a1</u>
Total Acres:	Tota	il Acres Surveyed	: Elevat	ion: Max	Min
Hours Surveye	d: 2115	7			

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)	
79-5	clear	% cloud cover	hazy	2/4	700	
:000	clean	% cloud cover	hazy	- 14	750	
1100	ctear/	% cloud cover	hazy	4/7	750	
130	elear	% cloud cover	hazy	u//	7.00	
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy		and a state of the state of the	
	clear	% cloud cover	hazy	Q	La entre de la compañía	
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy	1		
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			

Habitat onsite: open sols, 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



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Nymphalidae (Brush Footed Butterflies)	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 amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
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)
a strand strategy in the second strategy is a strategy in the second strategy in the second strategy is a strategy in the second st	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwarf Yellow)
The Parameter Street Stre	Pontia protodice (Common White)
1	Zerene eurydice (California Dogface)
	Provide comment (Classifican Collins
	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
and the second	Calephelis wrighti (Wright's Metalmark)
and an and a second	
Contraction of the second s	Potenidan (Patricka)
	Community californias (California Directat)
tanna anna anna anna anna anna anna ann	Coenonympna caujornica (California Kinglet)
OTHER:	
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t the second sec	COCH.
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Pousell	Date 🔢 🖉 🔢 Site Visit N	Number <u>H2</u>
Site Name	Mar 6	Site Location	san f
Total Acres:	Total Acres Surveyed	d: Elevation: Max	Min
Hours Surveyed:	1 504		

Time (24hr)	-	Sky			Temp (F)	
1200	(tear)	% cloud cover	hazy	58	780	
1300	ctear	% cloud cover	hazy	2)4	730	
13.50	etear	% cloud cover	hazy	517	1. A. 2	
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy		t	

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

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

*20 second period, mph



Mary Letta A	New Protect Button (Ban)	Lycaenidae (Blues)
Nymphalidae (1	Stush Pooled Butterines)	Reanhidium exilis (Pyomy Blue)
	Euphyaryas eauna quino (Quino Cueckerspor)	Colostring Indon echo (Echo Blue)
	Adelpha breaowit californica (California Sister)	Every amontula (Western Tailed Rhue)
	Basilarchia lorquini (Lorquin's Admiral)	Glauconsuche budanus australis (Southern Blue)
	Charteryas gabbii (Gabbi S Checkerspor)	Hamianny corgunus mus (Southern Dody)
	(Chalcedon Checkerspot)	mentargas cerdanas goas (Euward's Diac)
	Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acmon (Acmon Blue)
	Lunonia cognia (Buckeye)	Leptotes marina (Marine Blue)
	Numohalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	Contraction of the Contraction o
	Polyponia saturus (Satyr Anglewing)	
	Spewerin callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leaning wrighti (Leaning Checkerspot)	Atlides halesus (Great Purple Hairstreak)
(Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
		(Perpiexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisatia augustinus (Brown Einn)
(Vanessa cardui (Painteo Lady)	Strymon metinus (Gray Haitstreak)
	Vanessa virginiensis (Virginia Lady)	and the second sec
		5 17 11 10 10 1 1 X
1		Papilionidae (Swallowiails)
Danaidae (Mill	weed Butterflies)	Papilio eurymedon (Pale Swallowtait)
V	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
		Di il muito 10 control
Hesperidae		Pieridae (Whites and Orangeups)
	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis centura (Felder's Orangeup)
	Heltopetes ericetorum (Great White Skipper)	Aninocharis ianceolata (Orinnell's Marbie)
	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
		Colias eurytheme (Altalia Butterily)
is a sum inco	an anna an tao an ta	Collas harfordii (Harford's Sulfur)
		Euchioe hydniis iona (Southern Marbie)
		Eurema nicippe (Sieepy Orange)
		Nationalis tole (Dwart 1 chow)
	- Constanting of the second second	Fontia protodice (Common write)
	and the second states	Lerene euryaice (Cantomia Dogiace)
	and the second second	
		Riodinidae (Metalmarks)
		Apodemia mormo virgulti (Bchr's Mctalmark)
		Calephelis wrighti (Wright's Metalmark)
	and a second sec	Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
	Contraction of the second s	
OTHER:		
	al and a second s	
Statistical and the second	- 	

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Pomell	Date 3/9/16	Site Visit	Number
Site Name	MOPS	Site Location	Mirom	10
Total Acres:	Total Acres Surveye	d: Elevati	ion: Max	Min
Hours Surveyed	: 4511			

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)	
1110	cleap	% cloud cover	hazy	3/5	250
11 55	Clear	% cloud cover	hazy	315	FID
	clear	% cloud cover	hazy	1 40	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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

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

*20 second period, mph



Numphalidae	Brush Footed Butterflies)	Lycaenidae (Blues)
Nymphandae (Funhydryns editha auino (Ouino Checkersnat)	Brephidium exilis (Pygmy Blue)
12	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia loranini (Loranin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	3 a (,
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
1	(Henne's Checkerspot)	
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
1	Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Ladv)	
		Building March 10
De 11 ACI		Papilionidae (Swaliowialis)
Danaidae (Mill	kweed Butterfiles)	Papilio eurymedon (Pale Swallowiail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtall)
	Dandus plexippus (Monarch)	Papilio zelicaon (Anise Swallowiait)
Hesperidae		Pieridae (Whites and Orangetins)
Inoperidae	Francis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Drangetin)
	Heliopetes ericetorum (Great White Skinner)	Anthocharis (anceolata (Grinnell's Mathle)
	Hylenhila nhyleus (Fiery Skinper)	Anthocharis sara (Sara Orangetin)
	Pyrous athescens (Checkered Skinner)	Artogeia range (Cabbage White)
1		Colias eurytheme (Alfalfa Butterfly)
	and the second sec	Colias harfordii (Harford's Sulfur)
		Euchloe hvantis lotta (Southern Marble)
		Eurema nicippe (Sleepy Orange)
		Nathalis iole (Dwarf Yellow)
		Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
	419.0	
		Riodinidae (Metalmarks)
Contraction of the		Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Satyridac (Satyrids)
	and the second se	Coenonympha californica (California Ringlet)
OTHER.		
OTILIA		
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jale Par	ve l	Date = 10/16	Site Vișit	Number <u> </u> +	2
Site Name	Map	5	Site Location	MAINAY	2.7.1	1
Total Acres:	Total	Acres Surveyed	: Elevati	on: Max	Min	_
Hours Surveyed:	2151					

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
nar	clear	% cloud cover	hazy	11 M	- 5 M
10 A.	clear	% cloud cover	hazy	11.3	- 1-
100	clear	% cloud cover	hazy	41 4	-1.)
	clear	% cloud cover	hazy		-17 a T
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy	F	
	clear	% cloud cover	hazy		
	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

1-951-686-1497

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Euphydryas editha guino (Quino Checkerspot)	Ht Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	1 Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gvas (Edward's Blue)
(Chalcedon Checkerspot)	
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Bluc)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
	Panilionidae (Swallowtails)
Dangidge (Milknueed Butterflies)	Papilio eurymedon (Pale Swalfowtail)
Danaus (Mins weed Duronines)	Papilio rutulus (Western Tiger Swallowtail)
Danaus glavionus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Danaus piezippus (wonardi)	
M	Pierides (Whites and ()rangetins)
Francis Grandia (Fundral Duplay wing)	Anthocharis cethura (Felder's Orangetin)
Erynnis Juneralis (Fulctai Dusky-willg)	Anthocharis Janceolata (Grinnell's Marble)
- Heliopetes ericetorum (Great White Skipper)	1111 Anthocharis sara (Sara Orangetip)
11 Hit LAST 1) Purpus albascans (Checkered Skipper)	Artogeia range (Cabbage White)
par fill (Torgas dibesteris (Checkeled Skipper)	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
115 1	Euchlog hypertia (otta (Southern Marble)
	Eurema nicipae (Sleepy Orange)
	Nothalis iale (Dwarf Ycllow)
and the second state of th	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
	111 Plana Course Claudier Sultan
	Riodinidae (Metalmarks)
1 - 2000 (C)	Apodemia morino virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Motalmark)
and the second s	Satyridae (Satyrids)
	Control print Largor new Control (Chillieu)
OTHER	
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dal- Pa	11 12	Date	sinia	Site Visit	Number _	1+2
Site Name	CAR 6		Sit	e Location	Mara	den't	
Total Acres:	Total	Acres Surveye	ed:	Elevatio	n: Max	Min	
Hours Surveyed	: 1'56"						

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
12.05	clear	% cloud cover	hazy		3 A
(same	ctear	% cloud cover	hazy	2/4	3 30
1000	clear	% cloud cover	hazy		1110
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		La construction
	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

Nymphalidaa	Brush Footed Butterflies)	Lycaenidae (Blues)
rymphaniae (1	Eunhydryas editha auino (Ouino Checkerspot)	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Bluc)
	Basilarchia lorauini (Lorauin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
1	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	Leptotes marina (Marine Blue)
	Numohalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Numphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Destilianidas /Constitutio
	10.4.01.2	Papilionidae (Swallowians)
Danaidae (Mill	(weed Butterflies)	Papillo eurymedon (Pale Swallowtail)
1	Danaus gruppus (Queen)	Papilio ratidas (vesieni riger Swallowtail)
	Danaus plexippus (Monarch)	r unito zencuon (runse owanowich)
Hacheridae	· · · · · · · · · · · · · · · · · · ·	Pieridae (Whites and Orangetips)
III	Ervnnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
the	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)
1.00	an and a second s	Colias harfordii (Harford's Sulfur)
		Euchloe hyantis lotta (Southern Marble)
		Eurema nicippe (Sleepy Orange)
	the second s	Nathalis tole (Dwart Yellow)
	1(1))Cortie	Pontia protodice (Common White)
		Derene euryaice (Cantonna Dogiace)
		Riodinidae (Metalmarks)
	- mar and the second	Anodemia mormo viroulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
OTHER:	and the second sec	i meneral i menerali
		er et datage
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dala Paulell	Date 3/10/16	Site Visit 1	Number 1
Site Name	5 j 4 9.	Site Location	Muau	
Total Acres:	Total Acres Surveyed	Elevati	on: Max	Min
Hours Survey	red: 1'2.5"			

Time (24hr)	11 1	Sky		Wind (aver*/max)	Temp (F)
1413-10	clear	10 0% cloud cover	hazy	1/2	70"
1555	clear	mo% cloud cover	hazy	2.4	1 1
	clear	% cloud cover	hazy	<u> </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	4	
	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.

10

*20 second period, mph

1-951-686**-**1497

lymphalidae (B	rush Footed Butterflies)	Lycaenidae (Blues)			
	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)			
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)			
	Basilarchia lorguini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)			
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)			
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)			
	(Chalcedon Checkerspot)				
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)			
	(Henne's Checkerspot)				
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)			
	Nymphalis antiope (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)	Lycaenidae (Hairstreaks)			
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)			
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)			
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)			
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)			
	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)			
and the state of the	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)			
	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)			
	-17:8 monstern (entrication sublish)	Colias eurytheme (Alfalfa Butterfly)			
		Colias harfordii (Harford's Sulfur)			
		Euchloe hyantis lotta (Southern Marble)			
	intere de strie a dinaras destrit servicios da sub servicio de servicio de servicio de servicio de servicio de s	Furema nicippe (Sleenv ()range)			
	- in the international state of the second sta	Nathalis icle (Dwarf Vellow)			
		Partia protodice (Common White)			
		Zerane aurudice (Colifornia Donface)			
		Riodinidae (Metalmarks)			
1.		Apodemia mormo virgulti (Behr's Metalmark)			
		Calephelis wrighti (Wright's Metalmark)			
		Satyridae (Satyrids)			
		Coenonympha californica (California Ringlet)			
OTHER:	A A A A A A A A A A A A A A A A A A A				
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dale	Privall	Date 3	9/16	Site Visit N	Number	(Non)
Site Name	· r	Vief	Site Lo	cation	MIXaw	197	
Total Acres:	I	otal Acres Survey	/ed:	Elevation	on: Max	Min	
Hours Survey	red: 11	131					

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
0915	clear)_	% cloud cover	hazy	113	670
11/20	clear	% cloud cover	hazy	315	70
1100	clear	% cloud cover	hazy	N.	75"
1.0	clear	% cloud cover	hazy	1	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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, indges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

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

*20 second period, mph



Lycaenidae (Blues)
Brephidium exilis (Pygmy Blue)
Celastrina ladon echo (Echo Blue)
Everes amyntula (Western Tailed Blue)
Glaucopsyche lygdamus australis (Southern Blue)
Hemiargus ceraunus gyas (Edward's Blue)
Icarcia acmon (Acmon Blue)
Leptotes marina (Marine Blue)
Philotes sonorensis (Sonoran Blue)
Plebejus melissa (Melissa Blue)
Lycacnidae (Hairstreaks)
Atlides halesus (Great Purple Hairstreak)
Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Incisalia augustinus (Brown Elfin)
Surymon melinus (Gray Hairstreak)
Papilionidae (Swallowtails)
Papilio eurymedon (Pale Swallowtail)
Papilio rutulus (Western Tiger Swallowtail)
Papilio zelicaon (Anise Swallowtail)
Pieridae (Whites and Orangetins)
Anthocharis cethura (Felder's Orangetin)
Anthocharis Ianceolata (Grinneti's Marble)
Anthocharis sara (Sara Orangetin)
Artogeia rapae (Cabbage White)
Colias eurytheme (Alfalfa Butterfly)
Colias harfordii (Harford's Sulfur)
Euchloe hyantis lotta (Southern Marble)
Europe visions (Blassy Openno)
Eurena nicippe (Sicepy Orange)
Nathalis iole (Dwarf Yellow)
Nathalis iole (Dwarf Yellow) Pontia protodice (Common White)
Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) (Apodemia mormo virgulti (Bchr's Metalmark)
Riodinidae (Metalmarks) Image: Appendix mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wtipht's Metalmark)
Riodinidae (Metalmarks) Image: Apple discontract of the state of the s
Riodinidae (Metalmarks) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) (Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) 1 Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) 1 Coenonympha californica (California Ringlet)
Riodinidae (Metalmarks) Image: Appendix a mormo virgulti (Behr's Metalmark) Calephelis wrighti (Weight's Metalmark) Satyridae (Satyrids) (Coenonympha californica (California Ringlet)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [Coenonympha californica (California Ringlet)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) (Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) (Coenonympha californica (California Ringlet)
Eurema inciple (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) (Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) (Coenonympha californica (California Ringlet)
Eurema incippe (Steepy Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) 1 Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) 1 Coenonympha californica (California Ringlet)
Enrema incippe (Steep) Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) (Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) (Coenonympha californica (California Ringlet)
Enrema inciple (Steep) Orange) Nathalis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) (Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) (Coenonympha californica (California Ringlet)



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	a le Paracil	Date	_ Site Visit	Number (
Site Name	Mapz	Site Location	Miray	
Total Acres:	Total Acres Surveyed	: Elevati	ion: Max	Min
Hours Surveyed	45"			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1110	clean	% cloud cover	hazy	3/5	73°_
1155	clean	% cloud cover	hazy	215	714
	clear	% cloud cover	hazy		and the second
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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



And the second se			
Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)		
Euphydryas editha guino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)		
Adelpha bredowii californico (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	Hemiargus ceraunus gyas (Edward's Blue)		
(Chalcedon Checkerspot)			
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)		
(Henne's Checkerspot)			
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)		
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Bluc)		
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Bluc)		
Phycoides mylitta (Mylitta Crescent)			
Polygonia satyrus (Satyr Anglewing)			
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)		
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Haustreak)		
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dunietorum (Perplexing Hairstreak)		
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)		
Vanessa cardui (Paimed Lady)	Strymon melinus (Gray Hairstreak)		
Vanessa virginiensis (Virginia Lady)			
QQ			
	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 lole (Dwarf Yellow)		
	Pontia protodice (Common White)		
	Zerene eurydice (California Dogface)		
	(Biodinidae (Metalmarks)		
	(1 Anodemia mormo virculti (Rehr's Metalmark)		
	Colephulis wrighti (Wright's Metalmark)		
Anno Area and a second second and a second	Conspired a regar (regar a resolution of		
	Satyridae (Satyrids)		
	Coenonympha californica (California Ringlet)		
AMURD			
OTHER:			
te till			
	Construction of the second		

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Quino Checkerspot Survey Form

Adult Assessment

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 Surveyor
 Jun
 Partell
 Date
 2/2/16
 Site Visit Number
 y
 (Now)

 Site Name
 Mapl
 Site Location
 Minaural

 Total Acres:
 Total Acres Surveyed:
 Elevation: Max
 Min

 Hours Surveyed:
 1/451/1

Time (24hr)		Sky)	Wind (aver*/max)	Temp (F)
7160	clear	% cloud cover	hazy	: 3	670
1000	clear	% cloud cover	hazy	- it	70°
1100	clean	% cloud cover	hazy	214	アン
t to the second second	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		6. T
	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

1-951-686-1497

La Ula (Dauch Footed Butterflies)	Lycaenidae (Blues)
ymphalidae (Brush Pooled Buildennes)	Brephidium exilis (Pygmy Blue)
Adabha bradowiji californica (California Sister)	Celastrina ladon echo (Echo Blue)
Resilenshis lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidman aghhii (Cabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Europadana chalcadana chalcadana	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkersnot)	
Enderdense shelpedona hennei	Icarcia aemon (Acmon Blue)
(Viene's Charleatina hermer	
(rienne's Checkerspoe)	Leptotes marina (Marine Blue)
Junonia coenia (Buckeye)	Philotes sonorensis (Sonoran Blue)
Nymphalis antiope (Viourning Cloak)	Plebejus melissa (Melissa Blue)
Nymphalis californica (Californica Toronscinent)	
Phycoides mylula (Mynua Crescent)	
Polygonia satyrus (Satyr Anglewing)	(vcaenidae (Hairstreaks)
Speyeria callippe (Callippe Pfilliary)	Atlides halesus (Great Purple Hairstreak)
Thessalia leanira wright (Leanira Checkolspot)	Callophyrs perplexa = dumetorum
Vanessa annabella (West Coast Lady)	(Perplexing Hairstreak)
The second se	Incisalia augustinus (Brown Elfin)
Vanessa atalanta (Red Admiral)	Stromon melinus (Gray Hairstreak)
Vanessa cardui (Paintea Lady)	
Vanessa virginiensis (Virginia Lady)	-
the second s	Panilionidae (Swallowtails)
	Panilio anymedon (Pale Swallowtail)
Danaidae (Milkweed Butterflies)	Papilio eurymean (raid Smallowtail)
Danaus gilippus (Queen)	1 Papilio ralicaco (Anise Swallowtail)
Danaus plexippus (Monarch)	1 dynio zencuon 5 lines o nationality
Umanidaa	Pieridae (Whites and Orangetips)
Figures financis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Heliopoteo erioetorum (Great White Skinner)	Anthocharis lanceolata (Grinnell's Marble)
(Educated and the state of the	Anthocharis sara (Sara Orangetip)
Durating allogramma (Charliered Skinner)	Artogeia range (Cabbage White)
Pyrgus undescens (Cucerce of Skipper)	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchlog Irvantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis inle (Dwarf Yellow)
avist	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
	Riodinidae (Metalmarks)
	11 Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	Satyridae (Satyrids)
THE REPORT	Coenonympna californica (California Ringlet)
OTHED.	
UTHER:	



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Pawell	Date 3/8/16	Site Visit	Number <u>2</u>
Site Name	Map 2	Site Location	M,	the the Car
Total Acres:	Total Acres Surveyed	: Elevati	on: Max	Min
Hours Surveyed	1: 2/45"			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1645	elean	% cloud cover	hazy	10	650
1200	çlead	% cloud cover	hazy	3/5	660
1340	elear,	% cloud cover	hazy	416	650
1:30	clear	% cloud cover	hazy	517	6.10
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy	-	Constanting of
	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, tidges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

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

*20 second period, mph



Nymphalidae (B	Brush Footed Butterflies)	Lycaenidae (Blues)
1-	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Fygmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
1	Basilarchia lorquini (Lorquin's Admiral)	Everes amyntula (Western Taileo Blue)
	Charidryas gabbii (Gabb's Checkerspot)	(1) 1 Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	7 (1 (A
	Euphydryas chalcedona hennel	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspor)	(
	Junonia coenia (Buckeye)	Distance and the second
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoisesteri)	Fieldejus metissa (Metissa Blue)
	Phycoides mylilla (Mylitta Crescent)	
	Polygonia satyrus (Satyr Angiewing)	(Lucronidan (Haintanka)
	Speyeria camppe (Camppe Frinnary)	Atildae kalacus (Groat Durala Hoirstearle)
	Inessalia leanira wrighti (Leanira Checkerspot)	Callenhura perpleta = duratorum
	Vanessa annabella (West Coast Lady)	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
1	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	-
		Papilionidae (Swallowtails)
Danaidae (Milk	weed Butterflies)	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papillo zelicaon (Anise Swallowtail)
Hesperidae		Pieridae (whites and Orangeups)
	Erynnis juneralis (Funeral Dusky-Wing)	Anthocharis ceinara (Felder's Orangeup)
	Heltopetes ericelorum (Great White Skipper)	Anthocharis tanceolata (Gruinell's Walde)
	The statement of the second statem	
	Burgus albacanes (Checkared Skipper)	Anthocharis sara (Sara Orangeup)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfir)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hypotis lotta (Southern Marble)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Euroma niciane (Sleeny Orange)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangelp) 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 providice (Compon White)
	Pyrgus albescens (Checkered Skipper)	Anthocnaris sara (Sara Orangelip) 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)
	Pyrgus albescens (Checkered Skipper)	Anthocnars sara (Sara Orangelp) 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 Dogfacc)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangelip) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangelp) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
2 ¹	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbagc White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbagc 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 Dogfacc) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) })
	Tytephila phyteus (Piety Skipper) Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) 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) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
	Tytepnia phyteus (Prety Skipper) Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangetip) 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) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
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OTHER:	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
OTHER:	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
OTHER:	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
OTHER:	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
OTHER:	Tytepnia phyteus (Prety Skipper) Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)
OTHER:	Tytepnia phyteus (Prety Skipper) Pyrgus albescens (Checkered Skipper)	Antiocriaris sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathatis iole (Dwarf Yellow) Pontia protodice (Common White) Zerene eurydice (California Dogfacc) III Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) [1] Coenonympha californica (California Ringlet)

p 3

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Pawell 1	Date 3/8/16	Site Visit I	Number <u>2</u>
Site Name	Mep 3	Site Location	Mire	T Me a se
Total Acres:	Total Acres Surveyed:	Elevatio	on: Max	Min
Hours Surveye	ed: 2/50"			

Time (24hr)		Sky	-	Wind (aver*/max)	Temp (F)
1340	cleap	% cloud cover	hazy	6/9	640
1400	eteap	% cloud cover	hazy	416	700
1500	clear	% cloud cover	hazy	214	7:0
1630	dear	% cloud cover	hazy	3/6	620
	clear	% cloud cover	hazy	1.00	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		A second
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		1
	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 exserto, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla.

*20 second period, mph

(3.9)

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)			
rymphanoae (Funkydrygs editha guino (Oniun Checkerspot)	Brephidium exilis (Pygmy Blue)			
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)			
	Basilarchia lorauini (Lorouin's Admiral)	Everes amyntula (Western Tailed Blue)			
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)			
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)			
	(Chalcedon Checkerspot)				
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)			
	(Henne's Checkerspot)				
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)			
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Bluc)			
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)			
	Phycoides mylitta (Mylitta Crescent)				
	Polygonia satyrus (Satyr Anglewing)				
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)			
1	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)			
1	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)			
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)			
1	Vanessa cardui (Paimed Lady)	Strymon melinus (Gray Hairstreak)			
	Vanessa virginiensis (Virginia Lady)				
2					
		Papilionidae (Swallowtails)			
Danaidae (Mill	kweed Butterflies)	Papilio eurymedon (Pale Swallowtail)			
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)			
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)			
Hesperidae	Enough Committee (Frances I Dealer sectors)	Piericae (writes and Orangenps)			
	Haliopatan aniastorum (Creat White Stringer)	Anthocharis lanceslata (Crinnell's Marble)			
1	Hulaphila phylaus (Fign: Chinam)	Anthocharis runceordia (Officient's Matore)			
	Purgue albaseans (Checkard Skipper)	Artogeig range (Cabbase White)			
	· J. Ens anyeseers (Checkeled Display)	Colias eurotheme (Alfalta Rutterfly)			
		Collas barfordii (Harford's Sulfur)			
	Contraction of the second s	Fuchloe Inventis lotto (Southern Marhle)			
		Eurema nicippe (Sleepv Orange)			
		Nathalis iole (Dwarf Ycllow)			
	a se an e-shèire	Pontia protodice (Common White)			
		Zerene eurydice (California Dogface)			
		Riodinidae (Metalmarks)			
		Apodemia mormo virgulti (Bchr's Metalmark)			
	er ann an	Calephelis wrighti (Wright's Metalmark)			
		a man provided by a prosent of a second seco			
		Saturidae (Saturida)			
	the last take the second	Coenonympha californica (California Ringlet)			
	The second				
OTHER:					
	1				

Quino Checkerspot Survey Form

Adult Assessment

Surveyor Data Barli I	Date $\frac{2}{3}$ 6 Site Visit Number $\frac{7}{2}$
Site Name Mapl Total Acres Surveyed:	_ Site LocationVi(Connection
Hours Surveyed: 1730/	

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
01.5	clear	% cloud cover	hazy	~ / .!	115
1 1 4	clear	% cloud cover	hazy	112	6.0
1045	clears	% cloud cover	hazy	l l h	
1	clear	% cloud cover	hazy		1
	clear	% cloud cover	hazy	-	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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

1-951-686-1497



Exploying and the problem index (Durine Checkerspot) Exploying a self that quino (Quino Checkerspot) Brephidium exilis (Pygmy Blue) Adelpha bredowii californica (California Sister) Cetastrina ladon echo (Echo Blue) Basilarchia torquin's Admiral) Everes anyntula (Western Tailed Blue) Charidryas gabiti (Gabb's Checkerspot) Glaucopsyche lygdomus australis (Southern Euphydryas chalcedona chalcedona Hemiargus ceraunus goas (Edward's Blue) (Chalcedon Checkerspot) Icarcia acmon (Acmon Blue) (Henne's Checkerspot) Leptotes marina (Marine Blue) Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Nymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Phycoides mylitta (Mylitta Crescent) Pheoides mylitta (Mylitta Crescent) Phycoides mylitta (Mylitta Crescent) Pheoides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Callopinys perplexa = dumetorum (Perplexing Hairstreak) Vanessa anabella (West Coast Lady) Strymon melinus (Gray Hairstreak) Vanessa ardau (Red Admirai) Incisodia augustinus (Brown Elfin) Vanessa ardau (Red Admirai) Incisodia augustinus (Brown Elfin) Vanessa ardau (Red Admirai) Papilionidae (Swallowtails) Danaus gilippus (Queen) Papilio eurymed
Adelpha bredowii californica (California Sister) Celastrina ladon echo (Echo Blue) Basilarchia lorquini (Lotquin's Admiral) Everes anynula (Western Tailed Blue) Charidryas gabbii (Gabb's Checkerspot) Glaucopsyche lygdamus australis (Southern Euphydryas chalcedona chalcedona (Chalcedon Checkerspot) Glaucopsyche lygdamus australis (Southern Hemiargus ceraunus gyas (Edward's Blue) (Chalcedon Checkerspot) Icarcia acmon (Acmon Blue) (Henne's Checkerspot) Icarcia acmon (Acmon Blue) Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Nymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Phycoides mylita (Mylita Crescent) Plebejus melissa (Melissa Blue) Phycoides mylita (Mylita Crescent) Plebejus melissa (Great Purple Hairstreak) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa anabella (West Coast Lady) Srymon melinus (Gray Hairstreak) Vanessa ardularta (Red Admiral) Incisatia augustinus (Brown Elfin) Vanessa arginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaus gilippus (Queen) Papilio zelicaon (Anise Swallowtail) Danaus gilippus (Monarch) Papilio zelicaon (Anis
Basilanchia lorguini (Lorguin's Admiral) Everes amyntula (Western Tailed Blue) Charidryas gabbii (Gabb's Checkerspot) Glaucopsyche (vgdamus austrolis (Southern Euphydryas chalcedona chalcedona (Chalcedon Checkerspot) Euphydryas chalcedona chalcedona (Chalcedon Checkerspot) Hemiargus ceraunus gyas (Edward's Blue) Kenne's Checkerspot) Icarcia acmon (Acmon Blue) Menne's Checkerspot) Leptotes marina (Marine Blue) Mymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Nymphalis california Tortoiseshell) Plebejus melissa (Melissa Blue) Polygonia satyrus (Satyr Anglewing) Lycaenidae (Hairstreaks) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa avirginiensis (Virginia Lady) Snymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaudae (Milkweed Butterflies) Papilionidae (Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail)
Charidryas gabbii (Gabb's Chockerspot) Glaucopsyche lygdamus australis (Southern Euphydryas chalcedona chalcedona (Chalcedon Checkerspot) Hemiargus ceraunus gyas (Edward's Bluc) Euphydryas chalcedona hennei (Chalcedon Checkerspot) Icarcia acmon (Acmon Blue) Henne's Checkerspot) Leptotes marina (Marine Blue) Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Nymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Nymphalis californica (California Tortoiseshell) Plebejus melissa (Melissa Blue) Phycoides mylitta (Mylitta Crescent) Plebejus melissa (Melissa Blue) Polygonia satyrus (Satyr Anglewing) Lycaenidae (Hairstreaks) Speyeria callippe Callippe Fritilary) Lycaenidae (Hairstreaks) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admirai) Incisatia augustinus (Brown Elfin) Vanessa avirginiensis (Virginia Lady) Srymon melinus (Gray Hairstreak) Danaus glippus (Queen) Papilio rutulus (Western Tiger Swallowtail) Danaus plexippus (Monurch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Euphydryas chalcedona chalcedona (Chalcedon Checkerspot) Hemiargus ceraunus gyas (Edward's Bluc) Euphydryas chalcedona hennei (Henne's Checkerspot) Icarcia acmon (Acmon Blue) Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Nymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Nymphalis californica (California Tortoiseshell) Plebejus melissa (Melissa Blue) Phycoides mylitta (Mylitta Crescent) Plebejus melissa (Melissa Blue) Polygonia satyrus (Satyr Anglewing) Lycaenidae (Hairstreaks) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admirai) Incisalia augustinus (Brown Elfin) Vanessa virginiensis (Virginia Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilionidae (Swallowtails) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Leptotes and Oraneetins) Papilio zelicaon (Anise Swallowtail)
Euphydryas chalcedona hennei Icarcia acmon (Acmon Blue) (Henne's Checkerspot) Leptotes marina (Marine Blue) Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Nymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Nymphalis californica (California Tortoiseshell) Plebejus melissa (Melissa Blue) Phycoides mylitta (Mylitta Crescent) Plebejus melissa (Melissa Blue) Polygonia sayrus (Sayr Anglewing) Lycaenidae (Hairstreaks) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Iracisatia augustinus (Brown Elfin) Vanessa ardui (Painted Lady) Snymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilionidae (Swallowtails) Danaus gilippus (Queen) Papilio rutulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hexperidae Pieridae (Whites and Oranestins)
Junonia coenia (Buckeye) Leptotes marina (Marine Blue) Mymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Blue) Nymphalis california (California Tortoiseshell) Plebejus melissa (Melissa Blue) Phycoides mylitta (Mylitta Crescent) Plebejus melissa (Melissa Blue) Polygonia satyrus (Satyr Anglewing) Lycaenidae (Hairstreaks) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilio eurymedon (Pale Swallowtail) Danaus glippus (Queen) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Nymphalis antiope (Mourning Cloak) Philotes sonorensis (Sonoran Bluc) Nymphalis californica (California Tortoiseshell) Plebejus melissa (Melissa Bluc) Phycoides mylitta (Mylitta Crescent) Plebejus melissa (Melissa Bluc) Polygonia satyrus (Satyr Anglewing) Lycaenidae (Hairstreaks) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Thessalia leanira wrighti (Leanira Checkerspot) Allides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swellowtails) Danaidae (Milkweed Butterflies) Papilio rutulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Nymphalis californica (California Tortoiseshell) Plebejus melissa (Melissa Blue) Phycoides mylitta (Mylitta Crescent) Polygonia satyrus (Satyr Anglewing) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Thessalia leanira wrighti (Leanira Checkerspot) Allides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilio eurymedon (Pale Swallowtail) Danaus glippus (Queen) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Phycoides mylitta (Mylitta Crescent) Polygonia satyrus (Satyr Anglewing) Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Thessalia leanira wrighti (Leanira Checkerspot) Attides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Vanessa atalanta (Red Admiral) Vanessa atalanta (Red Admiral) Vanessa cardui (Painted Lady) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Danaus gilippus (Queen) Papilio zelicaon (Anise Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Papilio zelicaon (Anise Swallowtail)
Polygonia satyrus (Satyr Anglewing) Speyeria callippe (Callippe Fritillary) Thessalia leanira wright (Leanira Checkerspot) Allides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Vanessa atalanta (Red Admiral) Vanessa cardui (Painted Lady) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Danaus gilippus (Queen) Papilio zelicaon (Anise Swallowtail) Papilio zelicaon (Anise Swallowtail) Hesperidae
Speyeria callippe (Callippe Fritillary) Lycaenidae (Hairstreaks) Thessalia leanira wrighti (Leanira Checkerspot) Atlides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilionidae (Swallowtails) Danaus gilippus (Queen) Papilio rutulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Thessalia leanira wrighti (Leanira Checkerspot) Atlides halesus (Great Purple Hairstreak) Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilio eurymedon (Pale Swallowtail) Danaus gilippus (Queen) Papilio ratulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Vanessa annabella (West Coast Lady) Callophyrs perplexa = dumetorum (Perplexing Hairstreak) Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilio eurymedon (Pale Swallowtail) Danaus glippus (Queen) Papilio ratulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Vanessa atalanta (Red Admiral) Incisalia augustinus (Brown Elfin) Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Papilionidae (Swallowtails) Danaus gilippus (Queen) Papilio rutulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Vanessa cardui (Painted Lady) Strymon melinus (Gray Hairstreak) Vanessa virginiensis (Virginia Lady)
Vanessa virginiensis (Virginia Lady) Papilionidae (Swallowtails) Danaidae (Milkweed Butterflies) Danaus gilippus (Queen) Papilio rutulus (Western Tiger Swallowtail) Danaus plexippus (Monarch) Hesperidae Pieridae (Whites and Orangetins)
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 Oranostins)
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 Orangetins)
Dancus gilippus (Queen) Papilio rutulus (Western Tiger Swallowtail) Dancus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
Dancus plexippus (Monarch) Papilio zelicaon (Anise Swallowtail) Hesperidae Pieridae (Whites and Orangetins)
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Hesperidae (Whites and Oranoetins)
TA WINDO THINKS ON OTHING ON
Ervnnis 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)
Kiodinidae (Metalmarks)
Apodemia mormo virguii (Bent's Metalmar
Calepneus wright (Wright s Mictalmark)
Coturidaa (Coturida)
Satyriuos (Satyriuos Cognonymetra californica (California Rinal
OTHER:

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jule Powell	Date 218/18	Site Visit	Number 📿
Site Name	Maria	Site Location	P.A.S.	in the off
Total Acres:	Total Acres Surveye	d: Elevati	on: Max	Min
Hours Surveyed:	2'45"			

Time (24hr)		Sky	-	Wind (aver*/max)	Temp (F)
1045	clear	% cloud cover	hazy	1/2	650
1240	elean	% cloud cover	hazy	35	552
CAR	cleap	% cloud cover	hazy	416	350
(530)	cléar	% cloud cover	hazy	518	640
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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 erectu, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla.

*20 second period, mph

1-951-686-1497

p.17

Nymphalidae (F	Brush Footed Butterflies)	Lycaenidae (Blues)	
Eunhydryas editha auino (Ouino Checkersnot)		1	Brephidium exilis (Pygmy Blue)	
21-1-103-13-13	Adelpha bredowij californica (California Sister)	1	Celastrina ladon echo (Echo Blue)	
-	Basilarchia loravini (Lorouin's Admiral)		Everes amyntula (Western Tailed Blue)	
	Charidryas gabbii (Gabb's Checkerspot)	IL	Glaucopsyche lygdamus australis (Southern Blue)	
	Euphydryas chalcedona chalcedona	1 201	Hemiargus ceraunus gyas (Edward's Blue)	
	(Chalcedon Checkerspot)			
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)	
	(Henne's Checkerspot)			
	Junonia coenia (Buckeye)	1	Leptotes marina (Marine Blue)	
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)	
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)	
	Phycoides mylitta (Mylitta Crescent)			
	Polygonia satyrus (Satyr Anglewing)	10-		
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)	
	Thessalia leanira wrighti (Leanira Checkerspot)	1	Atlides halesus (Great Purple Hairstreak)	
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)	
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)	
(T. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)	
	Vanessa virginiensis (Virginia Lady)			
		Papilionidae	(Swallowtails)	
Danaidae (Milk	tweed Butterflies)		Papilio eurymedon (Pale Swallowtail)	
	Danaus gilippus (Qucen)	-	Papilio rutulus (Western Tiger Swallowtail)	
	Danous plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)	
Hesperidae		Discides (Whites and Orangetins)		
resperione	Ervnnis funeralis (Functal Dusky-wing)		Anthocharis cethura (Felder's Orangetin)	
	Heliopetes ericetorum (Great White Skinner)		Anthocharis lanceolata (Grinnell's Marble)	
	Hylephila phyleus (Fiery Skipper)		Anthocharis sara (Sara Orangetip)	
	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)		
1	and the second sec		Colias eurytheme (Alfalfa Butterfly)	
	The second s	10.5	Colias harfordii (Harford's Sulfur)	
		Euchloe hyantis lotta (Southern Marble)		
			Eurema nicippe (Sleepy Orange)	
			Nathalis iole (Dwarf Yellow)	
			Pontia protodice (Common White)	
		1	Zerene curydice (California Dogface)	
		Diodinidae ()	Mata Tanaka)	
		Niominase (1	Anodamia marma uiraulti (Dahr's Matalmark)	
-			Calephelis wrighti (Wright's Metalmark)	
	10	Satyridae (Sa	atyrids)	
		<u> </u>	Coenonympha californica (California Ringlet)	
OTHED.			and the second s	
UTHER:	in the second			
			and the second se	
		-	24%	
	The second s			
			The second s	

р3

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	le Parreil	Date 3 2 6	Site Visit I	Number 2
Site Name	MAR	Site Location	Winca	that
Total Acres:	Total Acres Surveye	ed: Elevatio	on: Max	Min
Hours Surveyed:	2'50"			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1. 4D	clear	% cloud cover	hazy	69	640
$f_{1} = f_{1} = f_{1}$	clear	% cloud cover	hazy	4/2	-15
1 - 2	clear	% cloud cover	hazy	- 11:	12.17
16:0	clear	% cloud cover	hazy	216	623
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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

1-951-686-1497

p.16

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
	Euphydryas editha auino (Ouino Checkerspot)	Brephidium exilis (Pygmy Blue)
	Adeloha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorquini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbit (Gabb's Checkerspot)	Glaucopsyche hygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Bluc)
	(Chalcedon Checkerspot)	
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
1	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
14	Polygonia saturus (Satyr Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
1.1.1	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
	and the second sec	Papilionidae (Swallowtails)
Danaidae (Mill	cweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Duraidue (frian	Danaus gilionus (Oucen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Macnaridaa		Diaridae (Whites and Orangetine)
Incaperidae	Francis funeralis (Funeral Ducky, wing)	Anthockaris cethura (Felder's Orangetin)
	Halianatas ariastonum (Greet White Skinner)	Anthocharis langeolate (Grinpell's Marble)
	Hylanhila phylaus (Fiers: Skinper)	Anthocharis sara (Sara Orangetin)
Y	Pyrans albescens (Checkered Skipper)	Artogeia range (Cabbage White)
		Colias eurytheme (Alfalfa Butterfly)
		Colias barlordii (Harford's Sulfur)
	testistic is a second second	Euchlog hypertit (Interest of Southern Marble)
	and a second	Eurema nicippe (Sleeny Orange)
	Accession of the second s	Nathalis iole (Dwarf Yellow)
		Pontia protodice (Common White)
		Zerene eurodice (California Dosface)
		200 the buryance (cantoning beginne)
		Dischinides (Metalmarky)
· · · · · · · · · · · · · · · · · · ·	weiter and the second second second	Apodomia marma virgulti (Dahr's Matalmark)
	the second s	Calankalin suviakti (Wright's Metaimark)
		Chiephens Wright (Wright's Michannark)
	and the second	Republics (Republic)
		Conversion and forming (California Director)
		Coenonympna caujornica (Cautomia Kinglet)
OTHER:		
and all the second s		

Quino Checkerspot Survey Form

Adult Assessment

p.6

Surveyor 5	ale Provell	_ Date 19 16	Site Visit Number 2.	_
Site Name	Max 4	Site Location	Miramar	e.
Total Acres:	Total Acres Survey	/ed: Elevatio	n: Max Min	
Hours Surveyed:	31454			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1 anian	ateap	% cloud cover	hazy	4/6	710
1200	ctear	% cloud cover	hazy	4/6	71"
1400	(elcar)	% cloud cover	hazy	54	680
1	clear	% cloud cover	hazy		1.5
1600	clear	% cloud cover	hazy	316	670
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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
26

Nymphalidae (P	Brush Footed Butterflies)	Lycaenidae	(Blues)
A Thurnanday (E	Eurhydryas editha auino (Ouino Checkerspot)	1.11	Brephidium exilis (Pygmy Blue)
1	Adelaba bredowii californica (California Sister)	-	Celastrina ladon echo (Echo Blue)
	Resilerchia loravini (Lorouin's Admiral)		Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkersuot)	115	Glaucopsyche lygdamus australis (Southern Blue)
	Eunbydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	A CONTRACT	
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
1	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	10	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Myhitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)		
	Speyeria callippe (Callippe Fritillary)	Lycaenidae	(Hairstreaks)
1	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
t	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
1	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
1	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)
1	Vanessa virginiensis (Virginia Lady)		
		Papilionidae	e (Swallowtails)
Danaidae (Milk	weed Butterflies)	1.1.1	Papilio eurymedon (Palc Swallowtail)
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
1	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
Hesperidae	the second s	Pieridae (W	hites and Orangetips)
il - An	Ervnnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	111	Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)		Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
10 mm			Colias eurytheme (Alfalfa Butterfly)
		1	Colias harfordii (Harford's Sulfur)
		120.00	Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
			Nathalis iole (Dwarf Yellow)
			Pontia protodice (Common White)
		-	Zerene eurydice (California Dogtace)
		Riodinidae	(Metalmarks)
			Calephelis wrighti (Wright's Metalmark)
			Surprise in the congress interanting
		Saturidae (S	Saturide)
		Salyridae (c	Comanympha californica (California Ringlet)
	an constant of the second seco		Commission cargo men (Cantonia Kargot)
OTHED.		-	
OTHER:	18-11-1 - 12-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	1	10011 000-002-01 0000-0000-0000-0000-000
		-	
	annual a second annual annual annual annual a second		A contraction of the second
	and a second		n - 11
La management			



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Pralell	Date ~ (2/16	Site Visit	Number 2
Site Name	Mapl	Site Location	Marana	
Total Acres:	Total Acres Surveye	d: Elevat	tion: Max	Min
Hours Surveyed:	1/30"			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
0915	clean	% cloud cover	hazy	2/4	610
1000	clear	% cloud cover	hazy	13	6,5
2101	clear	% cloud cover	hazy	2	500
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		Aug. 100
	clear	% cloud cover	hazy		
	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



р9

	Lumanidae (Blues)
Nymphalidae (Brush Footed Butterlifes)	1)11 Republication exilis (Promy Blue)
Luphyaryas eauna quino (Quino Checkerspot)	Calasteina ladan acho (Echo Blue)
Regilerabio location (Cantonna Sister)	Evaras amutula (Mestern Tailed Blue)
Charidanas aabhii (Cabh's Cherkerspot)	(V) Glauconsyche lyadamus australis (Southern Blue)
Europada as chalcadara chalcadara	Hemiorous cerannus quas (Edward's Blue)
(Chalcedon Checkerspot)	Theman guo cer annuo gran (La mar a chao)
Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acmon (Acmon Blue)
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
	Panilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	Papilio euromedon (Pale Swallowtail)
Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
Danaus plexingus (Quoti)	Papilio zelicaon (Anise Swallowtail)
Hesperidae	Pieridae (Whites and Orangetins)
Ervnnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetin)
Heliopetes ericetorum (Great White Skipper)	Anthocharis Ignegolata (Grinpell's Marble)
Hylephila phyleus (Fiery Skinner)	Anthocharis sara (Sara Orangetin)
Pyrgus albescens (Checkered Skipper)	Artopeia range (Cabbage White)
	Colias envytheme (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)
total contraction of the second se	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor 5	in Pawell	_ Date 3/9/16_ Site Visit	t Number 2
Site Name	Mapy	Site Location	
Total Acres:	Total Acres Survey	/ed: Elevation: Max	Min
Hours Surveyed	2451		

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1215	_clear,	% cloud cover	hazy	4/6	710
1300	clear	% cloud cover	hazy	0/6	710
1400	Clean	% cloud cover	hazy	517	620
1500	clear	% cloud cover	hazy	214	68°
1600	clear	% cloud cover	trazy	316	670
	clear	% cloud cover	hazy	L	
	clear	% cloud cover	hazy		1
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		103 0 100

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

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

*20 second period, mph

Tymphandae	(Brush Pooted Butterflies)	Lycaenidae (Blues)
1	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pypmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon scho (Echo Blue)
the second second	Basilarchia lorguini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Phue)
	Euphydryas chalcedona chalcedona	Hemiargus cercunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	See the second solution of the formation of the
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Bluc)
	(Henne's Checkerspot)	
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
1	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brawn Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Grav Hairstreak)
	Vanessa virginiensis (Virginia Lady)	(Sid) Hunsteak)
	and the second sec	Papilionidae (Swallowtails)
Janaidae (Milk	(weed Butterflies)	Papilio eurymedon (Pale Swalloutail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
-	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
lesperidae		
111	Empris formatic (Engaged Dust	Pieridae (Whites and Orangetips)
	Haliopatas existences (Caret Million Chi	Anthocharis cethura (Felder's Orangetip)
1	Hulenhile platen (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
-	Pyraw albasans (Chashand Chi	Anthocharis sara (Sara Orangetip)
	ryrgas albestens (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)
1000		Zerene eurydice (California Dogface)
		Rindinidae (Mambanda)
		Andread (Vicialmarks)
		Appaemia mormo virgulti (Behr's Metalmark)
		Calephetis wrighti (Wright's Metalmark)
2.5.5		Saturidae (Saturida)
		Comparison Inc. 1. Comparison
		Coenonympna catifornica (California Ringlet)
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Quino Checkerspot Survey Form

Adult Assessment

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Surveyor	Dale	Pauleil	Date _?	13/16	Site Visit]	Number 3	•
Site Name	WA.	£ 1	Site L	ocation	Mira	Junit .	-
Total Acres:	Ť	otal Acres Sur	veyed:	Elevatio	on: Max	Min	
Hours Surve	yed: 1/1	SIS .					

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
9:20	clear % cloud cover	hazy	0/0	67.0
1 de	clear 3 % cloud cover	hazy	24	7.0
No.5	clear (1) % cloud cover	hazy	315	6 12
1 . J.	clear >> % cloud cover	hazy		15-2-2
1	clear 👋 % cloud cover	hazy		
	clear % cloud cover	hazy		and the second second
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
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	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1

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



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Mumphalidae (P	Trush Footed Butterflies)	Lycaenidae (Blues)
reyniphanuae (n	Funhydrygs aditha auina (Quine Checkersnot)	HAT LATE LATE	(1) Brephidium exilis (Pygmy Blue)
	Adalaha bradowii californica (California Sister)	the set sure	Celastring ladon echo (Echo Blue)
	Rasilarshia laravini (Loranin's Admiral)	-	Everes amyntula (Western Tailed Blue)
	Chanideway aphili (Gabh's Checkersnot)	111	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona (Chalcedona Checkersnot)	1	Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hennei (Hanne's Chackgrout)		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		Lentotes maring (Marine Blue)
	Nymphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	1	Plebeius melissa (Melissa Blue)
	Physicilas mulita (Mulitta Crescent)		
	Polyconia saturas (Satur Anglewing)		
4110	Speveria callinne (Callinne Fritillary)	Lycaenidae ((Hairstreaks)
	Therealig leaving wright (Leaving Checkerspot)		Atlides halesus (Great Purple Hairstreak)
1	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanassa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Ladv)		Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
2 subulineau		Panilionidaa	(Swallowtails)
Donaidea (1.60	waad Butterfline)	Fapinondae	Panilio euromedor (Pale Swallowtail)
Danaidae (Milk	Densus cilimus (Queen)		Papillo eutymetich (Faic Swallowdail)
	Danaus glappus (Queen)		Papilio ralicoon (Anise Swallowtail)
	Dandus prexippus (Monarch)		1 dpino zenedon (Panse Smanoman)
Uamaridaa	and the second s	Pieridae (W	hites and ()rangeting)
riespendae	Emanis funaralie (Enneral Ducky wing)	T IOTODO (17)	Anthocharis cethura (Felder's Orangetin)
-	Halioneten enjectorum (Great White Skinner)	-	Anthocharis lanceolata (Grinnell's Mathle)
711	Huleohila nhuleus (Fiery Skipper)		Anthocharis sara (Sara Orangelip)
	Pyreus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
		Jui	Colias eurytheme (Alfalfa Butterfly)
		11	Colias harfordii (Harford's Sulfur)
	when a family a section of the secti		Euchloe hyantis lotta (Southern Marble)
-		11/1	Eurema nicippe (Sleepy Orange)
		1	Nathalis iole (Dwarf Yellow)
			Pontia protodice (Common White)
	500-500 - 100-5	-	Zerene eurydice (California Dogface)
		Riodinidae (Metalmarks)
	na n		Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
· · · · · ·	p		i series
-	- Income and the Caller	Satyridae (S	atyrids)
		1-11-	Coenonympha californica (California Ringlet)
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			and any set of the set



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dale	Faul !!	Date 3 3 16	Site Visit 1	Number <u>3</u>
Site Name	Winp	4	_ Site Location	Mira	in o ve
Total Acres:	Tota	I Acres Surveyed	Elevatio	m: Max	Min
Hours Surveyed:	2130"				

Time (24hr)	1.00	Sky		Wind (aver*/max)	Temp (F)
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4	clear	% cloud cover	hazy	1 时间	1263
- 3 AV	clear	% cloud cover	hazy	1/16	
1 12 -	clear	% cloud cover	hazy	6/17)	14
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	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



Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Euphydryas editha auino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	1
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidac (Milkweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 - 1941 -	
Themesides	Pierides (Whites and Orangetine)
Hespendae	Anthocharis cathura (Felder's Orangetin)
Holionatas aviadomum (Grant White Skinner)	Anthocharis lanceolata (Grinnell's Marble)
Heliopeles encelorum (Great White Skipper)	Anthocharis sara (Sara Orangetin)
Purgue albaccans (Checkered Skipper)	Artogejo range (Cabbage White)
Tyrgus urbescens (Cincekered Shipper)	Coligs eurotheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
hand the second s	Euchloe Inventis lotta (Southern Marble)
	Furema nicinne (Sleenv Orange)
	Nothalis jole (Dwarf Yellow)
	Pontia protodice (Common White)
	Zerene eurodice (California Dogface)
and an an an array of the second s	Zerene extynice (outroining poBrass)
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	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Bchr's Metalmark)
······································	Calephelis wrighti (Wright's Metalmark)
Name and Annual	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
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Name	Map	Sit	Location_	Mivamar	Trends
al Acres:	Total A	Acres Surveyed:	Elevat	ion: MaxMi	p <u> </u>
urs Surveyed:	(1,10 H	a all a sea an an an analy	an card of the second	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	10 - 19 A
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	clear		hazy	Chevrolation D., characteria	
	clear	% cloud cover	hazy		
an take and	clear	% cloud cover	hazy	N.: 749	Contractorio de la contractorio
(m) #1	clear	M. % cloud cover	hazy	the particular solution	(11) 1 12 10 M
	clear	% cloud cover	hazy		
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tat onsite: open	soils, hilito recta, Plant	ps, ridges, rock outer tago patagonica, Casi	ops, soil cru tilleja exsert	sts, clay soils, old 10 a, Cordylanthus rig	ads, nectar sources
tat onsite: open Plantago e Antirrhim	solls, hillto recta) Plant m coulteria	ps, ridges, rock-outer tago patagonica, Casi num, Collinsia hetero	ops, soil cru tilleja exsert phylla	sts, clay soils, old ro ta, Cordylanthus rig	ads, nectar sources
tat onsite: open Plantago e Antirrhinu) second period	solls, hillito recta: Plant m coulteria , mph	ps, ridges, rock outer tago patagonica, Casi num, Collinsia hetero	ops, soil cru tilleja exsert phylla	sts, clay soils, old ro a, Cordylanthus rig	ads, nectar sources
tat onsite: open Plantago e Antirrhimu	soils, hillito recta) Plant m coulteria , mph	ps, ridges, rock outer tago patagonica, Cast num, Collinsia hetero	ops, soil cru tilleja exsert phylla	sts, clay soils, old ro a, Cordylanthus rig	ads, nectar sources
tat onsite: open <i>Plantago e</i> <i>Antirrhimu</i>) second period MMENT:	sõlls, hillito rečta, Plani m coulteriai , mph	ps, ridges, rock outer ago patagonica, Cast num, Collinsia hetero	ops, soil cru tilleja exsert phylla	sts, clay soils, old ro ta, Cordylanthus rig	ads, nectar sources
tat onsite: open Plantago e Antirrhimu) second period	soils, hilito recta: Plant m coulteria , mph	ps, ridges, rock outer tago patagonica, Cast num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
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tat onsite: open <i>Plantago e</i> <i>Antirrhimu</i>) second period MMENT:	soils, hillito recta) Plant m coulteria , mph	ps, ridges, rock outer rago patagonica, Casi num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
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tat onsite: open Plantago e Antirrhimu) second period	soils, hillito recta) Plant m coulteria , mph	ps, ridges, rock outer rago patagonica, Casi num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
tat onsite: open Plantago e Antirrhimu second period	soils, hilito recta: Plant m coulteria , mph	ps, ridges, rock outcro rago patagonica, Casa num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
tat onsite: open Plantago e Antirrhimu Second period	soils, hillito recta) Plant m coulteria , mph	ps, ridges, rock outer tago patagonica, Cast num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
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tat onsite: open Plantago e Antirrhimu) second period (MMENT:	soils, hilito recta: Plant m coulteria , mph	ps, ridges, rock outer rago patagonica, Casa num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
tat onsite: open Plantago e Antirrhimu) second period (MMENT:	soils, hilito recta: Plant m coulterta , mph	ps, ridges, rock outer tago patagonica, Cast num, Collinsia hetero	ops, soil cru tilleja exsert phylla.	sts, clay soils, old ro	ads, nectar sources
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Number Description of Description	Incoming (Burgles and a long set of the set
Nympicing Contract and Contact with a mine (Onine Checkersnot)	Brenhidium exilis (Pyemy Blue)
Adalaha bradavij califarnica (California Sister)	Celastrina ladon echo (Echo Blue)
Recilerable Linewin (Commin's Admiral)	Everes anontula (Western Tailed Blue)
Charidress and bil (Cobb's Charlesmot)	Glauconsyche lyodamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus cerainus gyas (Edward's Blue)
(Chalcedon Checkerspot) Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	The second s
Junonia coenia (Buckeye):	Leptotes martine (Marine Bide)
Nymphalis antiope (Mourning Cloak)	Philoles sonorensis (Solioian Blac)
Nymphalis californica (California Tortoiseshell)	Piedejus menssu (Menssa Blue)
Phycoides mylitta (Mylitta Crescent)	And Market and Annual Annua
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lychendack Hausterstein and the second s
Thessalia leanira wrighti (Leanira Checkerspot)	Allides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown-Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	LOR AND A MAG
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Danaidae (Minkweed Battechies)	Papilio eurymedon (Palc Swallowtail)
Danaus gilippus (Queen)	10 40 31 1 Papilio rutulas (Western Tiger Swallowtail)
Daninus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
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A second se	17 al 24 leader and an annual and an an an an an an an annual annual annual annual annual annual annual annual
Hesperidae	Preventar Diethnics and Orangetips and
Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Heliopstes 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)
He I've and Provinces Contractory	Colias eurytheme (Alfalia Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwaif Yellow)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
1 - inny - 440 - 4,	
	Riodinal ac (Meta)marks)
	Apoaemia mormo virguiti (Bear's Metaimark)
	Calephelis wrighti (Wright's Metaimark)
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Basilarchia lorquini (Lorquin's Admiral)	12000	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	- Al	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona – (Chalcedon Checkerspot)	ų	Hemiargus ceraunus gyas (Edward's Blue)
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IIII Junonia coenia (Buckeye)	1.2.602.002.009.000	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	- 57	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	Sec. Steen	the second s
Polygonia satyrus (Satyr Anglewing)	1	
Speyeria callippe (Callippe Fritillary)	Lycachidao	(Thatstrenks)
Thessalia leanira wrighti (Leanira Checkerspot)	4.1 - 1.4 (4.1	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum , (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)		- Incisalia augustinus (Brown-Elfin)
Vanessa cardui (Painted Lady)	N - N - 144	Strymon melinius (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	1	10 10 10 10 10 10 10 10 10 10 10 10 10 1
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mundae (Milkover) (Bulletibes)		Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen)	the second	Papilio rutulus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
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Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marble)
Hylephila phyleus (Fiery Skipper)	1.2.2 11.015	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
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1		Euchloe hyantis lotta (Southern Marble)
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Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
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Wymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Bluc)
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Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
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Heliopetes ericetorum (Great White Skipper)	Anthocharis Ianceolata (Grinnell's Marble)
Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
the provided of the second	Coltas eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis tole (Dwaff Yellow)
	Pontia protodice (Common White)
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	Calephelis wrighti (Wright's Metalmark)
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Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pyginy 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 Bluc)
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 antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Molissa Blue)
Phycoides mylitta (Mylitta Crescent)	enorgeback de gale
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Exercised a strain and the second
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	
Vanessa cardui (Painted Lady)	Strymon meliniis (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	10 2991 - God (5 1
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nanchie (Welkweight Statistics) and a second statistics of the Statistics	Papilio eurymedon (Pale Swallowtail)
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Danaus plexippus (Monarch)	Rapilio zelicaon (Anise Swallowtail)
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Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
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Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
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a successive in the second of the	Colias eurytheme (Alfalfa Butterfly)
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	Pontia protodice (Common White)

Surveyor	un Powell Date 3/15	6 Site Visit Number 3
Total Acres: Hours Surveyed:	Total Acres Surveyed: Elev	vation: Max Min
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And Wagek J. Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla. -----

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Funkeding alithe aving (Oning Checkerspot)	11 Brenhidium exilis (Pyomy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
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Charidryas gabbii (Cabb's Checkerspot)	Glauconsuche badanus australis (Southern Blue)
Euphydryas chilceidona chalceidona (Chalceidon Checkerssot)	Hemiargus cerainnus gyas (Edward's Blue)
Euphydryas chalcedona hennei (Hennie's Checkerspot)	Icarcia acmon (Acmon Blue)
Junomia coenia (Buckeye)	Leptotes moring (Marine Blue)
Winnhalts antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	energy and a second
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Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	- Incisalia augustimus (Brown-Elfin)
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O handle man we de tour the set of the set o	Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Rapilio zelicaon (Anise Swallowtail)
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Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
h Heliopetes ericetorum (Great White Skipper)	Anthocharis Ianceolata (Grinnell's Marble)
Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
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	Coenonympha californica (California Ringlet)
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Pa	well	Date 215/16	Site Visit	Number
Site Name	NAO 3		Site Location	Mirana	r
Total Acres:	Total A	cres Surveyed	Elevati	on: Max	Min
Hours Surveyed	1: 1'35"				

Time (24hr)	120	Sky		Wind (aver*/max)	Temp (F)
1320	clean	% cloud cover	hazy	812	750
14110	elear	% cloud cover	hazy	416	740
1455	Clear	% cloud cover	hazy	517	700
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
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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



Numerialidae (D	(such Footed Butterflies)	L Lycaenidae (B	lues)
rymphandae (b	Eunhydrygs editha guing (Oning Checkersnet)	1	Brephidium exilis (Pygmy Blue)
	Adalaha bradowii californica (California Sister)		Celastrina ladon echo (Echo Blue)
	Raciforalia loravini (I oravin's Admiral)		Everes anyonula (Western Tailed Blue)
	Chanidanag gabbii (Gabb's Chackerspot)	111	Glauconsyche badamus australis (Southern Blue)
	Embudaves chalcadona chalcadona		Hemiarous ceraunus quas (Edward's Blue)
10.1	(Chalcedon Checkerspot)		memorgus certannas gyas (Lannad 5 Diso)
v	Evolvdrygs chalcedong hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	1	
	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
1.1	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
111 C	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)		
Commence and	Speyeria callippe (Callippe Fritillary)	Lycaenidae (H	lairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
6	Vanessa annabella (West Coast Lady)	6	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
·	Vanessa cardui (Painted Lady)	11	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
		D. 11	Constant (In)
-		Papilionidae (Swanowtalls)
Danaidae (Milk	weed Butterflies)	4	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	-	Papilio zelicaon (Anise Swallowtail)
	a de la completencia de la complete		
Hesperidae		Pieridae (Whit	tes and Orangetips)
171	Erynnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	4	Anthocharis lanceolata (Grinnell's Marble)
1	Hylephila phyleus (Fiery Skipper)	1	Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
		W.	Colias eurytheme (Alfalfa Butterfly)
		1	Colias harfordii (Harford's Sulfur)
			Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Slcepy Orange)
		1	Nathalis iole (Dwarf Yellow)
	to all a start and a start a		Phoebis sennae (Cloudless sulfur)
		-	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
· · · · · · · · · · · · · · · · · · ·	The second s	Riodinidae (M	(etalmarks)
		1111	Anodemia mormo virgulti (Behr's Metalmark)
	and a second sec	- here	Calephelis wrighti (Wright's Metalmark)
			• •
		Satyridae (Sat	yrids)
			Coenonympha californica (California Ringlet)
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Surveyor Date 3/15/16 Site Visit Number 3	id of
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Habitat onsite: open solls, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

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and Bogston in a second Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirthimm coulterianum, Collinsia heterophylla.

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*20 second period, mph

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Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
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Danaus gilippus (Queen) 73371	Papilio rutuins (Western Tiger Swallowtail)
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Heliopetes ericetorum (Great White Skipper)	Anthocharis. lunceolata (Grinnell's Marble)
Holephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
We go some the a hand the rest of	Colias eurytheme (Alfalfa Butterfly)
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	Euchloe hyantis lotta (Southern Marble)
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site Name	MASO CIL Date	e Location	Munt	era and the
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Euphydryas editha quino (Quino Checkerspot) Adelpha bredowii californica (California Sister) Basilarchia longuini (Lorguin's Admiral) Charidryas gabbii (Gabb's Checkerspot) Euphydryas chalcedona chalcedona	Brephidium exilis (Pygmy Blue) Celastrina ladon echo (Echo Blue) Everes amontula (Western Tailed Blue)
Adelpha bredowii californica (California Sister) Basilarchia lorguini (Eorquin's Admiral) Charidryas gabbii (Gabb's Checkerspot) Euphydryas chalcedona chalcedona	Celastrina ladon echo (Echo Blue)
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i (a. Shingh all antions (Mauring (look)	Philates sonorangis (Sonoran Rhie)
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a in a street of the second	(Perpiexing Hansdeak)
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Vanessa virginiensis (Virginia Lady)	1 11 m 14 11
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	Tapinondar (Swiftowiads)
encial Afrikane of hospen fiest, the second s	Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen) 75/10	Papilio rutuine (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
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Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
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Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
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	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
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	Componympha californica (California Ringlet)
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor D	ale fourth	Date 14/	Site Visit N	Number <u>3</u>
Site Name	Max 6	Site Location	1. Autom	21
Total Acres:	Total Acres Surv	eyed: Elevation	on: Max	Min
Hours Surveyed:	2/30/1	2 · · ·		

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1430	clear W % cloud cover	hazy	57	683
1500	clear 110 % cloud cover	hazy	416	70°
1600	clear 55 % cloud cover	hazy	316	680
1200	clear 40 % cloud cover	hazy	315	620
1.11.00	clear % cloud cover	hazy	-1-	
1 A 1	clear % cloud cover	hazy		
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Habitat onsite; open soils, hilltops, ridges, lock outcrops, soil crusts, clay soils, old roads, nectar sources

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

*20 second period, mph

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COMMENT:



Nymphalidae (I	Brush Footed Butterflies)	Lycaenidae (Blues)		
()	Euphydryas editha guino (Quino Checkerspot)		Brephidium exilis (Pygmy Blue)	
- 110	Adelpha bredowii californica (California Sister)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Celastrina ladon echo (Echo Blue)	
	Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)		
	Charidryas gabbii (Gabb's Checkerspot)	1 Glaucopsyche lygdamus australis (Southern B		
1	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 antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)	
	Nymphalis californica (California Tortoiseshell)	1000	Plebejus melissa (Melissa Blue)	
	Phycoides mylitta (Mylitta Crescent)			
	Polyconia satyrus (Satyr Anglewing)			
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)	
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)	
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)	
	Vanessa atalanta (Red Admiral)	Cel:	Incisalia augustimus (Brown Elfin)	
	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)	
	Vanessa virginiensis (Virginia Lady)			
		Panilionidac (Swallowtails)		
Denaidae (Mill	sweed Butterflies)	Papilio eurymedon (Pale Swallowtail)		
	Danaus gilippus (Oucen)	Papilio rutulus (Western Tiger Swallowtail)		
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)		
		Dissides (Wh	liter and Opennation)	
Hesperidae	C	Fiendae (wit	Anthophanis cathura (Felder's Orangetin)	
	Ervnnis funeralis (Funeral Dusky-wing)		Anthocharis Lengeolata (Grinnell's Marble)	
	Heliopetes ericetorum (Great White Skipper)		Anthocharis sana (Sara Orangetin)	
	Hylephila phyleus (Piery Skipper)		Antocharia sana (Cabbage White)	
1	Pyrgus albescens (Checkered Skipper)		Colias oursthame (Alfalfe Butterfly)	
	and the second		Collier harfordii (Harford's Sulfur)	
			Euchlos Inventis lotta (Southern Marble)	
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	and the second se	- i ta carge sine-m	Zanada augudiaa (California Daafara)	
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		111	Apodemia mormo virgulti (Behr's Metalmark)	
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Satyridae (Sotyrids) Cosmonympha californico (Conturning)

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bitat onsite: open Plantago e Antirrhima 20 second period COMMENT:	clear clear soils, hillic recta, Plan m coulteria , mph	% cloud cover % cloud cover. ps, tidges, tock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, voil cru illeja exsert ohylla.	sts, clay soils, old ra	oads, nectar sõim
ibitat onsite: open Plantage e Antirrininu 20 second period COMMENT:	clear clear solis, hillic recta, Plan m coulteria , mph	% cloud cover % cloud cover. ps, tidges) tock outero tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, ≠oil cru illeja exsert ohylla.	sts, clay soils, old ra	oads, nectar sour
abitat onsite: open Plantago e Antirrhima 20 second period COMMENT:	clear clear soits, hillic recta, Plan m coulteria	% cloud cover % cloud cover. ps, tidges, tock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, ≈oil cru illeja exsert ohylla.	sts, clay soils, old ra	oads, nectar soin nidus,
bitat onsite: open Plantago e Antirrhimu 20 second period COMMENT:	clear clear soils, hillic recta, Plan m coulteria , mph	% cloud cover % cloud cover. ps; tidges; tock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, ≈oil cru illeja exsert ohylla.	sts, clay soils, old ra	oads, nectar soin ridus,
ibitat onsiter open Plantage e Antirrhinu 20 second period COMMENT:	clear clear solis, hillic recta, Plan m coulteria mph	% cloud cover % cloud cover. ps, tidges) tock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, voil cru illeja exsert ohylla.	sts, clay soils, old r	oads, nectar sour
bitat onsite: open Plantago e Antirrhima 20 second period COMMENT:	clear clear soits, hiftic recta, Plan m coulteria mph	% cloud cover % cloud cover. ps; tidges; tock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, voil cru illeja exsert ohylla.	sts, clay soils, old ra	oads, nectar sõin ridus,
ibitat onsité: open Plantago e Antirritimu 20 second period COMMENT:	clear clear solis, hillic recta, Plan m coulteria , mph	% cloud cover % cloud cover. ps; ridges; rock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, ≈oil cru illeja exsert ohylla.	sts, clay soils, old ra	oads, nectar sour
bitat onsiter open Plantage e Antirrhinu 20 second period COMMENT:	clear clear solis, hillic recta, Plan m coulteria mph	% cloud cover % cloud cover. ps, tidges) tock outcro tago patagonica, Casti num, Collinsia heterop	hazy hazy ps, voil cru illeja exsert ohylla.	sts, clay soils, old r	oads, nectar sour



р.8

Nymphailane.	111/17 Rearbridium evilie Dytomy Rhiel
Euphyaryas eanna quino (Quino Checkerspot)	Calastring Indon scho (Echo Blue)
Adeipha bredowit californica (Californica Sister)	Europe annulula (Western Trilled Bine)
Basilarchia lorgum (rongun s, Admiral)	Everes antynuud (western Fance Blue)
Charidryas gabbii (Gabb's Checkerspot).	Hamiloving conductor and Fdward's Blue)
Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)	Devoire dentitie ges certaines gras (Landid Constant)
Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acman (Acmon Blue) a 1999 de crasso
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
2 Wymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue) / 22011
Nymphalis californica (California Tortoiseshell)	e Plebejus melissa (Melissa-Blue)
Phycoides mylitta (Mylitta Crescent)	ana na tanàn ang ang ang ang ang ang ang ang ang an
Polygonia satyrus (Satyr Anglewing)	permanente. All la construction de la const
Speyeria callippe (Callippe Fritillary)	
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vonessa atalanta (Red Admiral)	- Incisalia augustinus (Brown-Elfin)
Vanessa cardui (Painted Lady)	Strymon melimis (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	NAME AND A PROPERTY A
	the set of the second second second by the second by the second second second second second second second second
ىرىغى ئىلى ئىلى ئىلى ئىلى ئىلى ئىلى ئىلى ئ	
Denistra Materia Director de Carto de C	Papilio euromedon (Pale Swallowtail)
Dannus gilippus (Queen)	Papilio rutidus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
and the second	The set of the statement is a set of the set
A State of the second sec	57467 (G
Hesperiter in the second se	Durante definits and Open copyed a service service and the service of the service
Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cetkura (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)
the second s	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)
	Rightindie Mendeling warme viewelij (Dahrie Matelmete)
	Colonholie wright (Wright's Motalmark)
	Catepricia wight (Willia Strouthand)
	Some Canadis Parties and Canadi
	Coenonympha californica (California Ringlet)
•	
OTHER:	
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TIME	
	Carbon and the second s

Quino Checkerspot Survey Form

Adult Assessment

11.00

Surveyor	Jun	Paweil	Date	14 16	2 Site Visit	Number 3
Site Name	Ma	e 4 '	Site	Location	Mara	10 31
Total Acres:		Total Acres Surv	eyed:	Elevation	on: Max	Min
Hours Survey	yed: 1/1!	C ^A				

Time (24hr)	-	Sky		Wind (aver*/max)	Temp (F)
1315	clear	% cloud cover	hazy	316	70°
1400	clear	% cloud cover	hazy	316	720
	clear	% cloud cover	hazy	1-	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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



р.9

Nymphalidae (R	nish Foated Butterflies)	Lycaenidae (F	Blues)	
riymphanoae (D	Eunhydryas editha auino (Onino Checkerspot)		Brephidium exilis (Pygmy Blue)	
	Adelpha bredowii californica (California Sister)		Celastring ladon echo (Echo Blue)	
	Basilarchia lorauini (Lorquin's Admiral)		Everes amontula (Western Tailed Blue)	
	Charidryas gabbii (Gabb's Checkerspot)	BATT	Glaucopsyche lygdamus australis (Southern Blue)	
1	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)	1 11	Hemiargus ceraunus gyas (Edward's Blue)	
	Euphydryas chalcedona hennei (Henne's Checkerspot)		Icarcia acmon (Acmon Blue)	
	Junonia coenia (Buckeye)	18	Leptotes marina (Marine Bluc)	
	Nymphalis antiope (Mourning Cloak)	110	Philotes sonorensis (Sonoran Blue)	
	Nymphalis californica (California Tortoiseshell)	11-	Plebejus melissa (Melissa Blue)	
1	Phycoides mylitta (Mylitta Crescent)			
	Polygonia satyrus (Satyr Anglewing)			
	Speyeria callippe (Callippe Fritillary)	Lycaenidae ()	Hairstreaks)	
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)	
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)	
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)	
	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)	
	Vanessa virginiensis (Virginia Lady)			
		Ponilionidos ((Sunlawtaile)	
Densides (b.Cilla		Papinomone	Bapilio summadon (Pale Swallowtail)	
Danatdae (Willky	Demonstratilization (Outcom)		Papillo rutulus (Western Tiger Swallowtail)	
	Danaus glappus (Queen)		Papilio zeliceon (Anise Swallowtail)	
			Tapino zenenosi (i mise o nano nan)	
11		Diaridaa (Wh	itse and ()concertine)	
Hesperidae	Ensuring forwardie (Europeal Ducker wing)	I Icildae (with	Anthocharis cethura (Felder's Orangetin)	
111	Heliopatan ericatorum (Creat White Skinner)		Anthocharis lanceolata (Grinnell's Marble)	
	Henopeles encerorum (Great White Supper)	Anthocharis song (Sara Orangetin)		
	Purgus albescens (Checkered Skipper)		Artogeia range (Cabbage White)	
	Trigas abeseene (edeexared enapper)		Colias eurytheme (Alfalfa Butterfly)	
	i c sittingen and an and an		Colias harfordii (Harford's Sulfur)	
			Euchloe hyantis lotta (Southern Marble)	
1			Eurema nicippe (Sleepy Orange)	
			Nathalis iole (Dwarf Yellow)	
			Pontia protodice (Common White)	
			Zerene eurydice (California Dogface)	
		Rindinidae (A	Metalmarka)	
	and the planet of the second sec	Anoundacin	Anodemia mormo virgulti (Behr's Metalmark)	
			Calephelis wrighti (Wright's Metalmark)	
	La contra de la co	Satyridae (Sa	tyrids)	
	1999-990		Coenonympha calijornica (California Ringlet)	
OTHER.				
	and the second s			
· · · · · · · · · · · · · · · · · · ·	1			
		1	An owner of a start of the star	

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Poureil	Date 3/20/16	Site Visit N	umber <u>4</u>
Site Name	Meps	Site Location	Millar	10.10
Total Acres:	Total Acres Surveyed	1: Elevati	on: Max	Min
Hours Surveye	d: 7'00"			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
6001	clear 7	6 % cloud cover	hazy	1/2	610
1030	clear 2	∂ % cloud cover	hazy		58
1100	clear	% cloud cover	hazy	13	12.23
1240	clêar	% cloud cover	hazy	015	14 40
1 300	clear	% cloud cover	hazy	3/4	76*
140	clear	% cloud cover	hazy	315	767
1500	clear	% cloud cover	hazy	472	
1600	clear	% cloud cover	hazy	3/4	20
1200	clear	% cloud cover	hazy	512	67"
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy	1	

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:

1"



Nymphalidae /R	rush Footed Butterflies)	Lycaenidae ((Blues)
	Euphydryas editha guino (Quino Checkerspot)	1 11	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)	مستنهل	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	4	
	Euphydryas chalcedona hennei	1	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philoies sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoisesnell)		Pledejus meussa (Meussa Dide)
	Phycoides mylitta (Mylitta Crescent)	1	nen en
	Polygonia salyrus (Salyr Anglewing)	Lucoenidae	(Hoirstreake)
	Therealize to an appe (Campbe Fritinary)	Lycacinuac	Atlides halasus (Great Purple Hairstreak)
	Vanosaa amaballa (Wast Coast Lady)	1	Callophurs perplexa = dumetorum
l l	Vanessa annuoena (West Coast Lady)	1	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
C	Vanessa cardui (Painted Lady)	(II	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
	an annual anna anna anna anna anna anna		20 M - 1 X
		Papilionidae	(Swallowtails)
Danaidae (Milky	veed Butterflies)	1	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)		Papilio rululus (Western Tiger Swallowiail)
	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowiali)
Hesperidae	and the second sec	Pieridae (W	hites and Orangetips)
241	Ervnnis funeralis (Funeral Dusky-wing)	d	Anthocharis cethura (Felder's Orangetip)
1.28	Heliopetes ericetorum (Great White Skipper)	1	Anthocharis lanceolata (Grinnell's Marble)
LAT III	Hylephila phyleus (Fiery Skipper)	1 11	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 (Steepy Orange)
		1	Nathalis tole (Dwart Yellow)
			Phoebis sennae (Cloudless sullar)
	and a second		Zorone survivas (California Dogfara)
-			Lerene euryaice (Cantonna Dograce)
		Riodinidae ((Metalmarks)
		H	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrighti (Wright's Metalmark)
		Satyridae (S	atyrids)
		1	Coenonympha californica (California Ringlet)
		1	а на станована на с
OTHER:	objective.		and and a second s
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	manufacture commen	1	
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Powall	Date 3/21/16	Site Visit	Number 4
Site Name	Mac= 2.4.5.	Site Location	15 can	11
Total Acres:	Total Acres Surveyed	: Elevati	ion: Max	Min
Hours Surveye	d: .5'ace			

Time (24hr)	e (24hr) Sky		Wind (aver*/max)	Temp (F)
:200	clear 👋 % cloud cover	hazy	36	570
i de la companya de l	clear 5 % cloud cover	hazy	24	220
1.2	clear 🐣 % cloud cover	hazy	3/5	12 1 B
10 8 24	clear 5% cloud cover	hazy	417	220
3.200	clear 5% cloud cover	hazy	412	70°.
1700	clear 👋 cloud cover	hazy	416	52"
	clear % cloud cover	hazy	1	
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy	1	
	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


Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
	Euphydryas editha guino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100	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 Checkersnot)	Icarcia acmon (Acmon Blue)
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
	an in the second se	Papilionidae (Swallowtails)
Danaidae (Milk	tweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtait)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Hesperidae	and the second se	Pieridae (Whites and Orangetips)
Lift	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
1	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
111	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
		Colias eurytheme (Alfalfa Butterfly)
		Colias harfordii (Harford's Sulfur)
	ere anti-tra e	Euchloe hyantis lolta (Southern Marble)
		Eurema nicippe (Sleepy Orange)
		Phanking some (Clauding million)
	(e.e.)	Protocols Sennae (Cloudless schut)
		Toma provodce (Collifornia Doeface)
		Derene euryaice (Camoima Dogiace)
		Riodinidae (Metalmarks)
	and the second s	Apodemia mormo virgulti (Behr's Metalmark)
	(1)(i=1)	Calephelis wrighti (Wright's Metalmark)
		Satyridae (Satyrids)
	A CARLES AND A CAR	1) Coenonympha californica (California Ringlet)
	The second se	
OTHER:	water a second s	
	- Manager and a state of the st	The second se



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun	Paulell	Date	3/22/16	Site Visit I	Number	4
Site Name	Ma.	05	Site	Location	Wheanar	r	_
Total Acres:	. T	otal Acres Surv	eyed:	Elevation	on: Max	Min	_
Hours Survey	red: 3/11	54					

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1000	clear (,)% cloud cover	hazy	6/7	640
0011	clear 35% cloud cover	hazy	5/9	680
1200	clear 40 % cloud cover	hazy	515	70.0
1200	clear 15 % cloud cover	hazy	1.46	7
1345	clear 10% cloud cover	hazy	SIA	700
1-12	clear % cloud cover	hazy	11	adasta contractores
	clear % cloud cover	hazy		and the second second second
	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 soil, hilltops, ridges, rock outcrops soil crusts, clay soils, old roads, nectar sources-

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

*20 second period, mph

15

		1	A
Nymphalidae (Bi	rush Footed Butterflies)	Lycacnidae (BI	
	Euphydryas editha quino (Quino Checkerspot)	171	Brephidium exilis (Pygmy Bluc)
	Adelpha bredowił californica (California Sister)		Celusiring Idaon echo (Echo Blue)
	Basilarchia lorguini (Lorguin's Admiral)	4	Everes amyntula (Western Tailed Blue)
	Chariaryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona		Hemlargus ceraunus gyas (Bawara's Blue)
	(Chalcedon Checkerspot)		lagneig gemen (Acmon Plue)
	(Henne's Checkersnot)		Rurcia action (Action Blue)
	(memie s checkerspor)		Leptotes maring (Marine Blue)
	Numphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	-	Pleheius melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	1	Theory to memory (internet press)
	Polygonia saturus (Satyr Anglewing)	1	the subscription of the second s
	Sneveria callippe (Callippe Fritillary)	Lycaenidae (Ha	airstreaks)
	Thessatia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum
			(Perplexing Hairstreak)
1	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
4	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
		Ber Wertlass (S	Danie 201
Densides () (illus	used Dutte-flips)	rapinonidae (S	Barilia aurana dan (Dala Sualloutail)
	Dergus gilienus (Ousen)		Papillo eurymedon (Fait Swallowiall)
1000012-021-	Danaus grappus (Queen)		Papilio raliagon (Anice Swallowtail)
	Билина ремрриз (монасн)		Tupino zencaon (Polise Swallowian)
leeneridae	10 10	Pieridae (White	re and Orangetine)
10speridae	Empris fungralis (Enneral Ducky-wing)	Tiendae (winte	Anthocharis cethura (Felder's Ocangetin)
P	Halionatas aricatorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marhie)
m	Hylephilo phyleus (Fiery Skipper)	1 11	Anthocharis sara (Sara Orangetin)
HTT VII	Pyrous albescons (Checkered Skipper)		Artogeia range (Cabbage White)
and itt	(Chevitered Stapper)		Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
			Euchloe hvantis latta (Southern Marble)
ing a little			Eurema nicippe (Sleepy Orange)
	140	1	Nathalis iole (Dwarf Yellow)
	and the second sec		Phoebis sennae (Cloudless sulfur)
			Pontia protodice (Common White)
		16.2	Zerene eurydice (California Dogface)
		Riodinidae (Me	stalmarks)
		ANTI ALL	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrighti (Wright's Mctalmark)
	All the second sec	Commiden (C.	and a second
		Salyridae (Saly	Community californics (California Diselat)
	+ 110 ² 00		Coenonymphia caujui meta (Cantonna Kinglet)
THED.	and the second s		- 11
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te true			100
			en e
	and Jailian sure a		



Adult Assessment

p.2

Surveyor	Jun Famel	Date 3:16	Site Vis	sit Number
Site Name	Mars	Site Location		Mirawah
Total Acres:	Total Acres Surveyed	: Elevatio	on: Max	Min
Hours Survey	yed:1.51			

Time (24hr)	in a V	Sky	-	Wind (aver*/max)	Temp (F)
0011	clear	% cloud cover	hazy	5/8	698
1515	clear	5% cloud cover	hazy	1/9	683
	clear	% cloud cover	hazy	361.1	han being some
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		L
	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

1-951-686-1497



Nymphalidae (F	Brush Footed Butterflics)	Lycaenidae (I	Blues)
ci jinpianoac (L	Euphydryas editha auino (Ouino Checkerspot)		Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)		Celastrina ladon echo (Echo Bluc)
	Basilarchia lorquini (Lorquin's Admiral)	-	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	11	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)		Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hennei (Henne's Checkersnot)		Icarcia acmon (Acmon Blue)
N	(Inemie s ensekersport)		Leptotes marina (Marine Blue)
	Numphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides phylitta (Mylitta Crescent)		
	Polyconia saturus (Satyr Anglewing)		
	Speneria callione (Callione Fritillary)	Lycaenidae (Hairstreaks)
	These alig leaving wright (Leaving Checkerspot)		Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	1	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	11	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Ladv)		
	·		
1	and the second sec	Papilionidae	(Swallowtails)
Danaidae (Mill	cweed Butterflies)		Papilio eurymedon (Pale Swallowtail)
Durantine (train	Danous gilipous (Queen)		Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	1	Papilio zelicaon (Anise Swallowtail)
Llassaridaa		Pieridae (Wh	nites and Orangetips)
Hespendae	Financia funaralis (Funeral Dusky-wing)		Anthocharis cethurg (Felder's Orangetip)
-11	Haliopatas aricatorum (Great White Skinner)		Anthocharis lanceolata (Grinnell's Marble)
	Helaphila phylaus (Fiery Skinner)		Anthocharis sara (Sara Orangetip)
	Paraus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
	Tyrgas abestens (encovered biopper)	1.000	Colias eurytheme (Alfalfa Butterfly)
		-	Colias harfordii (Harford's Sulfur)
			Euchloe hyantis lotta (Southern Marble)
	in the second		Eurema nicippe (Sleepy Orange)
			Nathalis iole (Dwarf Yellow)
			Phoebis sennae (Cloudless sulfur)
20.4	Talianta al 1 de la constante de constante de constante de la constante de constante de constante de constante		Pontia protodice (Common White)
	and the second sec		Zerene eurydice (California Dogface)
		Riodinidae (Metalmarks)
	Table Research Contract	11	Apodemia mormo virgulti (Behr's Metalmark)
0			Calephelis wrighti (Wright's Metalmark)
		Satvridae (Satvridae)	atyrids)
			Coenonympha californica (California Ringlet)
	- III		
OTHED.			
UTTER:			i na sa iyo kuda ta
	101.00	-	and a state of the
		-	- Philippine international and
	the second se		



Adult Assessment

Surveyor Dale	Powell	Date 3/20/16	Site Visit N	Number <u>4</u>
Site Name 100	01+2	_ Site Location	Mucai	200
Total Acres:	'Total Acres Surveyed:	Elevation	on: Max	Min
Hours Surveyed: 2	145"			

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1000	clear 770% cloud cove	er hazy	1. A [22]	
1.00	clear 30% cloud cove	er hazy		653
100	clear > % cloud cove	er hazy		è
5 m	clear % cloud cove	r hazy		
1245	clear ' % cloud cove	r hazy		75
	clear % cloud cove	er hazy		
	clear % cloud cove	er hazy		
	clear % cloud cove	er hazy		
	clear % cloud cove	er hazy		
	clear % cloud cove	er hazy		
	clear % cloud cove	r hazy		
	clear % cloud cove	er hazy		
	clear % cloud cove	er 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

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1-951-686-1497

Numphalidae (trush Footed Butterflies)	Lyoaenidae (Blues)
Nytupnanuae (E	Funlydryas editha avino (Ourino Checkerspot)	With With Brephidium exilis (Pygmy Bluc)
	Adelpha hredowii colifornica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia loravini (Loravin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidrugs gabbii (Gabh's Checkersnot)	Glaucopsyche lygdamus australis (Southern Bluc)
	Funhydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
6	Funhydrygs chalcedong bennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
	hunonia coenia (Buckeve)	Leptotes marina (Marine Blue)
	Nymphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mulitta (Mulitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
10155	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
	(in the second	Papilionidae (Swallowtails)
Danaidae (Milk	weed Butterflies)	Papilio eurymedon (Pale Swallowtail)
the full state of the state of	Danaus gilippus (Oueen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Hesperidae		Pieridae (Whites and Orangetips)
Thepolitica	Ervnnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
o - 2-11	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
111	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
+1.4+	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
-		Colias eurytheme (Alfalfa Butterfly)
		Colias harfordii (Harford's Sulfur)
		Euchloe hyantis lotta (Southern Marble)
		Eurema nicippe (Sicepy Orange)
S		Nathalis iole (Dwarf Yellow)
	illustres statements	Phoebis sennae (Cloudless sulfur)
		Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
		Riodinidae (Metalmarks)
		ill Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
OTHER:	and a maximum	



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dale Fauri	Date 21.016	Site Visit	Number 4
Site Name	Mar 3	Site Location	M. Ine	A.H.
Total Acres:	Total Acres Surveyed	i: Elevati	on: Max	Min
Hours Survey	ed: 3454			

Time (24hr)		Sky Wind (aver*/max)		Sky Wind Te (aver*/max)		Sky		Temp (F)
1255	clear	% cloud cover	hazy	3/9	753			
1400.	elear	% cloud cover	hazy	75	760			
1500	elear	% cloud cover	hazy	4/6	750			
1100	eicar	% cloud cover	hazy	315	701			
1700	cleap	% cloud cover	hazy	5/8	670			
	clear	% cloud cover	hazy					
	clear	% cloud cover	hazy					
	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



Numahalidan (D	much Equated Butterflies)	Lycaenidae (E	Blues)
Nymphalidae (B	Funkydrygs editha guino (Onino Checkerspot)	1 11)	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	1 11.	Celastrina ladon echo (Echo Blue)
	Basilarchia lorauini (Lorouin's Admiral)		Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	11	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)		
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	-	and the second
11	Junonia coenia (Buckeye)	10	Leptotes marina (Marine Blue)
·	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)		
P	Polygonia satyrus (Satyr Anglewing)		
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrightl (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
11	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
-	Vanessa cardui (Painted Lady)	111	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
		Papilionidae	(Swallowtails)
Danaidae (Milk	weed Butterflies)		Papilio eurymedon (Pale Swallowtail)
Contract Contract	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	1	Papilio zelicaon (Anise Swallowtail)
TTooper!dee		Pieridae (Wh	ites and Orangetins)
Hesperidae	Removie finanalis (Gunaral Ducky wina)	1 Jerroac (Wil	Anthocharis cethura (Felder's Orangetip)
	Heliopater grigetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marble)
111	Hydenkila nhyleye (Fiery Skinner)	LUT III	Anthocharis sara (Sara Orangetin)
1	Buyous albascans (Checkered Skinner)	- Anton	Artogeia rapae (Cabbage White)
	1 Ji Eno divescens (canonered paipper)	1	Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
		1	Euchloe hvantis lotta (Southern Marble)
	0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.		Eurema nicippe (Sleepy Orange)
		-	Nathalis iole (Dwarf Yellow)
	- Aut	1 11	Phoebis sennae (Cloudless sulfur)
	in the second		Pontia protodice (Common White)
14.000			Zerene eurydice (California Dogface)
	() () () () () () () () () () () () ()		
2 3.H		Diadinidas	Matalmarks)
	sali and a second s	Kiodinidae (Anademia marma viraulti (Bahr's Matalmark)
		11	Calaphalis unighti (Wright's Metalmark)
			Guephens wright (wright's bioathark)
		-	- manufacture
		Satyridae (Sa	Atyrids) Communum da californica (California Ripulet)
		1	Coentricipina cargor nica (Cantorina Ruigier)
	and a state of the		
OTHER:			
	and the second		



Adult Assessment

Surveyor	Dole formeil	Date 312116 Site Visit Number 4	
Site Name	Maps 3,4,5	Site Location Mara mak	
Total Acres:	Total Acres Surveye	d: Elevation: Max Min	
Hours Surveyed	4		

Time (24hr)	Sky	Sky		
1200	clear 65 % cloud cover	hazy	316	
1 2 - 5	clear / % cloud cover	hazy	-14	in the second se
1400	clear % cloud cover	hazy	21	12
- 1, 1	clear 15% cloud cover	hazy	4.7	100 7
16617	clear % cloud cover	hazy	4.1 6	i
1701	clear 5% cloud cover	hazy	416	6.20
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
Contraction of the second s	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



wmphalidae (Br	ush Footed Butterflies)	Lycaenidae (Blues)
Inpuanuae (151)	Funkydryas editha auino (Ouino Checkerspot)	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue
	Euphydryos chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Funbudayas chalcedona hennet	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
	Innonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Numphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Numphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Planaidas multita (Mylitta Crescent)	
	Polycondes myning (Myning Consecution)	
	Securic callions (Calling Fritillary)	Lycaenidae (Hairstreaks)
	Theoredia leaning wright (Leaning Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Veneral anapolia (West Coast Lady)	Callophyrs perplexa = dumetorum
	Vanessa annabena (west coast carry)	(Perplexing Hairstreak)
	Vanarra atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanance condui (Pointed Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa vienielausis (Virainis Lady)	
	vanessa virgimensis (virgima Lady)	
	no si ante di	Papilionidae (Swallowtails)
	and Detroubles)	Papilio eurymedon (Pale Swallowtail)
Janaidae (Milkw	Dungen gilingun (Ousan)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus giuppus (Queen)	Papilio zelicaon (Anise Swallowtail)
	Danaus plexippus (Monarch)	- upito schedon (Funse endere many
lesperidae	and the second s	Pieridae (Whites and Orangetips)
-111	Erynnis funeralis (Funcral Dusky-wing)	Anthocharis celtura (Felder's Orangeup)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marole)
	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
LATINT	Pyrgus albescens (Checkered Skipper)	Arlogeta rapae (Cabbage White)
X·¥	the second se	Collas eurylneme (Atlanta Buderity)
		Collas narjorali (Harlord's Suntar)
	and the second	Euchide hydrins tota (Southern Martice)
	And the second sec	Eurema mcippe (Siccepy Change)
		Nathalis fole (Dwarf Fellow)
		Phoebis sennae (Cloudless sultar)
		Pontia protoaice (Continion White)
		Zerene euryaice (California Dogiaco)
19-1		
	U	Riodinidae (Metalmarks)
		MI Apodamia mormo virgulli (Behr's Metalmark)
		Calephetis wrighti (Wright's Mictainark)
	i and i a	
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
		1.11
OTHER:		
	and designed and the second	



Adult Assessment

Surveyor	Date Paul	Date <u>3/22.16</u> Site Location	Site Visit	Number
Total Acres: Hours Survey	Total Acres Surveyed:	Elevati	on: Max	Min

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
),	clear 6 7% cloud cover	hazy	1	11
40.4	clear % cloud cover	hazy	10	· ()
101	clear * 7 % cloud cover	hazy	57-	70"
1230	clear % cloud cover	hazy	416	コイト
1.2	clear 1/5% cloud cover	hazy	a '''ai	2.00
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1
	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 softs, 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

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Bluc)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
	(Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
the many states of the states	Punilionidae (Suulloutaile)
Danaidas (Milkwood Butterflies)	Provilio surverdon (Dole Swellowteil)
Danaudae (Winkweed Banerines)	Papillo eurymedon (Fale Swallow(all)
Danaus ginppus (Queen)	Pupillo ratia (Western Figer Swallowian)
Danaus plexippus (withiatin)	r upino zencaon (runse Swanowian)
Uenneridae	Dissides (Willing and Opposition)
Empire fungentie (Eungest Duchy suing)	(white allo Orangeups)
Halionatas arigatorum (Creat White Skinner)	Anthochuris Leman ((Consell'a Marble)
Hilenbile nhulaus (Fiery Shinner)	Anthocharis infectional (Chimnen's Marbie)
Htt I LKI Mill Purgue albascane (Checkered Skipper)	(stageig sange (Cabbage White)
And TALL IN LABOR DEDESCENS (CHECKETED SKIPPE)	Collias eventhama (Alfolfa Butterfly)
the second s	Collas barfardii (Harford's Sulfur)
	Euchlog Inventis Latta (Southern Marble)
interior and a second	Euroma vicinna (Slaany Orange)
and the second	Nathalia iola (Dwarf Vallow)
the second secon	Dhashis sounds (Cloudless sulfur)
	Pontia protodice (Common White)
The second se	Zarana aurudica (California Doofaca)
The second secon	Zerene caryance (Cartorina Dograco)
and and a supervised data and a supervised	Riodinidae (Metalmarks)
and the second s	Anodomia marma viewelti (Bahr's Matulmark)
	Calepholis wrighti (Wright's Matalmork)
	Confinente wrigine (wrigin S Michannark)
	Patridas (Patrida)
······································	Continuing a childrenia (Colifernia Disated
	Coencilymphia californica (California Kinglet)
the second se	
OTHER:	
and the second se	

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dole Panel	Date 3/22/16	Site Visit,	Number <u>4</u>
Site Name	Mar	Site Location	Mira	6 CV
Total Acres:	Total Acres Surveyed	: Elevatio	on: Max	Min
Hours Surveyed	1: 1 1.			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
12/20	clear	% cloud cover	hazy	6.19	170
1315	clear	% cloud cover	hazy	1/2/01	6.2
	clear	% cloud cover	hazy		
-	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		Contesting
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
and the second s	clear	% cloud cover	hazy		
	clear	% cloud cover	haży		Station -
	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



mphalidae	rush Footed Butterflies)	Lycaenidae (Blues)
alphanous (b)	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	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	and the second sec
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	A C L DL D
	Junonia coenia (Buckeye)	Leptoles marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus metissa (Metissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	Turneridee (Heinsteerka)
	Speyeria callippe (Callippe Fritillary)	Lycaemoac (rianstreaks)
	Thessalia leanira wright (Leanira Checkerspot)	Callanhars perplexa = dumetorum
	Vanessa annabella (West Coast Lady)	(Pernlexing Hairstreak)
	Vanishe atalanta (Pad Admiral)	Incisatio augustinus (Brown Elfin)
-	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Ladv)	W W
	runessa virginerisis (ritginia basy)	
	and the second se	Papilionidae (Swallowtails)
anaidae (Milk	weed Butterflies)	Papilio eurymedon (Pale Swallowtail)
mature (irrine	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
esperidae	all and and and a street	Pieridae (Whites and Orangetips)
11	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
- the	Heliopetes ericetorum (Great White Skipper)	Anthocharis Ianceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
	· · · · · · · · · · · · · · · · · · ·	Colias eurytheme (Alfalta Butterliy)
		Colias harfordii (Harford's Sulfur)
		Euchioe hyantis lotta (Southern Marble)
		Eurema nicippe (Sleepy Urange)
		Rhachia som so (Claudiase sulfur)
	- Juniter	Photodis senade (Cloudless sulful)
		Zerone autodice (Collifornia Dooface)
	and the second sec	Zerene euryaice (Cantonna Dograco)
		Riodinidae (Metalmarks)
		Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		- Management of the second sec
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
	1	
THER:		

Quino Checkerspot General Form

Adult Survey

Location	SAN VIC	ents p	ES- SAN DI	to River	Ment Survey Segr	nent Sury	EL AREA (8)
Surveyor	GRET-	CHATM	M	Da	te 30 MAR ZOIG	Survey We	eek Number	(5)
Survey Pa	artner(s)							<u></u>
Total A		D a set	C 1		101	1 34		

 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	Z-Ymph	63° F
11:00	0	clear patchy overcast drizzle shower	3-5 mm	68°F
12:00	150%	clear patchy overcast drizzle shower	Z-Smeh	GTF
13:00	20%	clear patchy overcast drizzle shower	2-6 gm	68°F
14:00	20%	clear patchy overcast drizzle shower	2-5 mpc	67° F
Stop 8- 43	25%	clear patchy overcast drizzle shower	3-5 mph	67°F

Habitat onsite (circle as applicable), hilltops, tydges, tock outcrops, open soil soil crusts clay soil old road, Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources.

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)			Leptotes marinu (Marine Blue)		1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		1
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		1
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		1
Thessalia leanira (Leanira Checkerspot)		12.00	Riodinidae (Metalmarks)	12.000	
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	10	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	Z		Papilio eurymedon (Pale Swallowtail)	1	1
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	1	
Vanessa atalanta (Rcd Admiral)			Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)		1	Pieridae (Whites and Orangetips)	1.	1.00.00
Vanessa virginiensis (American Lady)	s.2.11		Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	15	X
Danaus gilippus (Queen)		1.00	Pieris rapae (Cabbage White)	1000	
Danaus plexippus (Monarch)		1.1	Pontia protodice (Checkered White)	6	X
Hesperidae			Colias eurytheme (Orange Sulphur)	U.C. II	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Fiery Skipper)	1	101	Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)				10	
Ochlodes agricola (Rural Skipper)	-				1
Lycaenidae (Hairstreaks)	1			11-23	
Atlides halesus (Great Purple Hairstreak)	1.0			1.	
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)	1.			YL. ST	
Strymon melinus (Gray Hairstreak)	1	¥			
Leave and the second se	-				
Calastuina Ladar (Eaka Dius)	-			1	
Cerasirina iadon (Ecno Blue)	-			-	

Surveyor GRE CHAMMAN

Segment # SURVEY AREA(8) Date: 30 MARCH 2016

		Contraction of the second state of the second	
₩.	Apodemis mormo in pe	all flight (Lots of fresh Genules)	
ALE	Darche LAA 71	hand & A thick it save	
. Ac	POSSIBLE STAT OF LUA	with lacos individuals)	
		made (arga) man clada (-
		N	
			-
Plant Communities and	I Habitat Information:		
			_
			_
Host Plants Present:	Plantago erecta +	Castilleja exerta	
		J	_
Nectar Plants Present:	Buckuheat + Black.	-sage now blooming	
Nectar Plants Present:	Buckuheat + Black.	-sage now blooming	
Nectar Plants Present:	Buckuheat + Black.	-sage now blooming	
Nectar Plants Present:	Buckuheat + Black	-sage now blooming	
Nectar Plants Present:	Buckuheat + Black.	-sage now blooming	
Nectar Plants Present:	Buckuheat + Black. Date:	-stge now blooming GPS Location:	
Nectar Plants Present:	Buckuheat + Black. Date:	-sage now blooming GPS Location:	
Nectar Plants Present:	Buckuheat + Black. Date:	-sige now blooming GPS Location:	
Nectar Plants Present: Quino Sighting Photographs Taken: 1.	Buckuheat + Black. Date: 2.	-style now blooming GPS Location: 3.	
Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4.	Вискићеа + В/лок. Date: 2. 5.	-5432 now blooming GPS Location: 3. 6.	
Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4. 7.	Buckuheat + Black. Date: - - 2. - - 8. - -	-5452 now blooming GPS Location: 3. 6. 9.	

Quino Checkerspot General Form

Adult Survey

Location	sount .	TREATMENT FACI	un	Sur	vey Segment Sugar	AREA (4)
Surveyor	GAEL	CHAMAN	0	Date 3/mA	A 2016 Survey Week	Number (5)
Survey Par	tner(s)			100		
Total Acres	S:	Portion Surveyed:			Elevation: Max	Min

Time (24 hr)	% Cloud	a maga conta	Sky	e The second		Wind (range)	Temp (F)
Start 09:00	Ð	clear patchy	overcast	drizzle	shower	1-2 mph	61° F
10:00	0	clear patchy	overcast	drizzle	shower	1-2mph	64° F
11:00	Ð	clear) patchy	overcast	drizzle	shower	4-burn	670F
12:00	0	clear) patchy	overcast	drizzle	shower	4-6mp	72°F
13:00	-0-	clear) patchy	overcast	drizzle	shower	5-7 mp	74°F
14:00	100	clear) patchy	overcast	drizzle	shower	4-6nge	74°F
Stop 15:30	a	clear) patchy	overcast	drizzle	shower	5-7-16	73°E

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

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	1	1.272.5
Euphydras editha quino (Quino Checkerspot)	11.15	()	Philotes sonorensis (Sonoran Blue)	12.00	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	l i i	
Thessalia leanira (Lcanira Checkerspot)		1	Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	8		Apodemia mormo (Mormon Metalmark)	10	
Basilarchia lorquini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	8		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)	1021		Papilio rutulus (Western Tiger Swallowtail)	· · · · · · · · · · · ·	1000
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)	1 - 1	X	Pieridae (Whites and Orangetips)	1	
Vanessa virginiensis (American Lady)	1		Anthocharis cethura (Desert Orangetip)		
Danaidae		1	Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	1	
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		(*****
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)	1	1	Colias harfordii (Harford's Sulphur)	1.00	
Hylephila phyleus (Ficry Skipper)	1		Eurema nicippe (Sleepy Orange)	1 E	
Pyrgus albescens (White Checkered-Skipper)	2		Satyridae (Satyrids)	()	
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS: Adeloka bradowii alifor	via (1	0
Erynnis propertius (Propertius Duskywing)		1	(Cal Rania sister)	1	
Ochlodes agricola (Rural Skipper)		1.00			
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)				1	1
Incisalia augustinus (Western Brown Elfin)			· · · · · · · · · · · · · · · · · · ·		1.1.1
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	1				
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)				1	1.2
Celastrina ladon (Echo Blue)				-	

Surveyor line Chamed Segment # SURVEY ANEX (4) Date: 31 MARCH 2016

# 1	BUCKEYES IN PEN	AC FLIGHT	*
	0		
		54	
Plant Communities and Ha	bitat Information:		
			1
Host Plants Present:	Plantago erecta	+ Castilleig t	xeita
	0	0	A.,
Nectar Plants Present:	Buckahart + Bl	ick-sage bloomie	ng now!
Nectar Plants Present:	Buckahart + Bl	self-sage bloomin	ng now!
Nectar Plants Present:	Buckuhant + Bl	sek-sage bloomie	y now!
Nectar Plants Present:	Buckahart + Bl	sell-sage bloomin	y now!
Nectar Plants Present:	Buckuhent + Bl	GPS Location:	y now!
Nectar Plants Present:	Buckahent + Bl	GPS Location:	g now!
Nectar Plants Present:	Buckahent + Bl Date:	GPS Location:	ng Now!
Nectar Plants Present:	Buckahent + Bl	GPS Location:	y now!
Nectar Plants Present:	Buckahent + Bl	GPS Location:	ng Mow!
Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4. 7.	Buckuhent + Ble Date: 	GPS Location:	у <i>по</i> ш!

Adult Survey

Cold Survey We	eek Number (5)
	-
levation: Max	Min
]	levation: Max

Time (24 hr)	% Cloud	- espire -		Sky	a calente	data.	Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower	1-2 mph	TIOF
11:00	0	Clear	patchy	overcast	drizzle	shower	2-4men	76°F
12:00	-0	clear	patchy	overcast	drizzle	shower	2. Minth	81°F-
		clear	patchy	overcast	drizzle	shower	,	1.1.5
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop /3:00	0	clear	patchy	overcast	drizzle	shower	3-5 mph	63°F

Habitat onsite (circle as applicable) fulltops, idges, rock outcrops open soils soil crust, clay soils old roads Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources.

Butterfly Species	Count. (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)	1	1	Leptotes marina (Marine Blue)	3	
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)		4.000	Plebejus melissa (Melissa Blue)	1 1	1.1
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		(III III III	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		1
Nymphalis antiopa (Mourning Cloak)	1		Apodemia mormo (Mormon Metalmark)	10	
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)	100	
Junonia coenia (Common Buckeye)	3	+	Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)	1		Papilio rutulus (Western Tiger Swallowtail)	1.	
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)		1	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangelip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	12	+
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)		10.00
Heliopetes ericetorum (Northern White-Skipper)	8		Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Ficry Skipper)	1		Eurema nicippe (Sleepy Orange)	4	
Pyrgus albescens (White Checkered-Skipper)	2		Satyridae (Satyrids)	And and	1
Erynnis funeralis (Funcreal Duskywing)	1		<i>Coenonympha californica</i> (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		1	OTHERS:		
Erynnis propertius (Propertius Duskywing)		1		. 14	
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)		100		1.1	
Incisalia augustinus (Western Brown Elfin)					1
Callophrys perplexa (Perplexing Hairstreak)				1	
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)				8200	1.
Celastrina ladon (Echo Blue)					
				11/1	

Surveyor Great Continued Segment # SURVEY AREA (7) Date: 02 MPRIL 2016

	* Appdemie	g mormo in	park fl	ight	· ·
		340			
lant Communities a	nd Habitat Informatio	on:			
iunt communities e					
Host Plants Present:	Plantaso	erecta 4	Castille	exects	
Host Plants Present:	Plantaso	erecta 4	Castilleza	exeAn	
Host Plants Present:	Plantaso	erecta 4	Gatilleza	s exeAs	
lost Plants Present:	Plantaso	erecta 4	Castilleza	s exeAr	
Host Plants Present:	Plantaso	erecta 4	Castilleze	s exeAr	
Host Plants Presents	Plantaso 	erecta 4	Castilleze	exects	
Host Plants Presents	Plantazo nt: Buckuhca	erecta 4 A + Black	Castilleza K sage n	exects	
Iost Plants Present:	Plantaso nt: Buckuhca	erecta 4 A + Black	Castilleza K sage no	exerta on blogenie	
Host Plants Presents	Plantaso nt: Buckuhea	erecta 4 A + Black	Cartilleza	exeeAn	
Host Plants Presents	Plantago nt: Buckuhree Date:	erecta 4 A + Black	GPS Location	on blogen w	
Iost Plants Present:	Plantago nt: Buckahee Date	erecta 4 A + Black	GPS Location	exerta on blogence	
Host Plants Present:	Plantaso nt: Buckahea Date:	erecta 4	GPS Location	a execta	
Host Plants Present: Nectar Plants Present Quino Sighting Photographs Taken: 1.	Plantago nt: Buckahee Date: 2.	erecta 4 A + Black	GPS Location	a execta on blogence	
Host Plants Present: Nectar Plants Prese Quino Sighting Photographs Taken: 1. 4.	Plantaso nt: Buckahee Date:	erecta 4	GPS Location	a execta ou blogense n: 3. 6.	



Adult Assessment

Surveyor	Date Site Visit Number
Site Name	Site Location Mira Mara
Total Acres: Total Acres Surveyed	: Elevation: Max Min
Hours Surveyed: 245"	

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
OGIE	clear 60 % cloud cover	hazy	10.	620
1000	clear - % cloud cover	hazy	515	62
	clear % cloud cover	hazy	17 1 kg	22 12)*
	clear % cloud cover	hazy	7	5.5
and the second s	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1
	clear % cloud cover	r hazy		
	clear % cloud cover	hazy		11
	clear % cloud cove:	r hazy		
	clear % cloud cove	r hazy		
	clear % cloud cove	r hazy	1	

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



Numebolidos (Bruch Rooted Butterflins)	Lycaenidae (Blues)
Nympnandae (Brush Footed Bunerfilles)	Y Y Y Brenhidium exilis (Pyomy Blue)
Lupnyaryas eannu quino (Quino Checkerspot)	Celastrina ladan echo (Echo Blue)
Residence in the languining of annual (California Sister)	Everes anymula (Western Tailed Blue)
Charidana arbhii (Cabh's Checkersnot)	Glaucopsyche lygdamus australis (Southern Blue)
Evalutional challendarg challendarg	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcadon Chackerspot)	
Fundadana akalandana hannai	Icarcia acmon (Acmon Blue)
(Umpa's Charlestona)	
(menic s checkerspor)	Leptotes maring (Marine Blue)
Numphalia antiona (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Numphalis and forming (California Tartaiseshell)	Plebeius melissa (Melissa Blue)
Blucoides militta (Mulitta Crescent)	
Phycoldes mynna (Mynna Crescent)	
Comparing and lines (Callinne Eritillary)	Lycaenidae (Hairstreaks)
Theoretical compare (Campbe Friting y)	Atlides balesus (Great Purple Hairstreak)
Veneral and the West Coast Lady)	Callonings perplexa = dumelorum
vanessa annabella (west Coast Lady)	(Perplexing Hairstreak)
Vanassa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa aardui (Deinted Lady)	Strymon melinus (Gray Hairstreak)
Vanasa virainiansis (Virainia Lady)	
Vanessa virginiensis (Virginia Lady)	
	Papilionidae (Swallowtails)
Densides (Millourad Butterflier)	Panilio eurymedon (Pale Swallowtail)
Danau allinnus (Queen)	Panilia rutulus (Western Tiger Swallowtail)
Danaus gauppus (Queen)	Papilio ralicaon (Anise Swallowtail)
Dandus plexippus (Monaicu)	I upino zeneatin (; inse sinanoman)
Hesperidae	Pieridae (Whites and Orangetips)
Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangeup)
 Heliopetes ericetorum (Great White Skipper) 	Anthocharis lanceolata (Grinnell's Marble)
11 Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
	Colias eurytheme (Altalia Butterity)
	Colias harjordu (Harlord's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwart Yellow)
an at months a	Phoebis sennae (Cloudless sultur)
	Pontia protodice (Common white)
	Zerene eurydice (California Doglace)
	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	Satyridae (Satyrids)
the second s	Coenonympha californica (California Ringlet)
OTHER:	and the second se
1	
	a state a state of the state of



Adult Assessment

Surveyor	Date Princil	Date 3/2-7/16	Site Visit	Number 5
Site Name	Maps	Site Location	Mira	and of the
Total Acres:	Total Acres Surveyed	: Elevation	on: Max	Min
Hours Surveyed:	500			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1215	Clear	% cloud cover	hazy	315	200
1305	clear 15	% cloud cover	hazy	2/4	24 -
1465	clear>	% cloud cover	hazy	2/4	7.0
15 5 3	clear	% cloud cover	hazy	2/4	7.000
a granda	clear	% cloud cover	hazy	31-	and a second sec
115	clear	% cloud cover	hazy	1	\$1 °
	clear	% cloud cover	hazy		
	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



Numphalidas (D	rush Footed Butterflies)	Lycaenidae (Blues)
rymphaticae (E	Euphydryas editha anino (Ouino Checkerspot)	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorauini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Bluc)
	(Chalcedon Checkerspot)	
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
111	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
1.00	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
1	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
11	Vanessa virginiensis (Virginia Lady)	
		Papílionidae (Swallowtails)
Danaidae (Milk	weed Butterflies)	Papilio eurymedon (Palc Swallowtail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Llasperidae		Pieridae (Whites and Orangetips)
ritt!	Ervanis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
164 1	Hylenhila phyleus (Fiery Skipper)	141 14 Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
1		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)
	1.000	Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
OTHER:		
	and the second	
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-		

Surveyor	Dala favoli	Date //// 16	Site Visit	Number <u>5</u>
Total Acres: Hours Surveye	Total Acres Surveye	Elevat	ion: Max	Min

Time (24hr) Sky	Time (24hr) Sky		Sky		(24hr) Sky		me (24hr) Sky		Wind (aver*/max)	Temp (F)
1100	clear 20 % clo	oud cover	hazy	315						
1225	clear \0 % clo	oud cover	hazy	2/1	29)					
	clear % clo	oud cover	hazy							
	clear % cle	oud cover	hazy							
	clear % cle	oud cover	hazy							
	clear % clo	oud cover	hazy							
	clear % cle	oud cover	hazy							
	clear % cl	oud cover	hazy							
	clear % cle	oud cover	hazy							
	clear % cle	oud cover	hazy							
	clear % cl	oud cover	hazy							
	clear % cle	oud cover	hazy		L					
	clear % cl	oud 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

lymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
1	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Bluc)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	and the second s
	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Bluc)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
	Warman and man (Dad Admitter)	Incisalia anaustinus (Brown Elfin)
	Vanessa atatanta (Red Admirat)	Stowney wellows (Crey Hairstreak)
	Vanessa caraui (Painted Lady)	Surymon metanas (Oray Hansucak)
	vanessa virginiensis (virginia Lady)	
	al et al let	Panilionidae (Swallowtails)
ongidaa (Mill	awand Butterflies)	Panilio euromedon (Pale Swallowtail)
Manalcae (Min	Danaus ailionus (Oueen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plazionus (Monarch)	Panilio zelicaon (Anise Swallowtail)
	Duning provident (Worksen)	
Tesneridae	and the second se	Pieridae (Whites and Orangetips)
	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
1000	Hylephila phyleus (Fiery Skipper)	1) Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
		Colias eurytheme (Alfalfa Butterfly)
		Collas 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)
		Piodinidae (Metalmarks)
		Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
	i and in the second	
		Satyridae (Satyrids)
L		Coenonympha californica (California Ringlet)
OTHER D		
JTHER:		
	11110	

Surveyor	Jale Pause	Date 1116	Site Visit	Number <u>5</u>
Site Name	Mory+5	Site Location	· 17/-+	1.5
Total Acres:	Total Acres Surveyed	: Elevatio	on: Max	Min
Hours Surveyed:	2'45"			

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1245	clear 15 % cloud cover	hazy	46	72"
1.1.1.	clear 😭 🔿 % cloud cover	hazy	17 19	-7
· •)	clear 🔬 % cloud cover	hazy	417	69
1923	clear 55 % cloud cover	hazy	512	67.
1530	clear 40 % cloud cover	hazy	517	670
1	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	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

Numebolidae (Bruch Footed Butterflige)	Lycaenidae (Blues)
Fundadary editha auino (Ouino Checkerspot)	Brephidium exilis (Pygmy Blue)
Adelpha bredawii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchin lorouini (Lorouin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidrows onbhii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Funbydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	-
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	the second se
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satvrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	(Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
	Double Head Could and An
	Papitionidae (Swallowians)
Danaidae (Milkweed Butterflies)	Papulo eurymedon (Pale Swallowdail)
Danaus gilippus (Queen)	Papulo rudulus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Papino zencaon (Anise Swanowan)
Venoridae	Pieridae (Whites and Orangetips)
Ecompis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Helionetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
Hylenhila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
1. Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
Y1 4	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
and a function	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudless sullur)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogtace)
	Riodinidae (Metalmarks)
· · · · · · · · · · · · · · · · · · ·	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	Saturidae (Saturids)
	Coenonympha californica (California Ringlet)
OTHER:	

Adult Assessment

р.5

Surveyor	Sale Pawell	Date 4 116	Site Visit N	Number <u>5</u>
Site Name	Map 5	Site Location	Mira	mar
Total Acres:	Total Acres Surveyed	I: Elevatio	on: Max	Min
Hours Surveyed	1: 3/004			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1030	clear)	% cloud cover	hazy	12	661
1150	clear	% cloud cover	hazy	2/4	690
0.5.0	clear	% cloud cover	hazy	316	710
	clear *	% cloud cover	hazy	513	7:"
1330	clear	% cloud cover	hazy	57	720
1550	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		1. I
	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, tock 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

1-951-686-1497



m exilis (Pygmy Bluc) a ladon echo (Echo Blue) myntula (Western Tailed Blue) yche lygdamus australis (Southern Blue) is ceraunus gyas (Edward's Blue) mon (Acmon Blue) marina (Marine Blue) monorensis (Sonoran Blue) melissa (Melissa Blue) melissa (Melissa Blue) melissa (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
a ladon echo (Echo Blue) nyntula (Western Tailed Blue) yche lygdamus australis (Southern Blue) is ceraunus gyas (Edward's Blue) mon (Acmon Blue) marina (Marine Blue) onorensis (Sonoran Blue) melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) nelinus (Gray Hairstreak)
nyntula (Western Tailed Blue) yche lygdamus australis (Southern Blue) is ceraunus gyas (Edward's Blue) mon (Acmon Blue) narina (Marine Blue) onorensis (Sonoran Blue) melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) nelinus (Gray Hairstreak)
yche lygdamus australis (Southern Blue) us ceraunus gyas (Edward's Blue) marina (Marine Blue) onorensis (Sonoran Blue) melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) nelinus (Gray Hairstreak)
as ceraunus gyas (Edward's Blue) marina (Marine Blue) narina (Marine Blue) onorensis (Sonoran Blue) melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) nelinus (Gray Hairstreak)
cmon (Acmon Blue) marina (Marine Blue) onorensis (Sonoran Blue) melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
marina (Marine Blue) sonorensis (Sonoran Blue) melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
nelissa (Melissa Blue) melissa (Melissa Blue) alesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
melissa (Melissa Blue) ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
ulesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
alesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
alesus (Great Purple Hairstreak) rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) melinus (Gray Hairstreak)
rs perplexa = dumetorum exing Hairstreak) augustimus (Brown Elfin) nelinus (Gray Hairstreak)
augustinus (Brown Elfin) melinus (Gray Hairstreak)
melinus (Gray Hairstreak)
A DE CONTRACTOR DE CONTRACT
)
urymedon (Pale Swallowtail)
utulus (Western Tiger Swallowtail)
elicaon (Anise Swallowtail)
agtine)
reis cathura (Felder's Orangetin)
aris lanceolata (Grinnell's Marble)
aris sora (Sara Oranectin)
rapae (Cabbage White)
arytheme (Alfalfa Butterfly)
arfordii (Harford's Sulfur)
hvantis lotta (Southern Marble)
nicippe (Sleepy Orange)
iole (Dwarf Yellow)
sennae (Cloudless sulfur)
rotodice (Common White)
urydice (California Dogface)
a mormo virgulti (Bchr's Mctalmark)
lis wrighti (Wright's Metalmark)
mpha californica (California Ringlet)
11 21



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Viale	Preseil	Date _	4/1/16	Site Visit	Number _	5
Site Name	ma	p.6	Site	Location	Muro	1 When a	
Total Acres:		otal Acres S	urveyed:	Elevatio	on: Max		
Hours Survey	red: 45	11					

Time (24hr)	A CONTRACTOR	Sky		Wind (aver*/max)	Temp (F)
1745	clear	% cloud cover	hazy	<19 1	15
1430	clear	% cloud cover	hazy	512	700
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy	in the second seco	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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



(Nymphalidae (Brush Footed Butterflies)	Lycaenipae (Blues)
Euphydryas editha guino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorauini (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)
(menie sonia (Buckeye)	Leptotes marina (Marine Blue)
Namenhalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Numphalis anticipe (Notinning Court)	Plebeius melissa (Melissa Blue)
Blaceider mulitta (Mulitta Crescent)	
Polygonia satimus (Satur Anglewing)	
Sociaria collinna (Collinna Fritillary)	Lycaenidae (Hairstreaks)
These lie leaving wright (Leaving Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vananta atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanassa andui (Painted Ladv)	Snymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Ladv)	
Vanessa virginiensis (Vaginia bady)	
	Papilionidae (Swallowtails)
Danaidae (Millayced Butterflies)	Papilio eurymedon (Pale Swallowtail)
Danaus ailinnus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
Danaus glappus (Queen)	Papilio zelicaon (Anise Swallowtail)
Dundus printiplis (restantin)	
Josperidae	Picridae (Whites and Orangetips)
Erunnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Helionetes aricetorum (Great White Skinner)	Anthocharis lanceolata (Grinnell's Marble)
i Huleopilo obviews (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
Pyrgus athescens (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)
an a	Zerene eurydice (California Dogface)
	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metaimark)
	Satyridae (Satyrids)
1	Coenonympha californica (California Ringlet)
(and the second s	
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	and the second sec

Quino Checkerspot Survey Form

Adult Assessment

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Surveyor	Jun Powell	Date 7/27/16	Site Visit Number 5
Site Name	Mora	Site Location	Mira mar
Total Acres:	Total Acres Surveye	d: Elevation	on: Max Min
Hours Survey	ed: 3'60'		

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
0917	clear 68 % cloud cover	hazy	13-	650
1400	clear 25 % cloud cover	hazy	00	650
100	clear % cloud cover	hazy	36	700
1	clear % cloud cover	hazy	315	700
15.0017	clear 15 % cloud cover	hazy	文件	749
1.4	clear % cloud cover	hazy	2/1	110
11- 21- 11-	clear, % cloud cover	hazy		
	clear % cloud cover	hazy		
'215	clear % cloud cover	hazy	3/5	630
	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 erecza, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla.

*20 second period, mph

1-951-686-1497

p.13 (m. 17) (m. 17)

lymphalidae (Br	ush Footed Butterflies)	Lycaenidae (Blues)			
Inputatione (Di	Euphydryas editha quino (Quino Checkerspot)	Di:	Brephidium exilis (Pygmy Blue)		
	Adelpha bredowii californica (California Sister)		Celastrina ladon echo (Echo Bluc)		
	Basilarchia lorauini (Lorguin's Admiral)		Everes amyntula (Western Tailed Blue)		
	Charidryas gabbii (Gabb's Checkerspot)	N	Glaucopsyche lygdamus australis (Southern Blue		
	Euphydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Blue)		
	(Chalcedon Checkerspot)	1			
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)		
	(Henne's Checkerspot)	-	and the second s		
HILLIN	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)		
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)		
	Nymphalis californica (California Tortoiseshell)	-	Plebejus melissa (Melissa Blue)		
	Phycoides mylitta (Mylitta Crescent)	1			
	Polygonia satyrus (Satyr Anglewing)	1			
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Ha	airstreaks)		
	Thessalia leanira wrighti (Leanira Checkerspot)	1	Atlides halesus (Great Purple Hairstreak)		
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetarum (Perplexing Hairstreak)		
	Vanessa atalanta (Red Admiral)		Incisalia augustimus (Brown Elfin)		
	Vanessa cardui (Painted Lady)	1	Surymon melinus (Gray Hairstreak)		
1	Vanessa virginiensis (Virginia Lady)	-			
		Papilionidae (S	wallowtails)		
Danaidae (Milky	veed Butterflies)		Papilio eurymedon (Pale Swallowtail)		
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)		
1. The second	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)		
Teeneridee		Pieridae (Whit	es and Orangetins)		
Hesperidae	Emmis function (Expert Ducky-wing)		Anthocharis cethura (Felder's Orangetip)		
<u>UI</u>	Legionetro evictory (Creat White Skinner)	-	Anthocharis lanceolata (Grinnell's Marble)		
1112 112 111	Heliopeles ericelorum (Oteat white Skipper)	111/11	Anthocharis sara (Sara Orangetip)		
un hum	Purpose albassans (Checkered Skipper)	- said	Artogeia rapae (Cabbage White)		
Par IN 11	Pyrgus dibescens (Checkeled Skipper)		Colios eurytheme (Alfalfa Butterfly)		
		-	Colias harfordii (Harford's Sulfur)		
			Euchloe hvantis lotta (Southern Marble)		
			Eurema nicippe (Sleepy Orange)		
			Nathalis inle (Dwarf Yellow)		
			Phoebis sennae (Cloudless sulfur)		
		1	Pontia protodice (Common White)		
			Zerene eurydice (California Dogface)		
1.5803		Riodinidae (M	letalmarks)		
10000	and the second s	127	Apodemia mormo virgulti (Bchr's Metalmark)		
		- Child Print	Calephelis wrighti (Wright's Mctalmark)		
	And a second sec				
		Satyridae (Sat	yrids)		
			Coenonympha californica (California Ringlet)		
-	The second statement	1			
OTHER					
VIII MAN	en e	S			

Surveyor Jun	Pourell	Date	3 20/16	Site Visit	Number 5
Site Name IV	5.0	Site	Location	Miron	10.07
Total Acres:	Total Acres Surveyed	:	Elevatio	on: Max	Min
Hours Surveyed: 1	125"				

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1100	clear	20% cloud cover	hazy	315	673
1225	clear	10 % cloud cover	hazy	214	192
	clear	% cloud cover	hazy	1.	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
0.001475(14.1	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


21 1 1 1 4 (1	Sauch Deuteneffice)	Luczenidae (Bhies)
Nymphalidae (I	Funkadeurs edities (Quine Checkersnet)	Brenhidium exilis (Pyemy Bluc)
	Euphyaryas eauna quino (Quino Checkerspor)	Celastrina ladon echo (Echo Blue)
	Particular and the second of the second second second	Everes onvntula (Western Tailed Blue)
	Chanidenna cohhii (Cohh's Checkersnot)	Glauconsyche bygdamus australis (Southern Blue)
	Endraryas gabon (Gabo S Checkerspor)	Hemiarous cerannus guas (Edward's Blue)
	(Chalcadon Chackerspot)	110/mar gas ov. azrino gr = (===== - = =
	(Chalcedon Checkerspor)	Icarcia acmon (Acmon Blue)
	(Honne's Charlestonat)	
	(Home's Checkerspor)	Lentotes marina (Marine Blue)
	Numbhalis antiana (Mourning Clock)	Philotes sonorensis (Sonoran Blue)
	Numphalis anlifernica (California Tortoiseshell)	Plebeius melissa (Melissa Blue)
	Placesides mulita (Mulitta (zessent)	
Sector and the sector of the s	Polycoules myrind (Myrina Crescun)	
	Conversion and Jones (Collingo Exitillary)	Lycaenidae (Hairstreaks)
	Speyeria camppe (Campbe Fridaily)	Atlides belows (Great Pumle Hairstreak)
	Inessaila leanira wright (Leanita Checkerspor)	Callonhurs nerplexa = dumetorum
	Vanessa annaoetta (West Coast Lady)	(Perplexing Hairstreak)
	Vauring stalents (Ped Admirsh)	Incisolia augustinus (Brown Elfin)
	Vanassa aardui (Painted Ladu)	1 Strymon melinus (Gray Hairstreak)
	Vanassa virginiansis (Virginia Lady)	
1.010	Vanessa Virginiensis (Virginia Lauv)	and the second sec
	and the second s	Panilionidae (Swallowtails)
Densides (ACII	award Destrauffing)	Papilio euromedon (Pale Swallowtail)
Danaidae (Milli	Densus vilianus (Queen)	Papilio entrulus (Western Tiger Swallowtail)
	Danaus gluppus (Queen)	Papilio raliano (Anise Swallowtail)
	Danous presippus (monarch)	
Hesperidae		Pieridae (Whites and Orangeups)
	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis Centura (Feider's Orangetip)
	Iteliopetes ericelorum (Great White Skipper)	Anthocharis anceolata (Ontaten's Marbie)
- thu	Hylephila phyleus (Flery Skipper)	Antonic mana (Cohang White)
	Pyrgus albescens (Checkered Skipper)	Colice current and (Alfalfa Butterfly)
	a posterio de la companya de la comp	Collas eurytheme (Analia Botterity)
		Condes narjoran (Harlota Southar)
V		Eucrace hydrais tolar (Soumern Marole)
	the second s	Eurema micippe (Sicopy Oraligo)
		Rhachig court of (Cloudings cultur)
	Alter and a second s	Proteors sennae (Cloudicss sullur)
·	and the second	Ponta protoace (Common Winte)
		Zerene euryaice (California Dograce)
	and the second	Riodimdae (Metalmarks)
		Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wright (Wright's Metalmark)
		and the second state of second states, and second states and state
	and the second sec	Satyridae (Satyrids)
	tare to the second s	Coenonympna californica (California Kinglet)
OTHER:		
	and the second sec	
	and the second secon	



Quino Checkerspot Survey Form

Adult Assessment

Surveyor 50	in (Powell	Date_	4/1/16	Site Visit	Number <u>5</u>	_
Site Name	Mas	۵ <i>С</i>	Site	Location	Mira	Now	
Total Acres:		Total Acres Surveyed	:	Elevatio	m: Max	Min	
Hours Surveyed:		0.0 "					

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1030	clear	% cloud cover	hazy	(13	10/2
0011	clear	% cloud cover	hazy	214	49.00
500	clear	% cloud cover	hazy	316	344
FRAM	clear	% cloud cover	hazy	SIT	HQ
1650	clear	% cloud cover	hazy	5/7	7-25
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		11
	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



Numphalidae (Bruch Footod Butterflies)	Lvcaenidae (P	Blues)
isympatanoae (i	Funhydryns editha guine (Quine Checkerspot)	11	Brephidium exilis (Pygmy Blue)
	(dalaha bradawii aglifamiag (California Sister)	1	Celastrina ladua echo (Echo Blue)
- 111	Basilarchia loravini (Loravin's Admiral)		Everes anomula (Western Tailed Blue)
	Chanidwas aphii (Gabh's Checkersnot)		Glauconsyche lygdamus australis (Southern Blue)
	Funksdmas chaleedana chaleedana		Hemiorgus cerounus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	(1) on 11 al 2 a
	Euclidence chalcedona hennei		Icarcia acman (Acmon Blue)
	(Henne's Checkerspot)		
	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Numphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Pleheius melissa (Melissa Blue)
	Phycaides mulitta (Mylitta Crescent)		
	Polygonia saturas (Satur Anglewing)		and the second
	Seguria callinna (Callinne Fritillary)	I vezenidae (lairstreaks)
	Thassalia lagning wright (Legning Checkerspot)	Lifeacindae (1	Atlides halesus (Great Purple Hairstreak)
	Vanessa annaholla (West Coast I adv)		Callonhurs perplexa = dumetarum
111	vanessa annabena (west Coast Lady)		(Perplexing Hairstreak)
-	Vanessa atalanta (Red Admiral)	15	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	1	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
	total for the second		
	and the second	Papilionidae (Swallowtails)
Danaidae (Milk	(weed Butterflies)		Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	Rit	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	1	Papilio zelicaon (Anise Swallowtail)
TT-in-ide-		Diaddae (UD)	iter and (hereasting)
Hesperidae	Front (Plendae (with	(ether have a strong (Felder's Oren setie)
	Leynnis funeralis (Funeral Dusky-wing)	-	Anthocharis ceinura (Feider's Otaligeup)
111	It last in a strategy (Circat white Skipper)	Visit	Anthocharis tanceotata (Crimien's Marbie)
131	Restrict of Angeles (Chook and Stringer)	- 41	Anthocharis sara (Saha Orangeup)
	Pyrgus dibescens (Checkeren Skipper)		Collins anatheres (Alfolfo Butterflu)
			Collas euryneme (Analia Bulleniy)
			Euchlos Interior (Ranford & Santar)
			Eucride Ayunus Idia (Sociality Mature)
			Nuclealization (Duran Vallaux)
			Nationalis Tote (Dwaff Yellow)
122.2.2		- in the second	Phoebis sennae (Cloudiess sultur)
			Ponua protoaice (Common write)
			Zerene euryaice (Cantornia Dograce)
		Riodinidae (N	Aetalmarks)
internation	and the second sec	th	Apodemia mormo virgutti (Behr's Metalmark)
			Calephelis wrighti (Wright's Metalmark)
		Satyridae (Sat	tyrids)
			Coenonympha californica (California Ringlet)
	A second and a second as a		termine with contract, and the termine
OTHER			
- A HARN	thanksense de sous in pri		and the second s
			in the second
	and the second sec		
	in the second se	- manutation	



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Sun	Fruell	Da	ate	1/1	16	Site V	isit Nun	nber <u>5</u>	ă
Site Name	MAAC	6		Site L	ocati	on	1	V1120	merzt.	
Total Acres:	T	otal Acres S	urveyed:		El	evatio	n: Max		Min	
Hours Survey	ed: 4.5	1								

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
13:15	(Tear)	% cloud cover	hazy	Slo	12
1:30	etear	% cloud cover	hazy	17	40
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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, nector sources

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

*20 second period, mph



Numerica (Prush Ecorad Butterflies)	Lycaenidae (Blues)
Nymphandae (Brush Pooled Butterines)	Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Ravilarahia lorquini (Loronin's Admiral)	Everes amontula (Western Tailed Blue)
Charidman anhhii (Cabh's Checkersnot)	Glaucoosyche lygdamus australis (Southern Blue)
Europydayas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	5 . .
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	all and the second s
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
tained and the statements of the statements	
And a second state of the	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	Papilio eurymedon (Pale Swallowtall)
Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtan)
Danous plexippus (Monarch).	Papulo zelicaon (Anise Swallowian)
	Dissides (Whites and Orangetine)
Hesperidae	Anthocharis cethura (Felder's Orangetin)
Erynnis juneralis (Funeral Dusky-willg)	Anthocharis Ionceolota (Grinnell's Marbic)
Heliopetes ericetorum (Orcat White Skipper)	Anthocharis sara (Sara Orangetip)
Purgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
1 // gan biocherin (enterne enapper)	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)
	Disducides (Mateleo alla)
	Kiodinidae (Metalmarks)
	Colonkalia suvialiti (Wright's Matalmark)
	Calephens wright (wright's incommark)
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
OTHER:	



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Paulell	Date 3/29/16	Site Visit Number 5
Site Name	MAS04 +5	Site Location	Minamor
Total Acres:	Total Acres Surveyed	Elevatio	n: Max Min
Hours Surveye	ed: 2145"		

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)	
242	clear 15% cloud cover	hazy	4/6	720
1:00	clear 20% cloud cover	hazy	5/8	700
1 AGE	clear 5% cloud cover	hazy	417	690
1 TAN	clear % < % cloud cover	hazy	518	622
	clear 40% cloud cover	hazy	sia	67°
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1
	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



Numphalidae (Brush Ecoted Butterflies)	Lycaenidae (Blues)
ivyinpitanuae (Funkydrugs gditka guina (Quing Checkerspot)		Brenhidium exilis (Pyemy Blue)
	Adelpha bradowii californica (California Sister)	-	Celastrina ladon echo (Echo Blue)
	Basilarchia loravini (Loravin's Admiral)	1	Everes amyntula (Western Tailed Blue)
	Charidovas gabbii (Gabb's Checketspot)	1	Glaucopsyche lyodamus australis (Southern Blue)
	Funhudruras chalcedona chalcedona		Hemiargus ceraunus pyas (Edward's Blue)
	(Chalcedon Checkersnot)		The man gate bolt damage gy at (contrast o state)
	Funbydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
1	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mulitta (Mulitta Crescent)	1	and the second standard and the second stand
	Polygonia saturus (Satyr Anglewing)	A Reserved and	
	Speveria callippe (Callippe Fritiliary)	Lycaenidae ((Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
	Vanesso annabella (West Coast Lady)	1	Callophyrs perplexa = dumetorum
1			(Perplexing Hairstreak)
	Vonesso atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
-			
	and the second sec	Papilionidae	(Swallowtails)
Danaidae (Mill	kweed Butterflies)		Papilio eurymedon (Pale Swallowtail)
Canada Com	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
Hesperidae		Pieridae (Wh	hites and Orangetips)
	Erynnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangelip)
	Heliopetes ericetorum (Great White Skipper)	105 amin	Anthocharis lanceolata (Grinnell's Marble)
the	Hylephila phyleus (Ficry Skipper)		Anthocharis sara (Sara Orangetip)
521	Pyrgus albescens (Checkered Skipper)	11	Artogeia rapae (Cabbage White)
		-	Colias eurytheme (Alfalfa Butterfly)
(C.)		-	Colias harfordii (Harlord's Sultur)
			Euchloe hyantis lotta (Southern Marble)
1			Eurema nicippe (Sleepy Orange)
			Nathalis tole (Dwart Yellow)
1.0			Phoebis sennae (Cloudless sulfur)
			Pontia protodice (Common White)
			Zerene eurydice (California Dogtace)
		1	
		Riodinidae (Metalmarks)
		181	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrighti (Wright's Metalmark)
V. I.			
		Competition of	
		Satyridae (Sa	ayrids)
	and the	-	Coenonympna californica (California Kinglet)
	a start and a start and a start	-	
OTHER.			
UTILA.			and the state of the
1			Provide the state of the second
	Total State 1	1	
		-	
		- Langer and an and the	and a second

13:00

14:00

15:00

Adult Survey

83°F

84°P

83°F

4-6ml

4-Jull

3-6mp

Location SAN VIC Surveyor Cana Survey Partner(s)	ENTE LES.	SUM DIEVO A	Date D	E Survey	Segment 2016 Surv	Yey Week Number	4 (8) (6)
Total Acres:	Portion Surv	eyed:		E	levation: N	Max Min	
Time (24 hr)	% Cloud	- and a second	Sky	ting to		Wind (range)	Temp (F)
Start 10:00	9	clear patchy	overcast	drizzle	shower	3-5 ma	76° F
11:00	0	clear) patchy	overcast	drizzle	shower	3-6 men	790F
12:00	0	clear) patchy	overcast	drizzle	shower	3-6	81°F

overcast

overcast

overcast

drizzle

drizzle

drizzle

shower

shower

shower

clear patchy Stop 16:45 80°F -0 4-6 mph overcast drizzle shower Habitat onsite (circle as applicable) hillton, ridges rock outcrops, open soils soil crusts clay soils old roads Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources.)

clear)

clear

clear

patchy

patchy

patchy

-0

0

Ð

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	2	
Euphydras editha quino (Quino Checkerspot)	10.000)	Philotes sonorensis (Sonoran Blue)	1 2 - 1	
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)		1
Charidryas gabbii (Gabb's Checkerspot)	1		Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		1.	Brephidium exilis (Western Pygmy-Blue)	11	
Thessalia leanira (Leanira Checkerspot)	1000	-	Riodinidae (Metalmarks)	100	1
Nymphalis antiopa (Mourning Cloak)	2		Apodemia mormo (Mormon Metalmark)	8	
Basilarchia lorquini (Lorquin's Admiral)	V -		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	3	2	Papilio eurymedon (Pale Swallowtail)	1	*
Vanessa annabella (West Coast Lady)	27.21		Papilio rutulus (Western Tiger Swallowtail)		1
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)		() III () ()	Anthocharis cethura (Desert Orangelip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	20	×
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		1
Danaus plexippus (Monarch)		1	Pontia protodice (Checkered White)	6	×
Hesperidae			Colias eurytheme (Orange Sulphur)	11	+
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		5
Hylephila phyleus (Fiery Skipper)	12.72	1111	Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1		OTHERS: Nothelis iole	1	
Erynnis propertius (Propertius Duskywing)	12.5.5	1000	(Darate - sul plant)		
Ochlodes agricola (Rural Skipper)	1999		0 7		1
Lycaenidae (Hairstreaks)		6000	lerodea atala	1	
Atlides halesus (Great Purple Hairstreak)			(Emphala skinser)		
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)	12			1	
Strymon melinus (Gray Hairstreak)					1
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)		N. Com			

Surveyor UNER CHATMAN Segment # SURVEY AREA (R) Date: 04 APRIL 2016

omments:			
	1		
lant Communities and	Habitat Information:		
		1:11 and	
Host Plants Present:	Mawtago erects + Ca	stilleja everia	
Nectar Plants Present:	Blue dicks , Crestanthe.	Lathenia Byckuhant Black	-589P ;
Nectar Plants Present:	Bluedicks, Cryptantha,	Lathenia, Buckuhant, Black	-sage ;
Vectar Plants Present:	Bluedicks, Cryptantha, Encelia	Lasthenia, Buckukent, Black.	-5 <i>agl</i> ;
Vectar Plants Present:	Bluedicks, Cryptantha, Encelia	Lasthenia, Buckuhent, Black.	-5 <i>09C</i> ;
Nectar Plants Present:	Bluedicks, Cryptantha; Encelia	Lasthenia, Buckukent, Black.	-5 <i>49C</i> ;
Vectar Plants Present:	Bluedicks , Cryptantha ; Eincelia Date:	Carthenia, Buckuhent, Black GPS Location:	-sage ;
Vectar Plants Present:	Bluedicks , Cryptantha ; Eincelia Date:	Carthenia, Buckuhant, Black GPS Location:	-sage ;
Nectar Plants Present:	Bluedicks , Cryptantha , Encelia Date:	Carthenis, Buckuhent, Black GPS Location:	-50gC ;
Vectar Plants Present: Quino Sighting Photographs Taken:	Bluedicks , Cryptantha , Eincelia Date: 2.	GPS Location:	-5 <i>09C</i> ;
Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4.	Bluedicks , Cryptantha , Eacelia Date: 2. 5.	GPS Location: 3. 6.	-sage ;
Nectar Plants Present:	Bluedicks , Cryptantha , Eincelia Date: 2. 5. 8.	GPS Location: 3. 6. 9.	-sage ;

Adult Survey

Location	SOUTHERW TRENT PLANT	Survey Segme	nt Surve	STAPON (4)
Surveyor	GRED CHATMIN	Date 05 2016 S	Survey We	ek Number (6)
Survey Par	tner(s)	OS APR ZOIG		
Total Acres	s: Portion Surveyed:	Elevation	n: Max	Min

Time (24 hr)	% Cloud		- State - Stat	Sky		-	Wind (range)	Temp (F)
Start /0:00	HARRY	clear	patchy	overcast	drizzle	shower	Ð	70°F
11:00	Hora	clear	patchy	overcast	drizzle	shower	0	JYOF
12:00	Hory	clear	patchy	overcast	drizzle	shower	1-2 up	79°F
13:00	HARry	clear	patchy	overcast	drizzle	shower	2-3yph	83°F
14:00	Ð	clear	patchy	overcast	drizzle	shower	2-4 mile	84PF
15:00	-0-	elear	patchy	overcast	drizzle	shower	2-Maph	83° F
Stop 16:00	æ	clean	patchy	overcast	drizzle	shower	2-4use	82°F

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

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	2	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1.2.1	
Euphydras chalcedona (Chalcedon Checkerspot)	15 51	(Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)		V	Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		1	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	10	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)	1	
Junonia coenia (Common Buckeye)	4		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)		-	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	1	+	Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	8	*
Danaus gilippus (Queen)		(Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	1.	
Hesperidae			Colias eurytheme (Orange Sulphur)	11	
Heliopetes ericetorum (Northern White-Skipper)	3		Colias harfordii (Harford's Sulphur)	1200	
Hylephila phyleus (Fiery Skipper)	1		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1.000	
Erynnis funeralis (Funereal Duskywing)	2	*	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)	1000				
Lycaenidae (Hairstreaks)		1			
Atlides halesus (Great Purple Hairstreak)				I	
Incisalia augustinus (Western Brown Elfin)					
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	1	1			
(annucopsyche lygannus (Southern Blue)				1	
	-			-	-
Celastrina ladon (Echo Blue)		1		-	

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Surveyor and Common Segment # SULVEY ALEA (4) Date: OT APPEIL ZOIL

Comments:			
			-
-			
	t T. C		
Plant Communities and Habr	at Information:		
Host Plants Present:	Plantago erecta + C	stilleja exerts	
		•	
		E 12 81 14 D	111
Nectar Plants Present:	ryptantha, Lasthenia	, Encelig, Islue-dicks, 1300	Kanest,
5	luis molifiery , your	SHA/7A	
	Data	CPS Location:	
Quino Sighting	Date:	OI D LOCATION.	
	•		
Photographs Taken:			
1.	2.	3.	
4.	5.	0.	
7-	8.	9.	
10.	11.	12.	

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Location	MISSION GORGE AREA	Survey Segment _ Supre	3 AREA (7)			
Surveyor Charman Survey Partner(s)		Date OG APR 2016 Survey Week Number (6)				
			*			
Total Acre	s: Portion Surveyed:	Elevation: Max	Min			

Time (24 hr)	% Cloud		and a second	Ský	Constanting of the second s	-0	Wind (range)	Temp (F)
Start 09:30	Ø	clear	patchy	overcast	drizzle	shower	1-2.4h	75°F
10:00	-8-	Clear	patchy	overcast	drizzle	shower	1-Zuge	78°F
11:00	6	clean	patchy	overcast	drizzle	shower	Zulinge	80° F
12:00	Ð	clean	patchy	overcast	drizzle	shower	2-4mp	83° F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 12:30	0	Clean	patchy	overcast	drizzle	shower	2- Ungl	85°F

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

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	2	
Euphydras editha quino (Quino Checkerspot)	1.		Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)	1		Plebejus melissa (Melissa Blue)	1	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	11	
Thessalia leanira (Leanira Checkerspot)	-		Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	12	1
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		1
Junonia coenia (Common Buckeye)	2	×	Papilio eurymedon (Pale Swallowtail)		2.12.1
Vanessa annabella (West Coast Lady)	1.00		Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)	M	
Vanessa cardui (Painted Lady)	1000		Pieridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae	1.00	1	Anthocharis sara (Sara's Orangetip)	12	+
Dangus gilippus (Oucen)	1		Pieris rapae (Cabbage White)		
Dangus plexippus (Monarch)	1	1	Pontia protodice (Checkered White)	4	×
Hesperidae			Colias eurytheme (Orange Sulphur)	1	1
Heliopetes ericetorum (Northern White-Skipper)	8	+	Colias harfordii (Harford's Sulphur)	1	[1
Hylephila phyleus (Fiery Skipper)	1.	1.1	Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)	1	1.	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1	1	OTHERS:		
Erynnis propertius (Propertius Duskywing)	11.111				
Ochlodes agricola (Rural Skipper)	1/8/11	1	1		
Lycaenidae (Hairstreaks)				1	
Atlides halesus (Great Purple Hairstreak)	10				
Incisalia augustinus (Western Brown Elfin)					1
Callophrys perplexa (Perplexing Hairstreak)				1	
Strymon melinus (Gray Hairstreak) Glaucopsyche badanus (Southern Blue)	1	*		-	
Icarcia acmon (Acmon Blue)	-	1			
Celastrina Iadon (Echo Blue)					
		-			-
				_	

Surveyor GREV CHATTMAN Segment # Suprez ALEA (7) Date: 06 ADLIC 2016

Comments:		
	12	
Plant Communities and Habitat Inform		
Host Plants Present:	Plantago erecta y Cas	filleig exeta
	0	•
		1 1
Nectar Plants Present: Buck	about + Black-sage no	W Blooming !
Outro Statting	CPS Logation	
	GF5 Location	
Dhata manha Takan.		
rnotographs laken:		2
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7.	0.	9.
10.	11,	12.

Quino Checkerspot Survey Form

Adult Assessment

p.1

Surveyor	Cala	Rueli	Date Michie	Site Visit 3	Number <u>6</u>
Site Name	Mie	1+2	Site Location	Miran	~1/
Total Acres:		Total Acres Surveyed	: Elevati	ion: Max	Min
Hours Survey	ed:	;			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
(395)	, clear'	% cloud cover	hazy	215	67
060	clear	% cloud cover	hazy	2	7.
121012	clear	% cloud cover	hazy	110	7.1.0
and the second	clear	% cloud cover	hazy	17	1
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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

St 2 1

ymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Construction and	Euphydryas editha quino (Quino Checkerspot)	X	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)	1	Glaucopsyche lygdamus australis (Southern Blue
	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)		Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hennei (Henne's Checkersnot)		Icarcia acmon (Acmon Blue)
1	Junonia coenia (Buckeye)		Lentates marina (Marine Blue)
	Nymphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Planaius malinga (Melioca Blue)
	Phycoides mulitta (Mylitta Crescent)	1	Tiebejus menssa (menssa blac)
	Polygonia saturus (Satur Anglewing)		
	Speveria callinne (Callinne Fritillary)	Lucaenidae (Hairstreaks)
	Thesealia leanira wrighti (Leanira Checkersnot)	Liyeactridac (Atlidae halarus (Great Durole Haircheale)
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	_	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	it	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
		Papilionidac	(Swallowtails)
maidae (Mill	kweed Butterflies)		Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	1	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
esperidae		Pieridae (Wh	ites and Orangetips)
1	Erynnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)	A.	Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
			Colias eurytheme (Alfaifa Butterfly)
			Colias harfordii (Harford's Sulfur)
			Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
-		1	Nathalis iole (Dwarf Yellow)
		1	Phoebis sennae (Cloudless sulfur)
(A)		1 1	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
		Riodinidae (N	Aetalmarks)
		1 12	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrlghti (Wright's Metalmark)
	100	Saturidae (Ca	typide)
	a second se	Daryman (Sa	Connoumnha californias (California Directat)
	in the second		Coentonympris conyonica (Camorina Kinglet)
HER:			

Surveyor	(1)	Date 4/3/16	_ Site Visit 1	Number <u>6</u>
Site Name 11	r 3	_ Site Location _	(Arcamo)	c
Total Acres:	Total Acres Surveyed	Elevati	ion: Max	Min
Hours Surveyed: 4)	1C			

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
	clear % cloud cover	hazy	5.0	
1	clear % cloud cover	hazy	4. 4.4	4
	clear % cloud cover	hazy	34 6	72.3 *
1.11 =	clear 🐂 % cloud cover	hazy	1.15	2 · 2~
15	clear % cloud cover	hazy	1.00	2017
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy	1	
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1

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



Nymohalidae (Brush Footed Butterflies)	Lycaepidae (Blues)
reymphatuae ()	Funbudence editing quine (Oning Checkerspot)	Rrenhidium exilis (Pyomy Blue)
- Senter - Senter	Adelpha bredowii californica (California Sister)	Calastrina ladan acha (Echo Blue)
-	Basilorchia loravini (Loravin's Admiral)	Everes amuntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkersnot)	Glaucopsyche lygdamus australis (Southern Bluc)
-	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	Laniolas maring (Marine Blue)
	Junonia coenia (Buckeye)	Philotes reportensis (Separan Blue)
	(vympnaus antiope (totourning Cloak)	Planaine maliese (Maliese Plue)
	Nymphalis californica (California Tortoisesnen)	Tiebejus mensu (Menssa Dide)
	Phycoides mynita (Mynita Crescent)	
	Polygonia salyrus (Salyr Anglewing)	1 vacanidaa (Haisstranks)
	Speyeria camppe (Camppe Frithlary)	Atlidas halasus (Creat Purple Hairstreak)
	Kanaga ang aballa (West Const Lady)	Callonhum = name a = dume to rum
	Vanessa annabena (West Coast Lauy)	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
3	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidac (Milk	(weed 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)
<u> </u>	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Ficry Skipper)	Vil (1) Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	1/1 Artogeia rapae (Cabbage White)
	the second se	Collas eurymeme (Altana Bullerity)
	Anno 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1	Evaluation for an evaluation of the state of
	and the second se	Euroma nicinna (Sleepy (Jeanee)
		Nathalis iale (Dwarf Vellow)
		Phonhis sonnas (Cloudless sulfur)
		Pontia protodice (Common White)
	Contraction and the second sec	Zarane aunudice (Colifornia Dogface)
		zerene eurparce (Cantonia Dogiaco)
		Klodiniciae (Metalmarks)
		Colophalis periodet: (Diricht's Metalmark)
7		Calepheas wright (wright's Medalmark)
	ter in the second s	Satyridae (Satyrids)
	and an	Coenonympha californica (California Ringlet)
		1 100
OTHER:	Senter and a second	
	The second se	
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	and the state of the second seco	

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p.3

Surveyor	e Palur	\ Date_5	14/116	Site Vişit Numbe	r
Site Name W	hep in the	Site	Location	May May	
Total Acres:	Total Ac	res Surveyed:	Eievau		щ <u></u>
Hours Surveyed:	7151			en ditta dita. A an industria	en Trans
fine (24br)		Sky 11.		Wind (Deredmin):	Temp (F)
0915	(clear)	% cloud cover	hazy	615	52°
16.2	clear	% cloud cover	hazy	San Salara and	1 - 2 - 1 ⁽¹⁾
64	clear	% cloud cover-	hazy	Child	5.7 *
19.53	clear)	% cloud cover	hazy	115	430
1. A.N.	clear	% cloud cover	hazy	24	1. 201
Jun I	clean	% cloud cover	hazy	and the second	790
1	ofear)	% cloud cover	hazy		
	clear	% cloud cover	hazy	and the second sec	
2.2	clear	%-cloud cover	-hazy		1.5.7.21 12
E constant	clear	% cloud cover	häzy	4	14.15
in the	clear	% cloud cover	hazy	the second second	1.12
24	clear	% cloud cover	hazy		9.57
(a)	clear	% cloud cover	hazy		

Habitat onsite: open solls, hilltops, fidges, rock outcrope, soil crusts, clay soils, old roads, nectar sources,

Section 197

1.6.6

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

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*20 second period, mph

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COMMENT: 1.

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p.12

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Inductione (D	rush Fooled Butterflies)	Lycaenidae (Blues)
	Euphydryas editha quino (Quino Checkerspot)	Brenkidium exilis (Puerry Blue)
	Adelpha bredowii californica (California Sister)	Celastring Indon scho (Echo Dius)
	Basilarchia lorguini (Lorquin's Admiral)	Everes anyutula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glauconsyche lugdamus gustralie (Southern Bi
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	(Henne's Charlestor)	Icarcia acmon (Acmon Blue)
- 11	Junonia caenia (Buckeye)	
	Nymphalis antions (Mourning Cloub)	Leptotes marina (Marine Blue)
	Nymphalis californica (California Testainatally	Philotes sonorensis (Sonoran Blue)
	Phycoides mylitta (Mylitta Croscant)	Plebejus melissa (Melissa Blue)
	Polyponia satyrus (Sety: Anglewing)	
1 1	Speweria callinge (Callinge Estillant)	and a statement of the second s
4	Thessalia leaving wright (anim Charles and	Lycacnidae (Haustreaks)
	Vanessa annahalla (West Coast i adu)	Atlides halesus (Great Purple Hairstreak)
l:	(West Coast Cady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalama (Red Admira!)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Struman melinus (Gray Hainstreak)
	Vanessa virginiensis (Virginia Lady)	(Oray Transucak)
		Photeonica (Swallowsite
naidae (Milkw	ced Batterfless	Panilio euromedon (Pole Swallowici)
	Danaus gilippus (Queen)	Papilio rutulus (Western Timer Swalloweil)
	Danaus plexippus (Monarch)	Papilio relicaon (Anise Swallowtail)
meridan	In success and success	
Y	Sector Contraction of Statistics	Pieridae (Whites and Orangerins)
	Erynnis juneralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetin)
	Henopeles ericetorum (Great Walls Skipper)	Anthechoris Ianceolata (Grianell's Marble)
1	Pureus albarrans (Charling of Skipper)	Anthocharis sara (Sara Orangetip)
-1	Piges intestens (Caeckered Skipper)	Artogeia rapae (Cabbage White)
		Colias eurytheme (Alfalfa Butterfly)
	the second se	Colias harfordii (Harford's Sulfur)
		Euchloe hyantis lotta (Southern Marble)
		Eurema nicippe (Sleepy Orange)
		Nathalis iole (Dwarf Yellow)
		Phoebis sennae (Cloudless sulfur)
	the second s	Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
		and the state of the
		Riodinidae (Metalmarks)
		Apodemia mormo virgulti (Behr's Matalmost)
		Calephelis wrighti (Wright's Metalmark)
		I DE TEL CERTERARE PRANT
		Saturidae (Saturida)
		Company to the
		Coenonympna californica (California Ringlet)
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Surveyor D.	· fame	Date -	Site Visit Number	r
Site Name	1005	Site L	ocation Winging C	2.45
Total Acres:	Total Acres	Surveyed:	Elevation: Max Mi	n
Hours Surveyed: 2	1301		きょうちょう 美国語家 い	- B

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Tone 124hill	HIL	Sky-1		Wind favor/maxe	Temp (F)
07700	clear !	% cloud cover	hazy	$\sim \gamma$	1,71
100	clear /	; % cloud cover	hazy'	0.55	1. 18 1
A 4 4 4 4 4 4 4	clear	% cloud cover-	hazy	10	1.97
and the second second	clear	% cloud cover	hazy		105
	clear	% cloud cover	hazy		
The second se	clear	%-cloud cover	hazy	The T (3)	P
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy	Sam in stars	Win garage
	clear	%-cloud cover	hazy		
	clear	% cloud cover	hazy	in the second second	A see at
14 1	clear	% cloud cover	hazy	and and the second	ANS STATE
	clear	% cloud cover	hazy		() · · · · · · · · · · · · · · · · · ·
e canada de com	clear	% cloud cover	hazy	And And	(4) 4

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

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

*20 second period, mph

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COMMENT:

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the second	Lychenidae (Blues)
Euphydryas editha quina (Quino Checkerspot)	Brenhidium erilis (Pyony Plus)
Adelpha bredowii californics (California Sister)	Celevine Index scho (Esta Dias)
Basilarchia lorguini (Lorcuin's Admiral)	Everes amunula (Washing Talled Dhart
Charidryas gabbii (Gabb's Checkerspot)	Glaucoporte hadana antici (Santa anti
Euphydryas chalcedong chalcedona	Homiarous connection australis (Southern Blue
(Chalcedon Checkerspot)	incimiar gas certaintas gyas (Edward 5 Blite)
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspei)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mounting Goak)	Philotes sonorensis (Sonoran Blue)
Nymphelis californica (California Tortoiseshel!)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitte Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Priziliary)	Eyra nidae (Hairstreaks)
Thessaila leaning wright (Londin Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanesta annabella (West Chest Lady)	Callophyrs perplexa = dumerorum (Perplexing Hairstreak)
Vanessa atolanta (Red Advance)	Incisalia mousting (Brown Elfin)
Venessa cardui (Painted Lady)	Spranna meligua (Gray Heisetanta)
Vanessa virginiensis (Virginas Lady)	on ymon mennes (Oray Hansheak)
	P.ml ander (Swellowsher
anaidae (Milkweed Buiterflies)	Panilio annua da Onte Contracto
Danaus gilippus (Oucen)	Papilio rutulus (Nastan Pina Continents)
Danaus plexippus (Manarch)	Papilio ralianas (western Liger Swaitowiait)
	Tapino zencatin (Ause Swanswian)
lesneridae	THE STATE AND AND A DESCRIPTION OF ADDRESS OF
Ervanis funeralis (Faceral Declevation)	FIGTS & AW DIES and Orangemps)
Heliopetes ericetorum (Grant Miles 91 incor	Anthocharis cethura (Felder's Orangetip)
livenala abulare Libre Skinese	Butnocharis (anceolate (Grinzell's Marble)
Purous albascopes (Checkoped Stimmer)	Anthocharis sara (Sara Orangetip)
The descere (checkere) (all to)	Artogeta rapae (Cabhage White)
	Collas eurytheme (Altalta Butlerily)
	Conds narjorda (Harlord's Sultur)
	Euchtoe hyantis lotta (Southern Marble)
a a construction of the second s	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudiess sulfur)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Sat-**ac (Satyrids) Coencetympha california (California Ringlet)
	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Saturidae (Satyrids) Coencesympha californica (California Ringlet)
THER:	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Sat="dat (Satyrids) Coencomympha californica (California Ringlet)
THER:	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virguitti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Saty-**2ac (Satyrids) Coenconympha californica (California Ringlet)
THER:	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Sate-dae (Satyrids) Coencomympha californica (California Ringlet)
THER:	Phoebis sennae (Cloudiess sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Ricdin dae (Metalmarks) Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Sateridae (Satyrids) Coenonympha californica (California Ringlet)

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Surveyor	Tim Parceli	Date 4/3/16	Site Visit]	Number 6
Site Name	Macz	Site Location	Myras	a elp*
Total Acres:	Total Acres Surveyed	Eleva	tion: Max	Min
Hours Surveyed:	7151			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1000	clear	% cloud cover	hazy	3/5	620
1100	clear	% cloud cover	hazy	21/	7.78
12.04.74	clear	% cloud cover	hazy	=14	767
· · · · ·	clear	% cloud cover	hazy	dig	731
t leave Y	clear	% cloud cover	hazy	314	75.
1 4/4	clear	% cloud cover	hazy	316	770
	clear	% cloud cover	hazy	315	210
:15	clear	% cloud cover	hazy	315	740
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		1

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

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			31930115200 - 1
Nymphalidae (E	Brush Footed Butterflies)	Lycaenidae (Bl	ues)
	Euphydryas editha quino (Quino Checkerspot)	1	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	-	Celastrina ladon echo (Echo Blue)
11	Basilarchia lorguini (Lorguin's Admiral)		Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Blue)
None and a second se	(Chalcedon Checkerspot)		
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	+	to a state plant
	Junonia coenia (Buckeye)	1	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philoles sonorensis (Sonoran Blue)
Termine and the second se	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylilla (Mylitta Crescent)		
	Polygonia salyrus (Salyr Anglewing)	Taxantida a // 1	here a second
	Speyeria callippe (Callippe Fritiliary)	Lycaenidae (Ha	Addition for low a (Const Durate Mainstreak)
	Thessalia teanira wrighti (Leanira Checkerspot)		Calladama accolora - duratomat
1111	Vanessa annabella (West Coast Lady)		(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	1	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	1. and and	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	1	
1		Papilionidae (S	wallowtails)
Danaidae (Milk	weed Butterflies)	A DECLARATION OF	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
a	Danaus plexippus (Monarch)	1	Papilio zelicaon (Anise Swallowtail)
Hesperidae		Pieridae (White	es and Orangetips)
11.4	Erynnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marbic)
Utt Til	Privepnua phyleus (Fiery Skipper)		Anthocharis sara (Cabhara Wibita)
1 1 1 1 1 1 1 1	ryrgus dibescens (Checkered Skipper)		Colling angularity (Alfolia Buttosflu)
			Colias barfondii (Horford's Sulfur)
-	The state of the s		Euchica Insurtis Latta (Southern Marble)
			Eurama viainna (Sleenv Orange)
			Nathalis iole (Dwarf Vellow)
			Phoshic sannas (Cloudless sulfur)
			Pontia protodica (Common White)
	ne de service de servi	1	Zerane aunudice (California Douface)
	- maintainana		Zerene eur faiet (Cuatornia Dogiant)
		1	
		Riodinidae (M	etalmarks)
· · · · · · · · · · · · · · · · · · ·		NO P	Apodemia mormo virgulti (Behr's Metalmark)
		1	Calephelis wrighti (Wright's Metalmark)
		Satyridae (Saty	rids)
	and the second	-	Coenonympha californica (California Ringlet)
	and the second s	-	ne anna
OTHER	×		1
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Surveyor	pa Keni	Ci. Date Site	Location	Site Visit Nu	mber.
Total Acres:	Total Ac	tes Surveyed:	Eleva	tion: Max	Min
Hours Surveyed:	7151	- 6			4.235.13
					A
-lime (24hr)		SEV			III FITEmp (F)
1911 19	clear	% cloud cover	hazy	010	52°
INAO.	clear	% cloud cover	hazy	3	741
KAD	Clear	% cloud cover-	hazy -	25	770
1.55	clear	% cloud cover	hazy	.3	2.80
12 at	ćlear	% cloud cover	hazy	214	20-
103-	clean	% cloud cover	hazy-	3%	700
-2.5 N	clear	% cloud cover	hazy	1. 14/2	78
	clear	% cloud cover	hazy		510
	clean	% cloud cover	hazy-	314	1
	clear	% cloud cover	hazy		

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

hazy

hazy

hazy ...

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

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% cloud cover

% cloud cover

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% cloud cover

*20 second period, mph

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COMMENT:

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iymianaac (i	Desite Transal Double files 11 1	Lycaemidae (Blues)
	Fundadanas aditha anina (Ouizo Cireckerspot)	Brephidium exilis (Pygmy Blue)
	Adelphia bredowil californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia-laranini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidovas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Biue)
	Fundrular chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Funkydrovas chalcedona kennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
1128	Iunopia coepia (Buckeye)	Leptotes marina (Marine Blue)
,KU	Numphalis antione (Mourning Clock)	Philotes sonorensis (Sonoran Blue)
	Numphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Pingoides mulitta (Mylitta Crescent)	
	Pelvaonia saparus (Satyr Anglewing)	
	Someria callinne (Callinne Fritillary)	Eyeacmidae (Hanstreaks)
	Thomalia lamina wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Kanana maghella (West Cost I adv)	Callophyrs perplexa = dumetorum
AVE II	Vunessa unnabena (West Coust Guest)	(Perplexing Hairstreak)
2011 11	Vanassa atalanta (Red Admiral)	Incisalia augustimus (Brown Elfin)
	Venerge cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Records vinginiancie (Virginia Lady)	
	Vanessa virginiensis (Virginia Lauy)	
		Provider (Swallowbirts)
	1 1 10 10 10 10 10 10 10 10 10 10 10 10	Pantlio eurymedon (Pale Swallowtail)
Danaidae (Mil	weed Ballcruces and the set of the set of the set	Papilio rutulus (Western Tiger Swallowtail)
	Danaus ginppus (Queen)	Papilio zelicaon (Anise Swallowtail)
	Dandus plexippus (Woharch)	
ATTI	Hylephila phyleus (Fiery Skipper) Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
110	Tyrgas albestens (Caternation Chippen)	Colias eurytheme (Alfalfa Butterfly)
		Colias harfordii (Harford's Sulfur)
		Contrate transferrer to the second seco
		Euchloe hyantis lotta (Southern Marble)
		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange)
		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathalis iole (Dwarf Yellow)
		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathalis iole (Dwarf Yellow) Phoebis sennae (Cloudless sulfur)
		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathalis iole (Dwarf Yellow) Phoebis sennae (Cloudless sulfur) Pontia protodice (Common White)
		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)
		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)
		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)
		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) Let Mill Apodemia mormo virgulti (Behr's Metalmark)
		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) L+ L+ Nathalis wrighti (Wright's Metalmark)
		Euchloe hyantis lotta (Southern Marble) 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) LH Hit Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark)
		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) LH LH Natolis wrighti (Wright's Metalmark) Calephelis wrighti (Wright's Metalmark)
		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathalis iole (Dwarf Yellow) Phoebis sentae (Cloudless sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) Light HTI Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids)
		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) LH LH Nathalis wrighti (Wright's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathalis iole (Dwarf Yellow) Phoebis sennae (Cloudless suffur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) HH Hill Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
0TBED.		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) LH LH Nathalis wrighti (Wright's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
OTHER:		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) Let Marbalis wrighti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
OTHER:		Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) Nathalis iole (Dwarf Yellow) Phoebis sentae (Cloudless suffur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) Light HT Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
OTHER:		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) HH Hill Apodemia mormo virgulti (Behr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
OTHER:		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) Lift Marble (Metalmarks) Lift Marble (Metalmarks) Satyridae (Satyrids) Coenonympha californica (California Ringlet)

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Surveyor Site Name Total Acres:	Map 5 Total A	<u>t []</u> Date Site	Location_ Elevat	Site Visit Number	ar <u>6</u> in
Hours Surveyed:	2-301	an	-	· · · · · · · · · · · · · · · · · · ·	en andre en
Time (24hr)		Sko-		Wind Cover 7max)	Temp (F)
6000	clear	10 % cloud cover	hazy)	1. 10	62
1000	clear	10 %.cloud cover	Hazy	1 2 6/2	1 2 2 3 2
1102	clear	% cloud cover	hazy	-214	1 . 3/2.5
130	clear	% cloud cover	hazy	1 - ALL	1 1
-417 11 14 A	clear	% cloud cover	hazy	La construcción de la construcci	1 m
	clear	% cloud cover	hazy		1 C 2 C 44
· · · · · · · · · · · · · · · · · · ·	clear	% cloud cover	hazy		14.
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy-	a a second of a	
and the set of	clear	% cloud cover	hazy		and the second second
19.00	clear	% cloud cover	hazy	Constant States	MARCE R
lander - state - ander	-clear	% cloud cover	hazy		
· · · · · · · · ·	clear	% cloud cover	hazy		+ 14 1

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

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

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Nymphaudae (Brush rooted Butternies)	Eycacroose (Bines)
Euphydryas editha quino (Qaino Checkerspot)	Columnia la dan caba (Paginy Blue)
Adelpha bredowii californica (California Sister)	Celaspina tadon echo (Echo Bluc)
Basilarchia-lorguini (Lorguin's Admiral)	Everes any nucla (western Talled Blue)
Charidryas gabbu (Gabb's Checkerspot)	Chaucopsyche lygaamus australis (Soduletti Blue)
(Chalcedon Checkerspot)	nemtargus ceraunus gyas (Euwalu's Bille)
Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acmon (Acmon Blue)
Junonia coenia (Buckcye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Closk)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Eycacaidae (Hanstreaks)
Thessalia leanira wrighti (Leanisa Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessà annabella (West Cozst Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa ataianta (Red Admiral)	Ht Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melīnus (Gray Hairstreak)
Vanessa virginiensis (Virginie Lady)	
	Paprisondae (Swallowiaits)
Danaidae (Milkweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
Danaus plexippus (Monerch)	Papilio zelicaon (Anise Swallowtail)
*	
Hesperidae	Richilar (Whiles and Oningenips)
Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
Hylephila phyleus (Ficry Skipper)	HH HT HT 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)
i contra di	Nathalis iole (Dwarf Yellow)
and the second se	Phoebis sennae (Cloudless sulfur)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
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where and and and and and a second	Kiodinidae (Metalmarks)
	Apodemia mormo virguli (Benr's Metalmark)
	Catepneus wright (wright's Metalmark)
	Conversion (California Director)
	Coenonympna caujornica (Cantornia Kinglet)
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Adult Survey

Location SHN	ICENTERES.	SHOU DEELO	RIVER ALEA SU	rvey Segment SULVE	JANEA (8	3)
Surveyor Life	E CHAMMAN	/	Date 13 A	PR 2016Survey Wee	k Number (7)
Survey Partner(s)					e	
Total Acres:	Portion Surv	eyed:		Elevation: Max	Min	

Time (24 hr)	% Cloud	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Sky		10.00	Wind (range)	Temp.(F)
Start 10:00	0	clear patchy o	overcast	drizzle	shower	Z-4 ml	67° F
11:00	Ð	clear patchy o	overcast	drizzle	shower	2. Math	7100
12:00	-0-	clear patchy o	overcast	drizzle	shower	4-6 mm	75°P
13:00	\$	clear patchy o	overcast	drizzle	shower	4-6 mb	76° F
14:00	D	clear patchy o	overcast	drizzle	shower	5-7 m	76 @
15:00	0	clear patchy o	overcast	drizzle	shower	3-644	78°P
Stop 16:00	0	clear patchy o	overcast	drizzle	shower	4-6 up	77°F

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

Butterfly Species	Count (Total)	Hill- topping	Bütterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		-
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Bluc)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		1	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	10+	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)	2	
Junonia coenia (Common Buckeye)		1000	Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	1	
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)		1	Pieridae (Whites and Orangetips)	12	1
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	ZOX	×
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	MB	
Danaus plexippus (Monarch)	1		Pontia protodice (Checkered White)	10+	×
Hesperidae			Colias eurytheme (Orange Sulphur)	2	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	1.1.1	
Hylephila phyleus (Ficry Skipper)	2		Eurema nicippe (Sleepy Orange)	11	
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		E T
Erynnis tristis (Mournful Duskywing)		11.2.1	OTHERS:	1	1
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)	1			_	10.000
Allides halesus (Great Purple Hairstreak)				1	
Incisalia augustinus (Western Brown Elfin)		1		1	
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	2				
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)				1	
Celastrina ladon (Echo Blue)				-	

Surveyor GAR CHATMAN Segment # SURVEJ ALEA (8) Date: 13 APR 2016

Comments			
comments.			
		40	
	the traffermentions		
Plant Communities and Hal	bitat Information:		
-			
Host Plants Present:	Planters exerts		
110st 1 luits 1 reseries	1 an ago acord		
	-		
Nootor Plante Present			
Nectal Flants Frescht.			
1 Ouino Sighting	Date:	GPS Location	
L Quillo Signiting	Dutte		
plate make maken	•		
Photographs Taken:			3.
1.	2.		6
4.	5.		0
7.	8.		y.
10.	11.		12.

			6.5
Location South	- TREAMOUT FACILITY	Survey Segment Surve	JAREA (4)
Surveyor GA	Eb CHATIMAN O	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 m/2	69° F
11:00	-0-	clear) patchy overcast drizzle shower	1-2 mh	TIPF
12:00	-8-	clear patchy overcast drizzle shower	2-4 mh	72°F
13:00	Ð	clear patchy overcast drizzle shower	24ml	73°F
14:00	D	clear patchy overcast drizzle shower	25 MM	74%
15:00	-0	clear patchy overcast drizzle shower	4-buch	74°F
Stop 15: 45	-0	clear patchy overcast drizzle shower	4-7 mb	7205

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

Butterfly Species	Connt (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	4	
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)		122	Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	2		Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	8		Papilio eurymedon (Pale Swallowtail)		1
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	11.2	
Vanessa atalanta (Red Admiral)	II	4	Papilio zelicaon (Anise Swallowtail)		X
Vanessa cardui (Painted Lady)	II		Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	2	×	Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	3	×
Dangus gilippus (Oucen)			Pieris rapae (Cabbage White)		1.1.1.1
Danaus plexippus (Monarch)		-	Pontia protodice (Checkered White)		1
Hesperidac			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Ficry Skipper)	1		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		11	OTHERS: Cloudless sul Dhur	1	
Erynnis propertius (Propertius Duskywing)		1000	(Phoebus Sennae)		1200
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)					1
Atlides halesus (Great Purple Hairstreak)	T.				1.
Incisalia augustinus (Western Brown Ellín)				1	
Callophrys perplexa (Perplexing Hairstreak)		1			
Strymon melinus (Gray Hairstreak)	4	-			
(Southern Blue)	-	-		-	-
Icarcia acmon (Acmon Blue)	-			-	-
Celastrina ladon (Echo Blue)	-	1			-
		1		-	

Surveyor anor Chromen

Segment # Survey Alor (4) Date: 14 AM 2016

Comments:			
Johnments:			
Plant Communities and Hab	oitat Information:		
1			
Host Plants Present	Plate mate + Cas	tilles execta	
Host Flaints I Tesent.	TTANTAGO ETECT + C+1	They can t	
Nectar Plants Present:			
Quino Sighting	Date:	GPS Location:	
Photographs Taken:			
	and the second se		
1.	2.	3.	
1.	2.	3. 6.	
1. 4. 7.	2. 5. 8.	3. 6. 9.	

Adult Survey

Location MISSION GORGE APER Surveyor GREGE CHARTIM AD		Survey Segment 4000	Y ALEA (7)
Survey Partner(s)	na chamma	Date Survey week	Number (1)
Total Acres:	Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	Ð	Clear patchy overcast drizzle shower	1-2 m	72° R
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
11:00	Ø	clear patchy overcast drizzle shower	ZMM	7700
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop / Z:00	0	clear patchy overcast drizzle shower	2-4mh	79°F

Habitat onsite (circle as applicable) hilltops ridger bek outcropt, 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-
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	3	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	10-20	1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	1	K.C.S.
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	+10	7
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)		1.1	Papilio rutulus (Western Tiger Swallowtail)		0.00
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		0
Vanessa cardui (Painted Lady)		1.1	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	0.000	12	Anthocharis cethura (Desert Orangetip)		
Danaidae	1		Anthocharis sara (Sara's Orangetip)	40	×
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	1.	
Danaus plexippus (Monarch)	11		Pontia protodice (Checkered White)	6	×
Hesperidae		1	Colias eurytheme (Orange Sulphur)		-1-
Heliopetes ericetorum (Northern White-Skipper)	2		Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Fiery Skipper)	2		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1	26.23
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:	T.	I
Erynnis propertius (Propertius Duskywing)				î	
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)	1				
Atlides halesus (Great Purple Hairstreak)	20			17	
Incisalia augustinus (Western Brown Ellin)				12	2 1 2
Callophrys perplexa (Perplexing Hairstreak)		1			
Strymon melinus (Gray Hairstreak)					6. 21
Glaucopsyche lygdamus (Southern Blue)				1	1
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)				1	
a second s					· · · · · ·

Surveyor Gree Curring

Segment # GULVOS ALGA (7) Date: 15 AM ZO16

omments:			
			*
		140	
		•	
			1
Plant Communities and H	abitat Information:		
ILe et Diente Present	Plate and + las	tille: enerthe	
Host Plants Fresent.	Plantage er cut + Cas	n eja cours	
2010			
and the second sec			
u -			
Nector Plante Present			
Nectar Flatts Fresche.			
Outro Sighting	Date:	GPS Location:	
U Quino Signang			
wi. 1 m l			
Photographs Taken:			3.
1.			6.
4.	5.		9.
7.	8.		<u>7</u> ,
10	11.		12.



Quino Checkerspot Survey Form

Adult Assessment

Surveyor 1	le Poureil	Date 4/11/16	Site Visit I	Number <u>7</u>
Site Name [MARS1+2	Site Location	Muran	ndr
Total Acres:	Total Acres Surveyed	: Elevatio	on: Max	Min
Hours Surveyed:	3'66"		100 m	

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
11:15	clear 65 % cloud cover	hazy	215	7.40
(x · · · · · · · · · · · · · · · · · · ·	clear $\neq D$ % cloud cover	hazy	316	7.9 "
10. 2012	clear 🚓 🖓 % cloud cover	hazy	1.10	7.17
14 10	clear in % cloud cover	hazy	1	63
134 1 ¹¹¹¹	clear 17 % cloud cover	hazy	· · · · · · · · · · · · · · · · · · ·	2
	clear % cloud cover	hazy		1
	clear % cloud cover	hazy		
	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 sols, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

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

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*20 second period, mph



Nymphalidae (F	Brush Footed Butterflies)	Lycaenidae (Blues)
(Jupunitary)	Euphydryas editha auino (Quino Checkerspot)	Ur, (i) Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
-	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	the state of the second second second
	Euphydryas chalcedona hennei (Uanna's Checkerspot)	Icarcia acmon (Acmon Blue)
- 1	[unomia connia (Buckeye)	Leptotes marina (Marine Blue)
1-	Numphalis antiona (Mourning Closk)	Philotes sonorensis (Sonoran Blue)
	Numericalis californica (California Tortoiseshell)	Plehelus melissa (Melissa Blue)
	Phycoides mulitta (Mylitta Crescent)	
	Polygonia sabrus (Satyr Anglewing)	
	Speweria callinne (Callinne Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
in the task	Vanessa cardui (Painted Ladv)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiansis (Virginia Lady)	
	runose va ganenoio (+ ngittie bita)	
		Papilionidac (Swallowtails)
Danaidae (Mill	oweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Danaidae (ivine	Danaus ailinnus (Oucen)	Papilio rutulus (Western Tiger Swallowtail)
	Dongus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
	Dunnas presippins (Montalon)	
Hamaridaa	and the second s	Pieridae (Whites and Orangetins)
resperiude	Emunic Superalis (Eunoral Ducky-wing)	Anthocharis cethura (Felder's Orangetip)
-	Halianatas aricatorum (Great White Skinner)	Anthocharis lanceolata (Grinnell's Marble)
1111	Hulenhila nhuleus (Fiery Skinner)	Anthocharis sara (Sara Orangetip)
100	Purgue albaseans (Checkered Skinner)	111X Artogeig rapae (Cabbage White)
	Tyrgus undertains (Onterkoron excepter)	Coligs 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)
		II Pontia protodice (Common White)
	nne	Zerene eurydice (California Dogface)
	a comune () the second prove (Di di di che de à
	Martin and Anna and A	Kindinidae (Metalmarks)
	succession that the provide the	(alast discussion of the states of the state
		Calepheits wright (wright's inclamatk)
k		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
OTHER:		
	- Horan Constant	

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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dale Powell	Date 4/11/16	Site Visit	Number 7	
Site Name	Mars	Site Location	MArria	1.01-	
Total Acres:	Total Acres Surveyed	: Elevati	on: Max	Min	
Hours Surveyed	1 21451				

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1430	clear	% cloud cover	hazy	3/6	670
1500	clear	% cloud cover	hazy	4/6	690
1	clear	% cloud cover	hazy	214	720
- 15	clear	% cloud cover	hazy	315	カイン
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
1	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		1

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


p.1

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (B	llues)
	Eunhydryas editha auino (Quino Checkerspot)		Brephidium exilis (Pygmy Blue)
	Adeloha bredowii californica (California Sister)		Celastring ladon echo (Echo Blue)
	Basilarchia lorauini (Lorguin's Admiral)		Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Blue)
	Eunhydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	1	
	Funbudryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antione (Mourning Cloak)	1	Philotes sonorensis (Sonoran Bluc)
	Nymphalis californica (California Tortoiseshell)		Plebeius melissa (Melissa Bluc)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia saturus (Satur Anglewing)	1000	
	Spawria callione (Callinne Fritillary)	Lycaenidae (F	fairstreaks)
	These alia looping wright (Leaning Checkerspot)	- D) outside (A	Atlides halesus (Great Purple Hairstreak)
	Vanassa annahalla (West Coast Lady)		Callaphyrs perplexa = dumetorum
11	Panessa annabena (West Coast Lady)	1	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	TUH	Strymon melinus (Gray Hairstreak)
INT	Vanessa virainiansis (Virainia Lady)		out mon monne (ord) managery
	ranessa vargimensis (ringinia Lady)		
		Danilionidae (Surllouteile)
Danaidaa (Mill	award Dutterfline)	1 aprilonidae (Papilio gununadan (Pele Suralioutail)
Danatuae (Ivitio	Danous cilingua (Queun)	-	Papillo entulus (Western Tiger Swallowtail)
	Danaus gluppus (Queen)	-	Papilio rationan (Anise Swallowtail)
	Danaus prexippus (Monaten)		a dparto zenedon (Parise o wanto wility
n		Dissides (SD):	the and (here active)
Hesperidae		Plendae (whi	(all a family and (Fall and Orangetin)
	Erynnis funeralis (Funeral Dusky-Wing)	2	Anthocharis cethura (Pelder's Changeup)
	Henopetes ericetorum (Great white Skipper)	1180	Anthocharis Inneonata (Chinaen S Marone)
	Hylephila phyleus (Fiery Skipper)	1 NGI I	Anthocharis sara (Sara Orangettp)
	Pyrgus albescens (Checkered Skipper)		Artogeta rapae (Cabbage Witte)
			Collas eurytheme (Alfalfa Butterity)
	representation of the second	-	Conas harjoran (Harlord's Sunur)
	Contraction of the second s	-	Euchide nyantis tota (Southern Marole)
			Eurema nicippe (Sicopy Orange)
	10-10-10-10-10-10-10-10-10-10-10-10-10-1		Ivaliants fore (Dwart Tchow)
			Phoebis sennde (Cloudless sultur)
	and the second		Ponna protoaice (Common White)
	njut to see the second s		Zerene eurydice (California Dogface)
		D' P 11 0	
	· Second and the second s	Riodinidae (M	Actionaries (Contraction of the Contraction of the
	in a second distance of the second distance o		Apoaemia mormo virguiti (Benr's Metalmark)
	n area		Calepheus wright (wright s Motalmark)
	and a second	Caturidae (Pat	traids)
-		Salyriuae (Sal	Componymphe endiforming (California Director)
	and the second		Coentry numa canformica (Cantonna Ringici)
OTHER-	(140) (140)		d same same same
omen.	an ang gan takan san ang ang ang ang ang ang ang ang ang a		
			· · · · · · · · · · · · · · · · · · ·
			and a second sec

Quino Checkerspot Survey Form

Adult Assessment

Surveyor D	ale Pourl	Date 4/12/16	Site Visit	Number	7
Site Name	MAR	Site Location	Mira	ingit	
Total Acres:	Total Acres Surveyed:	Elevation	on: Max	Min	
Hours Surveyed:	7'00"				

Time (24hr)	Sky	1	Wind (aver*/max)	Temp (F)
945	clear % cloud cover	hazy	J. J.	_1.1 74 7
1.00	clear % cloud cover	hazy	nir	100
1 - ET T	clear % cloud cover	hazy	1,202	25
1	clear 🐁 % cloud cover	hazy		
il esta	clear 🖆 % cloud cover	hazy		- y
1500	clear % cloud cover	hazy	$\mathbf{r}^{(1)}$	6 12
1610	clear % cloud cover	hazy	1.54	· · · ·
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		A second second second
	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

1-951-686-1497

p.4

A STATE OF A	Drush robaca Dattermes)	Lycaenidae (Blues)
	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
Lit	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Bluc)
14	Basilarchia lorguini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	0 a (
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
132	Junonia cognia (Buckeye)	1 Jontotes maring (Marine Blue)
-11	Nympholis antione (Mourning Cloak)	Philotas souceareis (Songran Dhua)
	Numphalis californica (California Tortoiseshall)	Dishaina maliana (Maliana Dhua)
10	Physicial confirmed (California Tottorsestien)	riebejus merissa (Merissa Blue)
	Polyconic sature (Soter Andonica)	
	Conversion and lines (Collings Existing)	Township (Relation by)
	Speyeria camppe (Camppe Frinnary)	Lycaenidae (Hairstreaks)
	Thessaud leantra wright (Leanira Checkerspot)	Attides halesus (Great Purple Hairstreak)
113.	Vanessa annabella (West Coast Lady)	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
maidae (Milk	weed Butterflies)	Papilio gurumadon (Pala Swallowtail)
	Danaus gilippus (Oueca)	Panilio nutulus (Viestern Tiger Swallowtail)
	Danaus alexianus (Monarch)	Papilio ralizace (Anise Swallowteil)
	Summe persippus (monuter)	rupulo zencaon (Pause Swallowian)
speridae		Pieridae (Whites and Orgnostine)
-A	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis cathura (Felder's Orangetin)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis langeolata (Crinnell's Mathle)
	Hylephila phyleus (Fiery Skinner)	IN Let bet an independence same (Same Orangetin)
111	Purgus albescons (Cheskened Skinner)	Antonnia sur a (Sala Orangenp)
-12:	The service of the se	Artogeta rapae (Caboage Winte)
		Conds eurymeme (Allalia Burterily)
		Colias harfordii (Harford's Sulfur)
		Euchloe hyantis lotta (Southern Marble)
	- Harrison	Eurema nicippe (Slcopy Orange)
	and the second s	Nathalis iole (Dwarf Yellow)
	the state of the s	Phoebis sennae (Cloudless sulfur)
-		Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
	· · · · · · · · · · · · · · · · · · ·	Kiodinidae (Metalmarks)
		Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Samuidaa (Retarida)
		Salynuae (Salynus)
	100	Coenonympha californica (California Ringlet)
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor Jun Found !!	Date 4/11/16 Site Visit Number 7
Site Name Mac	Site Location Miramar
Total Acres: Total Acres Surve	yed: Elevation: Max Min
Hours Surveyed: 6100 H	

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1115	clear 🛵	% cloud cover	hazy	215	700
1200	clear 70	o % cloud cover	hazy	316	700
1500	clear 7/	% cloud cover	hazy	3/5	745
Centre 1	clear Th	% cloud cover	hazy	2/6	510
10 160	clear 🐴	% cloud cover	hazy	416	59 m
1200	clear 6	% cloud cover	hazy	5 12 C	7.27
1215	clear 3	5 % cloud cover	hazy	35	70°
	clear	% cloud cover	hazy	10	
	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:

1



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Nymphalidae (B	rush Footed Butterflies)	Lycaenidae (B)	ucs)
Hymphanuae (D	Funbydrygs editha aving (Quino Checkerspot)		Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	1	Celastrina ladon echo (Echo Blue)
- 1	Basilarchia loravini (Loravin's Admiral)	-	Everes amuntula (Western Tailed Blue)
	Charidewas anhhii (Gabb's Checkerspot)	1	Glaucopsyche lygdamus australis (Southern Blue)
	Eupladenas chalcedona chalcedona	-	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkersnot)	1.000.000	
	Fundadores chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
7/1	Junonia cognia (Buckeye)	111	Leptotes marina (Marine Blue)
- 100	Nymphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Numphalis californica (California Tortoiseshell)	1	Plebeius melissa (Melissa Blue)
	Phycoides mulitta (Mulitta Crescent)		
	Polygonia saturus (Satyr Anglewing)	1	
	Soeverig callippe (Callippe Fritillary)	Lycaenidae (Ha	airstreaks)
	Thessalia legnira wrighti (Legnira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
	Vanessa annahella (West Coast Lady)	1000	Callophyrs perplexa = dumetorum
11(1		a marine	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	1 11	Strymon melinus (Gray Hairstreak)
Un	Vanessa virginiensis (Virginia Lady)		
		Papilionidae (S	wallowtails)
Danaidae (Milky	weed Butterflies)		Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtaii)
	Danaus plexippus (Monarch)	1 Line and the same	Papilio zelicaon (Anise Swallowtail)
11	A . I	Pieridae (White	es and Arangeting)
riesperidae	Emunia Amaralia (Emuaral Duala mina)	I Iondao (Wille	Authocharis cethura (Felder's Orangetin)
4	Halianataa aniastonum (Graar White Skinner)	the damage of the	Anthocharis lanceolata (Grinnell's Mathle)
111/11	Henopetes ericerorum (Great winte Skipper)	141	Anthocharis sara (Sara Orangetin)
thin	Pyrans albaseans (Checkered Skinner)	1 KU-L	Artogeig rappe (Cabbage White)
10	Tright and seens (checkeled chepper)	111	Colias eurytheme (Alfalfa Butterfly)
	sector and the sector of the s	- franciska and and and and and and and and and an	Colias harfordii (Harford's Sulfur)
	A second s		Euchloe livantis lotta (Southern Marble)
			Furema nicinne (Sleeny Orange)
			Nathalis jale (Dwarf Yellow)
			Phoebis sennae (Cloudless sulfur)
	1	111	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
		1	<u> </u>
	house an or	Rigdinidae (M	etalmarke)
		11. 14	Angelemia mormo viroulti (Behr's Metalmark)
		- Al tu	Calenhalis wrighti (Wright's Metalmark)
	and the second sec		Careprens wright i wight b treastanty
		Caturiday (Cat	-ida)
		Salyridae (Sal)	Community californica (California Rinelet)
1		1	Coentrympha carlot naca (Camorina Ringico)
OTHER:			
	and and the second s		
	. In The Contract		
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			111 March 11 March 11



p.5

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun	Provell	Date_	4/ialia	Site Visit	Number 7	<u> </u>
Site Name	Max	3-4-5	Site	Location	HAira	pendo	_
Total Acres:	Total	Acres Surveyed	i:	Elevation	on: Max	Min	
Hours Surveyed:	7'00"						

Time (24hr)	Sky	-	Wind (aver*/max)	Temp (F)
945	clear 60% cloud cover	hazy	8/0	1:40
1100	clear 38 % cloud cover	hazy	NO	54 PN "8
1200	clear 15 % cloud cover	hazy	13	710
1300	clear 5 % cloud cover	hazy	in le	75%
0011	clear 5 % cloud cover	hazy	36	riden 1 dt
15:00	clear 15 % cloud cover	hazy	5/2	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
1605	clear 25 % cloud cover	hazy	117	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
1645	clear 35 % cloud cover	hazy	315	- 1 ⁴ 4
	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



p.7

Nymphalidae (1	Bruch Footed Butterflies)	Lycaenidae (Blues)
Nymphanuae (1	Funhydryns editha guing (Quino Checkersnot)	[]] Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
l li	Basilarchia lorauini (Lorauin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche hygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
1	(Chalcedon Checkerspot)	
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
HTT	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (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)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Htt i	Vanessa annabella (Wost Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
11	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Milk	weed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Contraction (Contraction	Danaus gilippus (Oneen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Harneridae		Pieridae (Whites and Orangetins)
Trespertate	Ervnnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
	Helionetes ericetorum (Great White Skinner)	Anthocharis lanceolata (Grinnell's Marble)
111	Hylephila phyleus (Fiery Skipper)	WTI JAN Anthocharis sara (Sara Orangetip)
1111	Pyrgus albescens (Checkered Skipper)	Arlogeia 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)
		11 Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
-		
		Riodinidae (Metalmarks)
		Apodemia mormo virgulti (Behr's Metalmark)
	and the second	Calephelis wrighti (Wright's Metalmark)
	1.000 (A. 1997) (A. 1997) (A. 1997)	Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
OTHER:		
		in the second
1		and the second s
	111, ····	and the second
2		and a second



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	NOC	Powell	Date 4/13	116 5	Site Vişit	Number 7	7-
Site Name	Ma	0.5	Site Location	on	Mis	Awandy	
Total Acres:		Total Acres Surveye	ed: El	evation	: Max	Min	
Hours Survey	red: 6'3	N ⁽¹					

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
10:2 "	clear 70 % cloud cover	hazy	5/1	57°
11:20	clear 🦂 5 % cloud cover	hazy	12	
12.00	clear % cloud cover	r hazy	214	770
5 5 3	clear % cloud cover	hazy	1. 1.	1.2
11:27	cleap % cloud cover	r hazy	214	711
· · · · · ·	Clear % cloud cover	r hazy	. 1.5	760
15:30	cleap % cloud cover	t hazy	112	1.57
	clear % cloud cover	r hazy		1
	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 eresta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla

3

*20 second period, mph



Nymphalidae (Brush Footed Butterflies)	T Lycaenidae (Blues)
Funkydryas editha ayina (Ouino Checkersnot)	(Brephidium exilis (Pygmy Blue)
111 Adetoha bredawli californica (California Sister)	Celastring ladon echo (Echo Blue)
1 Basilarchia lorauini (Lorauin's Admiral)	Everes anyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	
Euphydryas chalcedona hennei	(learcia acmon (Acmon Blue)
(Henne's Checkerspot)	
141- Junonia coenia (Buckeye)	1 Leptotes marina (Marine Blue)
// Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Bluc)
Phycoides mylitta (Mylitta Crescent)	
Polvgonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritiliary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
- Hert Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
	(Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	
Vanessa virginiensis (Virginia Lady)	
D. H. APP. ID. ALA	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterfiles)	Papulo eurymedon (Pale Swanowian)
Danaus gilippus (Queen)	(1 Papillo ruluus (Western Tiger Swallowtan)
Dandus plexippus (Mionarch)	Papillo zelicaon (Altise Swallowian)
Hesperidae	Pieridae (Whites and Orangetips)
Ervnnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
1. Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
-1+7 -77 Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sultur)
the second se	Euchloe hyantis (otta (Southern Marble)
and the second sec	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwarf Yellow)
the second s	Phoebis sennae (Cloudless sulfur)
	111 Pontia prolodice (Common White)
	Zerene euryaice (California Dogtace)
	Riodinidae (Metalmarks)
	+ Hft Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	and the second
and the second	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
and the second	
OTHER:	
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	The second

Quino Checkerspot General Form

Adult Survey

Location 541	VICENTE RES.	SANDIELO	RIVER	ALOSurvey Segment_	SURVE,	AREA(8)
Surveyor GA	EL CHAMA	1	Date	20 APRIL ZOUSSUR	vey Week Ni	umber (8)
Survey Partner(s)						
Total Acres:	Portion Surve	eyed:		Elevation: N	/lax	Min

.

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 10:00	0	clear patchy overcast drizzle shower	2-4 uh	77° F
11:00	-0	clear patchy overcast drizzle shower	2-3 m	BPR
12:00	0	clear patchy overcast drizzle shower	3-5 mm	85° R
13:00	Ð	clear patchy overcast drizzle shower	Zulfah	BJOR
14:00	2	clear patchy overcast drizzle shower	2 Mun	89°F
15:00	D	Clear patchy overcast drizzle shower	3-6 mh	92°E
Stop 16:00	0	clear patchy overcast drizzle shower	4-7 wh	88° P

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

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	2	
Euphydras editha quino (Quino Checkerspot)		4	Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	1.5	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	1	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	1		Apodenia mormo (Mormon Metalmark)	5	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)		1.00	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	1	
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)		1.2011	Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	1	
Dangus gilippus (Queen)			Pieris rapae (Cabbage White)		
Dangus plexippus (Monarch)			Pontia protodice (Checkered White)	+10	
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Ficry Skipper)			Eurema nicippe (Sleepy Orange)		1
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1.	
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		1.2.2.2
Erynnis propertius (Propertius Duskywing)					1
Ochlodes agricola (Rural Skipper)					1.000
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)					1
Incisalia augustinus (Western Brown Elfin)	1				
Callophrys perplexa (Perplexing Hairstreak)					1
Strymon melinus (Gray Hairstreak)					
Glaucopsyche lygdamus (Southern Blue)					1
Icarcia acmon (Acmon Blue)		1		1	
Celastrina ladon (Echo Blue)				1	

Surveyor afor atomas

Segment # Survey Alory (8) Date: 70 All 7016

omments:							
	¥	SHAN	DEKNER TOP	SECOND	Brood	WINDING	DOWN
		7.2.1					
	¥.						
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			8				
	a and	Habitatl	nformation:				
lant Communiti	es and	Habitati	Indi mation.				
Host Plants Pres	ent:	CA	Allein ex.	etta			
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	-				-		
(
Nectar Plants Pr	esent:						
	_				-		
			Date		GPS Lo	ocation:	
U Quino Signtin	<u> </u>		Dates		01010		
Dhotographe Taka	n•		•				
rnotographs rake			2,			3.	
4.			5.			6.	
7.			8.			9.	
			11.			12.	5

Quino Checkerspot General Form

Location Sour	+ TREATMENT PLANT	Survey Segment Survey	AREA (4)
Surveyor and	at citram AN	Date ZI 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	Ð	clear patchy overcast drizzle shower	4-6 mp	74° F
11:00	0	clear patchy overcast drizzle shower	4-7.h	TTR
12:00	Ð	clear patchy overcast drizzle shower	5-8 m	790R
13:00	8	clear patchy overcast drizzle shower	6-94h	81° R
14:00	Ð	clear patchy overcast drizzle shower	6-9.h	83° F
15:00	O	clear patchy overcast drizzle shower	5-8nh	81º 72
Stop 16:00	0	clear patchy overcast drizzle shower	6-guh	79° E

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

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count. (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	6	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1	
Euphydras chalcedona (Chalcedon Checkerspot)		1.1	Plebejus melissa (Melissa Bluc)		
Charidryas gabbii (Gabb's Checkerspot)	1		Everes amyntula (Western Tailed-Blue)		1.5
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)	12	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	100		Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2	1.1	Papilio eurymedon (Pale Swallowtail)	1.	1
Vanessa annabella (West Coast Lady)	1.00		Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	2		Anthocharis cethura (Desert Orangelip)		
Danaidae			Anthocharis sara (Sara's Orangetip)		
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)		
Hesperidae			Colias eurytheme (Orange Sulphur)	1	
Heliopetes ericetorum (Northern White-Skipper)	1.1.1.1		Colias harfordii (Harford's Sulphur)	1	
Hylephila phyleus (Ficry Skipper)	12 20		Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)	(1.4)	
Erynnis tristis (Mournful Duskywing)		1-1-1	OTHERS: Cloudless cul dent	2	
Erynnis propertius (Propertius Duskywing)	1.1		(Phoches service)		
Ochlodes agricola (Rural Skipper)			(The Case) grante /	1000	1.1
Lycaenidae (Hairstreaks)				1.000	
Allides halesus (Great Purple Hairstreak)				1	
Incisalia augustinus (Western Brown Elfin)				1.0	
Callophrys perplexa (Perplexing Hairstreak)		1		1	
Strymon melinus (Gray Hairstreak)	8				100
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)					
				1.000	11

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last Communities and H	abitat Information:	
lant Communities and h		
Host Plants Present:	Planoto erecto, Castillein	epeta
Host Plants Present:	Plantago crecta, Castilleja	eneda
lost Plants Present:	Planotago crecta, Castilleja	enetta
lost Plants Present:	Planotago crecta, Castilleja	exeAq
lost Plants Present:	Planotago erecta, Castilleja	eneAg
Host Plants Present:	Planotago crecta, Castilleja	epeta
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Host Plants Present:	Planstage crecta, Castilleja	eveAz
Host Plants Present:	Planotago crecta, Castilleja	exeAq
Host Plants Present:	Manotago erecta, Castilleja	eneda
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Host Plants Present:	Manotago crecta, Castilleja	eveAz
Host Plants Present:	Planotago erecta Castilleja Date: GPS	Location:
Host Plants Present:	Planotago crecta Castilleja Date: GPS	eneda Location:
Host Plants Present:	Planotago erecta Castilleja Date: GPS	eneda Location:
Host Plants Present:	Planotago crecta Castilleja Date: GPS	Location:
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1.	Planotago crecta Castilleja Date: GPS	eneda Location:
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4.	Planotago crecta Castilleja Date: GPS	Events Interview 3. 6. 0
Host Plants Present: Nectar Plants Present: Quino Sighting Photographs Taken: 1. 4. 7.	Date: GPS	Exercise 3. 6. 9. 12

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Quino Checkerspot General Form

Adult Survey

Location Surveyor Survey Partne	(SSION GOING AFER ARE CHAINEN	Survey Segment <u>Survey</u> Date <u>ZZ MPPU 2016</u> Survey Week	ALEA (7) Number (8)
Total Acres:	Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	% Cloud	(there a	in and a second	Sky			Wind (range)	Temp (F)
Start 10:00	0	clear	patchy	overcast	drizzle	shower	1-21h	690F
		clear	patchy	overcast	drizzle	shower	1	
		clear	patchy	overcast	drizzle	shower		
11:00	Ð	clear	patchy	overcast	drizzle	shower	24/1	72°F
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop 12:00	0	clear	patchy	overcast	drizzle	shower	2-Much	73°p

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

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	4	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)	1100	
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	1.000	
Charidryas gabbii (Gabb's Checkerspot)		1	Everes amyntula (Western Tailed-Blue)	111777	
Phycoides mylitta (Mylitta Crescent)		1	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)		1.1.1	Riodinidae (Metalmarks)	1 1 1 1	
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	+20	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)	1	
Junonia coenia (Common Buckeye)	2		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	1.0	
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)	1	
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangetip)		
Danaidae	1.1.1.1		Anthocharis sara (Sara's Orangetip)	2	+
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	2	¥
Hesperidae			Colias eurytheme (Orange Sulphur)		1.00
Heliopetes ericetorum (Northern White-Skipper)	2	1	Colias harfordii (Harford's Sulphur)	1	
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)	1	10.00	Satyridae (Satyrids)	1 1	1
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)				10.1	
Lycaenidae (Hairstreaks)				1	
Allides halesus (Great Purple Hairstreak)				1	
Incisalia augustinus (Western Brown Elfin)				1.00	1.1
Callophrys perplexa (Perplexing Hairstreak)	1000				
Strymon melinus (Gray Hairstreak)	2				
Glaucopsyche lygdamus (Southern Blue)	-				
Icarcia acmon (Acmon Blue)		ù U			
Celastrina ladon (Echo Blue)					

Surveyor Aler CHARMAN Segment # SURVES MADA (7) Date: 27 MARIL 2016

omments:			
the SEL	OND BRODD OF MOR	MON METALMANIC	APPERQue
		41	
Plant Communities and Habi	at Information:		
			1
Host Plants Present:	Mate ereste + C	adiller exerta	
	Taurego titure		
Nector Plants Present:			•
Nettai Hants Hesent.			
		CDC Logation	
Quino Sighting	Date:	GPS Location;	
an l	•		
Photographs Taken:	2.	3	
		0	
1.	5.	6	•
1. 4. 7.	5. 8.	6).



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	The forme!	Date 4/17/16 Si	ite Visi	t Number 🖇
Site Name	MA. po lata	Site Location	Vieras	
Total Acres:	Total Acres Surveyed	Elevation:	Max	Min
Hours Surveyed	1: 2/45"			

Time (24hr)	and the second second	Sky		Wind (aver*/max)	Temp (F)
1. 1.2	clear	% cloud cover	hazy	519	919
12.00	clean	% cloud cover	hazy		S. X.
1,200	clear	% cloud cover	hazy	316	9.00
12.03	Clear	% cloud cover	hazy	512	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	1	
	clear	% cloud cover	hazy		1
	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



Manahalidaad	Death Easted Dutterflier)	T vocasidas /	lines)
raympnandae (Funhydryge aditika aning (Ouing Charlossnat)	Execution Charles	Rephidium exilis (Promy Blue)
	(dalahar bradawii galifowiga (California Sister)		Colostving Indon acho (Echo Blue)
	Basilaschia loravini (Loravin's Admiral)		Everage amuntula (Western Tailed Plue)
	Charidewas anthii (Cobb's Checkerspot)		Gloucoparticle (western Tance Diec)
	Euphydryas chalcedona chalcedona		Hemiorous corgunus guas (Edward's Blue)
	(Chalcedon Checkerspot)	-	Azomargus cordanas gras (Danada 5 0100)
	Euphydryas chalcedona hennei (Henne's Checkerspot)		Icarcia acmon (Acmon Blue)
111	Junonia coenia (Buckeye)	-	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
and the second se	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)		
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (F	lairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	_	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	11	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	- tut	and the second s
		Panilionidaa (Suciloutails)
Danaidea (Mill	oward Dutterflins)	Papinoniuae	Panilia augumadan (Pala Swallowtail)
Danalgac (Min	Denses cilianus (Oucon)		Papilio subulus (Western Tiger Swallowtail)
	Danaus gruppus (Queen)		Papilio ralianas (Anica Swallowtail)
	Danaus plexippus (Monarch)		Fapilio zencaon (Amse Swanowian)
Hesperidae		Pieridae (Whi	tes and Orangetips)
1	Erynnis funeralis (Funeral Dusky-wing)	1	Anthocharis cethura (Felder's Orangetio)
	Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)		Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	47	Artogeta rapae (Cabbage White)
			Collas eurymeme (Analia Butterny)
			Evaluation for an (Martin Lotta (Southern Marble)
			Europe niciona (Sleenv Orange)
	1. 11.0000 () () () () () () () () ()		Nathalis iole (Dwarf Vellow)
	and and a construction of the		Phoebis sennee (Cloudless sulfur)
	Contract Con		Portio protodice (Common White)
1	Tan an an annual an annual an		Zerene eurodice (Colifornia Dooface)
			zerene caryace (cantornia cograco)
	and a state of the	Rindinidae (M	(etalmatke)
		A X I	Anodemia mormo virgulti (Rebr's Metalmark)
	an angeneration and a state of the state of		Colaphalia wrighti (Wright's Metalmark)
	the second s		Careprietas wright (wright s weathark)
		Satyridae (Sat	yrids)
<u>.</u>	internet and an and		Coenonympha californica (California Ringlet)
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	0	and the state	, page front in second	6
Surveyor the	10 touri	Date	117/16 Site Visit	Number
Site Name	Acp >	Site I	ocation /VIII	Pre.d/
Total Acres:	Total Acres Su	urveyed:	Elevation: Max	Mm
Hours Surveyed: 3	5001	a saranne e	a series and the series of the	

Time (24hr)				wind .	Frimp (F)
1400	clear)	% cloud cover	hazy	- 18	90)
1550.	clear	% cloud cover	hazy	「「「なっても」	900
1700	clear	% cloud cover	hazy		:290
700	clear	% cloud cover	hazy	619	-25
	clear	% cloud cover	hazy	a in provide the provide	5
ar (mail 1 and	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy	1	141 L
	clear	% cloud cover	hazy	· · · · · · · · · · · · · · · · · · ·	
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	clear	% cloud cover	hazy		land the
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	clear	% cloud cover	hazy	Lands and	43
	clear	% cloud cover	hazy	de se con	- 25
	clear	% cloud cover	hazy	a (a) (b) (b) (b) (b)	
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Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

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Section 2.

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

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*20 second period, mph

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COMMENT:

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Nymphalidae (Brush Footed Butterflies	T Lycaendad (Bh	Ben Li dan anila (Parama Pha)
	Euphydryas editha quino (Quino Checkerspot)	1 th	Brephianim exilis (Fyginy Bluc)
	Adeipha bredowii calijornica (California Sister)		Celastrina ladon echo (Echo Blue)
	Basilarchia-lorquini (Lorquin's Admiral)	14	Everes amyniula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Blue)
	(Chalcedon Checkerspot)	-	Hemiargus cerdunus gyas (Edward S Bille)
	Euphydryas chalcedona hennei (Henne's Checkerspot)		Icarcia acmon (Acmon Blue)
III.	Junonia coenia (Buckeye).	1	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue).
	Phycoides mylitta (Mylitta Crescent)	-1.5G	
· · · · · · · · · · · · · · · · · · ·	Polygonia satyrus (Satyr Anglewing)		1/3
	Speyeria callippe (Callippe Fritillary)	Dycse aidae (12	or praises to a state of the second state of the
1. A.	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
10	Vanesså annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustimus (Brown Elfin)
	Vanessa cardui (Painted Lady)	2121	- Strymon melinus (Gray Hairstreak)
611	Vanessa virginiensis (Virginia Ladv)		3
	e	CALL MILL	
	and the second s	Reprinting	wallowings and the second s
Danaidae	levest Bine fliest states	e e	-Papilio eurymedon (Pale Swallowtail)
in an	Danaus gilionus (Queen)	1	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Quron)	1.1.1	Panilio zelicaon (Anise Swallowtail)
	Danage presspon (resolution)		
3-	<u>,</u> ,		in the second
Hesperidae	Erynnis funeralis (Funeral Dusky-wing) Heliopetes ericetorum (Great White Skipper)	j dicricac (White	Anthocharis cethura (Felder's Orangetip) Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)	111 68	Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
11	3 .	1. 11	Colias eurytheme (Alfalia Butterfly)
			Collas harfordii (Harford's Sullir)
	production and and and and		Euchice invantis lotta (Southern Marbic)
			Eurema nicippe (Sicepy Urange)
		-	Nathalis iole (Dwart Yellow)
		f in	Phoebis sennae (Cloudiess sulfur)
	Mar at the second se	1	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
	······································	Riodinidae (Mo	(antiarks)
	and the second	100	Colonholin unrichti (Wricht's Matelunada)
		1	Calepheus wright (wright's Metalmark)
		上进行的复数 过度	
		Saturidae (Saty	rias)
			Coenonympha californica (California Ringlet)
		1	and a second
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- 1.04 ¹			And Annual An	
Surveyor Ch L	- Faur	(Date 4	1.71 'L Site Visi	Number 8
Site Name Man	0 3 4 5	Site I	Location Min	have an
Total Acres:	Total Acres	Surveyed:	Elevation: Max	Min
Hours Surveyed:	7 M	an lateration	- 18	an age of the second

Time(24br)		Ský .	Wind 11	Temp (F) →
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NA MA	clear	%.cloud cover hazy	10 14 P 1. 11	1 I
100:	clear	% cloud cover hazy		
178.	clear	% cloud cover hazy	지구	270
100	(clear)	% cloud cover hazy	1	900
1400	clear	% cloud cover hazy	417	O
	clear	% cloud cover hazy	1. B. S. S. S.	
1,000	clear	% cloud cover hazy	4.52	
and the second	clear	%-cloud cover hazy-		87%
1	clear	% cloud cover hazy	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.020
5 x 1 x 1	clear	% cloud cover hazy	1	Tona t
	clear	% cloud cover hazy	line to the second	
10 - 10 - 12 - 12 - 11 - 12 - 12 - 12 -	clear	% cloud cover hazy	a anna an an an Anna Anna Anna Anna Ann	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)

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

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Plantago erecta, Plantago patagonica, Castilleja-exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla 1 21-

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*20 second period, mph

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1.125 6.2	Adelpha bredueri agli (unine Chicke spot)	11/2	Brephidium exilis (Pygmy Blue)
	Basilanskin Loweniai (camina (California Sister)		Celastrina ladon echo (Echo Blue)
1	Charidovas aphili (Cohb's Charles		Everes amyntula (Western Tailed Blue)
	Europudevers ekalendever ale bude		Glaucopsyche hygdamus australis (Southern Blue)
and the second	(Chalcedon Checkerspot)	1 .	Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hermei (Henne's Checkerspot)	1.	Icarcia acmon (Acmon Blue)
	Junonia coenia (Buckeye)	1	L'antotas minimu Oto No. 701. 2
	Nymphalis antiope (Mourning Cloak)		Bhilatas santas (Marine Blue)
	Nymphalis californica (California Tortoiseshell)		Plahaing maliana O (aliana Dias)
	Phycoides mylitta (Mylitta Crescent)		Teorgas menssa (Menssa Blue)
11	Polygonia satyrus (Satyr Angiewing)		N A
	Speyeric callippe (Callippe Frivillary)	Tyca miller (
	Thessalia leanira wrighti (Leanira Checkerspot)	1. Contraction of the	Allides balance (Great Dumla Haimen 1)
31	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Pemlexing Hairstreak)
	Vanessa atalanta (Red Admiral)	-	Incisatio annustimus (Braum Flfm)
	Vanessa cardui (Painted Lady)	1 1	Stromon melinus (Grav Hoinetaale)
	Vanessa virginiensis (Virginia Lady)	1	(ordy Lindon Cark)
1. Frank	and the second sec	Poll midne f	Mellowents: The second second
anaidae (Milka	weed Butterflies)	- A Contraction of the second of the	Papillo arminadon (Pale S.
	Danaus gilippus (Queen)		Papilio rutulus (Water Time C
	Danaus plexippus (Monarch)	1.1	Papilio raliano (Vestern Tigor Swailowtail)
			Contract (Amse Swallowtall)
esneridae	18. 4. 4		- 1 string excloser to lation Davil
appendiate (the state)	Francis funeralis (Funeral Duda	Piece ic OVbit	s and Orangetips) +
	Heliopatas aricelorum (Comp Blining Oli		Anthocharis cethuro (Felder's Orangetip)
	Huighbig philars (From Same)		Anthocharis Inceolate (Grianell's Machle)
the	Purgue albaseans (Checkend Chinad	11.	Anthocharis sara (Sara Orangetip)
	- Jugas autoscens (Catchered Skipper)		Artogeia rapae (Cabbage White)
		1	Colias eurytheme (Alfalfa Butterfly)
	and a second sec	1	Colias harfordii (Harford's Sulfar)
			Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
	territoria de la construcción de la		Nathalis iole (Dwarf Yellow)
		11	Phoebis sennae (Cloudless sulfur)
		11	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
	and the second se	CRAFT LARS	
		Ricdinidae (Me	talmarks)
		1. X	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrighti (Wright's Metalmark)
			Maria Cala and Cala a
		A CONTRACTOR OF	A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR AND
		Sat ridae (Satyr	ids)
		Sat tidae (Satyr	ids) Coenonympha californica (California Ringlet)
HER:		Sat tidae (Satyr	ids) Coenonympha californica (California Ringlet)
HER:		Sat, tidae (Satyr	ids) Coenonympha californica (California Ringlet)
HER:		Sat; tidae (Satyr	ids) Coenonympha californica (California Ringlet)
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HER:		Sat, ridae (Satyr	ids) Coenonympha californica (California Ringlet)

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Surveyor De	ic Powell	Date 4 1916	Site Visit	Number 2
Site Name W	1003	Site Location	1/1.10	unai
Total Acres:	Total Acres Surveyed	Elevati	on: Max	Min
Hours Surveyed:				

Time (24hr)	i ni	Sky		Wind (aver*/max)	Temp (F)
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	clear 9	6 cloud cover	hazy		
	clear %	6 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

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Nymphalidae (I	Brush Footed Butterflies)	Lycaenidae (Blues)
- Juponinuito (1	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
161	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
- șic	Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
and the second second	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
1 (19)	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	¹ Philotes sonorensis (Sonoran Blue)
in section.	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
- x -	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
		(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
1	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
1.7	Vanessa virginiensis (Virginia Lady)	
	and and a second se	Papilionidae (Swallowtails)
Dannidan (Mill	awand Duttarfias)	Papilio survmedon (Palc Swallowtail)
Analoae (IVIIIA	Danaus gilinnus (Queen)	Papilia rutulus (Western Tiger Swallowtail)
	Danaus playionus (Queen)	Papilia zelicaon (Anise Swallowtail)
-1	Danais presippus (woneren)	
lesneridae	and the second	Pieridae (Whites and Orangetips)
	Ervnnis funeralis (Funeral Dusky-wing)	Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)	('se MI 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)
	10.00	Apodemia mormo virgulti (Bchr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Saturidae (Saturids)
		Coenonympha californica (California Ringlet)
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Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Q.	1011	Date = 1 . 6	Site Visit N	Jumber <u>8</u>
Site Name	Map		Site Location	Mirona	- Andrewson -
Total Acres:	Total	Acres Surveyed:	Eleva	tion: Max	Min
Hours Surveyed:	6/001				

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1100	-ctear	% cloud cover	hazy	5/7	860
(202)	clēár	% cloud cover	hazy	4/7-	$\mathcal{A} \neq \mathcal{A}$
1300	clear	% cloud cover	hazy	3/6	900
1400	clear	% cloud cover	hazy	58	Cig"
1500	clear	% cloud cover	hazy	417	890,
1600	clear	% cloud cover	hazy	35	850
1700	clear	% cloud cover	hazy		
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	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



Nymphalidae (Brush Footed Butterflies)	I vegenidae	(Blues)
- i y inplandice y	Eughydroas editha auino (Quino Checkersnot)	- Cycacindae	Reenhidium avilis (Pyamy Blue)
11	Adelpha bredowii californica (California Sister)	- <u>, nr</u> -	Celastring Iddon echo (Echo Blue)
	Basilarchia lorauini (Lorauin's Admiral)		Everes amontula (Western Tailed Blue)
	Charidrvas gabbii (Gabb's Checkerspot)	1	Glauconsyche lyadamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona		Hemiorous ceraunus avas (Edward's Blue)
	(Chalcedon Checkerspot)		Towner Sup cer mining grup (Towner a prac)
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	1	ion one donion (i tomon bruo)
LHT I	11 Junonia coenia (Buckeye)	T	Leptotes moring (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philoles sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebeius melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)		
	Speyeria callippe (Callippe Fritillary)	Lycaenidae	(Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	JP	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	10	Callophyrs perplexa = dumetorum
111			(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	111	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	111	Strymon melinus (Gray Hairstreak)
i Ne	Vanessa virginiensis (Virginia Lady)		
-		Papilionidae	e (Swallowtails)
Danaidae (Mill	(weed Butterflies)		Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	11	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
1	the second s		
Hesperidae	Long To all the second s	Pieridae (W	hites and Orangetips)
	Erynnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)
A contract of the second	Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)	IT	K Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	1111	Artogeia rapae (Cabbage White)
	1	11	Colias eurytheme (Alfalfa Butterfly)
		1 10	Colias harfordii (Harford's Sulfur)
		å	Euchloe hyantis lotta (Southern Marble)
	100 000 000 000 000	-	Eurema nicippe (Sleepy Orange)
			Nathalis iole (Dwarf Yellow)
		4	Phoebis sennae (Cloudless sulfur)
		- 111	Pontia protodice (Common White)
		1.	Zerene eurydice (California Dogface)
		-	
			a second in the second s
		Riodinidae (Metalmarks)
		ALC :	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis verighti (Wright's Metalmark)
		Count day 20	
	in the second	Salyridae (Sa	
	- Penne - Alexandre - Alexandr	170-0-0-	Coenonympna californica (California Ringlet)
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15/10	clear) %	cloud cover	hazy		sha	1 de -	9C	
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Habitat onsite: open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, nectar sources

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Symphonicae (B	nutle Provide Plantic Initian and the second state	A reacturdic (15)	Deski i marili (Danne Pha)
- Contraction	Euphydryas editha quino (Quino Checkerspot)	1 phill	Brephiaium exuis (Pyginy Blue)
111	Adelpha bredowii californica (California Sister)	1.0.1	Celastrina idaon echo (ECDO Blue)
	Basilarchia lorquini (Lorquin'slAdmiral)	the sector	Clauseres anynaud (western 18100 Blue)
- Denne	Charidryas gabbii (Gabb's Checkerspot)	1 m	Glaucopsyche lygaamus dustratis (Soutient Blue)
	Euphydryas chalcedona chalcedona	1.0 1.00	Hemiargus ceraunus grus (Daward S Didv)
	(Chalcedon Checkerspot)		Icoreia genera (Acmon Blue)
	Euphydryas chaiceaona nennei	-	
the web-	(Henne's Checkerspol)	1	Lantatar maring (Marine Blue)
MI IN	Junoma coema (Buckeye)		Philotes sonoremsis (Sonoren Blue)
	Nymphalis antiope (Mourning Cloak)		Platning maligra (Melisse Blue)
The and contraction	Nymphalis californica (California Lonoiscater)	1	.Tieocjus metasta (monard bioc)
	Phycoides mynina (Wynua Crescent)	is dri	
E.	Polygonia salyrus (Salyr Anglewing)	Par Colorado Colorado	and the first of the second
	Thereadia Jacobies weight (Leonies Checkersnot)	Everence	Atlides halesus (Great Purple Hairstreak)
	Venana amahalla (West Coast I adu)	1. ····································	Callophus perplexa = dumetorum
Jet 111 -	Vanessa Unnabella (WESI Coasi Lady)		(Perplexing Hairstreak)
des letter and	Vanessa atalanta (Red Admiral)	- +	Incisalia augustinus (Brown Elfin)
1	Vanessa cardui (Painted Lady)	1. 1.	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Ladv)	S Area Date	A 1998 A
2		8 1 2 m 1 31	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Proposition	
			Papilio eurymedon (Pale Swallowtail)
11	Danaus gilippus (Queen)		Papilio rutilus (Western Tiger Swallowtail)
4	Danaus plexippus (Monarch)	1. 12 . 15 - FR	Papilio zelicaon: (Anise Swallowtail)
	and the second second second second second second		a to the second se
A Martine Constant			
ALACES DESIGNATION CONTRACTOR	Francis Generalis (Funeral Ducky-wing)	CON CONCERNMENT OF TAXABLE	Anthocharis cethurg (Felder's Orangetip)
	Halionater ariantorum (Great White Skinner)		Anthocharis lanceolata (Grinnell's Marble)
and the orth	The dependence (Color Mart Color Chinner)	WWI	11 Anthocharis sara (Sara Orangetin)
11.1	Burger allowers (Checkard Skipper)	- Contract	Artogeia rapae (Cabbage White)
XII	Tyrgus aubescens (Cucckered Skipper)	aline alteres	Colian mentheme (Alfalfa Butterfly)
	Application and a providence of the starts.	ALL NT OF	Colias harfordii (Harford's Sulfur)
			Fuchloe invantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
	the state of the s	- B	Nathalis jole (Dwarf Yellow)
		111	Phoebis sennae (Cloudless sulfur)
		M. I	Pontia protodice (Common White)
			Zerene ewydice (California Doeface)
the second second			
		PERCENSION CONTRACTOR	
-	and the second s	Riodinidae (M	(etalmarks)
		1441	Apodemia mormo virgulti (Behr's Metalmark)
		1 4 4	Calephelis wrighti (Wright's Metalmark)
		1	and the second
10 V			
	1.	Satyridae (Sat	yrids)
			Coenonympha californica (California Ringlet)
		1	
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Justiciae 1	Smith Ported Clutterflies)	Lycacoidae (B	lecs)
2	Euphydryas editha quino (Quino Checkerspot)	1 HT	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	1	Celastrina ladon echo (Echo Blue)
	Basilarchia lorquini (Lorquin SlAdmiral)	12.0	Everes amyntula (Western Tailed Bhic)
	Charidryas gabbii (Gabb's Checkerspot)	1.10	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	1 a 194	Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
. 11	Emoria comia (Buchave)	1	Lentoles marina (Marine Blue)
11	Numericalia antione (Magning Clock)		Philotes sonorensis (Sonoran Blue)
	Nymphalis antiope (Mounning Cloak)		Plahajus melissa (Melissa Blue)
	Nymphalis californica (California Torioiscsucit)	100000 1450	
	Phycoldes mynud (brynul Clescent)		
	Polygonia salyrus (Salyr Anglewing)	U.D. Standing State	and a second
	Speveria callippe (Callippe Fittinary)	1000 ASICOLOROSA	Atlides balance (Great Purple Hairstreak)
C. Corner	Inessalia leanira wright (Leanira Checkerspor)	- J*10.8 14/5*	Callanhum insurface = dumatorum
- 1	Vanessa annabella (West Coast Lady)		(Perplexing Hairstreak)
a ester or	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Blin)
	- Vanessa cardui (Painted Lady)	1 11	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
		ind with	
	and a second	.Taplacada	Stationalism
		W L	Papilto eurymedon (Palc Swallowtail)
	Danaus gilippus (Queen)	10	Papilio runilus (Western Tiger Swallowtail)
	Danaus plexiopus (Monarch)	Margare 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Papilio zelicaon (Anise Swallowtail)
		1	a siyala artaqat ar
	Erynnis funeralis (Funeral Dusky-wing) Heliopetes ericetorum (Great White Skipper) Hylephila phyleus (Fiery Skipper)	- ANT	Anthocharis cethura (Felder's Orangetip) Anthocharis lanceolata (Grimell's Marble) Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	1	Ariogeia rapae (Cabbage White)
	a see) a mereter it repairing meretering a set from	· · · · · · · · · · · · · · · · · · ·	" Collas eurytheme (Atfalfa Butterfly)
	i ent	والمعادية والمحافية	Colias harfordii (Harford's Sulfur)
		De como de se	Euchloe hyantis lotta (Southern Marble)
		1	Eurema nicippe (Sleepy Orange)
		1 martine and the	Nathalis iole (Dwarf Yellow)
	and a strength of the strength	11	Phoebis sennae (Cloudless sulfur)
		11	Pontia protodice (Common White)
-	en e	15.200	Zerene eurydice (California Dogface)
		Diodinidas O	(eta]marke)
	and the second s	NICOLINGAC (N	(notalina is)
		1141	Apoannia mormo vugun (Benr & Metalitare)
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IER:		Satyridae (Sa	Calephelis wrighti (Wright's Metalmark)
IER:		Satyridae (Sa	Calephelis wrighti (Wright's Metalmark)

Quino Checkerspot General Form

Location SAN VICENTE PER.	SAN DIELO RIVER	ARENS	Survey Segment	QCB suprer	AREA (8)
Surveyor GREG CUMM	h	Date 26	APRIL ZOIL SU	rvey Week Num	ber (9)	2
Survey Partner(s)	100		and the second of			č.,

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 4-6mm	65°F
11:00	20°10	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° R
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, actar sources.

Nymphalidae (Brush Footed Butterflies)Leptotes marina (Marine Blue)Euphydras editha quino (Quino Checkerspot)Philotes sonorensis (Sonoran Blue)Euphydras chalcedona (Chalcedon Checkerspot)Plebejus melissa (Melissa Blue)Charidryas gabbii (Gabb's Checkerspot)Everes amyntula (Western Tailed-Blue)Phycoides mylitta (Mylitta Crescent)Brephidium exilis (Western Pygmy-Blue)Thessalia leanira (Leanira Checkerspot)Riodinidae (Metalmarks)Nymphalis antiopa (Mourning Cloak)Apodenia mormo (Mormon Metalmark)Basilarchia lorquini (Lorquin's Admiral)Papilionidae (Swallowtails)Junonia coenia (Common Buckeye)Papilio eurymedon (Pale Swallowtail)	Count (Total)	Hill-
Euphydras editha quino (Quino Checkerspot)Philotes sonorensis (Sonoran Blue)Euphydras chalcedona (Chalcedon Checkerspot)Plebejus melissa (Melissa Blue)Charidryas gabbii (Gabb's Checkerspot)Everes amyntula (Western Tailed-Blue)Phycoides mylitta (Mylitta Crescent)Brephidium exilis (Western Pygmy-Blue)Thessalia leanira (Leanira Checkerspot)Riodinidae (Metalmarks)Nymphalis antiopa (Mourning Cloak)Apodenia mormo (Mormon Metalmark)Basilarchia lorquini (Lorquin's Admiral)Papilionidae (Swallowtails)Junonia coenia (Common Buckeye)Papilio eurymedon (Pale Swallowtail)		
Euphydras chalcedona (Chalcedon Checkerspot) Plebejus melissa (Melissa Blue) Charidryas gabbii (Gabb's Checkerspot) Everes amyntula (Western Tailed-Blue) Phycoides mylitta (Mylitta Crescent) Brephidium exilis (Western Pygmy-Blue) Thessalia leanira (Leanira Checkerspot) Riodinidae (Metalmarks) Nymphalis antiopa (Mourning Cloak) Apodenia mormo (Mormon Metalmark) Basilarchia lorquini (Lorquin's Admiral) Papilionidae (Swallowtails) Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)		
Charidryas gabbii (Gabb's Checkerspot) Everes amyntula (Western Tailed-Blue) Phycoides mylitta (Mylitta Crescent) Brephidium exilis (Western Pygmy-Blue) Thessalia leanira (Leanira Checkerspot) Riodinidae (Metalmarks) Nymphalis antiopa (Mourning Cloak) Apodemia mormo (Mormon Metalmark) Basilarchia lorquini (Lorquin's Admiral) Papilionidae (Swallowtails) Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)		
Phycoides mylitta (Mylitta Crescent) Brephidium exilis (Western Pygmy-Blue) Thessalia leanira (Leanira Checkerspot) Riodinidae (Metalmarks) Nymphalis antiopa (Mourning Cloak) Apodemia mormo (Mormon Metalmark) Basilarchia lorguini (Lorquin's Admiral) Papilionidae (Swallowtails) Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)		1.7.15
Thessalia leanira (Leanira Checkerspot) Riodinidae (Metalmarks) Nymphalis antiopa (Mourning Cloak) Apodenia mormo (Mormon Metalmark) Basilarchia lorquini (Lorquin's Admiral) Papilionidae (Swallowtails) Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)		
Nymphalis antiopa (Mourning Cloak) Apodenia mormo (Mormon Metalmark) Basilarchia lorquini (Lorquin's Admiral) Papilionidae (Swallowtails) Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)		2 - 21
Basilarchia lorquini (Lorquin's Admiral) Papilionidae (Swallowtails) Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)	+15	
Junonia coenia (Common Buckeye) Papilio eurymedon (Pale Swallowtail)		
		5 70
Vanessa annabella (West Coast Lady) Papilio rutulus (Western Tiger Swallowtail))	1
Vanessa atalanta (Red Admiral) Papilio zelicaon (Anise Swallowtail)		1
Vanessa cardui (Painted Lady) Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady) Anthocharis cethura (Desert Orangetip)		
Danaidae Anthocharis sara (Sara's Orangetip)	6	1
Danaus gilippus (Queen) Pieris rapae (Cabbage White)	- 0	1
Danaus plexippus (Monarch) Pontia protodice (Checkered White)	+20	1
Hesperidae Colias eurytheme (Orange Sulphur)		S
Heliopetes ericetorum (Northern White-Skipper) Colias harfordii (Harford's Sulphur)		2
Hylephila phyleus (Fiery Skipper) Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper) Satyridae (Satyrids)		1.1.1.1
Erynnis funeralis (Funereal Duskywing) Z Coenonympha californica (Common Californica Ringlet)	mia	
Erynnis tristis (Mournful Duskywing) OTHERS: Lynne blue		
Erynnis propertius (Propertius Duskywing)		1
Ochlodes agricola (Rural Skipper)		
Lycaenidae (Hairstreaks)		1.000
Ailides halesus (Great Purple Hairstreak)		
Incisalia augustinus (Western Brown Elfin)		
Callophrys perplexa (Perplexing Hairstreak)		
Strymon melinus (Gray Hairstreak)		
Glaucopsyche lygdamus (Southern Blue)	فعسار فخص	-
Icarcia acmon (Acmon Blue)		1
Celastrina ladon (Echo Blue)		1

Surveyor Liter Citerman Segment # OCB survey Aller (8) Date: 26 APR 2016

Comments:			
		×	
Plant Communities and Habita	t Information:		
Host Plants Present: 0/	1		
riost mantes i resent. Pla	atago erecta		
Nectar Plants Present:	Lake Lathering	Rock hats RI. Lake	
(19)	TRAINI / LAJINENIA /	parantary placatches /	
Quino Sighting	Date:	GPS Location:	
	•		
Photographs Taken:			
1.	2.	2.	
4.	5.	6	
7.	8.	0.	
10.	11.		
		14.	and the second sec

Adult Survey

2

Location Thorn	OUT PLANT	Survey Segment Survey AREA (4)
Surveyor GREF	CHAMMAN	Date 27 April Toll Survey Week Number (9)
Survey Partner(s)		
Total Acres:	Portion Surveyed:	Elevation: Max Min

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start /0:00	25%	clear patchy overcast drizzle shower	6-8 up	65° 2
11:00	25%	clear patchy overcast drizzle shower	6-8 mp	66° F
12:00	250%	clear patch overcast drizzle shower	1	67°E
13:00		clear patch overcast drizzle shower		68° F
14:00		clear patchy overcast drizzle shower		68°F
15:00		clear matche overcast drizzle shower	L	68°F
Stop 16:00		clear patchy overcast drizzle shower	V	68° E

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

Butterfly Species	Count. (Total)	Hill- topping	Butterfly Species	Count: (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	6	1
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Lcanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	8	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		1
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		1000
Vanessa virginiensis (American Lady)		1.1.1.1	Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	1.000	
Danaus gilippus (Queen)		1.00	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)	1.0		Pontia protodice (Checkered White)	5	
Hesperidae			Colias eurytheme (Orange Sulphur)	1	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		102.00
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		1.4	OTHERS:	1.2	1
Erynnis propertius (Propertius Duskywing)	1				
Ochlodes agricola (Rural Skipper)					19.00
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)	-				
Incisalia augustinus (Western Brown Elfin)	1				
Callophrys perplexa (Perplexing Hairstreak)	1.000				
Strymon melinus (Gray Hairstreak) Glaucopsyche lygdamus (Southern Blue)	6			_	
Icarcia acmon (Acmon Blue)				1	
Celastrina ladon (Echo Blue)				-	

Surveyor Great Comman Segment # Sugar ARGA (4) Date: 27 APRIL 2016

Comments:			
		· · · · · · · · · · · · · · · · · · ·	
		+	
Plant Communities and Habi	itat Information:		
		No. of the second se	
2.1			
Host Plants Present:	lantago creata / Ca	stille a exerta	
	0 /		
1			
N. A. DI A. D. A. A.			
Nectar Plants Present: Cry	stantes , Latteria,	buckulicater, Encer	is .
		/	
Ouino Sighting	Data		
	Date:	GPS Location:	
Bhotograph - Th-1	•		
rnotographs Taken:		1	
1.	2.	3.	
4.	5.	6.	and the second
7.	8.	9.	
10.	11.	12.	

Quino Checkerspot General Form

Adult Survey

Location Mession Corse Apera's	Survey Segment AREA ()
Surveyor Geer Cuppen and	Date 29 Mail 2016 Survey Week Number (9)
Survey Partner(s)	
Total Acres: Portion Surveyed:	Elevation: Max Min

Sky Wind (range) Temp (F) Time (24 hr) % Cloud 65° F 6-8 cm 10% clear patchy drizzle Start 10:00 overcast shower 66° F 10%0 clear patchy overcast drizzle shower 11:00 Sak 66°E 10% clear patchy drizzle shower -8ú overcast 12:00 drizzle shower clear patchy overcast clear patchy drizzle shower overcast drizzle clear patchy shower overcast 6-8 up 68°= 100% clear patchy overcast drizzle shower Stop 13:00

Habitat onsite (circle as applicable): hillions ridge, ock outcrops open soils, soil crusts, day soils, old roads Plantago Castilleja, Cordylanthus, Antirrhinum, nectar sources)

Butterfly Species	Count. (Total)	Hill-	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	7	1.000
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		11.00
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	2		Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)	1		Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)		<u> </u>	Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)	100.00	
Vanessa virginiensis (American Lady)			Anthocharis cethura (Desert Orangelip)	2	
Danaidae			Anthocharis sara (Sara's Orangetip)		-
Danaus gilippus (Queen)		1	Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	5	
Hesperidae			Colias eurytheme (Orange Sulphur)	(=)	
Heliopetes ericetorum (Northern White-Skipper)	2		Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		1
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		1
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)		1			
Lyczenidze (Hairstreaks)				1.0	
Allides halesus (Great Purple Hairstreak)				1.	
Incisalia augustinus (Western Brown Elfin)				1.000	
Callophrys perplexa (Perplexing Hairstreak)				1	
Strymon melinus (Gray Hairstreak)	2				
Glaucopsyche lygdamus (Southern Blue)				1	
Icarcia acmon (Acmon Blue)		1			
Celastrina ladon (Echo Blue)				1	

Surveyor LAEZ CHATMAN

Segment # suprog Alter (7) Date: 29 Mar 2016

Comments:			
			4
Plant Communities and Habitat Inform	ation		
Plant Communities and Habitat Inform			
Host Plants Present: Plantaso el	coft		
0-			
		17.0.7	
Nectar Plants Present: Contaithe	Blue-dicks	Lathenia, Bud	ukeat
	/		
	N - 4	OPO I	
U Quino Signting	Date:	GPS Location:	
•			
Photographs Taken:			
1.	2.	3.	
4.	5.	6.	
7.	8.	9.	
10.	11.	12,	7



Quino Checkerspot Survey Form

Adult Assessment

1

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Surveyor §		Date 464 14 Site Visi	t Number
Site Name	Marine intering	Site Location (1	3.6
Total Acres:	Total Acres Surveye	d: Elevation: Max	Min
Hours Surveyed	: 2414		

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
3	clear	% cloud cover	hazy		
11 00	clear	% cloud cover	hazy	476	72)
1: dia	्टोच्विर	% cloud cover	hazy	-17	76 -
19.34	clear	% cloud cover	hazy	j	1. I. 8
RIC	clear	% cloud cover	hazy	\$ 12	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
and the second second	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, Rlantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla

*20 second period, mph


Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
- Contraction of the	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
	Adelpha bredowil californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (Lorguin'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 antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Const Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Mil	kweed 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)
	and the second	Colias harfordii (Harford's Sulfur)
· · · · · · · · · · · · · · · · · · ·		Euchloe hyantis Iona (Southern Marble)
		Eurema nicippe (Sleepy Orange)
1		Nathalis iole (Dwarf Yellow)
	and the second	Phoebis sennae (Cloudless sultur)
		Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
		Riodinidae (Metalmarks)
-		(i Apodemia mormo virgulti (Behr's Metalmark)
	a la construction de la construc	Calephelis wrighti (Wright's Metalmark)
		Saturidae (Saturide)
		Coenonympha californica (California Ringlet)
OTHER:	and a first of the part of the second s	

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Quino Checkerspot Survey Form

Adult Assessment

p.2

Surveyor Cale Paule II	Date the has	Site Visit N	Number 1
Site Name Martin State	Site Location	Miles	wa [
Total Acres: Total Acres Surveyed	: Elevatio	n: Max	Min
Hours Surveyed: 6'00"			

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
10.20	clear 75 % cloud cover has	zy 6/10	63
11000	clear 70% cloud cover has	zy 7	1.
12.313	clear 50 % cloud cover has	zy 47	1. S
13.00	clear 5% cloud cover has	zy 4/2	1
1.00	clear 7% cloud cover ha	zy n ^v an	7
15 00	clear () % cloud cover has	zy +	1.7
200	clear 6 % cloud cover ha	zy Ale	627
1130	clear 50% cloud cover ha	zy 5h	660
-10-00	clear % cloud cover ha	Zy	
	clear % cloud cover ha	zy	
	clear % cloud cover ha	zy	
	clear % cloud cover ha	Zy	Line
	clear % cloud cover ha	zy	and the second

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

Jun 20 16 11:42a

11:42a Dale A Powell

1-951-686-1497

p.21

wmnhalidae (P	rush Equited Butterflies)	Lycaenidae (F	Blues)		
ayinphianalae (L	Euphydryas editha quino (Quino Checkerspot)	1	Brephidium exilis (Pygmy Blue)		
1	Adelpha bredowii californica (California Sister)	1	Celastrina ladon echo (Echo Blue)		
	Basilarchia larauini (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)	l	Icarcia acmon (Acmon Blue)		
T	Junonia cognia (Buckeye)	101	Leptotes marina (Marine Blue)		
	Nymphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)		
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)		
	Phycoides mylitta (Mylitta Crescent)				
	Polygonia satyrus (Satyr Anglewing)		interior and a second		
	Speverig callippe (Callippe Fritillary)	Lycaenidac (Hairstreaks)			
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)			
141	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)		
1410	Vanessa atalanta (Red Admiral)		Incisalia augustimus (Brown Elfin)		
	Vanessa cardui (Painted Lady)	1	Strymon melinus (Gray Hairstreak)		
-	Vanessa virginiensis (Virginia Lady)				
	· · · · · · · · · · · · · · · · · · ·	Papilionidae	(Swallowtails)		
Danaidae (Milk	weed Butterflies)	S. Contraction	Papilio eurymedon (Pale Swallowtail)		
- Aller Aller	Dangus gilippus (Queen)	11	Papilio rutulus (Western Tiger Swallowtail)		
	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)		
Hecneridae		Pieridae (Wh	lites and Orangetips)		
respertuae	Emmuis Superalis (Euneral Dusky-wing)		Anthocharis cethura (Felder's Orangetip)		

Adult Assessment

Surveyor	ne	(sol	eli	Date 41-16	Site Visit	Number
Site Name	Ma	e5	2,4	_ Site Location _	Miga	W
Total Acres:		'Total	Acres Surveyed	: Elevati	on: Max	Min
Hours Surveyed	E UP					

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
÷ 1	clear	% cloud cover	hazy	14 A	2.7
IGA	clear	% cloud cover	hazy	72 Je	5
11:07	clear	% cloud cover	hazy	·]}7	5/22 0
1 7	clear 5	% cloud cover	hazy	4/6	775
12.00	clear 🗁	% cloud cover	hazy		10
125	clear 🕤	% cloud cover	hazy		11
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		1
	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

1-951-686-1497



VIIIII ATTACT	Brush Footed Butterflies)	Lycaenidae (Blues)	
lymphantiac (i	Eunhydryns editha guing (Quing Checkerspot)	Brephidium exilis (Pygmy Blue)		
1.1.	Adelnha bredowii californica (California Sister)		Celastrina ladon echo (Echo Blue)	
	Basilarchia lorauini (Lorauin's Admiral)	-	Everes amyntula (Western Tailed Blue)	
	Charidryas gabbii (Gabb's Checkerspot)	1	Glaucopsyche lygdamus australis (Southern Blue	
	Funhydryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Bluc)	
	(Chalcedon Checkerspot)	1		
	Funhydryas chalcedona hennei	1	Icarcia acmon (Acmon Blue)	
	(Henne's Checkerspot)			
117	Junonia cognia (Buckeye)		Leptotes marina (Marine Blue)	
11	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)	
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)	
	Phycoides mylitta (Mylitta Crescent)			
	Polygonia satyrus (Satyr Anglewing)	1		
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)	
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)	
1	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)	
	Vanessa atalanta (Red Admiral)	1 11	Incisalia augustinus (Brown Elfin)	
	Vanessa cardui (Painted Lady)	111	Strymon melinus (Gray Hairstreak)	
111	Vanessa virginiensis (Virginia Lady)	-		
		Panilionidae	(Swallowtails)	
analda - A Pl	mund Butterfline)	1 aprilonitade	Papilio survedon (Pale Swallowtail)	
analoae (Mill	Daways allionus (Oucen)	1 12	Papilio rutulus (Western Tiger Swallowtail)	
	Danaus glavinnus (Monarch)	- de	Papilio zelicaon (Anise Swallowtail)	
	Danaus presuppus (vionaton)	1	r dpino zoniskom panas s	
Inconsidoa		Pieridae (Wi	nites and Orangetips)	
tespenuae	Francis funeralis (Faneral Dusky-wing)	1.1011000 (111	Anthocharis cethura (Felder's Orangetip)	
	Heliopetes gricetorum (Great White Skipner)	-	Anthocharis lanceolata (Grinnell's Marble)	
	Hylephila phyleus (Fiery Skipner)	620	Anthocharis sara (Sara Orangetip)	
	Pyrous albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)	
	The second (contraction and provide the second seco	1. 1	Colias eurytheme (Alfalfa Butterfly)	
		dha -	Colias harfordii (Harford's Sulfur)	
1	and the second s		Euchloe hyantis lotta (Southern Marble)	
			Eurema nicippe (Sleepy Orange)	
	and an and a second		Nathalis iole (Dwarf Yellow)	
		111	Phoebis sennae (Cloudless sulfur)	
		-\$1	Pontia protodice (Common White)	
	and the second s		Zerene eurydice (California Dogface)	
		1-2-1-		
	Lane -	Riodinidae (Metalmarks)	
		1.	Apodemia mormo virguiti (Behr's Mctaimark)	
		-	Calephelis wrighti (Wright's Metalmark)	
		Satyridae (S	atyrids)	
			Coenonympna caujornica (California Kinglet)	
THER:	10.000		1	



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	JUN	Parell	Dat	e 1/2-116	Site Visit	Number	•
Site Name	(Ma	P 3	S	ite Location	Micon	11	_
Total Acres:		Total Acres	Surveyed:	Elevati	on: Max	Min	_
Hours Surveye	d: Gh	Sit					

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
:01"	clear> % cloud co	ver hazy	25	70.°
11.3.	cleap % cloud co	ver hazy	4/6	72°
0.1	clear % cloud co	ver hazy	57	760
	clear % cloud co	ver hazy	417	750
1 A (6) 1 (1)	clear % cloud co	ver hazy	5	7
5.12	clear $\chi(2)$ % cloud co	ver hazy	31.	100
14nd	clear % cloud co	ver hazy		1. A.
1.2.1	clear % cloud co	ver hazy	÷	
	clear % cloud co	ver hazy		
	clear % cloud co	ver hazy		
	clear % cloud co	ver hazy		
	clear % cloud co	ver hazy		
	clear % cloud co	ver hazy		

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

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

*20 second period, mph



Nummhalidae /	Rrush Footed Butterflies)	Lycaenidae (I	Blues)
wympoandae (i	Eunhydryas editha auina (Ouino Checkersnof)	36.75	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	1	Celastrina ladon echo (Echo Blue)
	Basilarchia loravini (Loravin's Admiral)		Everes amyntula (Western Tailed Blue)
5 M -	Charidryas gabbii (Gabb's Checkersnot)	1	Glaucopsyche lygdamus australis (Southern Blue)
	Furthydrygs chalcedong chalcedong		Hemiargus ceraunus gvas (Edward's Bluc)
	(Chalcedon Checkerspot)		
	Fundavaras chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
12/11	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
I	Nymohalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Mclissa Blue)
	Phycoides mylitta (Mylitta Crescent)	-	in the second
	Polygonia satyrus (Satyr Anglewing)		
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
1	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum
		1	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	2.11	Incisalia augustinus (Brown Elfin)
1.000.000	Vanessa cardui (Painted Lady)	1. 1.1	Strymon melinus (Gray Hairstreak)
- 111	Vanessa virginiensis (Virginia Lady)		
111			
· · · · · · · · · · · · · · · · · · ·		Papilionidae	(Swallowtails)
Danaidae (Mill	kweed Butterflies)		Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	1.	Papilio zelicaon (Anise Swallowtail)
		1 Colores	
		Dioridos (117	itae and Orangeting)
Hesperidae	Contractor (Constant Destanting)	Plendae (Wh	Anthocharis cethura (Felder's Orangetin)
	Erynnis juneralis (Functal Dusky-wing)	-	Anthocharis lanceolota (Grinnell's Marble)
	Henopetes cricetorum (Great white Skipper)		Anthocharis sara (Sara Orangetin)
HI	Hylephua phyleus (Flery Skipper)	-	Artogoia range (Cabbage White)
	Pyrgus dibescens (Checkered Skipper)	1 1	Colias eurotheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
		-	Fuckloe hvantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
	1.0000		Nathalis jole (Dwarf Yellow)
	- inter-	1-1-	Phoebis sennae (Cloudless sulfur)
			Pantia protodice (Common White)
		- int	Zerene eurydice (California Dosface)
			weight on June (sentering ordered)
		Riodinidae (Metalmarks)
		1.6	(Apoaemia mormo virguit (Bent's Metalmark)
		1	Catepnens wright (wright S Wichannark)
		and the second	
		Satyridae (Sa	atyrids)
		~	Coenonympha californica (California Ringlet)
		-	
OTHER:			
		-	
- interior			



Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun	Paul		Date 4/25/16	Site Visit	Number 🖉	
Site Name	Ma	05 2	4.5	Site Location	Mija	y.dr	
Total Acres:		Total	Acres Surveyed	i: Elevat	ion: Max	Min	
Hours Survey	red: 1.	05"					

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1030	clear 75 % cloud cover	hazy	6110	67 "
1100	clear 75 % cloud cover	hazy	4'7	670
12:00	clear 5 % cloud cover	hazy	417	600
12,09	clear 35% cloud cover	hazy	2	(90
3.00	clear $2 \le \%$ cloud cover	hazy	515	750
12.00	clear 5 % cloud cover	hazy	416	700
1600	clear 40 % cloud cover	hazy	215	1,00
1250	clear < 7 % cloud cover	hazy	5/9	653
	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 palagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla

*20 second period, mph



Nymohalidae (Brush Footed Butterflies)	Lycaenidae (B	ues)
	Euphydryas editha auino (Ouino Checkerspot)	115 111	Brephidium exilis (Pygmy Bluc)
1	Adelpha bredowii californica (California Sister)		Celastrina ladon echo (Echo Blue)
	Basilarchia lorauini (Lorouin's Admiral)		Everes amuntula (Western Tailed Blue)
-	Charidryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Bluc)
	Euphydryas chalcedona chalcedona	-	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)		
	Euphydryas chalcedona hennei	1	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	1	
11	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	1	Philotes sonorensis (Sonoran Blue)
1.1.1	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	1	
	Polygonia satyrus (Satyr Anglewing)		
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (H	airstreaks)
1	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
HIT	Vanessa annabellu (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
1	Vanessa atalanta (Rcd Admiral)	Contraction of the	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Paimed Lady)	01	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
		10	
		Papilionidae (S	wallowtails)
Danaidae (Mill	cweed Butterflies)	1	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	111	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	13	Papilio zelicaon (Anise Swallowtail)
1		14	
Hesperidae		Pieridae (White	es 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)
111	Pyrgus albescens (Checkered Skipper)	1	Artogeia rapae (Cabbage White)
	Contraction of the second s	El II	Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
			Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
1	a		Nathalis iole (Dwarf Yellow)
1			Phoebis sennae (Cloudless sulfur)
			Pontia protodice (Common White)
			Zerene eurydice (California Doglace)
			·
	New York Contraction of the second se	D: 11 11 01	
		Riodinidae (Me	etaimarks)
		100	Apodemia mormo virguiti (Bent's Metalmark)
			Calepheus wright (wright's Melaimark)
		Satyridae (Saty	
in the second			Coenonympha caufornica (California Kinglet)
			and the second sec
OTHER			1
UTHER:			
	and and an other		()
erie The			
			10 million
	2011/1 CON-		

Quino Checkerspot Survey Form

Adult Assessment

Surveyor Du	n Powell I	Date 4 26 16	Site Visit 1	Number 🤗
Site Name A	1003 2.4	Site Location	Myan	oV
Total Acres:	Total Acres Surveyed:	Elevati	on: Max	Min
Hours Surveyed:	4/30			

Time (24hr)	Sky			Wind (aver*/max)	Temp (F)	
0900	clear	% cloud cover	hazy	3/5	670	
5001	ctear	% cloud cover	hazy	2/5	680	
60	offear	% cloud cover	hazy	24	739	
:200	clear	$\int \%$ cloud cover	hazy	Y/K	アオの	
13:00	clear	5 % cloud cover	hazy	47	76°	
1330	clear	\int % cloud cover	hazy	35	740	
1	clear	% cloud cover	hazy			
	clear	% cloud cover	hazy	and the second sec		
	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

Numphalidae ()	Brush Footed Butterflies)	Lycaenidae (B)	lues)
Taymphanoae (1	Funhydryas editha aning (Quino Checkerspot)	HIT	Brephidium exilis (Pygmy Blue)
111	Adelpha bredowli californica (California Sister)		Celastrina ladon echo (Echo Blue)
	Basilarchia lorauini (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)	1	Icarcia acmon (Acmon Blue)
1	(unonia coenia (Buckeye)		Leptotes marina (Marine Blue)
Int	Numphalis antione (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
101	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)		A state of the sta
	Speveria callippe (Callippe Fritillary)	Lycaenidae (H	airstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
11	Vanessa annabella (West Coast Lady)	-	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	11	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	INT	Strymon melinus (Gray Hairstreak)
11	Vanessa virginiensis (Virginia Lady)	1	
		Papillonidae /	Suchowskie
n 11 a.c.	10.000	Taphtonidae (Ponilio gunmedon (Pale Swallowtail)
Danaidae (Mill	(weed Butterines)	- th	Papilio sutulus (Western Tiger Swallowtail)
	Danaus gilippus (Queen)	1111	Papilio raliacon (Anice Swallowtail)
	Danaus plexippus (Monarch)		i upino zencaon (runse ovanovani)
		Dissides (Whit	tan and Oromosting)
Hesperidae	E C (C (C visit Distance)	Fichibae (with	Anthocharis esthurg (Felder's Orangetin)
	Erynnis funeralis (Funeral Dusky-wing)	-	Anthocheris (anceolata (Grinnell's Marble)
	Heliopetes ericetorum (Great White Skipper)	100 111	Anthocharis cara (Sara Orangetin)
	Hylephila phyleus (Piery Skipper)	Nu m	Antrochun is sur (Cabbage White)
	Pyrgus albescens (Checkered Skipper)		Coliar ourstheme (Alfolfs Butterfly)
		1	Colias barfordii (Horford's Sulfur)
		1000	Evaluation (Interford Southern Marble)
			Eucanoe nyumis Iona (Southern Indere)
			Nathalis iola (Dwarf Vellow)
1			Phoshir rannag (Claudless sulfur)
		14th	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
		Riodinidae (M	letalmarks)
		IL++	Anodemia mormo virgulti (Behr's Metalmark)
	nine to second	A11.	Calephelis wrighti (Wright's Metalmark)
	and the second s	Satyridae (Sat	yrids)
		-	Coenonympha californica (California Ringlet)
OTHER:	·····		
			1. 11 f 11

Adult Assessment

Surveyor	Dale Court	Date 1/24/16 Site Visit	Number <u></u>
Site Name	Mapa	Site Location Mirame	»*
Total Acres:	Total Acres Surveyed	: Elevation: Max	Min
Hours Surveye	d: 1		

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1220	clear % cloud cover	hazy	1/7	270
1400	Clear % cloud cover	hazy	çlij	7/0
1500	clear 15 % cloud cover	hazy	5/11	7.19
VND	clear UN % cloud cover	hazy	511	680
16:5	clear 60% cloud cover	hazy	6 D_	150
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		and the second second
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		

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

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhimum coulterianum, Collinsia heterophylla

*20 second period, mph

Quino Checkerspot General Form

Location Sau (LICOLTE DES .	SHUDADO	augh	M	Survey Segn	nent	SURNOZ	Apen	(8)
Surveyor 40	Et Cilitania	and the second second	D	ate	Zan m 2016	Survey	y Week N	Number (10)
Survey Partner(s)					0				
Total Acres:	Portion Surv	eved:			Elevat	ion: Ma	x	Min	_

Time (24 hr)	% Cloud		Sky		-	Wind (range)	Temp (F)
Start 10:00	Ð	clear patchy	overcast	drizzle	shower	68 gh	67.8
11:00	1	clear) patchy	overcast	drizzle	shower	6-8 cm	69° F
12:00	8	etean) patchy	overcast	drizzle	shower	6-gude	TIOF
13:00	a	clear) patchy	overcast	drizzle	shower	7-10 mh	72010
14:00	d'	clear) patchy	overcast	drizzle	shower	6-gah	730F
15:00	à	clear patchy	overcast	drizzle	shower	6-84h	73°F
Stop /6:00	8	clear patchy	overcast	drizzle	shower	7-gud	7108

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

Butterfly Species	Count. (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)		· · · ·
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)		1.000	Plebejus melissa (Melissa Blue)		A 11
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Bluc)		1
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)		1.00	Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)	1		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)		
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)	1.5.7		Papilio zelicaon (Anise Swallowtail)		
Vanessa cardui (Painted Lady)			Picridae (Whites and Orangetips)	NC Y	1200
Vanessa virginiensis (American Lady)			Anthocharis celhura (Desert Orangetip)		
Danaidae		1.000	Anthocharis sara (Sara's Orangetip)	6	10.00
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)			Pontia protodice (Checkered White)	+10	
Hesperidae			Colias eurytheme (Orange Sulphur)		1
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS: Bernarding blue	1	17.21
Erynnis propertius (Propertius Duskywing)			(Eusti lotos becardino)		
Ochlodes agricola (Rural Skipper)			- Well		1.00
Lycaenidae (Hairstreaks)			1 March 1997		20.00
Atlides halesus (Great Purple Hairstreak)					1.5
Incisalia augustinus (Western Brown Elfin)	1				1
Callophrys perplexa (Perplexing Hairstreak)					1
Strymon melinus (Gray Hairstreak)	4				1.3
Glaucopsyche lygdamus (Southern Blue)	1.5	1			1
Icarcia acmon (Acmon Blue)					1000
Celastrina ladon (Echo Blue)		-			
	1				1

Surveyor Gen Citanual Segment # Supuez Anen (8) Date: 2 may 2016

Comments:			
	Last Tar Carrows and Carrows		
Plant Communities and Hab			
Host Plants Present:	le la sect		
Host Flants Fresent. Pl	GATAGO ETECAA		
- 41			
	1	a kill or in	
Noaton Dionto Duccont.	sthence, Craptantha, L	suchalleur, Islue-aices	
ivectar riants rresent:			
ivectar riants rresent:	1		
	1		
Quino Sighting	Date:	GPS Location:	
Quino Sighting	Date:	GPS Location:	
Quino Sighting Photographs Taken:	Date:	GPS Location:	
Quino Sighting Photographs Taken: 1.	Date:	GPS Location:	
Quino Sighting Photographs Taken: 1. 4.	Date:	GPS Location: 3. 6.	
Photographs Taken:	Date:	GPS Location: 3. 6. 9.	

Quino Checkerspot General Form

Location South MORMON PLANT	Survey Segment Survey ADCA (4)
Survey Partner(s)	Date 3 may 2016 Survey Week Number (10)
Total Acres: Portion Surveyed:	Elevation: Max Min

Time (24 hr)	% Cloud	1998 - 1996 - 1996	Sky		1.1	Wind (range)	Temp (F)
Start 10:00	-0	clear patchy	overcast	drizzle	shower	4-6 ah	69° R
11:00	D	clean patchy	overcast	drizzle	shower		72°R
12:00	A	clear patchy	overcast	drizzle	shower		75°F
13:00		clear patchy	overcast	drizzle	shower	*	76°F
14:00		clear patchy	overcast	drizzle	shower	6-84m	77°R
15:00		clear patchy	overcast	drizzle	shower	1	TTOR
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 and road Plantage) Castilleig, Cordylanthus, Antirrhinum, nectar sources.

Butterfly Species	Connt. (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)		10,000	Leptotes marina (Marine Blue)	+10	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)	100	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)	-		Brephidium exilis (Western Pygmy-Blue)	2	
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)			Papilionidae (Swallowtails)	1	
Junonia coenia (Common Buckeye)	2	10000	Papilio eurymedon (Pale Swallowtail)		12 7
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		1
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	T	×
Vanessa cardui (Painted Lady)	1		Pieridae (Whites and Orangetips)	1	1
Vanessa virginiensis (American Lady)	3	×	Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)		1000
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)	1	1. T 1	Pontia protodice (Checkered White)	+10	
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	3	1
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)			Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS: Calfornic Sister	1	1.1.1.1
Erynnis propertius (Propertius Duskywing)	1000	1	(Adelaha bradowiicalitarina)		
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)	1	(C-2)		1	
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	8			11.1	
Glaucopsyche lygdamus (Southern Blue)	1.1	1		Sh-S.	
Icarcia acmon (Acmon Blue)	11	1		1	
Celastrina ladon (Echo Blue)	-				
	1			S	

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Plant Communities and Hab	oitat Information:	
	0/1	dilles and
Host Plants Present:	Plantago erecta , Cas	stille ja exiella
-2		
		D I I A DI Alilio
Nectar Plants Present:	Cryptanthe, Lasthenis	, Buckakert, Blue-dicks
Nectar Plants Present:	Cryptanthe, Lastheaus	, Buckakert, Blue-dicks
Nectar Plants Present:	Cryptanthe, Lastheaus	, Buckakent, Blue-dicks
Nectar Plants Present:	Cryptanthe, Lasthenic	, Buckakert, Blue-dicks
Nectar Plants Present:	Cryptantha, Lasthenic	Buckakent, Blue-dicks
Nectar Plants Present:	Cryptanthe, Lasthenis Date:	; Buckakent; Blue-dicks GPS Location:
Nectar Plants Present:	Cryptanthe, Lasthenis Date:	Buckakert, Blue-dicks GPS Location:
Nectar Plants Present:	Cryptanthe, Lasthenic Date:	Buckakent, Blaz-dicks GPS Location:
Nectar Plants Present:	Cryptanthe, Lasthenis Date: 2.	; Buckakest; Blue-dicks GPS Location:
Nectar Plants Present:	Date: 2. 5.	Buckakeet, Blue-dicks GPS Location:

Quino Checkerspot General Form

Location miss	ION GORLE ARCA	Survey Segment Survey ANDA ()
Survey Partner(s)	2 CHATMAN	Date 4 mm 2016 Survey Week Number (10)
Total Acres:	Portion Surveyed:	Elevation: May Min

Time (24 hr)	% Cloud	-		Ský			Wind (range)	Temp (F)
Start 10:00	-0-	Clear	patchy	overcast	drizzle	shower	7-Mak	68 8
11:00		clea	patchy	overcast	drizzle	shower	2-4h	7/02
12:00		etean	patchy	overcast	drizzle	shower	4-6 al	TYOR
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
		clear	patchy	overcast	drizzle	shower		
Stop (3:00		etea	patchy	overcast	drizzle	shower	4-but	75°P

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

Butterfly Species	Connt (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)	1		Leptotes marina (Marine Blue)	5	
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)		7
Euphydras chalcedona (Chalcedon Checkerspot)	11.00		Plebejus melissa (Melissa Blue)	1123	
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	10-3	1
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		1.0
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		1
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	+10	1
Basilarchia lorguini (Lorquin's Admiral)			Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1	×	Papilio eurymedon (Pale Swallowtail)	110.00	1
Vanessa annabella (West Coast Lady)	1		Papilio rutulus (Western Tiger Swallowtail)	1	
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	1	-
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	2	1	Anthocharis cethura (Desert Orangetip)		-
Danaidae			Anthocharis sara (Sara's Orangetip)	1	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)		N	Pontia protodice (Checkered White)	3	
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)	1		Colias harfordii (Harford's Sulphur)	1	
Hylephila phyleus (Fiery Skipper)	11		Eurema nicippe (Sleepy Orange)	1000	
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)		
Erynnis funeralis (Funereal Duskywing)		1.72	Coenonympha californica (Common California Ringlet)		1
Erynnis tristis (Mournful Duskywing)		1	OTHERS:		-
Erynnis propertius (Propertius Duskywing)		1000			
Ochlodes agricola (Rural Skipper)					
Lycaenidae (Hairstreaks)				1122)	
Atlides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)				100	
Callophrys perplexa (Perplexing Hairstreak)					
Strymon melinus (Gray Hairstreak)	2				1.1
Glaucopsyche lygdamus (Southern Blue)					
Icarcia acmon (Acmon Blue)					
Celastrina ladon (Echo Blue)				-	

0			
Comments:			
Plant Communities and Habi	itat Information:		
I fulle Communication and I have			
Host Plants Present:	at Plantago erec	**	
Host Plants Present:	at Plantago erec	**	
Host Plants Present:	at Plantago erec	**	
Host Plants Present:	at Plantago erec	**	
Host Plants Present:	at Plantago erec	**	
Host Plants Present:	at Plantago erec	*a	
Host Plants Present:	at Plantago crec	ta Rukuh mt	Blue-dicks
Host Plants Present:	astrenis, Constante	ta	Blue-dicks
Host Plants Present:	estacais, Cogetante	ta , Buckecheat,	Blue-dicks
Host Plants Present:	strais, Contacto	ta	Blue-dicks
Host Plants Present:	esta Plantago erec astacais, Cryptanta	ta , Brokeheat,	Blue-dicks
Host Plants Present:	astrenis , Cryptantes Date:	ta	Blue-dicks
Host Plants Present:	astrenia, Cryptantia Date:	ta , Brokuheat , GPS Locati	Blue-dicks
Host Plants Present:	astrenis , Crastanthe Date:	ta , Buckenter, GPS Locati	Blue-dicks
Host Plants Present:	astrenis , Crastante Date: 2.	Frikuheat, GPS Locati	Blue-dicks
Host Plants Present:	<u>astrenis , Cryptantes</u> Date: 2. 5.	ta , Brokentent , GPS Locati	Blue-dicks

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Quino Checkerspot Survey Form

Adult Assessment

Surveyor Si	Prove !	Date SILLS	Site Visit	Number 10
Site Name N	1200 1-2-	Site Location	Miram	2.7
Total Acres:	Total Acres Surveyed	: Elevat	ion: Max	Min
Hours Surveyed:				

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
11:5	clear 77 % cloud cover	hazy	13	61
1200	clear 30 % cloud cover	hazy	a.14	7.6
1300	clear 40 % cloud cover	hazy	417	724
1460	clear 30 % cloud cover	hazy	16	730
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	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

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Europolica Contraction Contraction	Brephidium exilis (Pygmy Blue)
Adelaka bredawii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorauini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Bluc)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
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)
Eropsis 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)
A set	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Slccpy Orange)
	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudless sulfur)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
	Pindinidaa (Metalmarke)
	(Nounidae) (Wetalmarks)
in a second s	Colonholis veriabti (Wright's Metalmark)
	Comprietes wright (wright strictering)
	Question (Controlde)
	Satyridae (Satyrids)
	Coenonympna cargornica (Camornia Kingice)
OTHER:	

Adult Assessment

Surveyor	Da's tring	Date Child	Site Visit	Number 10
Site Name	Maps 3	Site Location	bite visit	
Total Acres:	Total Acres Surveyed	l: Elevati	on Max	Min
Hours Surveyed:	31101			

Time (24br)		Sky		Wind (aver*/max)	Temp (F)
1410	clear	% cloud cover	hazy	12	620
1500	clear	% cloud cover	hazy	214	200
1600	clear	% cloud cover	hazy	417	220
1200	clear	% cloud cover	hazy	311	-120
1725	clear	% cloud cover	hazy	315	200
	clear	% cloud cover	hazy	315	7.70
	clear	% cloud cover	hazy	415	230
	clear	% cloud cover	hazy	315	2.30
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		1
	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

1-951-686-1497

ymphalidae []	Brush Footed Butterflies)	Lycaenidae (Blues)		
	Euphydryas editha quino (Quino Checkerspot)		Brephidium exilis (Pygmy Blue)	
	Adelpha bredowii californica (California Sister)		Celastrina ladon echo (Echo Bluc)	
	Basilarchia lorguini (Lorguin's Admiral)	1	Everes amyntula (Western Tailed Blue)	
	Charidryas gabbii (Gabb's Checkerspot)		Glaucopsyche lygdamus australis (Southern Blue	
_	Euphydryas chalcedona chalcedona (Chalcedon Checkcrspot)		Hemiargus ceraunus gyas (Edward's Blue)	
	Euphydryas chalcedona kennei (Henne's Checkerspot)		Icarcia acmon (Acmon Blue)	
	Junonia coenia (Buckeye)	1	Leptotes marina (Marine Blue)	
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)	
	Nymphalis californica (California Tortoiseshell)	30.	Plebejus melissa (Melissa Bluc)	
	Phycoides mylitta (Mylitta Crescent)			
	Polygonia satyrus (Satyr Anglewing)			
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (H	airstreaks)	
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)	
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)	
	Vanessa atalanta (Red Admiral)	1	Incisalia augustinus (Brown Elfin)	
	Vanessa cardui (Painted Lady)	HT HT	Strymon melinus (Gray Hairstreak)	
11	Vanessa virginiensis (Virginia Lady)			
		Papilionidae (S	Swallowtails)	
anaidae (Mill	kweed Butterflies)		Papilio eurymedon (Pale Swallowtail)	
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)	
_	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)	
		Dissidas (N/bit	en and Oronantian)	
esperidae	E i (fr (Burnel Dedaration)	Pieridae (white	Anthosherin anthura (Felder's Orangetin)	
	Ervnnis funeralis (Funeral Dusky-wing)		Anthocharls centura (relider s of angelip)	
	Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolala (Orminell's Marole)	
	Hylephila phyleus (Fiery Skipper)		Antengoia range (Cabbage White)	
	Pyrgus aldescens (Checkered Skipper)		Colica anaukama (Alfalfa Butterfly)	
		-	Collar harfordii (Harford's Sulfur)	
		-	Fuching hypertis lotta (Southern Marble)	
		-	Eurama niciona (Sleenv Orange)	
			Nathalis inle (Dwarf Vellow)	
			Phoebis sennae (Cloudless sulfur)	
		itt	Pontia protodice (Common White)	
			Zerene eurydice (California Dogface)	
		Riodinidae (M	etalmarks)	
		11	Anodemia mormo virgulti (Behr's Metalmark)	
	i ciulit e testie		Calephelis wrighti (Wright's Mctalmark)	
		Satyridae (Saty	rrids)	
	TETERIT CO		Coenonympha californica (California Ringlet)	
			the second s	
THER:				
			444	



Adult Assessment

Surveyor Dal	5 Parcell	Date 5/2/16	Site Visit N	Jumber 1
Site Name M	053.45	Site Location	DArriance	
Total Acres:	Total Acres Surveyed	: Elevati	on: Max	Min
Hours Surveyed:	60			

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)	
ORD	clear % cloud cover	hazy	1/3	120	
* 5 1 m	clear % cloud cover	hazy	m 14	2	
at reation	clear % cloud cover	hazy	6/2	-dim-	
P. 11	clear % cloud cover	hazy	57.00	m L	
	clear > % cloud cover	hazy	- <u>,</u> -u	7.5	
	clear % cloud cover	hazy	2.17	57.5	
1000	clear 10 % cloud cover	hazy	£ 4	10.0	
1606	clear 5% cloud cover	hazy	4.2	· · ·	
1	clear 75% cloud cover	hazy		11 2	
	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 erects, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla

*20 second period, mph

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p.14

nphalidae (B	rush Footed Butterflies)	Lycaemuae (Blues)
	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
-11/1-	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorauini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas anhhii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Evolutionas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Funtudanas abalandana haupai	Icarcia acmon (Acmon Blue)
	(Honno's Charlessont)	16
	(Henne's Checkerspot)	i Lantatan maning (Marine Blue)
	Junonia coenia (Buckeye)	Rhilotos sonoransis (Sonoran Blue)
1	Nymphalis antiope (Mourning Cloak)	Plate solices (Malies Pha)
	Nymphalis californica (California Tortoiseshell)	Piebejus metasa (Menssa Bibe)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
121	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
11	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	If Strymon melinus (Gray Hairstreak)
5	Vanessa virginiensis (Virginia Lady)	
	ranessa virginiensia (rugina case)	
	1.000	Panilionidae (Swallowtails)
aidea /h dilla	wood Butterfline)	Papilio eurymedon (Palc Swallowtail)
laidae (wink)	Descent allianus (Outoen)	Papillo ratulus (Western Tiger Swallowtail)
1	Danaus guippus (Queen)	Papilio ralicgon (Anise Swallowtail)
	Danaus piexippus (Wonarch)	
		Diaridae (Whites and Orangetine)
speridae	C (C (C (C (C (C (C (C (C (C (Authocharis cathura (Felder's Orangetin)
	Erynnis Juneralis (Functal Dusky-wing)	Authocharis termina (Feder 5 Orthogenp)
	Heliopetes ericetorum (Great White Skipper)	Aninocharis lanceoladi (Oriniteti s Marole)
	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sala Orangcup)
	Pyrgus albescens (Checkered Skipper)	Arloged rapide (Caudage Wille)
0.0		Collas eurytheme (Allalla Bullethy)
100		Colias harfordu (Harlord's Sultur)
		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)
		11 Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
		Calveidaa (Satveide)
-		Concommunity california (California Dinatet)
		Coentratympnia curryor nices (Carriorine Kingree)
HER:	s de la Monte d	
- Maler		
		-

p.10

Adult Assessment

Surveyor	Lie Campil	Date_5/3/16	Site Visit	Number 10
Site Name	NACE	Site Location	Mira	13.12
Total Acres:	Total Acres Surveyed	: Elevati	on: Max	Min
Hours Surveyed	4'00/			

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
A	clear	% cloud cover	hazy		7.2
10	clear	% cloud cover	hazy	1 / 7	54 117
1 10	etear	% cloud cover	hazy	alla -	1. A. M.
1250	clear	% cloud cover	hazy	SIR	210
1700	clead	% cloud cover	hazy	3/5	780
12.11	clear	% cloud cover	hazy	3/5	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		attended to the

Habitat onsite: open soils, hilltops, fidges, 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



Nymphalidae (Brush Footed Butterflies)	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 amyntula (Western Tailed Bl	uc)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (S	outhern Blue)
	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)	Hemiargus ceraunus gyas (Edward'	s Blue)
	Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acmon (Acmon Blue)	
11	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)	
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)	
1. 302.00	Nymphalis californica (California Tortoisesheil)	Plebejus melissa (Melissa Blue)	
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)		
	Speyeria callippe (Callippe Fritillary)	Lycacnidae (Hairstreaks)	
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairst	reak)
111	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)	
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)	
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)	
- F	Vanessa virginiensis (Virginia Lady)	· · · · · · · · · · · · · · · · · · ·	
-		Papilionidae (Swallowtails)	
Danaidae (Mill	(weed Butterflies)	Papilio eurymedon (Pale Swaltowta	il)
	Danaus gilippus (Oucen)	Papilio rutulus (Western Tiger Swal	lowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Hesperidae		Pieridae (Whites and Orangetins)	
Trosperidae	Ervnnis funeralis (Faneral Dusky-wing)	Anthocharis cethura (Felder's Oran	ectiv)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's	Marble)
	Hylephila phyleus (Fiery Skipper)	MIL Anthocharis sara (Sara Orangetip)	
1	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)	
	SK week 2	Colias eurytheme (Alfalfa Butterfly)	
A		Colias harfordii (Harford's Sulfur)	
		Euchloe hyantis lotta (Southern Ma	rble)
		Eurema nicippe (Sleepy Orange)	Section 2
		Nathalis iole (Dwarf Yellow)	
		Phoebis sennae (Cloudless sulfur)	
		Pontia protodice (Common White)	
	arua) oue — į	Zerene eurydice (California Dogfac	e)
		Riodinidae (Metalmarks)	
		Anodemia mormo virculti (Behr's N	(etaimark)
		Calenhelis wrighti (Wright's Metalr	nark)
		Careprene my m (nrgen e core	
	and a second	Saturidae (Saturide)	
		Coenonymoha californica (Californ	ia Ringlet)
		Cocholy april dally of the Cochol	
OTUED.	uur min		
VIELK:			
	101		
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12'00	clear 30 % cloud cover	hazy	24	70*	1
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	clear 5 % cloud cover	hazy	3/6	77:	
	clear? % cloud cover	hazy	1. A.	14 51	1
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	clear % cloud cover	hazy	1	THE R. P. LEWIS CO. LANSING MICH.	du menere area

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

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(1. 8.14 () - 51 (1015) (area.) (area.)

Plantago erecta, Plantago patagonica, Castilleja exserta, Cordylanthus rigidus, Antirrhiman coulterianum, Collinsia heterophylla 1. 11. 141 (m. 1.

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COMMENT:

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Dale A Powell

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	University (RDES)
perinteristic occurs (Oning Checkerson)	Brenhidium exilis (Pygmy Blue)
(1) b la hardenni antifamian (Quida Checkerspor)	Celastring ladon echo (Echo Blue)
Residence (Cantonna Cost)	Everes anyntula (Western Tailed Blue)
Charidana anhii (Cahh's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Embudana akalandana chalandana	Hemiargus ceraunus gyas (Edward's Blue)
(Theleston Checkerspot)	1905 - minimum (Marine) - 1905
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(Honne's Checkersnot)	
(Heine's Checkerspec)	Leptotes marina (Marine Blue).
Min (11) Stational Country (Dankeyo)	Philotes sonoransis (Soporan, Blue)
Numphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Physicial and the Mylitta (Mylitta Crescent)	
Folycondes monda (Mynta Cresona)	
Polygonia saty as (Jacy Angiowing)	A CONTRACT RUSINGS
Theread a leaving wright (Leaving Checkerspot)	Atlides halesus (Great Purple Hairstreak)
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Vanessa unitubend (West Coast Laty)	(Perplexing Hairstreak)
Vaurana atalanta (Bad Admiral)	Incisalia augustinus (Brown Elfin)
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	Papilio-ourymedon (Palo Swallowtail) -
Dourous allinnus (Ouern)	Papilio rutulus (Western Tiger Swallowtail)
Danaus glauppus (Queen)	Papilio zelicaon (Anise Swallowtail)
Danaus plemppus (Monarch)	and the second sec
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Adult Assessment

Surveyor	in	Powel	11_1	Date	5/2/16	Site Visit	Number <u></u>	<u></u>
Site Name	NLOC	13 3.4	5	Site	e Location	Miran	64	
Total Acres:	11 -1	Total Acres	Surveyed:		Elevati	on: Max	Min	_
Hours Surveyed:	70	31						

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)	
0920	clear) % cloud cover hazy	13	670	
C001	dear % cloud cover hazy	36	710	
1130	ctean % cloud cover hazy	5/7	740	
1240	cleas % cloud cover hazy	SX	:770	
(250	clear) % cloud cover hazy	3/4	75	
1460	weeks % cloud cover hazy	412	78'	
0121	clear 1/2 % cloud cover hazy	519	780	
600	clear 2 % cloud cover hazy	418	7.72	
1620	clear 3/2% cloud cover dazzo	21/2	76	
	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



Manufalldar	Prich Egoted Butterflies)	Lycaenidae (R	lues)
Nymphalidae (1	Fushydrans editor oning (Oning Checkgrout)	Delation (D	Brephidium exilis (Pygmy Blue)
11	Adelpha bredowij californica (California Sister)	1 4 1 11	Celastrina ladon echo (Echo Blue)
	Basilarchia loranini ([oranin's Admiral)		Everes anyntula (Western Tailed Blue)
	Charidruas anthii (Gabb's Checkersnot)		Glaucopsyche lygdamus australis (Southern Blue)
	Eunindryas chalcedona chalcedona		Hemiargus ceraunus gyas (Edward's Bluc)
	(Chalcedon Checkerspot)		u u .
	Euphydryas chalcedona hennei	1	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
1	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
111	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	1	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)	T	
	Speyeria callippe (Callippe Fritillary)	Lycaenidae (H	Adidaa kalamu (Grant Dumla Uninstanda)
	Thessalia leanira wrighti (Leanira Checkerspot)		Callonhum papplaya = dumatomin
11	Vanessa annabella (West Coast Lady)		(Perplexing Hairstreak)
1	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	MANNI	// Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
	1		
		Papilionidae (S	Swallowtails)
Danaidae (Milk	weed Butterflies)		Papillo eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	+ nts	Papillo rutulus (western Liger Swallowtall)
	Danaus plexippus (Monarch)	1 M	raphio zeucaon (Anise Swallowiali)
	and the second se	-	
Illens out days		Dieridae (Whit	tes and Orangetins)
Hesperidae	Ensuis fungratie (Euneral Ducky wind)	T ICHUAC (WAII	Anthocharis cethura (Felder's Orangetin)
	Heliopetes ericetorum (Great White Skinner)		Anthocharis lanceolata (Grinnell's Marble)
	Hylenhila nhyleus (Fiery Skinner)	101	Anthocharis sara (Sara Orangetio)
11	Pyrgus albescens (Checkered Skinper)	10	Artogeia rapae (Cabbage White)
.,	· /· 0 and a state of the st	1111	Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
11			Euchloe hyantis lotta (Southern Marble)
		States and a	Eurema nicippe (Sleepy Orange)
E E			Nathalis iole (Dwarf Yellow)
		- All	Phoebis sennae (Cloudless sulfur)
		1	Pontia protodice (Common White)
			Zerene eurydice (California Dogface)
1			
	- 10-27 - E- 100-1000K	Diadiatida / 14	(-talmadra)
6-1-1-1		Riodinidae (M	Anodomia mormo viraulti (Dobres Matalmarte)
		400 61	Colephelis wrighti (Wright's Metalmark)
	CONTRACTOR OF A	-	Comparison or igna (Tright 5 treatmany)
La serie and the second			
		Satyridae (Sat	yrids)
			Coenonympha californica (California Ringlet)
	Kana an		
OTHER:		in the second	4
	1		in a second s



Adult Assessment

Surveyor Jun	fame 11	Date_	5/3/16	Site Visit	Number 🖄
Site Name Mr	631	Site	Location	Adian	New Diff
Total Acres:	Total Acres Surveyed	:	Elevatio	on: Max	Min
Hours Surveyed:	01				

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
A	(clear)	% cloud cover	hazy	215	72°
1 × 2)	Clear	% cloud cover	hazy	47	740
<u></u>	clear	% cloud cover	hazy	3/6	740
	clear'	% cloud cover	hazy	517	711
1250	clear	% cloud cover	hazy	3/5	780
15.1-	clear	% cloud cover	hazy	1 315	=2°
	clear	% cloud cover	hazy		
	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



Nymphalidae ((Brush Footed Butterflies)	Lycaenidae (B	lues)
	Euphydryas editha quino (Quino Checkerspot)	1	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	1	Celastrina ladon echo (Echo Blue)
	Basilarchia lorquini (Lorquin's Admiral)		Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	1	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)		Hemiargus ceraunus gyas (Edward's Bluc)
	Euphydryas chalcedona hennei (Henne's Checkerspot)	110	Icarcia acmon (Acmon Blue)
	Junonia coenia (Buckeye)	1	Leptotes marina (Marine Blue)
	Nymphalis antiope (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)	Lycaenidae (H	airstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
11	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
1	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Ht 1115	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		newaran (
	internet in the second se	Papilionidae (S	Swallowtails)
Danaidae (Mil	kweed Butterflies)		Papilio eurymedon (Pate Swallowtail)
	Danaus gilippus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
Hesperidae		Pieridae (Whit	es and Oranortins)
	Ervnnis funeralis (Funeral Dusky-wing)		Anthocharis cethura (Felder's Orangetin)
	Heliopetes ericetorum (Great White Skipper)		Anthocharis lanceolata (Grinnell's Marble)
100000	Hylephila phyleus (Fiery Skipper)	1111	Anthocharis sara (Sara Orangetip)
	Pyrgus albescens (Checkered Skipper)	1.	Artogeia rapae (Cabbage White)
11	TE AND F	1 11	Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
		1	Euchloe hyantis lotta (Southern Marble)
			Eurema nicippe (Sleepy Orange)
	a constant and a constant		Nathalis iole (Dwarf Yellow)
		14	Phoebis sennae (Cloudless sulfur)
		15.	Pontia protodice (Common White)
		1	Zerene eurydice (California Dogface)
		Riodinidae (M	ctalmarks)
		it	Apodemia mormo virgulti (Behr's Metaimark)
		A LE	Calephelis wrighti (Wright's Metalmark)
		Satyridae (Saty	rids)
			Coenonympha californica (California Ringlet)
	·····		
OTHER:			PARTICIPATION CONTRACTOR
			· · · · · · · · · · · · · · · · · · ·
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Quino Checkerspot General Form

Location Missio	N QURGE AREA	Survey Segment Survey ARGA (7)			
Surveyor	a Cuaman	Date 8 may 2016 Survey Week	Number (11)		
Survey Partner(s)		v			
Total Acres:	Portion Surveyed:	Elevation: Max	Min		

Time (24 hr)	% Cloud	Sky Wind (range) Temp.(F)
Start 11:00	120%	clear patch overcast drizzle shower
12:00	100/0	patchy overcast drizzle shower
13:00	2020%	patchy overcast drizzle shower
		clear patchy overcast drizzle shower
		clear patchy overcast drizzle shower
		clear patchy overcast drizzle shower
Stop 19:00	102%	patchy overcast drizzle shower

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

Butterfly Species	Count. (Total)	Hill-	Butterfly Species	Count (Total)	HIII- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	6	1
Euphydras editha quino (Quino Checkerspot)		10	Philotes sonorensis (Sonoran Blue)		[
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		1 1
Charidryas gabbii (Gabb's Checkerspot)		1	Everes amyntula (Western Tailed-Blue)	(J	1. T
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)	0.0	1	Riodinidae (Metalmarks)		1
Nymphalis antiopa (Mourning Cloak)	1	11.1.1	Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)	1		Papilionidae (Swallowtails)	0	1.22
Junonia coenia (Common Buckeye)		1.0	Papilio eurymedon (Pale Swallowtail)		4
Vanessa annabella (West Coast Lady)	1.1	1.00	Papilio rutulus (Western Tiger Swallowtail)		1 · · ·
Vanessa atalanta (Red Admiral)			Papilio zelicaon (Anise Swallowtail)	4	
Vanessa cardui (Painted Lady)	1.00	_	Pieridae (Whites and Orangetips)	1.	1
Vanessa virginiensis (American Lady)	2		Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	1	1
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		0.00
Danaus plexippus (Monarch)	1	1111	Pontia protodice (Checkered White)	4	
Hesperidae			Colias eurytheme (Orange Sulphur)	TI	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	1 - 1	
Hylephila phyleus (Fiery Skipper)		1	Eurema nicippe (Sleepy Orange)	-	
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrids)	11.1.1	1
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		1
Erynnis tristis (Mournful Duskywing)		1	OTHERS:	1	
Erynnis propertius (Propertius Duskywing)				1	1.5
Ochlodes agricola (Rural Skipper)	1	0.10.11			
Lycaenidae (Hairstreaks)					1.00
Allides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)				1.1.1.1	[1]
Callophrys perplexa (Perplexing Hairstreak)	3.50	72.00		1	
Strymon melinus (Gray Hairstreak)	2				10.00
Glaucopsyche lygdamus (Southern Blue)		1		1	(
Icarcia acmon (Acmon Blue)			N		S- 11
Celastrina ladon (Echo Blue)				1	1.000
				1.2.14	() i

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Surveyor Grea Cutoman Segment # Survey Alera (7) Date: 08 may 2016

Comments:			-		
Plant Communities and Habitat	Information:				
II t Directo Decremento da	1 1				
Host Plants Present: Pla	ntiso erection				
C					
	1 4 1 4 -	0			
Nectar Plants Present: (stantha, Lasthenis,	BUCKWATONA			
Ouino Sighting	Date:	GPS Location:			
	2400				
	•				
Photographs Taken:					
1.	2.	3.			
4.	5.	6.			
	8.	a .			
/*		10			
10.	11.	12,	the second s		

Quino Checkerspot General Form

Location South	TREATMONT PLANET	Survey Segment _ SURVEY	AREA (4)
Surveyor _ Cin	a- CHAMMAN	_ Date 9man 2016_ Survey Week	Number (11)
Survey Partner(s)		. 0	
Total Acres:	Portion Surveyed:	Elevation: Max	Min

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 65 510:00	40%	clear patch overcast drizzle shower	4-Jah	650\$F
11:00	30%	clear patchy overcast drizzle shower	4-buch	66° E
12:00	20%	clear calchy overcast drizzle shower	5-Bak	69° P
13:00	2006	clear patchy overcast drizzle shower	5-Anh	71°E
14:00	20.10	clear patchy overcast drizzle shower	4-7mh	7005
15:00	200%	clear patchy overcast drizzle shower	4-Gast	70°P
Stop 16:06	20%	clear patchy overcast drizzle shower	6-9mh	6900

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

Butterfly Species	Connt (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	+0	
Euphydras editha quino (Quino Checkerspot)	1		Philotes sonorensis (Sonoran Blue)		
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		-
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)	2		Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)	1		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)	1	
Vanessa annabella (West Coast Lady)	11	1	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)	1		Papilio zelicaon (Anise Swallowtail)	2	
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		1
Vanessa virginiensis (American Lady)	3		Anthocharis cethura (Desert Orangetip)		
Danaidae			Anthocharis sara (Sara's Orangetip)	11	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)		
Danaus plexippus (Monarch)	11	-	Pontia protodice (Checkered White)	4	
Hesperidae			Colias eurytheme (Orange Sulphur)	2	
Heliopetes ericetorum (Northern White-Skipper)	1		Colias harfordii (Harford's Sulphur)		1
Hylephila phyleus (Fiery Skipper)	2		Eurema nicippe (Sleepy Orange)	1	1.00
Pyrgus albescens (White Checkered-Skipper)	1		Satyridae (Satyrlds)		T
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS: California at or	2	1.4
Erynnis propertius (Propertius Duskywing)			(Adeloha bredowii californica)	1000	
Ochlodes agricola (Rural Skipper)	1		9. 1		
Lycaenidae (Hairstreaks)	1.1			11	
Allides halesus (Great Purple Hairstreak)					
Incisalia augustinus (Western Brown Elfin)					1.1.1
Callophrys perplexa (Perplexing Hairstreak)	1.00			1	
Strymon melinus (Gray Hairstreak)	+10				1
Glaucopsyche lygdamus (Southern Blue)	1				
Icarcia acmon (Acmon Blue)		1			
Celastrina ladon (Echo Blue)				12	

Surveyor GAR CINETMAN Segment # SURVEY AREA (4) Date: 09 may 2016

Comments:			
K			
Plant Communities and Hab	itat Information.		
	nut mor muton,		
II and a new office			
Host Plants Present: μ	lantação erecta, Cas	filleja erarta	
		9 –:	
Nector Planta Present			
Nectal Flatts Fresent: 5	MARE AS LATI VEB	L	
Ouino Sighting	Date	CPS Logation	
	Dates	GFS Location:	
Photographs Taken.	•		
1.		12.	
		3.	
7.	5.	6.	
/.	ð.	9.	
10.	11.	12.	
Quino Checkerspot General Form

Location Smillice Surveyor <u>Cher</u>	- CLART	SHOL MED	Rivel	Aneri's Date 10	Survey Segi	ment <u>Sulvey</u> Survey Week	Alet (8) Number (11)	
Total Acres:	Portion	Surveyed:		t sheet	Eleva	tion: Max	Min	ć

Time (24 hr)	% Cloud	Sky	- Wind (range)	Temp (F)
Start //:00	25%	clear patch overcast drizzle shower	Z-Yuh	6902
12:00	20%	clear patchy overcast drizzle shower	2.5uh	TUE
13:00	20%	clear patch overcast drizzle shower	3-74K	75°E
14:00	10%	etean patchy overcast drizzle shower	3-6 mp	760
15:00	1000	clear patchy overcast drizzle shower	2-but	7702
	·	clear patchy overcast drizzle shower		
Stop /6:00	10%	clear patchy overcast drizzle shower	4-6 mp	76°P

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

Butterfly Species	Connt (Total)	Hill-	Butterfly Species	Count (Total)	Hill-
Nymphalidae (Brush Footed Butterflies)		1	Leptotes marina (Marine Blue)	4	122-01
Euphydras editha quino (Quino Checkerspot)		1	Philotes sonorensis (Sonoran Blue)		λ
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)	12.24	·
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)			Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)		112.2	Riodinidae (Metalmarks)	10.000	li I Ì
Nymphalis antiopa (Mourning Cloak)		11.5	Apodemia mormo (Mormon Metalmark)	+10	1
Basilarchia lorguini (Lorquin's Admiral)	1	1.00	Papilionidae (Swallowtails)	100.00	1
Junonia coenia (Common Buckeye)	2	1	Papilio eurymedon (Pale Swallowtail)	1	1
Vanessa annabella (West Coast Lady)	1.	1	Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Red Admiral)	12.00		Papilio zelicaon (Anise Swallowtail)	1. 11	1 1
Vanessa cardui (Painted Lady)		Sec. 2.	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	3		Anthocharis cethura (Desert Orangetip)	1000	
Danaidae	1	1	Anthocharis sara (Sara's Orangetip)	11	1
Danaus gilippus (Queen)	(in the second s		Pieris rapae (Cabbage White)	1	1.0
Danaus plexippus (Monarch)	1	1.	Pontia protodice (Checkered White)	6	V
Hesperidae			Colias eurytheme (Orange Sulphur)	-	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	2	1
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)		
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1	j
Erynnis funeralis (Funereal Duskywing)	2		Coenonympha californica (Common California Ringlet)	1.0	1
Erynnis tristis (Mournful Duskywing)		1.1	OTHERS: California sister	1	1.000
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)		10.00			0
Lycaenidae (Hairstreaks)					
Atlides halesus (Great Purple Hairstreak)	1				
Incisalia augustinus (Western Brown Elfin)					1
Callophrys perplexa (Perplexing Hairstreak)		1.00			1
Strymon melinus (Gray Hairstreak) Glaucopsyche lygdanus (Southern Blue)	3				
Icarcia acmon (Acmon Blue)	-				
Celastrina ladon (Echo Blue)		-			
				-	

Surveyor Gra Channed

Segment # Survey Met (B) Date: 10 may 2016

Comments:		
11		
Plant Communities and Habitat Inform	nation:	
Host Plants Present:	autaso erecta	
	1	
Nectar Plants Present: 5Mmg	AS BEFORE!	
L Quino Sighting D	eate: GPS Location	:
•		
Photographs Taken:		
1.	2.	3.
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10.	11.	12.

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	4. A	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ndha in an		
Surveyor	Date Date		Site Visit Number		
Site Name	Man 1 j 2 Si	te Location	- 1 Manar	1	-
I otal Acres:	1 Ibiai Acres Surveyed:	Elevan	on: Max Mu		anna b Blainte Jac Anal
Hours Surveyed:	2 3	St. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	1	(
Time (24hr)	Sky	hing the state of	Wind	Lenpdate	1
		Torner out	, daver maxi -	and of extender of the solution of the solution	2
0511	clear 5% cloud cover	hazy	59	20	3
11:00	\therefore clear $\sim \leq \%$ cloud cover	hazy	0.2	70?	÷.
- 1 m - 27 5	clear 10 % cloud cover	hazy	11-10	202	2
124 45	clear 25% cloud cover	hazy	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	and a state of the second state	A. 1.44 (14) 7
	clear 25% cloud cover	hazy		327	
6 F 4 6 7	clear % cloud cover	hazy			1

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Habitat onsite: open soils, hilltops, ridges, rock outcreps, soil crusts, clay soils, old roads, nectar sources and the same of the party of

+ Strey-

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

% cloud cover

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imphasishe (B	resh Feologi Butterflics	Bytechicao (Dides	
	Euphydryas editha quino (Quino Checkerspot)	Srepniaium exits (ryginy Bille)	-
	Adelpha bredowii californica (California Sister)	Celastrina Idaoh echo (Ecuo Blue)	
	Bastlarchia lorgiani (Lorguin StAdmiral)	Everes anyniula (Western Talled Dide)	
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Bille)	
	Euphydryas chalcedona chalcedona.	Hemiargus ceraunus gyas (Edward's Blue)	
	Euphydryas chalcedona hennet	lcarcia acmon (Acmon-Blué)	
1 - 2	Iunoria comia (Buckeye)	Leptotes marina (Marine Blue)	-
	Numericalia antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)	
2	Nymphalis californica (California Tortoiseshell).	Plebejus melissa (Melissa Blue)	
	Phycoides myntta (Myntia Crescent)		
	Polygonia satyrus (Satyr Anglewing)		
2	Speyeria callippe (Callippe Fritiliary)	delidare balancia (Const Purple Hairstreak)	18
*1.000	Thessalia leanira wrighti (Leanira Checkerspot)	Allides naiesus (Great Fulpic Hansucak)	
	Vanessa annabella (West Coast Lady)	(Perplexing Hairstreak)	aia, 4
	Vanessa atalanta (Red Admiral)	Incisalla augustinus (Brown Elilli)	
S. 4	Vanessa cardud (Painted Lady)	Strymon melinus (Gray Hanstreak)	
0	Vanessa virginiensis (Virginia Lady)	$= - \frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \right) \right) \right)^{-1} \qquad \qquad$	
4	· · · · · · · · · · · · · · · · · · ·	and any the same and a straight the second str	
Annum - the set	and strange operation and same an end of	TO DISTURBANCE OF AN ADDRESS OF A STATE OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTION OF A	5
		Popilio eurymedon (Pale Swallowtail)	
ALCONGER AND A		Papilio rutulas (Western Tiger Swallowtail)	
-1000	Danaus guippus (Queen)	Panilio relicaon (Anise Swallowtail)	
1	Danaus plexippus (Monarch)	the state of the s	
-		The dealer of the second secon	1
$q_{\rm e}(x) = 1 ((x,y,y))^{-1}$	and the second		
lesperidae		(Falder's Owners)	-
	Erynnis funeralis (Funeral Dusky-wing)	Anthocharis celhura (relact's changeap)	6
-	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnein's Marole)	
11.	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangeup)	1
	Pyrous albescens (Checkered Skipper)	Arlogeia rapae (Cabbage White)	
		Colias ewytheme (Alfalfa Butterfly)	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Colias harfordii (Harford's Sulfur)	
		Euchloe hyantis lotta (Southern Marble)	
		Eurema nicippe (Sleepy Orange)	-
		Nathalis jole (Dwarf Yellow)	1
		Phoebis sennae (Cloudless sulfur)	
	and the second sec	Pontia protodice (Common White)	
		Zanana manufica (California Dooface)	
		Derene euryate (Cantonna Dograce)	1
		Anodamia morma vivadei (Rabr's Metalmark)	i
	Alexandra and a second s	Apodemia normo virgani (och siviciandik)	1
		Catepneus wright (wright's Michandary)	1
		Satyridae (Satyrids)	
		Coenonympha californica (California Kinglet)	-
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		A CONTRACTOR OF A CONTRACTOR O	
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Adult Assessment

All Local

Surveyor	Stale Passali	Date	5/8	1:6	Site Visit	Number [1
Site Name	Me 3	Sit	e Locat	ion	Minan	mar	
Total Acres:	Total Acres Surveyed		E	levatio	on: Max	Min	
Hours Surveye	d: 3157	-					

Time (24hr)	Sky		Wind .	Temp (F)
an article and the second s		Undbeart	(aver*/max)	Canse Contract
1425	clear 25% cloud cover	hazy	4/17	730
1500	clear 27 % cloud cover	hazy	SA	740
600	clear 15 % cloud cover	hazy	417	735
1235	clear 🕥 % cloud cover	hazy	5-10	57
	clear 🗧 % cloud cover	hazy	1. 1.	57
	clear % cloud cover	hazy		10 A 4
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		and a second
	clear % cloud cover	hazy	21 10 10 10 21	12001
	clear % cloud cover	hazy	•	100 m
	clear % cloud cover	hazy	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1989-2-98 PH
	clear % cloud cover	hazy		100 C 100 C 100 C
	clear % cloud cover	hazy	The set of the set	

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

Plantago erecta, Plantago patagonica, Gastilleja exserta, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla

*20 second period, mph



Nymphalidae (Brush Footed Butterflies)	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 amyntula (Western Tailed Blue)
Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	
Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	the second s
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
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)
	District of With second of Opportunity 1.
Hesperidae	Anthocharis calibura (Felder's Orangetin)
Erynnis funeralis (runeral Dusky-wing)	Anthocharis Innegolata (Grinnell's Machle)
Heliopetes ericetorum (Great White Skipper)	Anthocharis sara (Sara Orangetin)
Hytephila phyteus (Fiery Skipper)	111 Artongia range (Cabhage White)
Pyrgus albescens (Checkered Skipper)	Collag mouthoma (Alfalfa Rutterfly)
	Colias harfordii (Harford's Sulfur)
	Fuchloe hyperis later (Southern Marhle)
	Furama nicinna (Sleenv Orange)
	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudless sulfur)
	1:1 Pontia protodice (Common White)
	Zerene eurodice (California Dogface)
	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
a - and - a - a - a - a - a - a - a - a - a -	
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
OTHER:	

p,4

Adult Assessment

Surveyor Na	le Poisset	Date 5/9/16	Site Visit	Number 11
Site Name	MAPS 4.5	Site Lócation	Min	serd 2
Total Acres:	Total Acres Surveyed	1: Elevation	on: Max	Min
Hours Surveyed:	5'10"			

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
140	clear % cloud cover	hazy	2/4	670
1200	clear 80 % cloud cover	hazy	316	590
1200	clear 45% cloud cover	hazy	47	710
1460	clear 40 % cloud cover	hazy	5.18	73*
15:50	clear 2 ^{ss} % cloud cover	hazy	4.18	710
1600	clear 15 % cloud cover	hazy	512	730
1:50	clear ()% cloud cover	hazy	47	7:50
	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

p.24

Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
(inprimiting (Euphydryas editha gulno (Quino Checkerspot)	tyti wi IIN Brephidium exilis (Pygmy Blue)
1	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
1.6	Basilarchia lorquini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
1	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
	Funhydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
- 1	Junonia cognia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Numphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia satyrus (Satyr Anglewing)	
	Sneveria callinne (Callinne Fritiliary)	Lycaenidae (Hairstreaks)
	These alia leaning wright (Leaning Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annahella (West Coast Lady)	Callophyrs perplexa = dumetorum
		(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustimus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
- F	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Mil	kweed Butterflies)	Papilio eurymedon (Pale Swallowtall)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swanowtan)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowiaii)
		Pierides (Whites and Orangetins).
Hesperidae	E & Complete (Europe) Duglar wing)	Anthocharis cethura (Felder's Orangelip)
10	Erynnis juneralis (Functal Dusky-wing)	Anthocharis (anceolata (Grinnell's Marble)
	Heliopetes ericetorum (Great white Skipper)	Anthocharis sara (Sara Orangetip)
	Hylephila phyleus (Piery Skipper)	Artogeia range (Cabbage White)
	Pyrgus albescens (Checkered Skipper)	Colios eurotheme (Alfalfa Butterfly)
		Colias harfordii (Harford's Sulfur)
		Euchloe Invantis lotta (Southern Marble)
		Eurema nicippe (Slccpy Orange)
	Looken and the second s	Nathalis iole (Dwarf Yellow)
		Phoebis sennae (Cloudless sulfur)
		Pontia protodice (Common White)
		Zerene eurydice (California Dogface)
		Diadinidaa (Matalmarke)
		Would a Chickania norma visulti (Behr's Metalmark)
		Colonhalis weight (Wright's Metalmark)
		Cureptiens wright (Tright's browning)
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
	and the second sec	
OTHER:		

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Freedild #1

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	le Porse	Date 5/16	Site Visit	Number []
Site Name M	loco -	_ Site Location	Mira	Van D.T
Total Acres:	Total Acres Surveyed	Elevation	on: Max	Min
Hours Surveyed:	5"15"	•	- L	

Time (24hr)	Sky		Wind	Temp (F)
 i entrinemeter statut 	and the second sec	Linkongith	(aver*/max)	Augusta Parts
117410	clear % cloud cover	hazy	. Chr. C	and the second
·	clear 🖓 % cloud cover	hazy	ester a cara	1990 - La
· N3	clear 17% cloud cover	hazy		. 7:5
1407	clear % cloud cover	hazy	1 13/2	1
1:30	clear '% cloud cover	hazy	1. 0	1.5
1. 18 a 14	clear % cloud cover	hazy	e. 201	1
1730	clear 7 % cloud cover	bazy	1. 2 1. 2	1.7
1215	clear % cloud cover	hazy	A	L I Contrar
	clear % cloud cover	hazy		a contration of the second
	clear % cloud cover	hazy	1	
	clear % cloud cover	hazy	1. 1. 1. A. 1.	1
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1

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



		Description and in (Dummy Plane)
	Euphyaryas eauna quino (Quino Checkerspor)	Brephiatum etnis (Fyguly Blue)
	Adelpha bredown californica (California Sister)	Celastrina ladon echo (Echo Biue)
	Basilarchia lorgumi (Lorgum's Admiral)	Everes amyntula (western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	(naucopsyche lygaamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)	Hemiargus ceraunus gyas (Edward's Biuc)
	Euphydryas chalcedona hennei (Henne's Checkerspot)	Icarcia acmon (Acmon Blue)
17	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
1.44	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia saturus (Satyr Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidac (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
-1	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
<u> </u>	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Milk	rweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
anaraac (ivinit	Danaus gilintus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
	Danays plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
	and a second	Provide (Whiteshed Occupation)
lesperidae	Contract (Concert Durley wine)	Anthochoris oribura (Felder's Orangetin)
	Leynnis juneralis (Funeral Dusky-wing)	Anthocharis Jauceolata (Grinnell's Marble)
	Henopeles Pricetorum (Great White Scipper)	And a Latin in (Care (Comparin))
		Antrocharis sara (Sala Orangcub)
	Purgue albescene (Checkered Skinper)	Anthocharis sard (Sara Grangeup)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sata Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sara Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sara (Sata Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble)
	Pyrgus albescens (Checkered Skipper)	Antirocharis sara (Sata Orangedip) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange)
	Pyrgus albescens (Checkered Skipper)	Antirocharis sara (Sata Orangeup) 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)
	Pyrgus albescens (Checkered Skipper)	Antinocharis sard (Sara Orangedip) 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)
	Pyrgus albescens (Checkered Skipper)	Antinocharis sara (Sata Orangeup) 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)
	Pyrgus albescens (Checkerod Skipper)	Antiocedars stard (Sata Oralgetp) 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 sentae (Cloudless sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface)
	Pyrgus albescens (Checkered Skipper)	Antiocrairs stard (Sata Orangedp) 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)
	Pyrgus albescens (Checkered Skipper)	Antiocrairs stard (Sata Orangedp) 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)
	Pyrgus albescens (Checkered Skipper)	Antiocrairs stard (Sata Orangedp) 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) Apodemia mormo virgulti (Bchr's Metalmark)
	Pyrgus albescens (Checkered Skipper)	Antinocharis sard (Sata Orangeup) 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark)
	Pyrgus albescens (Checkered Skipper)	Antinocharis sard (Sata Orangedij) 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark)
	Pyrgus albescens (Checkered Skipper)	Anthocharis sard (Sata Orangeup) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyanis 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids)
	Pyrgus albescens (Checkered Skipper)	Antriocharis sard (Sara Orangeup) 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
YTHED-	Pyrgus albescens (Checkered Skipper)	Antinocharis sard (Sata Orangetty) 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
)THER:	Pyrgus albescens (Checkered Skipper)	Anthocharis sard (Sata Orangetp) Artogeia rapae (Cabbage White) Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyanis 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
)THER:	Pyrgus albescens (Checkered Skipper)	Anthocharis sard (Sata Orangeup) 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids) Coenonympha californica (California Ringlet)
OTHER:	Pyrgus albescens (Checkered Skipper)	Antinocharis sard (Sata Otalgeth) 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) Apodemia mormo virgulti (Bchr's Metalmark) Calephelis wrighti (Wright's Metalmark) Satyridae (Satyrids)



Adult Assessment

Surveyor	DUM	Painell	E	Date 5 12/16	Site Visit l	Number
Site Name	(V	ho- 3		Site Location	Miramo	
Total Acres:		Total Acres S	Surveyed:	Elevat	ion: Max	Min
Hours Survey	red: <u>6'</u> 8	00				

Time (24hr)	Sky		Wind (aver*/max)	Temp (F)
1130 1	clear 30 % cloud cover	hazy	5/9	720
1260	clear 25% cloud cover	hazy	47	14 A 12
1200	clear 4 3 % cloud cover	hazy	4/4	7.52
11120	clear 🕺 🗧 % cloud cover	hazy	216	12 1
-735	clear 3 % cloud cover	hazy	e 19	440
1240	clear 15 % cloud cover	hazy	417	733
76.2	clear 5 % cloud cover	hazy	5/9	69
(7.)	clear 5% cloud cover	hazy	2116	670
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		12

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



ymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Euphydryas editha quino (Quino Checkerspot)	JHT 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	Hemiargus ceraunus gyas (Edward's Blue)
(Chalcedon Checkerspot)	(A
Euphydryas chalcedona hennei	Lt Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	the Africa Plush
ا مستنا Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Miclissa Bluc)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	the feet forward a
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkerspot)	Atudes Hatesus (Great Purple Hanstreak)
Vanessa annabella (West Coast Lady)	(Paralening Hairstreak)
	Invitable antertions (Drown Elfin)
Vanessa atalanta (Red Admiral)	The source malinus (Brown Entry)
Vanessa cardui (Painted Lady)	MT SITYMUN MEMBER (Chay Hansucak)
Vanessa virginiensis (Virginia Lady)	
	D. Hinsiday (Purellouteile)
AND	Papillo aurumedon (Pale Swallowtail)
Danaidae (Milkweed Butterflies)	Papilio entrulus (Western Tiger Swallowtail)
Danaus gilippus (Queen)	Papilio ralicon (Anice Sualloutail)
Dangus plexippus (Monarch)	raphio zencuon (ranse Swano wany
	Pieridae (Whites and Orangetins)
lesperidae	Anthocharis cethura (Felder's Orangetip)
Erynnis funeralis (Funcial Dusky-whig)	Anthocharis lanceolata (Grinnell's Marble)
Heliopetes ericetor um (Steat white Skipper)	Anthocharis sara (Sara Orangetip)
1) Purgue albasone (Checkered Skinner)	Artogeia rapae (Cabbage White)
Tyrgus unbesteens (enconcred encoper)	Colias eurytheme (Alfalfa Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
and the second sec	Eurema nicippe (Sleepy Orange)
And the second s	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudless sulfur)
	Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
OTHER:	
and the second s	
and a second	

Adult Assessment

Surveyor	Jan Covell I	Date <u>51-116</u>	Site Visit l	Number 17	1
Site Name	Mago 45	Site Location	Mirova	nar.	_
Total Acres:	Total Acres Surveyed:	Elevatio	on: Max	Min	ġ,
Hours Survey	ved: 510"		5 G. A.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

1.71

Time (24hr)	Sky		Wind	Temp (F)
1		A standard	(aver*/max)	TESH KING T
1140	clear 85 % cloud cover	hazy	2/4	670
1200	clear 80 % cloud cover	hazy	3/6	690
1300	clear 65 % cloud cover	hazy	47	710
.400	clear 40 % cloud cover	hazy	5/8	730
1560	clear 25 % cloud cover	hazy	418	710
1600	clear \S % cloud cover	hazy	518	7:0
1250	clear ;) % cloud cover	hazy	4,7	700
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		and the second second
	clear % cloud cover	hazy	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	75 - 17 - 17 C
	clear % cloud cover	hazy	a last in the	
1 A	clear % cloud cover	hazy	en na a to sur a contra de alterno de	

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

1-951-686-1497



Nymphalidae (F	Brush Footed Butterflies)	Lycaenidae (Blues)
- White the Ca	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
11	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (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)
111	hunomia cognia (Buckeye)	Leptotes marina (Marine Blue)
	Numphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycaides mylitta (Mylitta Crescent)	
	Polygonia saturus (Satyr Anglewing)	
	Sneveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
11	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	114 (A M Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Mill	kweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowlan)
	Danaus plexippus (Monarch)	Papilio zelicaon (Amse Swallowial)
	Erynnis funeralis (Funeral Dusky-wing) Heliopetes ericetorum (Great White Skipper) Hylephila phyleus (Fiery Skipper) Pyrgus albescens (Checkered Skipper)	Pictuae (whites and Orangetips) Anthocharis cethura (Felder's Orangetip) Anthocharis lanceolata (Grinnell's Marble) Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbage White) Colias curytheme (Alfalfa Butterfly)
		Colias harfordii (Harford's Sulfur)
		Euchloe hyantis lotta (Southern Marble)
		Eurema nicippe (Sicepy Orange)
		Nathalis iole (Dwarf Yellow)
		Phoebis senhae (Cloudess sulful)
		Zerene eurydice (California Dogface)
		Piederidee Odersburger)
-		1114 Anodomia marmo viraulti (Rehr's Metalmark)
		Calephelis wright (Wright's Metalmark)
	a the stand term of	Satyridae (Satyrids)
1997	TEALS IN THE REAL	Coenonympha californica (California Ringlet)
OTHER:		
	li	
	- n	
		A state of the sta

Adult Assessment

Surveyor Jun	Pawell	Date Cliali6	Site Visit	Number
Site Name M	n Free State	Site Location	TA yarad	1
Total Acres:	Total Acres Surveyed	Eleva	tion: Max	Min
Hours Surveyed:	C ALCOM	7 ×		

Time (24hr)	Sky		Wind	Temp (F)
		1.1.100.005	(aver*/mas)	141 14 M
6.57	clear 97 % cloud cover	hazy		172
60.01	clear 85 % cloud cover	hazy	2/4	6.97
1380	clear 10 % cloud cover	hazy	3/5	7:0
1400	clear \sub % cloud cover	hazy	416	720
1520	clear 5 % cloud cover	hazy	46	730
1660	clear 35 % cloud cover	hazy	3/5	730
200	clear 50 % cloud cover	hazy	4/6	68
171	clear 50 % cloud cover	hazy	416	570
	clear % cloud cover	hazy		1
	clear % cloud cover	hazy		المستقر والمستعد
	clear % cloud cover	hazy	1993	
	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 exsenta, Cordylanthus rigidus, Antirrhimum coulterianum, Collinsia heterophylla

*20 second period, mph

Adult Survey

Location Messe	IN LOAGE MEET	Survey Segment Survey Mary (7)			
Surveyor and 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 // -00	30%0	clear patchy overcast drizzle shower	2-3ah	67°E
12:00	20%	clear patchy overcast drizzle shower	2-5m	69-1-
13:00	20%	clear patchy overcast drizzle shower	3-5m	70°R
	1	clear patchy overcast drizzle shower	-	
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop /4:00	10%	clear atchy overcast drizzle shower	4-6m	73°E

Habitat onsite (circle as applicable) milltops Ndges, ock outcrops open soils soil crusts clay soft, old roads, Plantago, Castilleja, Cordylanthus, Antirrhinum, nectar sources.

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	+10	
Euphydras editha quino (Quino Checkerspot)		1. 2.	Philotes sonorensis (Sonoran Blue)	1.1.1.5	1
Euphydras chalcedona (Chalcedon Checkerspot)			Plebejus melissa (Melissa Blue)		1
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	1
Phycoides mylitta (Mylitta Crescent)	1	1.00.00	Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)	11		Riodinidae (Metalmarks)		12.3
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	40	
Basilarchia lorguini (Lorquin's Admiral)		1	Papilionidae (Swallowtails)		12.7.1
Junonia coenia (Common Buckeye)	1	×	Papilio eurymedon (Pale Swallowtail)		1
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)		1	Papilio zelicaon (Anise Swallowtail)		()
Vanessa cardui (Painted Lady)	201		Pieridae (Whites and Orangetips)		1000
Vanessa virginiensis (American Lady)	Z		Anthocharis cethura (Desert Orangetip)		
Danaidae		1	Anthocharis sara (Sara's Orangetip)	1	0.000
Danaus gilippus (Queen)		1.000	Pieris rapae (Cabbage White)		1
Danaus plexippus (Monarch)	- /	1.000	Pontia protodice (Checkered White)	4	Lange 1
Hesperidae			Colias eurytheme (Orange Sulphur)		
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)	11/12/20	1	Eurema nicippe (Sleepy Orange)	1	
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		S
Erynnis funeralis (Funereal Duskywing)	2		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)			OTHERS:		
Erynnis propertius (Propertius Duskywing)					
Ochlodes agricola (Rural Skipper)					
Lyczenidae (Hairstreaks)		1.1.1			1
Atlides halesus (Great Purple Hairstreak)		1			
Incisalia augustinus (Western Brown Elfin)		1000			
Callophrys perplexa (Perplexing Hairstreak)		1			
Strymon melinus (Gray Hairstreak)	4				12
Glaucopsyche lygdamus (Southern Blue)	1				1
Icarcia acmon (Acmon Blue)		1			
Celastrina ladon (Echo Blue)		1	4	-	1
		11.2.1	V	-	1

Surveyor lever Common Segment # Guerry Mer (7) Date: 15 may 2016

Comments:		30.2	
		and the second second	
Plant Communities and Hab	uitat Information.		
Host Planta Processts	AL 1		
Host Flants Fresent:	Mantago erecta		
Nectar Plants Present:	STANG M OF	Read .	
	offine AS PE	PONLE	
Quino Sighting	Date:	GPS Location	
	•		-
Photographs Taken:		and the second se	
1.	2.		3.
4	5.		6.
7.	8.		9.
10.	11.		12.

Quino Checkerspot General Form

Location Star ULCENTE DES. Since D	IEVO MUCH MON Survey Segment Sullion MAONA (8)
Surveyor GAEL CHAMMAN	Date 16mm 2016 Survey Week Number (12)
Survey Partner(s)	

Total Acres: _____ Portion Surveyed: _

Elevation: Max

____ Min ____

Time (24 hr)	% Cloud	A THE CARE SHOW	Sky	they	and the second	Wind (range)	Temp (F)
Start //:00	30%	clear patchy	overcast	drizzle	shower	3-6 m	64° E
12:00	30%	clear patchy	overcast	drizzle	shower	3-buch	66° F
13:00	200%	clear patchy	overcast	drizzle	shower	Ubuh	67°R
14:00	200%	clear patchy	overcast	drizzle	shower	5-74h	68°P
15:00	20010	clear patchy	overcast	drizzle	shower	5-8nh	68°R
		clear patchy	overcast	drizzle	shower		
Stop 16:00	20%	clear patchy	overcast	drizzle	shower	6-8up	670 2

Habitat onsite (circle as applicable) militoper ridges, ock outcrops, open soils, soil crust any soils old roads Plantago Castilleja, Cordylanthus, Antirrhinum, nectar sources.

Butterfly Species	Count (Total)	Hill- topping	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)			Leptotes marina (Marine Blue)	7	
Euphydras editha quino (Quino Checkerspot)		1.1	Philotes sonorensis (Sonoran Blue)	1	1
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)			Everes amyntula (Western Tailed-Blue)	1	í
Phycoides mylitta (Mylitta Crescent)	1000		Brephidium exilis (Western Pygmy-Blue)		
Thessalia leanira (Leanira Checkerspot)			Riodinidae (Metalmarks)		1.1.5
Nymphalis antiopa (Mourning Cloak)		122.1	Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)	10-11	15 2	Papilionidae (Swallowtails)		1
Junonia coenia (Common Buckeye)			Papilio eurymedon (Pale Swallowtail)	1	*
Vanessa annabella (West Coast Lady)			Papilio rutulus (Western Tiger Swallowtail)	-	
Vanessa atalanta (Red Admiral)		1.1.1.1	Papilio zelicaon (Anise Swallowtail)	11	
Vanessa cardui (Painted Lady)			Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	2		Anthocharis cethura (Desert Orangelip)		
Danaidae	12-21		Anthocharis sara (Sara's Orangetip)	1.	
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	11.5	
Danaus plexippus (Monarch)	1	1.1	Pontia protodice (Checkered White)	+10	
Hesperidae			Colias eurytheme (Orange Sulphur)	3	
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)	1000	
Hylephila phyleus (Fiery Skipper)			Eurema nicippe (Sleepy Orange)	1	1.000
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)	1.	
Erynnis funeralis (Funereal Duskywing)	1		Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)		0.5.1	OTHERS: Phoeby Senne	11	
Erynnis propertius (Propertius Duskywing)			(claudlass culations)		
Ochlodes agricola (Rural Skipper)	10			100	
Lycaenidae (Hairstreaks)					
Allides halesus (Great Purple Hairstreak)				1.	
Incisalia augustinus (Western Brown Elfin)					1
Callophrys perplexa (Perplexing Hairstreak)				10-01	
Strymon melinus (Gray Hairstreak)	5			1.0	
Glaucopsyche lygdamus (Southern Blue)				1	1
Icarcia acmon (Acmon Blue)	1.5 3	12			
Celastrina ladon (Echo Blue)					

Surveyor Ling Cuntoment Segment # Sulvey Aver (8) Date: 16 may 2016

Comments			and and a second second
comments.			

			1900-000
		•	
Plant Communities and Habi	tat Information:		
Host Plants Present:	lastago erecta		
Nectar Plants Present: 5	TIME MS BEFURE		
Quino Sighting	Date:	GPS Location:	
	-		
Photographs Taken:			
1.	2.	3.	
4.	5.	6.	
7.	8.	0.	
10.	11	9.	
101	11.	12.	

Quino Ch	eckerspot	General Form					Adult Survey
Location	South	METERMENT	PLANET	Survey Segn	nent SUAIO	MAEN (4)	
Surveyor	UABL	CHATMAN	-	Date 18 mm LOIL	Survey Weel	k Number	2)
Survey Par	tner(s)			U		-	
Total Acre	s:	Portion Surveyed		Elevat	ion: Max	Min	

Time (24 hr)	% Cloud	Sky		Wind (range)	Temp (F)
Start 10:00	250/0	clear patchy overcast	drizzle shower	4.6 ml	66-1 F
11:00	25010	clear patchy overcast	trizzle shower	4.6.4	68°152
12:00	15%	clear patchy overcast o	drizzle shower	7-Anh	68° R
13:00	15%	clear patchy overcast	drizzle shower	6-gul	TOPE
14:00	15%0	clear patchy overcast o	drizzle shower	5-8nh	710F
15:00	25%	clear patchy overcast o	drizzle shower	6-gut	710 R
Stop 16:00	25%	clear matchy overcast	drizzle shower	brink	20°F

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

Butterfly Species	Count (Total)	Hill-	Butterfly Species	Count (Total)	Hill- topping
Nymphalidae (Brush Footed Butterflies)		11000	Leptotes marina (Marine Blue)	+10	
Euphydras editha quino (Quino Checkerspot)			Philotes sonorensis (Sonoran Blue)		1
Euphydras chalcedona (Chalcedon Checkerspot)		1	Plebejus melissa (Melissa Blue)		
Charidryas gabbii (Gabb's Checkerspot)		1.1.2	Everes amyntula (Western Tailed-Blue)		
Phycoides mylitta (Mylitta Crescent)		1	Brephidium exilis (Western Pygmy-Bluc)	2	
Thessalia leanira (Leanira Checkerspot)	1	0	Riodinidae (Metalmarks)		
Nymphalis antiopa (Mourning Cloak)			Apodemia mormo (Mormon Metalmark)	+10	
Basilarchia lorquini (Lorquin's Admiral)	1.		Papilionidae (Swallowtails)		
Junonia coenia (Common Buckeye)	1	1	Papilio eurymedon (Pale Swallowtail)		1000
Vanessa annabella (West Coast Lady)	10,000		Papilio rutulus (Western Tiger Swallowtail)		
Vanessa atalanta (Rcd Admiral)	1	1	Papilio zelicaon (Anise Swallowtail)	1	+
Vanessa cardui (Painted Lady)	1	1	Pieridae (Whites and Orangetips)		
Vanessa virginiensis (American Lady)	5	1	Anthocharis cethura (Desert Orangelip)		
Danaidae		1.1	Anthocharis sara (Sara's Orangetip)		1
Danaus gilippus (Queen)			Pieris rapae (Cabbage White)	2	
Danaus plexippus (Monarch)	1	1	Pontia protodice (Checkered White)	6	
Hesperidae	111		Colias eurytheme (Orange Sulphur)	2	1
Heliopetes ericetorum (Northern White-Skipper)			Colias harfordii (Harford's Sulphur)		
Hylephila phyleus (Fiery Skipper)	3		Eurema nicippe (Sleepy Orange)	(T =)	
Pyrgus albescens (White Checkered-Skipper)			Satyridae (Satyrids)		1
Erynnis funeralis (Funereal Duskywing)	2	12.2	Coenonympha californica (Common California Ringlet)		
Erynnis tristis (Mournful Duskywing)	1000		OTHERS: Caldering Liter		
Erynnis propertius (Propertius Duskywing)		11.0	(Adelaka bredowii californica	SI	(
Ochlodes agricola (Rural Skipper)	1		,	1	
Lycaenidae (Hairstreaks)				1 ()	
Atlides halesus (Great Purple Hairstreak)		1			
Incisalia augustinus (Western Brown Elfin)					[
Callophrys perplexa (Perplexing Hairstreak)	1	1			
Strymon melinus (Gray Hairstreak) Glaucopsyche lygdamus (Southern Blue)	+10	1			
Icarcia acmon (Acmon Blue)	1				-
Celastrina ladon (Echo Blue)		-			

Surveyor Web CHATM	Vice Segment	# SUMON AMENA	4) Date: 18 mm, 2016
0			
Comments:			
		24 C	
Plant Communities and Ha	bitat Information:		
Host Plants Present:			
- <u>121</u>			
Nectar Plants Present:			
Ouino Sighting	Date:	GPS Location	1
- Zamo orbitang		GI U LOCATION	
Photographs Taken:			
1.	2.		3.
4.	5.		6.
7.	8.		9.
10.	11.		12.

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Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
1	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (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 Checkersnot)	Icarcia acmon (Acmon Blue)
11	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
11	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Bluc)
	Phycoides mylitta (Mylitta Crescent)	
	Polygonia saturus (Satur Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
1	Vanessa atalanta (Red Admiral)	1) Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
1-1	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Mil	kweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
	Heliopetes ericetorum (Great White Skipper) Hylephila phyleus (Fiery Skipper) Pyrgus albescens (Checkered Skipper)	Anthocharis lanceolata (Grinnell's Marble) 1 Anthocharis sara (Sara Orangetip) Artogeia rapae (Cabbage White) 1 Colias eurytheme (Alfalfa Butterfly) Colias harfordii (Harford's Sulfur) Euchloe hyantis lotta (Southern Marble) Eurema nicippe (Sleepy Orange) 1 Nathalis iole (Dwarf Yellow) 11 Phoebis sennae (Cloudless sulfur) Pontia protodice (Common White) Zerene eurydice (California Dogface) Riodinidae (Metalmarks) Apodemia mormo virgulti (Bchr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
	- i	Satyridae (Satyrids) Coenonympha californica (California Ringlet)
OTHER:		
	and the second sec	

p.9

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dale Poisell	Date <u>Slis I'</u> Site Visit	Number <u>12</u>
Site Name	Machia	_ Site Location	State C
Total Acres:	Total Acres Surveyed	: Elevation: Max	Min
Hours Survey	ed: <u>55</u>		

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
12:05	clear 7	> % cloud cover	hazy	414	710
1.4	clear 7	% cloud cover	hazy	5/9	J-173 1
1. 1.1	clear	% cloud cover	hazy	42	
	clear	% cloud cover	hazy	self of	
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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

1.11.5 /**	- I Fasted Dutterflige)	Lycaenidae (Blues)
iymphalidae (Br	European Bullerales	Brenhidium exilis (Pyamy Blue)
	Cupnyaryas eauna quino (Quino Checkerspor)	Celastrina ladan echa (Echo Blue)
	Adeipha bredowit californica (California Sister)	Eueres annutula (Western Tailed Blue)
	Basuarchia lorguta (Lorgun S Addina)	Glaucaasyche lyedamus australis (Southern Blue
	Charidryas gabbii (Gabb's Checkerspot)	Hemiorgus cercunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	Incruiting an excitation of a line o
	Euphydryas chalcedona hennei (Henne's Checkerspot)	icarcta acmon (Actual Blue)
-	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	
	Polyconia saturus (Satyr Anglewing)	
	Sneveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	These dia leaving wright (Leaving Checkerspot)	Atlides halesus (Great Purple Hairstreak)
13	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Kanaga atalanta (Bad Admiral)	Incisalia augustimus (Brown Elfin)
	Vanessa aialania (Neu Adminal)	Strumon molimus (Gray Hairstreak)
	Vanessa caraul (Fainted Lady)	ou your meanus (only fidesteary
	Vanessa virginiensis (Virginia Lady)	1
		Desilianidas (Suullautaile)
		Papinoindac (Swanowians)
)anaidae (Milky	veed Butterflies)	Papillo eurymeaon (rate Swallowian)
	Danaus gilippus (Queen)	Papillo ruluus (western Tiger Swahowian)
	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtan)
lesperidae		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)
		Riodinidac (Metalmarks)
inter-		Apodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
- lat		
		Satyridae (Satyrids)
		Loenonympna caujornica (Cantornia Ringici)
	de de	
OTHER:	10-10-10-10-10-10-10-10-10-10-10-10-10-1	



Adult Assessment

Surveyor Dale	Pour 1 I	Date 5/15/16	Site Visit N	umber 12
Site Name Ma	PB S	Site Location	11 . 1	
Total Acres:	¹ Total Acres Surveyed:	Elevatio	on: Max	Min
Hours Surveyed: 210	NS 14		- 1	

Time (24hr)		Sky	1947 - 1928A	Wind (aver*/max)	Temp (F)
1505	clear 5	0 % cloud cover	hazy	5 /7	720
1600	clear 6	5 % cloud cover	hazy	316	69"
1205	clear C	5% cloud cover	hazy	315	69
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
S	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
and the second sec	clear	% cloud cover	hazy		
and an and a little	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

p.18

Y.

mahalidan	(Brush Footed Batterflies)	Lycaenidae	(Blues)
mpuanuec	Funbydrygs editha auing (Quine Checkerspot)	1 VN	Brephidium exilis (Pygmy Blue)
	Adelpha hredowii 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		Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)		
	Euphydryas chalcedona hennei		Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)		
	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philoles sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)		Plebejus metissa (Melissa Bluc)
	Phycoides mylitta (Mylitta Crescent)		
	Polygonia satyrus (Satyr Anglewing)	Transition	(Hatingha)
	Speyeria callippe (Callippe Fritillary)	Lycaenidae	(Hansucaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Callestan analana = dumatanum
13 -	Vanessa annabella (West Coast Lady)		(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	1. 1	Incisalia augustinus (Brown Elfun)
	Vanessa cardui (Painted Lady)		Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)		
-			(0 - Ilentelle)
		Papinonida	(Swallowdails)
anaidae (Mi	ilkweed Butterflies)		Papillo sutulus (Western Tiger Swallowtail)
	Danaus ginppus (Queen)		Papillo ralicoon (Anise Swallowtail)
-	Duncas prexippus (violater)		
lesneridae		Pieridae (W	hites and Orangelips)
1	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)
		- 11/	Phoebis sennae (Cloudless sulfur)
			Pontia protodice (Common White)
			Zerene eurydice (California Dogfacc)
		Rindinidea	(Metalmarks)
		I	Anodemia mormo virgulti (Rehr's Metalmark)
			Calephelis wright (Wright's Metalmark)
		1 E :	
	and the second	Satyridae (S	Satyrids)
			Coenonympha californica (California Ringlet)
		-	
OTHER:			
	a a da a	-	nde angelet
		1	and the second
	A		



Adult Assessment

Surveyor Dale	Guril	Date 5/16/16	Site Visit 1	Number 12
Site Name Mo	Nes - 4.5	Site Location	1 Aug	V CON
Total Acres:	Total Acres Surveyed	Elevati	on: Max	Min
Hours Surveyed: 5	154			

Time (24hr)	Sky	(* 1540) 1895-0	Wind (aver*/max)	Temp (F)
1145	clear an % cloud cover	hazy	. 2° ;-*	
1:77	clear 90 % cloud cover -	hazy	17	6.7 7
1430	clear 85 % cloud cover	hazy	3/6	70 0
1500	clear (n) % cloud cover	hazy	- 12	69 0
	clear % cloud cover	hazy	1. A. A. A. A. A.	(
-	clear % cloud cover	hazy		
	clear % cloud cover	hazy		· · · · · · · · · · · · · · · · · · ·
	clear % cloud cover	hazy		
- 0. St. 1	clear % cloud cover	hazy		
2. 10 - 1	clear % cloud cover	hazy	1	
and the second	clear % cloud cover	hazy		
	clear % cloud cover	hazy	1	
	clear % cloud cover	hazy	Contraction of the second	

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

Plantago erecta, Plantago patagonica, Castilleja exserva, Cordylanthus rigidus, Antirrhinum coulterianum, Collinsia heterophylla

Sec. 2

*20 second period, mph

COMMENT:

1015-1145 Sporn Galler Europe



1. 2. 0. 12 18 8 1. 2. 10

Nymphalidae i	Brush Footed Butterflies)	Lycaenidae (I	Blues)
	Euphydryas editha quino (Quino Checkerspot)	1 11- 1	Brephidium exilis (Pygmy Blue)
	Adelpha bredowii californica (California Sister)	1	Celastrina ladon echo (Echo Bluc)
	Basilarchia lorguini (Lorguin's Admiral)	*100	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)	1	Icarcia acmon (Acmon Blue)
111	Junonia coenia (Buckeye)	LIT	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)		Philotes sonorensis (Sonoran Blue)
1.2421	Nymphalis californica (California Tortoiseshell)		Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	1	
	Polyeonia saturus (Satyr Anglewing)		
	Speveria callippe (Callippe Fritillary)	Lycaenidae ()	Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)		Atlides halesus (Great Purple Hairstreak)
1 -	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)		Incisalia augustinus (Brown Ellin)
	Vanessa cardui (Painted Ladv)	1	Strymon melinus (Gray Hairstreak)
-	Vanessa virginiensis (Virginia Lady)		,
		Papilionidae ((Swallowtails)
Danaidae (Mill	kweed Butterflies)		Papilio eurymedon (Pale Swallowtail)
	Danaus gilionus (Queen)		Papilio rutulus (Western Tiger Swallowtail)
17.1	Danaus plexippus (Monarch)		Papilio zelicaon (Anise Swallowtail)
	Heliopetes ericetorum (Gscat White Skipper) Hylephila phyleus (Fiery Skipper)		Anthocharis lanceolata (Grinnell's Marble)
Ltr'	Pyrgus albescens (Checkered Skipper)		Artogeia rapae (Cabbage White)
			Colias eurytheme (Alfalfa Butterfly)
			Colias harfordii (Harford's Sulfur)
	and the second		Euchloe hyantis lotta (Southern Marble)
	the second se		Eurema nicippe (Sleepy Orange)
		-	Nathalis iole (Dwarf Yellow)
			Phoebis sennae (Cloudless sulfur)
			Pontia protodice (Common White)
			Zerene eurydice (California Dogtacc)
	· · · · · · · · · · · · · · · · · · ·	122 223	
		Riodinidae (N	vietaimarks)
		1	Apodemia mormo virguili (Benr S Mietalmark)
			Calephens wright (wright's Melaimark)
		12 45 4	
	1 H - H - H - H - H - H - H - H - H - H	Satyridae (Sa	tyrids)
	10-1 100-00 00-00 00-00-00-00-00-00-00-00-00-0		Coenonympna caujornica (Cantomia Rengiet)
	4	+	
OTHER:			
and the second statement			

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Adult Assessment

Surveyor	Jale Found	Date 577/16	Site Visit N	Jumber 12
Site Name	Mar 3H	_ Site Location	Nicana	r
Total Acres:	Total Acres Surveyed	: Elevat	ion: Max	Min
Hours Surveyed	" 3 Y			

Time (24hr)		Sky	Care an O	Wind (aver*/max)	Temp (F)
12 45	clear 🔿	% cloud cover	hazy	2/4	70
44	clear Y	% cloud cover	hazy	E15	1.9 "
1. A. A.	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		111
	clear	% cloud cover	hazy		, p
	clear	% cloud cover	hazy		4 ⁴¹
	clear	% cloud cover	hazy		24.0
	clear	% cloud cover	hazy		
	clear	% cloud cover	bazy		
	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: 12:30-13:5 Spinn failureze avenue 14:45-1600



Nymphalidae (Brush Footed Butterflies)	Lycaenidae (Blues)
Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
Basilarchia lorguini (Lorguin'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)
(Instite Southersport)	Lentotes maring (Marine Blue)
Numphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Numphalis californica (California Tortaiseshell)	Plahajus melissa (Melissa Bhie)
Physiology mylitta (Mulitta Cressent)	
Polyconia satures (Satur Anglewing)	
Sequeria callinge (Callinge Fritillary)	Lycaenidae (Hoinstmaks)
Theoretic lagring swichti (Leaning Charlemont)	Atlides haloeve (Great Phrase Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dimetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	(i Strymon melinus (Gray Hairstreak)
Vanessa virginiensis (Virginia Lady)	
	Papilionidae (Swallowtails)
Danaidae (Milkweed Butterflies)	Papilio eurymedon (Pale Swallowtail)
Danaus gilippus (Queen)	Papilio rututus (Western Tiger Swallowtail)
Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Hesperidao	Picridae (Whites and Orangetips)
Ervnnis 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)
	CONTRACTOR AND CONTRACTOR OF CONTRACTOR
	Kiodinidae (Metaimarks)
	Apodemia mormo virgulti (Behr's Metalmark)
	Calephelis wrighti (Wright's Metalmark)
	CONTRACTOR AND A DECEMPTION OF THE CALL
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
OTHER:	
	-



*Adult Assessment

Surveyor	Jun	Pausel	Date	Slislic	Site Visit	Number 2
Site Name	MAP	2	Sit	e Location	Miran	14
Total Acres:		Total Acres Survey	ed:	Elevati	on: Max	Min
Hours Surveyed	1: S'0	55"				

Time (24hr)	Sky	- ************************************	Wind (aver*/max)	Temp (F)
12 00	clear 7.3 % cloud cover	hazy	4/7	710
1.13.3	clear 👫 % cloud cover	- hazy	519	200
(i)	clear 60 % cloud cover	hazy	48	F10
1500 1	clear 50 % cloud cover	hazy	57	F20
1600	- clear /. % cloud cover	hazy	216.	5-t.
705	clear 55 % cloud cover	hazy	and a	100
	clear % cloud cover	hazy		
· · · · · ·	clear % cloud cover	hazy		
	clear % cloud cover	hazy		-1
	clear % cloud cover	hazy		1 F
and a straight	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

p.27 (118)

	State State		
Nymphalidae	(Brush Footest State Ties)	Lycaenidae (B	ilues)
	Euphydryss on the quing (Quino Checkerspot)	1.11	Brephidium exilis (Pygmy Blue)
1	Adelpha bredowii californica (California Sister)	- me	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (Lorguin's Admiral)		Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	1	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona (Chalcedon Checkerspot)		Hemiargus ceraunus gyas (Edward's Blue)
	Euphydryas chalcedona hennei (Henne's Checkerspot)	N	Icarcia acmon (Acmon Blue)
111-	Junonia coenia (Buckeye)		Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	71	Philotes sonorensis (Sonoran Bluc)
	Nymphalis californica (California Tortoiseshell)	-	Plebeius melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	1	
	Polygonia saturus (Satur Anglewing)	1	The second se
	Soveria callinge (Callinge Fritillary)	Lycacoidae (F	lairstreaks)
	Thessalia leaning wright (Leaning Checkersnot)	in the second second	Atlides halosus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)		Callophyrs perplexa = dumetorum (Perplexing Haisstreak)
	Vanessa atalanta (Red Admiral)	1 - 1	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	WHY the	Strumon melinus (Gray Hairstreak)
	Vanarra virainiancie (Virainia Ladu)	-	buymon momme (only menoreday)
	vunessu vu gintensis (virgina Lady)		And the second s
		Denillanidan (Smallandaila
Duraldas (NAS	Innered Dottandia	· rapinomuae (Builin aurora dan (Bala Swallowtail)
Danaldae (1911	Denena gilingua (Ounce)		Papilio eurymedon (Fale Swallowdall)
	Danaus guippus (Queen)		Papillo rational (Western Tiger Swallowdail)
	Danaus presippus (Monarch)		Papulo zencaon (Amse Swanowan)
	Hylephila phyleus (Fiery Skipper) Pyrgus albescens (Checkered Skipper)		Anthocharis tanceolata (Orintett's Matole) Anthocharis sara (Sara Orangetip) 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) Ponia produce (Common White)
		- 25 A	Zerene euryduce (Calitornia Dogtace)
200		Riodinidae (M	(etalmarks)
	and the second sec	1 111	Apodemia mormo virgulti (Behr's Metalmark)
			Calephelis wrighti (Wright's Metalmark)
	· · · · · · · · · · · · · · · · · · ·	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	TOTO TO THE TOTO TO TOTO TO	Satyridae (Sat	yrids)
	and the second	1	Coenonympha californica (California Ringlet)
		1	
			18 30-30
OTHER:	Careford and the second se	- 21	the second se
	- Constanting and Constanting		
	All and a second se		
			16
	the second se		and the second s
			and the second
	e stanna clikb x Co.		1111
	Alexandre in the second s		



Adult Assessment

Surveyor Jun Pri	Dat	5/16/16	Site Visit Nu	mber <u>12</u>
Site Name War	215 S	ite Location	Mirama	
Total Acres: Tota	al Acres Surveyed:	Elevation	n: Max	Min
Hours Surveyed: 5'15"				

Time (24hr)	Sky	اللي ترجيعية الإسمار المحط ولا الم	Wind	Temp (F)
and the second sec	Carl March Control Con	A Second	(aver*/max)	dan menye
1745	clear SO % cloud cover	hazy	5/9	69.4
12.4.7	clear 35 % cloud cover	hazy	77	AC
14 M L	clear % cloud cover	hazy .	- 36	7.0.5
0021	clear / % cloud cover	hazy	3/6	690
	clear % cloud cover	hazy		the part of a
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		4
	clear % cloud cover	hazy	41.2	A
	clear % cloud cover	hazy		a - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1
	clear % cloud cover	hazy		1 sent
	clear % cloud cover	hazy	1.00	1
	clear % cloud cover	hazy		
	clear % cloud cover	hazy	106**	

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

En marine

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

719

*20 second period, mph

Stand

COMMENT:

1015-1145



N LEI D LE LID & C A	
Nymphaiidae (Brush Footed Butterflies)	Lycaenidae (Bildes)
Adoloha buodanii adiino Quino Checkers	pot) 1 11 Brephlaium exilis (rygmy Bile)
Adelpha breadwil californica (California Sis	Celastrina ladon echo (Echo Blue)
Dasuarchia torquini (Lorquin's Admiral)	Everes amyntula (Western Tailed Blue)
Charlaryas gabon (Gabo's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
(Chalcedon Checkerspot)	Hemuargus ceraunus gyas (Edward S Blue)
Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
(Henne's Checkerspot)	UH I
Junonia coenia (Buckeye)	Leptötes marina (Marine Blue)
Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
Nymphalis californica (California Tortoisesh	ell) Plebejus melissa (Melissa Blue)
Phycoides mylitta (Mylitta Crescent)	
Polygonia satyrus (Satyr Anglewing)	
Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
Thessalia leanira wrighti (Leanira Checkers	pot) Atlides halesus (Great Purple Hairstreak)
Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
Vanessa cardui (Painted Lady)	Wit Hi 11 Strymon melinus (Gray Hairstreak)
/// Vanessa virginiensis (Virginia Lady)	A
	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	Picridae (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 (Alfalía Butterfly)
	Colias harfordii (Harford's Sulfur)
	Euchloe hyantis lotta (Southern Marble)
	Eurema nicippe (Sleepy Orange)
	Nathalis iole (Dwarf Yellow)
	Phoebis sennae (Cloudless sulfur)
	HT Pontia protodice (Common White)
	Zerene eurydice (California Dogface)
· · · · · · · · · · · · · · · · · · ·	
	Riodinidae (Metalmarks)
	Apodemia mormo virgulti (Behr's Metalmark)
The second se	Calephelis wrighti (Wright's Metalmark)
	Satyridae (Satyrids)
	Coenonympha californica (California Ringlet)
OTHER:	

p.15

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jua Gminell	Date 5/17/16	Site Visit]	Number 12
Site Name	Mars 3,4	Site Location	1/3900	31
Total Acres:	'Total Acres Survey	ed: Elevati	on: Max	Min
Hours Survey	red: 1'00			

Time (24hr)		Sky	adao dina ari	Wind (aver*/max)	Temp (F)
1245	clear 🤗	% cloud cover	hazy	Thi	: 70
THE .	clear ?	5 % cloud cover	hazy	315	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

1280-1345 Salary Red Army Sanny

p.29 121

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Lycaenidae (Blues)
Brephidium exilis (Pygmy Blue)
Celastrina ladon echo (Echo Blue)
Everes amyntula (Western Tailed Blue)
Glaucopsyche lygdamus australis (Southern Blue)
Hemiargus ceraunus gyas (Edward's Blue)
Icarcia acmon (Acmon Blue)
Leptotes marina (Marine Blue)
Philotes sonorensis (Sonoran Blue)
Plebejus melissa (Melissa Blue)
Lycaenidae (Hairstreaks)
Atlides halesus (Great Purple Hairstreak)
Callophyrs perplexa = dumetorum (Perplexing Hairstreak)
Incisalia augustimus (Brown Elfin)
Strymon melinus (Gray Hairstreak)
Papilionidae (Swallowtails)
Papilio eurymedon (Pale Swallowtail)
Papilio rutulus (Western Tiger Swallowitail)
Papilio zelicaon (Anise Swallowtai)
Anthocharis cethura (Felder's Orangetip)
Anthocharis lanceolata (Grinnell's Marble)
Anthocharis sara (Sara Orangettp)
Arlogeia rapae (Cabbage White)
Colias eurytheme (Alfalta Butterny)
Collas harjoral (narioid's Sullar)
Eucrope hydrats total (Southern Wallow)
Eurema mctippe (Steepy Orange)
Departing tone (Dowald reality)
Routia protodies (Common White)
Zarana eurudica (California Dooface)
We de la contraction
Klooinidae (Metalmarks)
Calankalia wrighti (Wright's Matelmark)
Catepnens wright (vright Sivilaunaik)
the second
Saturidae (Saturids)
Satyridae (Satyrids) Coenonympha californica (California Ringlet)


Quino Checkerspot Survey Form

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Adult Assessment

p.1

Surveyor	Dale Pawall	Date 2116	Site Visit	Number 12
She hame		Dife Location	WI Jam	ar
Total Acres: _	Total Acres Surveyed	Elevati	on: Max	Min
Hours Surveye	xd: 41301			

Time (24hr)	Sky	9 <u></u>	Wind (aver*/max)	Temp (F)
1120	clear 38% cloud cover	hazy	315	250
1.0C	clear % cloud cover	hazy	31.0	2147
12.60	clear (7) % cloud cover	hazy	1)4	215 7
1 22	clear % cloud cover	hazy	716	1.
1500	clear % cloud cover	hazy	A 6 .	7
1530	clear 5% cloud cover	hazy	14	720
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		-
	clear % cloud cover	hazy		
10.11	clear % cloud cover	hazy		
_	clear % cloud cover	hazy		AL
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		

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

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

*20 second period, mph

p.13

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Dale	Pawall	Date 5/22/16 Site Location	_ Site Visit	Number <u>i</u>
Total Acres:		Total Acres Surveyed	Elevati	ion: Max	Min
Hours Survey	ed:				

Time (24hr)		Sky		Wind (aver*/max)	Temp (F)
1130	clear)	N% cloud cover	hazy	3/5	TUN
1201	clear	% cloud cover -	hazy	j" a	747
1760	clear 17	ר cloud cover	hazy	-) 4	27.5 2
1 00	clear	> % cloud cover	hazy	216	14
1. 1. 1. 1.	clear	% cloud cover	hazy	2	7
	clear	% cloud cover	hazy		
	clear	% cloud cover	hazy		
	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

Nymphalidae	(Brush Footed Butterflies)	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 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)
1/	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antione (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebeius melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	Fuckil te hand in (ce ind)
	Polygonia salvrus (Satyr Anglewing)	
	Speveria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
1	Thessalia leanira wrighti (Leanira Checkersnot)	Atlides halesus (Great Purple Hairstreak)
	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
11	· · · · · · · · · · · · · · · · · · ·	(Perplexing Hairstreak)
1 × × × × × ×	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	
		Papilionidae (Swallowtails)
Danaidae (Mi	Ikweed Butterflies)	Papilio eurymedon (Palc Swallowtail)
A COLORED AND A	Danaus gilippus (Queen)	Papilio rutulus (Western Tiger Swallowtail)
1	Danaus plexippus (Monarch)	Papilio zelicaon (Anise Swallowtail)
Hesperidae	Erynnis funeralis (Funeral Dusky-wing)	Pieridae (Whites and Orangetips) Anthocharis cethura (Felder's Orangetip)
	Heliopetes ericetorum (Great White Skipper)	Anthocharis lanceolata (Grinnell's Marble)
	Hylephila phyleus (Fiery Skipper)	Anthocharis sara (Sara Orangetip)
,l,,	Pyrgus albescens (Checkered Skipper)	Artogeia rapae (Cabbage White)
		Collas eurymeme (Alfalia Bullerity)
	and the second s	Colds harjoral (Harlord S Sullar)
	and the second sec	Eucride Ayardis tota (Southern Marole)
		Lurema mcippe (Siecpy Orange)
		Dhashis source (Cloudless cutfur)
		Procedus service (Cloudless suffar)
	and the second	Zongra eurodice (California Donface)
e cui anne fermanne		Zerene carjance (cantornal Dograde)
		Rigdinidae (Metalmarka)
	and the second state of th	duodemia mormo virgulti (Behr's Metalmark)
		Calephelis wrighti (Wright's Metalmark)
	and a standard and the	The second second second second
		Satyridae (Satyrids)
		Coenonympha californica (California Ringlet)
	energy and the second s	
OTHER:		
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		nder internet and a state of the state of th

p.2

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Prwell	Date 5/23/16	Site Visit	Number <u>\2</u>
Site Name	Mon 2.4	Site Location	Miva	when all
Total Acres:	Total Acres Surveyed:	Eleva	tion: Max	Min
Hours Surveyed:	4'30"			

Time (24hr)	Sky	Wind (aver*/max)	Temp (F)
NRO I	clear 20% cloud cover hazy	315	740
1200	clear 15% cloud cover hazy	3/6	740
1300	clear 10 % cloud cover hazy	24	75
iston	clear 6 % cloud cover hazy	316	760
0021	clear 서 % cloud cover hazy	316	7.50
1910	clear 5% cloud cover hazy	24	720
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
the second second	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		
	clear % cloud cover hazy		

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

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

*20 second period, mph

p.14

Quino Checkerspot Survey Form

Adult Assessment

Surveyor	Jun Powell	Date	6/23/16	Site Visit	Number 🔨	2
Site Name	Mag 3.4	Site	Location	Miva	White w	
Total Acres:	Total Acres Surveyed.	:	Elevation	on: Max	Min	
Hours Surveyed		1	-			

Time (24hr)	Sky	94 a. a	Wind (aver*/max)	Temp (F)
1130	clear 20% cloud cover	hazy	315	740
1200	clear 15% cloud cover	hazy	3/6	740
1300	clear 10 % cloud cover	hazy	214	75
COP	clear ; 6 % cloud cover	hazy	316	760
1445	clear 1/1 % cloud cover	bazy	316	750
1	clear % cloud cover	hazy		4
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
and the second	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		
	clear % cloud cover	hazy		1 million 1 mill

Habitat onsite: open soils, hilltops, ridges, tock 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

p.16

(aa)

Nymphalidae	(Brush Footed Butterflies)	Lycaenidae (Blues)
	Euphydryas editha quino (Quino Checkerspot)	Brephidium exilis (Pygmy Blue)
n	Adelpha bredowii californica (California Sister)	Celastrina ladon echo (Echo Blue)
	Basilarchia lorguini (Lorguin's Admiral)	Everes amyntula (Western Tailed Blue)
	Charidryas gabbii (Gabb's Checkerspot)	Glaucopsyche lygdamus australis (Southern Blue)
	Euphydryas chalcedona chalcedona	Hemiargus ceraunus gyas (Edward's Blue)
	(Chalcedon Checkerspot)	
1	Euphydryas chalcedona hennei	Icarcia acmon (Acmon Blue)
	(Henne's Checkerspot)	
11	Junonia coenia (Buckeye)	Leptotes marina (Marine Blue)
	Nymphalis antiope (Mourning Cloak)	Philotes sonorensis (Sonoran Blue)
	Nymphalis californica (California Tortoiseshell)	Plebejus melissa (Melissa Blue)
	Phycoides mylitta (Mylitta Crescent)	111 Euchilates pernanding (S.B. slue)
	Polygonia satyrus (Satyr Anglewing)	
Sec.	Speyeria callippe (Callippe Fritillary)	Lycaenidae (Hairstreaks)
	Thessalia leanira wrighti (Leanira Checkerspot)	Atlides halesus (Great Purple Hairstreak)
1	Vanessa annabella (West Coast Lady)	Callophyrs perplexa = dumetorum
	and the second s	(Perplexing Hairstreak)
	Vanessa atalanta (Red Admiral)	Incisalia augustinus (Brown Elfin)
	Vanessa cardui (Painted Lady)	Strymon melinus (Gray Hairstreak)
	Vanessa virginiensis (Virginia Lady)	•
		Panilionidae (Suelloutaile)
Danaida: Of	(Innered Dettern91an)	Panilia gurungdan (Dala Swallowskii)
Danaidae (Mai	ikweed Builerines)	Papillo eurymeabh (Faic Swallowdai)
1	Danaus gluppus (Queen)	Papilio relicane (Anise Swallowtail)
	Dunuus presippus (Monarch)	1 upino tencion (ruise ownio wany
		Platin (NEW) - 10
Hesperidae	6	Pierkae (whites and Orangeups)
4	Erynnis juneralis (Funeral Dusky-wing)	Anthocharis Centura (Feider's Ofangeap)
	Heliopetes ericelorum (Great White Skipper)	Anthocharis care (Sam Ormantin)
	Providence (Charling Skipper)	Antonochuris suru (Sala (Hangenp)
	Tyrgus albestens (Caeckered Skipper)	Colias anotheres (Alfelfa Butterfly)
16	and the second s	Collas karlardii (Harford's Sulfur)
		Fucklog hypothis (charlot of obtained)
		Europa nicinne (Sleepy Orange)
	To the second	Nathalis jale (Dwarf Yellow)
	11.211.22001	Phosphis sennae (Cloudless sulfur)
Renter and the second s	and the second	Vol 11 Pontia protodice (Common White)
	Souther and the second second	Zerene ewydice (California Doeface)
1		De tris du Junes (controlles d'égenes)
1.00.7.10.4.0.1.		Biadinidaa (Matalmadaa)
	nei ersterreterreterreterreterreterreterret	Anodomica (Michalmarks)
	The second se	Apodemia mormo virguiti (Benr's Metalmark)
		Calephens wright (wright's Metalmark)
	and the second s	
		Satyridae (Satyrids)
-	n-site main at the	Coenonympha californica (California Ringlet)
	4	a second a s
OTHER:		
	de la recita de la competitionemente de la competitionemente de la competitionemente de la competitionemente de	
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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

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 california—common california 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

DUDEK

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

APPENDIX E

2016 Focused Coastal California Gnatcatcher Survey Report



31878 CAMINO CAPISTRANO #200 SAN JUAN CAPISTRANO, CALIFORNIA 92675 T 949.450.2525 F 949.450.2626

December 21, 2016

9420-03

Stacey Love Recovery Permit Coordinator U.S. Fish and Wildlife Service 2177 Salk Avenue, Suite 250 Carlsbad, California 92008

Subject: 2016 Focused Coastal California Gnatcatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

Dear Ms. Love:

This report documents the results of protocol-level presence/absence surveys for the federally listed threatened coastal California gnatcatcher (*Polioptila californica californica*) (CAGN). The surveys were conducted in support of the Pure Water San Diego Program North City Project (North City Project), located in the County of San Diego, California. The North City Project is the first phase of 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 North City Project consists of the design and construction of a new advanced water treatment facility, expansion of a wastewater treatment facility, pump stations, transmission lines, and pipelines. The Project site contains approximately 575 acres of potentially CAGN-suitable habitat that were surveyed in 2016.

CAGN is a federally listed threatened species and a California Department of Fish and Wildlife (CDFW) Species of Special Concern. It is closely associated with coastal sage scrub habitat, and is thereby threatened primarily by loss, degradation, and fragmentation of this habitat. CAGN typically occurs below 820 feet above mean sea level (amsl) within 22 miles of the coast and 1,640 feet amsl for inland regions (Atwood and Bolsinger 1992). Studies have suggested that CAGN avoid nesting on very steep slopes (greater than 40%) (Bontrager 1991). CAGN is also impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism (Braden et al. 1997).

LOCATION AND EXISTING CONDITIONS

North City Project pipelines extend through 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). CAGN surveys were being conducted on MCAS Miramar in

2016 as part of their yearly monitoring. Following consultation with the U.S. Fish and Wildlife Service (USFWS), it was determined that additional surveys as part of this project were not required in suitable habitat areas of the project that overlapped with MCAS Miramar. Results of 2016 focused CAGN surveys on MCAS Miramar will be submitted to USFWS separately by MCAS Miramar biologists.

The Project site occupies portions of Township 14 South, Range 1 East, 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 and 18; Township 15 South, Range 1 West, projected Sections 1, 23, and 30; Township 15 South, Range 2 West, projected Sections 6, 25, 29, 30, 31, 32, 33, 35, and 36; Township 15 South, Range 3 West, projected Sections 9, 10, 11, 16, 17, 20, 25, 26, and 28; Township 16 South, Range 2 West, projected Sections 1, 2, 3, and 4; and Township 16 South, Range 3 West, projected Section 9 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 94 feet amsl in the southwestern portion of the Project site to approximately 688 feet amsl.

Soils within the Project site consist of acid igneous rock land; Altamont clay; Carlsbad-Urban Land complex, Chesterton fine sandy loam; Chesterton-Urban Land complex; Cieneba rocky and very rocky coarse sandy loam, Cieneba-Fallbrook rocky sandy loam; Diablo clay; Diablo-Olivenhain complex; Diablo-Urban land complex; Fallbrook sandy loam; Fallbrook-Vista sandy loam; Friant rocky fine sandy loam; Gaviota fine sandy loam; gravel pits; Huerhuero loam; metamorphic rock land; Olivenhain cobbly loam; Ramona sandy loam; Redding cobbly and gravelly loam; Redding-Urban land complex; riverwash; Salinas clay loam; stony land; terrace escarpments; Tujunga sand; and Visalia sandy loam (SanGIS 2016).

VEGETATION COMMUNITIES

Based on species composition and general physiognomy, three vegetation communities with primary constituent element habitats (included restored and disturbed communities) suitable for CAGN were identified on the Project site and off-site mapping areas. Their acreages are presented in Table 1.

The entire project alignment includes approximately 847 acres of CAGN-suitable habitat were mapped on the Project site according to Holland (1986) and Oberbauer (2008). Approximately 517 acres of the CAGN-suitable habitat was surveyed on the Project site (due to exclusions and inaccessible private property).

Vegetation acreages are presented in Table 1, and primary constituent element habitats suitable for CAGN are described following the table.

Table 1 Coastal California Gnatcatcher-Suitable Vegetation Communities on the North City Project Site

Total Vegetation Community/Land Cover	Total Acres*	Total Surveyed Acres*
Diegan Coastal Sage Scrub	638.4	422.3
Diegan Coastal Sage Scrub-Restored	16.0	13.6
Diegan Coastal Sage Scrub-Disturbed	155.8	78.0
Diegan Coastal Sage Scrub: Baccharis-Dominated	32.4	3.5
Diegan Coastal Sage Scrub: Baccharis-Dominated-Disturbed	4.7	0.0
Grand Total	847.3	517.4

Note:

The difference in total acres and surveyed acres is due to restricted access to private property and MCAS Miramar lands.

Diegan Coastal Sage Scrub

Diegan coastal sage scrub is a native vegetation community. According to Oberbauer et al. (2008), coastal sage scrub is 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 laurel sumac (*Malosma laurina*). Diegan coastal sage scrub occupies 638.4acres in many patches within undisturbed areas, and an additional 16.0 acres of restored Diegan coastal sage is located in two portions on site, including south of the San Vicente Reservoir and a small patch south of Miramar Road. In addition, 155.8 acres of disturbed Diegan coastal sage scrub occur in several areas, with the majority located north of Miramar Road and east of Interstate 805 (I-805).

Diegan Coastal Sage Scrub—Baccharis-Dominated

Diegan coastal sage scrub—Baccharis-dominated is similar to Diegan coastal sage scrub but dominated by *Baccharis* species (desert broom (*B. sarothroides*) and/or coyotebrush (*B. pilularis*) (Oberbauer et al. 2008). This community typically occurs on disturbed sites or those with nutrient-poor soils and is often found within other forms of Diegan coastal sage scrub and on upper terraces of river valleys. This community is distributed along coastal and foothills areas in San Diego County. Approximately 32.4 acres of Diegan coastal sage scrub—Baccharis-dominated, and an additional 4.7 acres of disturbed Diegan coastal sage scrub—Baccharis-dominated vegetation throughout the study area.

METHODS

Dudek conducted a desktop CAGN-habitat suitability assessment of all coastal sage scrub habitat within the Project site. A number of areas were excluded from surveys due to the patch size being too small and/or isolated to support CAGN or the patch was buffered from the construction footprint by residential or commercial buildings. A number of areas were also excluded from the surveys as access permission was not provided by the landowner.

Focused surveys for CAGN were performed within the Project site between May 18 and July 7, 2016, by permitted biologists Jeff Priest, Tricia Wotipka, Kam Muri, Brenna Ogg, and Brian Lohstroh (Table 2). Non-permitted biologists Shelly Lawrence and Johanna Page accompanied CAGN-permitted biologists as passive observers, which included sitting quietly with little or no movement for prolonged periods while studying CAGN movements with binoculars and listening carefully to vocalizations. The surveys were conducted following the currently accepted USFWS *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Protocol* (USFWS 1997), using the breeding season survey methods. The majority of the Project alignment overlaps with the City of San Diego's Multiple Species Conservation Program Subarea Plan, with the exception of those portions of the alignment in the City of Santee and community of Lakeside, California. The survey included three visits at a minimum of 7-day intervals. Survey routes are shown in Figure 3.

Survey routes completely covered all accessible areas of suitable CAGN habitat on site. Appropriate birding binoculars (7 x 35 to 10 x 50 power) were used to aid in detecting and identifying bird species. The survey conditions were within protocol limits, as shown in Table 2. A recording of vocalizations was used frequently to elicit a response from the species. The recording was played approximately every 50 to 100 feet, and when a CAGN was detected, the playing of the recording ceased to avoid harassment. Two additional surveys were conducted in August and September to review habitat conditions for CAGN.

Survey Pass	Survey Area	Date	Time	Personnel	Conditions
1	2	05/18/2016	6:00 AM-12:00 PM	JP	60°F–72°F; 20%–100% cc; 0 to 5 mph wind
1	7	05/19/2016	7:00 AM-12:00 PM	JP	62°F–78°F; 0%–100% cc; 0 to 8 mph wind
1	5	05/20/2016	6:10 AM-11:10 AM	BL	59°F–65°F; 50%–70% cc; 0 to 5 mph wind
1	6	05/20/2016	6:00 AM-12:00 PM	JP	60°F–72°F; 50%–90% cc; 0 to 6 mph wind
1	3	05/27/2016	6:30 AM-12:00 PM	TW	63°F–68°F; 100% cc; 0 to 2 mph wind

Table 2Survey Conditions

Ms. Stacey Love

Subject: 2016 Focused Coastal California Gnatcatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

Survey	Survey				
Pass	Area	Date	Time	Personnel	Conditions
1	4	05/28/2016	6:00 AM-12:25 PM	BO	64°F–74°F; 90%–100% cc; 0 to 5 mph wind
1	8	05/30/2016	6:05 AM-11:30 AM	BO	61°F–72°F; 100% cc; 0 to 5 mph wind
1	1	06/01/2016	6:45 AM-12:00 PM	TW	62°F–69°F; 100% cc; 0 to 2 mph wind
2	2	05/25/2016	6:00 AM-12:00 PM	JP	56°F–68°F; 70%–50% cc; 0 to 6 mph wind
2	7	05/26/2016	6:10 AM-12:00 PM	JP	55°F–72°F; 90%–100% cc; 0 to 4 mph wind
2	5	05/27/2016	6:00 AM-11:44 AM	BL, SL	61°F–72°F; 70%–100% cc; 0 to 4 mph wind
2	4	06/04/2016	6:00 AM-12:00 PM	BO	60°F–85°F; 0%–100% cc; 0 to 11 mph wind
2	6	06/07/2016	6:00 AM-11:30 AM	JP	58°F–78°F; 10%–100% cc; 1 to 6 mph wind
2	1	06/09/2016	7:45 AM–11:45 AM	KM	64°F–68°F; 100% cc; 2 to 4 mph wind
2	8	06/12/2016	7:05 AM-12:00 PM	BO	61°F–70°F; 50%–100% cc; 0 to 5 mph wind
2	3	06/23/2016	7:40 AM-12:30 PM	KM	72°F–81°F; 10%–80% cc; 2 to 7 mph wind
3	5	06/03/2016	6:00 AM-11:00 AM	BL, JOP	59°F–82°F; 10%–100% cc; 0 to 5 mph wind
3	6	06/14/2016	7:45 AM-12:30 PM	KM	62°F–72°F; 0%–100% cc; 2 to 5 mph wind
3	4	06/18/2016	6:00 AM-12:00 PM	BO	53°F–89°F; 0%–50% cc; 0 to 12 mph wind
3	8	06/19/2016	6:35 AM-9:45 AM	BO	67°F–95°F; 0%–10% cc; 0 to 5 mph wind
3	2	06/20/2016	5:40 AM-11:45 AM	BL	68°F–92°F; 0% cc; 0/3 to 3 to 5 mph wind
3	6, 7	06/27/2016	6:10 AM-11:15 AM	JP	68°F–90°F; 10%–70% cc; 0 to 5 mph wind
3	3	06/30/2016	6:00 AM-12:00 PM	TW	64°F–79°F; 0%–100% cc; 0 to 4 mph wind
3	1	07/07/2016	7:45 AM–12:35 PM	KM	67°F–72°F; 0%–100% cc; 2 to 5 mph wind
3	2, 6	07/07/2016	6:00 AM-11:30 AM	JP	63°F–82°F; 0%–100% cc; 0 to 5 mph wind
3+	6, 7, 8	08/16/2016	9:30 AM-2:00 PM	BAO	73°F–98°F; 0% cc; 0 to 1 mph wind
3+	1, 2, 3,	09/28/2016	8:40 AM- 4:10 PM	BAO	67°F–90°F; 30%–0% cc; 0 to 5 mph wind
	4, 5				

Table 2Survey Conditions

Notes: BL = Brian Lohstroh; BO = Brenna Ogg; JP = Jeff Priest; JOP = Johanna Page; KM = Kamarul Muri; SL = Shelley Lawrence; TW = Tricia Wotipka; BAO = Brock Ortega; °F = Fahrenheit ; cc = cloud cover; mph = miles per hour.

RESULTS

Approximately 10 CAGN pairs and 45 individuals were observed in the survey area, including approximately 9 juveniles. Table 3 summarizes CAGN observations per survey area. Leg bands were not detected during these survey efforts.

Survey Area	Survey Area Maps	Estimated Total CAGN Individuals In Survey Map	Summarized Observations
1 (79.2 acres)	1, 2, 3, 4, and 5	6	One male individual was observed immediately west of the survey area on Map 2 on 09/06/16. One female individual observed approximately 150 feet east of the survey area on Map 4 on 05/25/16. Two groups of two uncapped individuals were observed adjacent to the survey area on Map 4 on 07/07/16.
2 (66.3 acres)	5, 6, 7, 8, and 9	2	One male was observed within the survey area on 05/27/16 on Map 9, and a pair was observed in the same general area on 07/07/16.
3 (87.5 acres)	10, 11, and 12	8	One pair was observed within middle portion of the survey area on Map 11 on 06/22/16. One unknown uncapped individual was observed on the most eastern portion of Map 11 on 06/30/16. A pair and a male individual were observed on 06/30/16 in the middle portion of Map 11. In the same general area, an unknown individual was observed on 06/22/16 and a juvenile on 06/30/16.
4 (61.6 acres)	12 and 13	17	Two unknown individuals were observed at the southern extent of this survey area on two survey dates – 06/04/16 and 05/28/16. An additional territory was also identified north of this with two unknown individuals observed on 05/28/16 and 06/04/16 and a male observed on 06/16/16. A single unknown individual was observed north of this area on 06/04/16. Three additional territories were observed within this survey area. The most northern territory had observations from all three survey dates (05/28/16, 06/03/16 and 06/18/16) and an observation from a biologist surveying the adjacent survey area on 05/27/16. The next most northern territory also had observations from all three survey dates and had observations of a pair with juveniles and unknown individuals. The next territory also had observations from all three dates and included observations of a male, a pair with juveniles, and unknown individuals.
5 (55.4acres)	12 and 13	5	One male was observed on 05/20/16 in the center of a large contiguous patch of suitable habitat on Map 12. A male individual was observed at the southern extent of this survey area on Map 12 on 05/20/16 and just outside the survey area on 05/27/16. A pair of was also observed in this vicinity on 06/03/16. A pair of was observed on 05/27/16 and 06/03/16 just north of the previous pair; the pair was observed with juveniles on the 05/27/16 survey date.
6 (77.5 acres)	14, 15, 16, and 17	6	A pair was observed on Map 14 of this survey area on 06/07/16 and 06/14/16. This pair was observed with juveniles (approximately two) on 06/14/16. A second pair was observed in the same patch on 06/07/16 and was confirmed as a separate pair.
7 (57.0 acres)	16 and 17	1	There was one juvenile observed on 06/27/16 on Map 17 within this survey area.
8 (25.7 acres)	17 and 18	0	There were no CAGN observations in this survey area.

 Table 3

 Coastal California Gnatcatcher 2016 Survey Observations

Note: "Adult" is defined as an individual known to have hatched the year prior to 2016. Otherwise, exact age unknown.

Ms. Stacey Love Subject: 2016 Focused Coastal California Gnatcatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

A total of 105 species of wildlife were observed or detected during the surveys: 72 bird species, 16 invertebrate species, 6 mammals, 1 amphibian species, and 10 reptile species (Attachment A).

We certify that the information in this survey report and attachments fully and accurately represent our work. Please contact Brock Ortega (bortega@dudek.com) with questions or if you require additional information.

Sincerely,

Brock Ortega Permit #TE813545/6

Jeffrey D. Priest Permit #TE840619/5

Kam Muri Permit #TE813545/6

Att: Figures 1–3 Attachment A

cc: Brock Ortega

REFERENCES

Permit #TE063608/5

Tricia Wotipka Permit #TE840619/2

Brenna Ogg Permit # TE134338/3

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	SOURCE: Bing Maps					2016
	2016 Coastal Ca	lifornia Gnatcatcher Survey Repo	ort - Pure Water San Diego Nor	th City Project		 2010



FIGURE 3-3 6 Coastal California Gnatcatcher Survey Results - Map 3
























2016 Coastal California Gnatcatcher Survey Report - Pure Water San Diego North City Project



2016 Coastal California Gnatcatcher Survey Report - Pure Water San Diego North City Project



ATTACHMENT A

Wildlife Species Observed in Study Area

ATTACHMENT A Wildlife Species Observed in Study Area

BIRD

BLACKBIRDS, ORIOLES, AND ALLIES

ICTERIDAE—BLACKBIRDS

Icterus bullockii—Bullock's oriole

* *Molothrus ater*—brown/headed cowbird

BUSHTITS

AEGITHALIDAE—LONG/TAILED TITS AND BUSHTITS

Psaltriparus minimus-bushtit

CARDINALS, GROSBEAKS, AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black/headed grosbeak

EMBERIZINES

EMBERIZIDAE—EMBERIZIDS

Melospiza melodia—song sparrow Melozone crissalis—California towhee Pipilo maculatus—spotted towhee

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Spinus psaltria—lesser goldfinch Haemorhous mexicanus—house finch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood/pewee *Myiarchus cinerascens*—ash/throated flycatcher

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

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Buteo jamaicensis—red/tailed hawk *Buteo lineatus*—red/shouldered hawk

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird Selasphorus sasin—Allen's hummingbird

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—western scrub/jay Corvus brachyrhynchos—American crow Corvus corax—common raven

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird *Toxostoma redivivum*—California thrasher

NEW WORLD QUAIL

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

NEW WORLD VULTURES

CATHARTIDAE—CARDINALS AND ALLIES

Cathartes aura-turkey vulture

OLD WORLD WARBLERS AND GNATCATCHERS

SYLVIIDAE—SYLVIID WARBLERS

Polioptila caerulea—blue/gray gnatcatcher *Polioptila californica californica*—coastal California gnatcatcher

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura-mourning dove

* Columba livia—rock pigeon (rock dove)

ROADRUNNERS AND CUCKOOS

CUCULIDAE—CUCKOOS, ROADRUNNERS, AND ANIS Geococcyx californianus—greater roadrunner

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY/FLYCATCHERS

Phainopepla nitens—phainopepla

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow *Petrochelidon pyrrhonota*—cliff swallow *Stelgidopteryx serripennis*—northern rough/winged swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis-white/throated swift

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD/WARBLERS

Geothlypis trichas—common yellowthroat *Oreothlypis celata*—orange/crowned warbler

ATTACHMENT A (Continued)

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Melanerpes formicivorus—Acorn woodpecker Picoides nuttallii—Nuttall's woodpecker Colaptes auratus—northern flicker

WRENS

TROGLODYTIDAE—WRENS

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

WRENTITS

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

INVERTEBRATE

BUTTERFLIES

NYMPHALIDAE—BRUSH/FOOTED BUTTERFLIES

Junonia coenia—common buckeye Limenitis lorquini—Lorquin's admiral

RIODINIDAE—METALMARKS

Apodemia mormo virgulti—Behr's metalmark

HESPERIIDAE—SKIPPERS

Erynnis funeralis-funereal duskywing

PAPILIONIDAE—SWALLOWTAILS

Papilio zelicaon—anise swallowtail

PIERIDAE—WHITES AND SULFURS

Pieris rapae—cabbage white *Pontia protodice*—checkered white

ATTACHMENT A (Continued)

MAMMAL

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Sylvilagus audubonii—desert cottontail *Sylvilagus bachmani*—brush rabbit

RACCOONS

PROCYONIDAE—RACCOONS AND RELATIVES

Procyon lotor-raccoon

RATS AND MICE

MURIDAE—RATS AND MICE

Neotoma fuscipes—dusky/footed woodrat

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus-mule deer

REPTILE

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard *Uta stansburiana*—common side/blotched lizard

SNAKES

VIPERIDAE—VIPERS

Crotalus ruber-red diamondback rattlesnake

* signifies introduced (non/native) species

APPENDIX F

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher



MAIN OFFICE 605 THIRD STREET ENCINITAS, CALIFORNIA 92024 T 760.942.5147 T 800.450.1818 F 760.632.0164

October 25, 2016

9420-03

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

Subject: 2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

Dear Recovery Permit Coordinator:

This report documents the results of protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's Vireo (*Vireo bellii pusillus*; vireo) and the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher). The surveys were conducted in support of the Pure Water San Diego Program North City project (North City Project), located in the County of San Diego, California. The North City Project is the first phase of 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 North City Project consists of the design and construction of a new advanced water treatment facility, expansion of a wastewater treatment facility, pump stations, transmission lines, and pipelines. The North City Project site contains approximately 147.3 acres of potentially suitable vireo and flycatcher habitat that were surveyed in 2016.

The vireo and flycatcher are closely associated with riparian habitats, especially densely vegetated willow scrub and riparian forest vegetation. These species are threatened primarily by loss, degradation, and fragmentation of riparian habitats. They also are impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

North City Project 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). The site occupies portions of Township 14 South, Range 1 East, 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 and 18; Township 15 South, Range 1 West, projected

Subject: 2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

Sections 1, 23 and 30; Township 15 South, Range 2 West, projected Sections 6, 25, 29, 30, 31, 32, 33, 35 and 36; Township 15 South, Range 3 West, projected Sections 9, 10, 11, 16, 17, 20, 25, 26, and 28; Township 16 South, Range 2 West, projected Sections 1, 2, 3, and 4; and Township 16 South, Range 3 West, projected Section 9 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 94 feet above mean sea level in the southwestern portion of Pure Water Program area to approximately 688-feet above mean sea level.

Soils on site consist of acid igneous rock land; Altamont clay; Carlsbad-Urban Land complex, Chesterton fine sandy loam; Chesterton-Urban Land complex; Cieneba rocky and very rocky coarse sandy loam, Cieneba-Fallbrook rocky sandy loam; Diablo clay; Diablo-Olivenhain complex; Diablo-Urban land complex; Fallbrook sandy loam; Fallbrook-Vista sandy loam; Friant rocky fine sandy loam; Gaviota fine sandy loam; gravel pits; Huerhuero loam; metamorphic rock land; Olivenhain cobbly loam; Ramona sandy loam; Redding cobbly and gravelly loam; Redding-Urban land complex; riverwash; Salinas clay loam; stony land; terrace escarpments; Tujunga sand; and Visalia sandy loam (USDA 2016).

VEGETATION COMMUNITIES

Based on species composition and general physiognomy, 13 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. Approximately 147.3 acres of vireo- and flycatcher-suitable habitat were mapped on the Project site according to Oberbauer et al. (2008).

Vegetation acreages are presented in Table 1, and primary constituent element habitats suitable for vireo and flycatcher are described following the table.

Table 1Vireo and Flycatcher-Suitable Vegetation Communities on the
Pure Water Program Site

Vegetation Community	Acres
Arundo-Dominated Riparian	7.5
disturbed Mulefat Scrub	1.9
disturbed Southern Willow Scrub	4.1
Mulefat Scrub	6.5
Southern Arroyo Willow Riparian Forest	29.1
Southern Coast Live Oak Riparian Forest	3.6

Table 1Vireo and Flycatcher-Suitable Vegetation Communities on the
Pure Water Program Site

Vegetation Community	Acres
Southern Cottonwood-Willow Riparian Forest	26.1
Southern Riparian Forest	6.8
Southern Sycamore-Alder Riparian Woodland	8.1
Southern Willow Scrub	53.6
Total	147.3

Arundo-Dominated Riparian

Arundo-dominated riparian is densely vegetated riparian thickets dominated by giant reed (*Arundo donax*) (Oberbauer et al. 2008). Arundo-dominated riparian primarily occurs along major rivers in coastal Southern California, including Otay River, Sweetwater River, San Diego River, San Dieguito River, and San Luis Rey River.

Mulefat Scrub (including Disturbed forms)

Mulefat scrub is a depauperate, tall, herbaceous riparian scrub strongly dominated by mulefat (*Baccharis salicifolia*). This early seral community is maintained by frequent flooding. Site factors include intermittent stream channels with fairly coarse substrate and moderate depth to the water table (Oberbauer et al. 2008). This community type is widely scattered along intermittent streams and near larger rivers.

Areas mapped as mulefat scrub within the Project Area are dominated by mulefat and are typically found along drainages that receive intermittent water throughout the year.

Disturbed mulefat scrub was mapped where 50% or more of the vegetation cover was dominated by non-native vegetation.

Southern Arroyo Willow Riparian Woodland

Southern arroyo willow riparian woodland is described by Oberbauer et al. (2008) 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*).

Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest is a dense riparian forest dominated by coast live oak *(Quercus agrifolia)*, often with an herbaceous understory. This community occurs along the bottom or outer slopes of larger streams (Oberbauer et al. 2008). Areas mapped as oak riparian forest are dominated by coast live oak.

Southern Cottonwood-Willow Riparian Forest

Southern cottonwood-willow riparian forest is dominated by deciduous trees species: Fremont cottonwood (*Populus fremontii*) or balsam poplar (*Populus trichocarpa*), and various willow trees (*Salix* spp.) (Oberbauer et al. 2008). The shrub layer typically includes various willow species (Oberbauer et al. 2008).

Southern Riparian Forest

Southern riparian forest is a dense riparian forest dominated by western sycamore (*Platanus racemose*), *Populus* species, and other wetland plants (Oberbauer et al. 2008). Southern riparian forests are primarily found along streams and rivers.

Southern Sycamore–Alder Riparian Woodland

Southern sycamore–alder riparian woodland is described by Oberbauer et al. (2008) as a tall, open, broad-leaved, winter-deciduous streamside woodland dominated by well-spaced western sycamore and often also white alder. Seldom forming closed canopy forests, these stands may appear as trees scattered in a shrubby thicket of sclerophyllous (i.e., evergreen) 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*).

Southern Willow Scrub (including Disturbed forms)

Southern willow scrub is a dense, broad-leafed, 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 and western sycamore trees emerging above the willow canopy and requires repeated flooding to avoid succession to a community dominated by these trees (Oberbauer et al. 2008).

On site, southern willow scrub occurs in patches dominated by arroyo willow (*Salix lasiolepis*) and black willow, with an understory of mulefat (*Baccharis salicifolia*).

Disturbed southern willow scrub was mapped where 50% or more of the vegetation cover was dominated by non-native vegetation.

METHODS

Suitable habitat areas within the study area were surveyed eight times for vireo and five times for flycatcher. Flycatcher-permitted Dudek wildlife biologists Paul M. Lemons (Permit #TE051248), Brock A. Ortega (Permit # TE813545-6), Jeff D. Priest (Permit # TE840619-3), and Anita M. Hayworth (Permit # TE781084-8) conducted all combined flycatcher/vireo surveys, while qualified Dudek biologists Callie J. Ford, Patricia Schuyler, Erin Bergman, and Marshall Paymard conducted vireo surveys on some visits (Table 2). Only flycatcher-permitted biologists used audio-playback techniques to elicit flycatcher responses. Focused surveys for these species were initiated on April 25, 2016, and continued through July 31, 2016.

Survey Pass #/	Data	Heure	Dereennel	Survey	Conditions (temperature, cloud cover, wind
Focus	Date	Hours	Personnei	Area	speed)
1-LBVI	2016-04-25	6:51 AM–9:52 AM	PS	3	57–61°F; 70–80% cc; 0-2 to 0-1 mph
					wind
1-LBVI	2016-04-27	6:02 AM-11:00 AM	KS	1A	55–62°F; 10–40% cc; 1-5 mph wind
1-LBVI	2016-04-28	6:02 AM-11:00 AM	KS	1B	55–58°F; 100% cc; 3-5 mph wind
1-LBVI	2016-05-04	6:28 AM-11:06 AM	CF	2	64–69°F; 0–100% cc; 0 mph wind
2-LBVI	2016-05-09	6:00 AM-10:59 AM	KS	1A	64–66°F; 90–100% cc; 2-3 mph wind
2-LBVI	2016-05-09	7:20 AM-10:16 AM	PS	3	63–68°F; 40–80% cc; 0-1 mph wind
2-LBVI	2016-05-10	6:04 AM-11:00 AM	KS	1B	64–70°F; 100% cc; 1 mph wind
2-LBVI	2016-05-17	4:50 AM-10:35 AM	JP	2	57–65°F; 100% cc; 0-1 to 1-4 mph wind
1-SWFL					
3-LBVI	2016-05-19	5:58 AM-10:31 AM	BO	1B	53–64°F; 100% cc; 0-1 mph wind
1-SWFL					
3-LBVI	2016-05-19	5:40 AM-11:00 AM	PL	1A	56–67°F; 100% cc; 0 to 1-4 mph wind
1-SWFL					
1-SWFL	2016-05-19	5:54 AM-11:09 AM	AH	3	61–75°F; 30–100% cc; 2-3 mph wind
3-LBVI	2016-06-01	5:00 AM-11:00 AM	JP	2	54–65°F; 100% cc; 0-1 to 1-4 mph wind
2- SWFL					
2- SWFL	2016-06-02	5:04 AM-10:08 AM	AH	3	57–75°F; 0% cc; 2-3 mph wind

 Table 2

 Vireo and Flycatcher Survey Schedule and Conditions

Subject: 2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

Survey Pass #/ Focus	Date	Hours	Personnel	Survey Area	Conditions (temperature, cloud cover, wind speed)
4-LBVI 2- SWFL	2016-06-03	5:50 AM-11:00 AM	PL	1A	58–76°F; 0–100% cc; 0-1 to 2-5 mph wind
4-LBVI 2- SWFL	2016-06-04	6:03 AM-10:50 AM	BO	1B	63–85°F; 70% cc; 0-1 mph wind
3-LBVI	2016-06-06	7:25 AM-10:15 AM	PS	3	64–72°F; 10–100% cc; 0-2 mph wind
5-LBVI 3- SWFL	2016-06-16	5:50 AM-11:00 AM	PL	1A	62–79°F; 0–10% cc; 0-1 to 1-4 mph wind
4-LBVI	2016-06-17	6:57 AM-10:05 AM	PS	3	64–79°F; 0–10% cc; 0-2 mph wind
5-LBVI 3- SWFL	2016-06-17	5:14 AM-10:32 AM	BO	1B	60–75°F; 20% cc; 0 mph wind
4-LBVI 3- SWFL	2016-06-17	5:00 AM-11:00 AM	JP	2	50–85°F; 0–10% cc; 0-2 to 1-3 mph wind
3- SWFL	2016-06-17	5:08 AM-10:09 AM	AH	3	64–75°F; 30–70% cc; 2-3 mph wind
6-LBVI	2016-06-26	6:08 AM-11:02 AM	MP	1A	66–80°F; 0–10% cc; 1-2 mph wind
6-LBVI	2016-06-27	6:00 AM-11:02 AM	MP	1B	67–78°F; 10% cc; 1-2 mph wind
5-LBVI	2016-06-27	6:05 AM-10:46 AM	PS	3	66–82°F; 0–50% cc; 0-2 mph wind
5-LBVI 4- SWFL	2016-06-30	5:00 AM-11:00 AM	JP	2	62–80°F; 0–100% cc; 0-1 to 3-6 mph wind
4- SWFL	2016-07-01	5:33 AM-10:10 AM	AH	3	65–73°F; 0–100% cc; 2 mph wind
7-LBVI 4- SWFL	2016-07-05	5:31 AM-10:48 AM	BO	1B	65–82°F; 0–100% cc; 5 mph wind
7-LBVI 4- SWFL	2016-07-07	5:50 AM-11:00 AM	PL	1A	63–74°F; 0–100% cc; 0 to 1-5 mph wind
6-LBVI	2016-07-08	6:05 AM-10:54 AM	PS	3	64–77°F; 0–100% cc; 0-2 mph wind
6-LBVI 5- SWFL	2016-07-11	5:00 AM-11:00 AM	JP	2	64–76°F; 0–100% cc; 1-4 to 1-5 mph wind
5- SWFL	2016-07-14	5:30 AM-10:15 AM	AH	3	66–70°F; 50–100% cc; 1 mph wind
8-LBVI 5- SWFL	2016-07-15	5:53 AM-11:05 AM	во	1B	65–77°F; 0–100% cc; 0-3 mph wind
8-LBVI 5- SWFL	2016-07-17	6:00 AM-11:00 AM	PL	1A	64–77°F; 0–100% cc; 0-1 to 2-6 mph wind
7-LBVI	2016-07-20	6:12 AM-10:39 AM	PS	3	64–82°F; 10–100% cc; 0-2 mph wind
7-LBVI	2016-07-21	6:00 AM-11:03 AM	MP	2	65–86°F; 10% cc; 1-2 to 2-3 mph wind
8-LBVI	2016-07-31	5:57 AM-11:57 AM	EB	3	69.3–85.1°F; 0–100% cc; 0-0.6 mph wind
8-I BVI	2016-07-31	6.20 AM-11.25 AM	CF	2	68–86°F·0–100% cc: 0 mph wind

 Table 2

 Vireo and Flycatcher Survey Schedule and Conditions

Notes: LBVI = least Bell's vireo; SWFL = Southwestern willow flycatcher; AH = Anita Hayworth; BO = Brock Ortega; CF = Callie Ford; EB = Erin Bergman; JP = Jeff Priest; KS = Kevin Shaw; MP = Marshall Paymard; PL = Paul Lemons; PS = Patricia Schuyler; cc = cloud cover; mph = miles per hour; $^{\circ}$ F = degrees Fahrenheit.

Recovery Permit Coordinator

Subject: 2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

As directed by Stacey Love, United States Fish & Wildlife Service (USFWS) Recovery Permit Coordinator (via email sent on April 27, 2016), surveys for vireo and flycatcher were not conducted concurrently. Due to differences in detectability, surveys were conducted sequentially, with surveys for the flycatcher first (i.e., first thing in the morning) and surveys for the vireo conducted afterwards. Additionally, for linear survey routes within a riparian corridor: flycatchers were surveyed from the starting point to the end, and vireos were surveyed on the way back. This route was arranged to cover all suitable habitat on site (depicted on Figure 3). A vegetation map (1:2,400 scale; 1 inch=200 feet) of the study area was available to record any detected vireo or flycatcher. Binoculars (7×50, 10×42, 10×50) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (*A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher* [Sogge et al. 2010]), which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. It is recommended that one survey is made between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Surveys during the final period (June 25 and July 17) were separated by at least five days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. If a flycatcher had been detected, playing of the tape would have ceased to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted *Least Bell's Vireo Survey Guidelines* (USFWS, 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations were not used during the surveys. Surveys were conducted between dawn and noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

Weather conditions, time of day, and season were appropriate for the detection of flycatcher and vireo (Table 2).

RESULTS

Ten (10) vireo Use Areas were observed on several occasions during the 2016 survey effort. Observed vireo use areas are defined as the specific areas of habitat that each vireo was observed

utilizing throughout the 2016 survey effort. All vireos detected within the study area were adult males, either singing or directly observed, and are shown in Figures 3a through 3n. Due to the long linear project alignment and fragmented suitable habitat areas to be accessed throughout the alignment, long periods of time were not spent at each vireo location to determine behavior (i.e., paired, unpaired, breeding status) of each individual vireo.

A one-time observation of willow flycatcher (*Empidonax traillii*) was observed by biologist Brock Ortega on May 19, 2016 (Figure 3f). The flycatcher was vocal, responding to taped playback, with no breeding behavior observed during this observation. According to Sogge (2010), because this flycatcher was observed during Period 1 (May 15 to 31) was not observed again during all remaining survey visits, it is not expected to be a southwestern willow flycatcher breeding within the study area.

Sensitive species observed included coastal California gnatcatcher (*Polioptila californica californica*), a federally listed threatened species; yellow-breasted chat (*Icteria virens*), a California Department of Fish and Wildlife (CDFW) Species of Special Concern; yellow warbler (*Dendroica petechia*), a CDFW Species of Special Concern; southwestern pond turtle (*Actinemys marmorata pallida*), a CDFW Species of Special Concern; Cooper's hawk (*Accipiter cooperii*), a CDFW Watch List species; and Nuttall's woodpecker (*Picoides nuttallii*), a USFWS Bird of Conservation Concern. Sensitive species observation locations are shown in Figures 3a through 3n. Brown-headed cowbird was also detected within the study area (Figure 3m).

One hundred twenty-seven wildlife species were observed during the focused surveys. A full list of wildlife species observed during the survey is provided in Appendix A. Data forms (Sogge et al. 2010) for willow flycatcher are included as Appendix B.

Please feel free to contact me at 760.479.4238 with questions or if you require additional information.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,

NIN

Paul Lemons Wildlife Biologist

Brock Ortega Permit #TE813545-6

Recovery Permit Coordinator Subject: 2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program North City Project, County of San Diego, California

Jeffrey D. Priest

Permit #TE840619

Anita Hayworth Permit #TE781084-8

Att: Figures 1–3n Appendix A and B

cc: Brock Ortega

REFERENCES

- Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Robert F. Holland, Ph.D., October 1986.
- Sogge, M.K., Ahlers, Darrell, and Sferra, S.J., 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*. U.S. Geological Survey Techniques and Methods 2A-10, 38 p.
- USDA (U.S. Department of Agriculture). 2016. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed August 2016. http://websoilsurvey.nrcs.usda.gov/.
- USFWS. 2001. Least Bell's Vireo Survey Guidelines. January 19.

























SOURCE: ESRI Word Topographic Basemap, 2016

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3a Survey Results Map



LEGEND

Pipeline Study Area - 500 FT Buffer
 Project Pipeline Impacts
 SWFL/ LBVI Survey Route
 Survey Results
 Species Code, Common Name
 POTU, Southwestern pond turtle
 Suitable SWFL/ LBVI Habitat
 Code, Dudek_VegCom
 MFS, Mule Fat Scrub
 NVC, Non-Vegetated Channel or Floodway
 SCI O, Southers Coast Line Oals Bin

SCLO, Southern Coast Live Oak Riparian Forest SRF, Southern Riparian Forest

SWRF, Southern Arroyo Willow Riparian Forest

Riparian Habitat

SWIFL/LBVI Survey Areas		
	Survey Area 1A	
	Survey Area 1B	
	Survey Area 2	
	Survey Area 3	



SOURCE: ESRI Word Topographic Basemap, 2016

610 ⊣ Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3b Survey Results Map



LEGEND

Pipeline Study Area - 500 FT Buffer
 Project Pipeline Impacts
 SWFL/ LBVI Survey Route
 Survey Results
 COHA,Cooper's Hawk
 YEWA,Yellow warbler
 Suitable SWFL/ LBVI Habitat

Code, Dudek_VegCom

 FWM, Coastal and Valley Freshwater

 Marsh

 SCLO, Southern Coast Live Oak Riparian

 Forest

 SWRF, Southern Arroyo Willow Riparian

 Forest

 SWS, Southern Willow Scrub

Riparian Habitat
SWIFL/LBVI Survey Areas
Survey Area 1A

Survey Area 1B
Survey Area 2
Survey Area 3



SOURCE: ESRI Word Topographic Basemap, 2016

610 Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3c Survey Results Map




LEGEND

Pipeline Study Area - 500 FT Buffer
 Project Pipeline Impacts
 SWFL/ LBVI Survey Route
 Suitable SWFL/ LBVI Habitat
 Code, Dudek_VegCom
 SWS, Southern Willow Scrub

Riparian Habitat

SWIFL/LBVI Survey Areas								
	Survey Area 1A							

- Survey Area 1BSurvey Area 2
- Survey Area 3



SOURCE: ESRI Word Topographic Basemap, 2016

610 Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3e Survey Results Map



LEGEND

Pipeline Study Area - 500 FT Buffer
 Project Pipeline Impacts
 SWFL/ LBVI Survey Route
 Survey Results
 Species Code, Common Name
 WIFL,Willow Flycatcher
 YBCH,Yellow-breasted chat
 YEWA,Yellow warbler

Suitable SWFL/ LBVI Habitat

Code, Dudek_VegCom

CSS-CHP, Coastal Sage-Chaparral Transition DH, Disturbed Habitat SARW, Southern Sycamore-Alder Riparian Woodland SMX, Southern Mixed Chaparral SRF, Southern Riparian Forest SWS, Southern Willow Scrub dSWS, disturbed Southern Willow Scrub **Riparian Habitat** SWIFL/LBVI Survey Areas Survey Area 1A Survey Area 1B Survey Area 2 Survey Area 3

> 610 Feet

305

DUDEK



SOURCE: ESRI Word Topographic Basemap, 2016

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3f Survey Results Map





SOURCE: ESRI Word Topographic Basemap, 2016

610 Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3g Survey Results Map



2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

DUDEK



Figure 3h Survey Results Map



2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California



Figure 3i Survey Results Map



LEGEND

Pipeline Study Area - 500 FT Buffer
 Project Pipeline Impacts
 Observed LBVI Use Area
 SWFL/ LBVI Survey Route

Survey Results

Species Code, Common Name

- LBVI-adult male,Least Bell's Vireo
- + NUWO,Nutall's woodpecker
- YBCH, Yellow-breasted chat
- YEWA,Yellow warbler
- Suitable SWFL/ LBVI Habitat

Code, Dudek_VegCom

SWRF, Southern Arroyo Willow Riparian Forest

Riparian Habitat

SWIFL/LBVI Survey Areas							
	Survey Area 1A						
	Survey Area 1B						
	Survey Area 2						
	Survey Area 3						



SOURCE: ESRI Word Topographic Basemap, 2016

610 – Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3j Survey Results Map



LEGEND

 \odot Pipeline Study Area - 500 FT Buffer Project Pipeline Impacts Observed LBVI Use Area SWFL/ LBVI Survey Route Survey Results

Species Code, Common Name									
+	COHA,Cooper's Hawk								
+	LBVI-adult male,Least Bell's Vireo								
	NUWO,Nutall's woodpecker								
+	YBCH, Yellow-breasted chat								
	Suitable SWFL/ LBVI Habitat								
Code, Duc	lek_VegCom								
	SWS, Southern Willow Scrub								
Riparian H	labitat								
SWIFL/LB	VI Survey Areas								
	Survey Area 1A								
	Survey Area 1B								
	Survey Area 2								
	Survey Area 3								



SOURCE: ESRI Word Topographic Basemap, 2016

610 - Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3k Survey Results Map





2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3I Survey Results Map



LEGEND

Pipeline Study Area - 500 FT Buffer
 Project Pipeline Impacts
 Observed LBVI Use Area
 SWFL/ LBVI Survey Route

Survey Results

Species Code, Common Name

- BHCO,brown headed cowbird
- CAGN, California Gnatcatcher

COHA,Cooper's Hawk

- LBVI-adult male,Least Bell's Vireo
- NUWO,Nutall's woodpecker

YEWA, Yellow warbler

Suitable SWFL/ LBVI Habitat

Code, Dudek_VegCom

DUDEK

CSS, Diegan Coastal Sage Scrub DEV, Urban/Developed NVC, Non-Vegetated Channel or Floodway OW, Open Water SCWRF, Southern Cottonwood-Willow Riparian Forest SWRF, Southern Arroyo Willow Riparian Forest SWS, Southern Willow Scrub Riparian Habitat SWIFL/LBVI Survey Areas Survey Area 1A Survey Area 1B

0 305 610

Survey Area 2

Survey Area 3



SOURCE: ESRI Word Topographic Basemap, 2016

Figure 3m Survey Results Map





SOURCE: ESRI Word Topographic Basemap, 2016

610 Feet

305

DUDEK

2016 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Pure Water San Diego Program, County of San Diego, California

Figure 3n Survey Results Map

APPENDIX A

Wildlife Species Observed in Study Area

ATTACHMENT A Wildlife Species Observed in Study Area

AMPHIBIANS

FROGS

RANIDAE—TONGUELESS FROGS

* Lithobates catesbeianus—American bullfrog

BIRDS

BLACKBIRDS, ORIOLES, AND ALLIES

ICTERIDAE—BLACKBIRDS

Agelaius phoeniceus—red-winged blackbird Euphagus cyanocephalus—Brewer's blackbird Icterus bullockii—Bullock's oriole Quiscalus mexicanus—great-tailed grackle

* *Molothrus ater*—brown-headed cowbird *Icterus cucullatus*—hooded oriole

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus-bushtit

CARDINALS, GROSBEAKS, AND ALLIES

CARDINALIDAE—CARDINALS AND ALLIES

Passerina amoena—Lazuli bunting Piranga ludoviciana—western tanager Passerina caerulea—blue grosbeak Pheucticus melanocephalus—black-headed grosbeak

CORMORANTS

PHALACROCORACIDAE—CORMORANTS

Phalacrocorax auritus-double-crested cormorant

EMBERIZINES

EMBERIZIDAE—EMBERIZIDS

Chondestes grammacus—lark sparrow

Melospiza lincolnii—Lincoln's sparrow Melospiza melodia—song sparrow Melozone crissalis—California towhee Pipilo maculatus—spotted towhee Zonotrichia leucophrys—white-crowned sparrow Aimophila ruficeps—rufous-crowned sparrow Junco hyemalis—dark-eyed junco

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Spinus psaltria—lesser goldfinch Spinus tristis—American goldfinch Haemorhous mexicanus—house finch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee Empidonax traillii—willow flycatcher Myiarchus cinerascens—ash-throated flycatcher Sayornis nigricans—black phoebe Sayornis saya—Say's phoebe Tyrannus verticalis—western kingbird Tyrannus vociferans—Cassin's kingbird Empidonax difficilis—Pacific-slope flycatcher

GOATSUCKERS

CAPRIMULGIDAE—GOATSUCKERS

Chordeiles acutipennis—lesser nighthawk

GREBES

PODICIPEDIDAE—GREBES

Podilymbus podiceps—pied-billed grebe

ATTACHMENT A (Continued)

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk Buteo jamaicensis—red-tailed hawk Buteo lineatus—red-shouldered hawk Circus cyaneus—northern harrier Elanus leucurus—white-tailed kite

HERONS AND BITTERNS

ARDEIDAE—HERONS, BITTERNS, AND ALLIES

Ardea alba—great egret Ardea herodias—great blue heron Butorides virescens—green heron Egretta thula—snowy egret Nycticorax nycticorax—black-crowned night-heron

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird Calypte costae—Costa's hummingbird Selasphorus sasin—Allen's hummingbird

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

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

KINGLETS

REGULIDAE—KINGLETS

Regulus calendula—ruby-crowned kinglet

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird Toxostoma redivivum—California thrasher

ATTACHMENT A (Continued)

NEW WORLD QUAIL

ODONTOPHORIDAE-NEW WORLD QUAIL

Callipepla californica—California quail

NEW WORLD VULTURES

CATHARTIDAE—CARDINALS AND ALLIES

Cathartes aura-turkey vulture

OLD WORLD SPARROWS

PASSERIDAE—OLD WORLD SPARROWS

* Passer domesticus—house sparrow

OLD WORLD WARBLERS AND GNATCATCHERS

SYLVIIDAE—SYLVIID WARBLERS

Polioptila caerulea—blue-gray gnatcatcher *Polioptila californica californica*—coastal California gnatcatcher

OWLS

TYTONIDAE—BARN OWLS

Tyto alba—barn owl

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura-mourning dove

- * *Columba livia*—rock pigeon (rock dove)
- * Streptopelia decaocto—Eurasian collared-dove

RAILS, GALLINULES, AND COOTS

RALLIDAE—RAILS, GALLINULES, AND COOTS

Fulica americana—American coot

SHOREBIRDS

CHARADRIIDAE—LAPWINGS AND PLOVERS

Charadrius vociferus-killdeer

SILKY FLYCATCHERS

PTILOGONATIDAE—SILKY-FLYCATCHERS

Phainopepla nitens-phainopepla

STARLINGS AND ALLIES

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

SWALLOWS

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow *Petrochelidon pyrrhonota*—cliff swallow *Stelgidopteryx serripennis*—northern rough-winged swallow

SWIFTS

APODIDAE—SWIFTS

Aeronautes saxatalis-white-throated swift

TERNS AND GULLS

LARIDAE—GULLS, TERNS, AND SKIMMERS

Larus occidentalis—western gull *Sterna hirundo*—common tern *Hydroprogne caspia*—Caspian tern

THRUSHES

TURDIDAE—THRUSHES

Catharus guttatus—hermit thrush *Sialia mexicana*—western bluebird *Turdus migratorius*—American robin

TITMICE

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus-oak titmouse

ATTACHMENT A (Continued)

VIREOS

VIREONIDAE—VIREOS

Vireo bellii pusillus—least Bell's vireo Vireo gilvus—warbling vireo Vireo huttoni—Hutton's vireo

WATERFOWL

ANATIDAE—DUCKS, GEESE, AND SWANS

Anas platyrhynchos—mallard Anas strepera—gadwall Lophodytes cucullatus—hooded merganser

WAXWINGS

BOMBYCILLIDAE—WAXWINGS

Bombycilla cedrorum—cedar waxwing

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Geothlypis trichas—common yellowthroat Icteria virens—yellow-breasted chat Oreothlypis celata—orange-crowned warbler Cardellina pusilla—Wilson's warbler Setophaga petechia—yellow warbler Setophaga townsendi—Townsend's warbler

WOODPECKERS

PICIDAE—WOODPECKERS AND ALLIES

Melanerpes formicivorus—Acorn woodpecker Picoides nuttallii—Nuttall's woodpecker Picoides pubescens—downy woodpecker Colaptes auratus—northern flicker

WRENS

TROGLODYTIDAE—WRENS

Thryomanes bewickii—Bewick's wren *Troglodytes aedon*—house wren

INVERTEBRATES

BUTTERFLIES

LYCAENIDAE—BLUES, HAIRSTREAKS, AND COPPERS

Leptotes marina-marine blue

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Adelpha bredowii—California sister Danaus gilippus—queen Junonia coenia—common buckeye Nymphalis antiopa—mourning cloak Vanessa annabella—west coast lady Vanessa atalanta—red admiral Vanessa cardui—painted lady Danaus plexippus—monarch

RIODINIDAE—METALMARKS

Apodemia mormo virgulti—Behr's metalmark

PAPILIONIDAE—SWALLOWTAILS

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

PIERIDAE—WHITES AND SULFURS

Phoebis sennae—cloudless sulphur Pieris rapae—cabbage white Pontia protodice—checkered white Pontia sisymbrii—spring white

MAMMAL

CANIDS

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

CATS

FELIDAE—CATS

Lynx rufus—bobcat

ATTACHMENT A (Continued)

DOMESTIC

CANIDAE—WOLVES AND FOXES

* Canis lupus familiaris—domestic dog

HARES AND RABBITS

LEPORIDAE—HARES AND RABBITS

Sylvilagus audubonii—desert cottontail *Sylvilagus bachmani*—brush rabbit

MUSTELIDS

MEPHITIDAE—SKUNKS

Mephitis mephitis-striped skunk

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae-Botta's pocket gopher

RACCOONS

PROCYONIDAE—RACCOONS AND RELATIVES

Procyon lotor—raccoon

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi-California ground squirrel

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus-mule deer

REPTILES

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard *Uta stanburiana*—common side-blotched lizard

TEHDAE—WHIPTAIL LIZARDS

Aspidoscelis hyperythra beldingi-Belding's orange-throated whiptail

SNAKES

VIPERIDAE—VIPERS

Crotalus ruber-red diamondback rattlesnake

TURTLES

EMYDIDAE—BOX AND WATER TURTLES

Actinemys marmorata—western pond turtle

* signifies introduced (non-native) species

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APPENDIX B

Willow Flycatcher Survey and Detection Forms

Appendix 1. Willow Flycatcher Survey and Detection Form

Area

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/southwest/es/arizona/) for the most up-to-date version.

		Willow	v Flycatel	er (WIFI	l) Survey an	d Detection Form (revised	April	2010)		
Site Name	Fure	-w	ater	~		StateCounty	5	m	Diego	
USCS Qua Creek, Riv	d Name er, Wetland,	or Lake	Name	Seven	al thea	ichart Snr Dieja	· Co	int	(met	crs)
Is cop	y of USGS n	nup ntari	ied with st	ervey area	and WIFL s	ightings anached (as requi	ired)?	1	les X N	0
Survey Co	ordinutes. S	lan: E 4	81051.	27	N 362	4902.48 UTM	Datum	NAD 2	Cee instruc	tions)
If surv	S cy coordinat	top: E 5	ed between	. (20 n visits, el	ter coordinate	es for each survey in comm	cone_	ction o	n back of this	s page.
		**	Fill in ac	lditiona	site inform	nation on back of this	page	**	_	
Survey# Observer(≼) (Full Name)	Date (m/d/y) Survey tone ZCN (G	Number 16 Adult WIFEs	Estimative Number of Pauls	Estimated Number of Territories	Nest(s) Found? Y or X (f Yes, number of posts	Comments (e.g., bud beliavior, evidence of pars or breeding, potential threats (Invostock, cowbards, (Norklaska spp.j), UF Norkholko (usud, contact USEWS and State WHFL	GPS Ce (dississ) individ- cach su necessa	cordinate an optio: Jals, paru svey) - la ry:	s for WIFL Dete nal column for d s, or groups of t salinde additions	ections peamersing ands found on I sheets if
Survey # 1	- 1					coordenator	# Dinas	5:3	UTM E	UTM: N
Observerts)	Dute 5/14									
Fart	Simt Querce	0	0	0	0			+		
184	SIOP DIX									
Survey # 2	Dara e /2	_					# Bods	Sex	UTME	ULL N
Observer(s)	Suatesta				<i>C</i> 2				_	
FL-	Sim IIO	O	0	0			-			
1.*	Total los 📶									
Survey # 3	Date (-/IC+						# Dirds	5:1	טיזא ב	υ ή Μ. Ν
Observer(s)	Star OFF	0		\circ	\sim		_		_	
PL-	Stor 1102				0					
L	Total hrs 5.1									_
Survey # 4	Date 7/7						# Hires	Scx	UTM E	С.17M К
Observer(s)	Start OFFD			~	0					
SI-	Sion 11422	0	O	\mathcal{O}	0					
15	Total lus 51						_			
Survey # 5	Durchen						# Birds	Sex	IITM E	UTMIN
Observe:(s)	Stat (Y.LZ									
PL	sun 1100	O	$ \mathcal{O} $	O	O		-			
/ -	Total brs 5								_	
Overail Site St. Totals do not equa each column fiech resident adults - O- migrants, restlinga	Innniary I che sum pri I de oniv a not incluste 5, and	Totač Adali Residents	Toul Pairs	Toral Territories	Total Neats	Were any Willow Flycate	hers co	kor-bau:	ided? Yes	_No
De careful not to J netividuals.	ouble cours	0	0	0	0	If yes, report color combination(s) in the comments section on back of form and report to USFWS. N/A - Nc WIFL detected			2	
Total Survey Hrs	6-20	-					~	1		

 Reporting Individual
 Part Learness
 Date Report Completed
 September 2016

 US Fish and Wildlife Service Permit # TE051248-5
 State Wildlife Agency Permit # Service Permit # Service
 State Wildlife Agency Permit # Service

 Submit form to USFWS and State Wildlife Agency by September 1st, Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

Fill in the following information completely. <u>Submit</u> form by September 1st. Retain a copy for your records.

Reporting Individual Part Lemans Phone # 160-942-5147 Affiliation Consultant - Dudek E-mail plemons@dudek.com Site Name Pure Water San Diege Program Date Report Completed Site 2016
Did you verify that this site name is consistent with that used in previous years? Yes No Not Applicable $\underline{\times}$ tf site name is different, what name(s) was used in the past? N/A If site was surveyed last year, did you survey the same general area this year? Yes No If no, summarize below, N/A Did you survey the same general area during each visit to this site this year? Yes $\underline{\times}$ No If no, summarize below.
Management Authority for Survey Area : Federal Municipal/County & State Tribal Private Name of Management Entity or Owner (e.g., Tonto National Forest) of Som Drego
Longth of area surveyed: ~37,400 (meters) = Approximate length of Entrie Project Alignment
Vegetation Characteristics: Mark the category that best describes the predominant tree/shrub foliar layer at this site (check one):
Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)
Mixed native and exotic plants (mostly native, 50 - 90% native)
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)
Identify the 2-3 predominant tree/strub species in order of dominance. Use scientific name.
Average height of canopy (Do not include a range):255 (meters)
Attach copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections. Attach sketch or aerial photo showing site location, patch shape, survey route, location of any WIFLs or WIFL nests detected. Attach photos of the interior of the patch, exterior of the patch, and overall site; describe any unique habitat features.

Comments (attach additional sheets if necessary)

No WIFL detected

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM N	UTM E	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting altempts, behavior)

Altach additional sheets if necessary

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/ southwest/es/arizona/) for the most up-to-date version.

	Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)										
	Site Name USGS Qua	Pure	- W	ater	-sec	report	State CA_ County Elevation 28	5	in	Diego	ers)
	Creek, Riv	er, Wetland,	or Lake	Name	Sever	al thea	what Sn Dicie	· (0	ind	Ky A	10
Gurray	Survey Co	Survey Coordinates: Start: E 491059,27 N 3624902.48 UTM Datum NAD27 (See instructions) Stop: E 508963.00 N 3642969.89 UTM Zone US									
	If surv	If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.									
Area			**	Fill in au	dditional	site inform	nation on back of this	page	**		
1B	Survey 4 Observer(s) (Full Name)	Date (m/d/y) Survey Lote 2016	Number of Adult WIFLs	Estimated Number of Patris	Estimated Number of Ferritories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bard behavior, rvelence of paos or breeding; potential threads (hvestock, constricts, <i>Diorikalska</i> spo). If <i>Diorikalska</i> found, contact USFWS and State WIFL coordinater	GPS Coordinates for WIFL Detections (this is an optional column for documenting and viduals, pairs, or groups of birds found on each sarvey), include additional shoets if recessary.			
	Survey # 1 Observer(s)	Date 5/19			1.0		Carpins .	A Hints	Ser	UTME	UIMIN
	Brock	star()558		ø	Ø	N	(S.		-		
	ntera	Seep 1031			1		not swee				
	(30)	Total has 45							_		
	Survey # 2	Date G/H	-					A Birds	Sev	UTM E	UIM N
	Observer(s)	Sec. 12.03							_		
	R/1	sin iOSU	-	-	-	-					
		Total base 4 %									
	Survey # 3 Observec(s)	Date G/M						t Hinds	Sça	UTM E	UTM N
		Start Ø514		_				_			
	BO	Stop 1032	-	-	-	-			_		
		Total hos 5.20	F								
	Survey # 4	Dx: 7/5						# Birds	Sex	UTM E	ע אדט
	Observer(s)	Stat / 531							_		
	20	Star Insula	-	-	-	-	3	-	-		
	DU	Total hos 5 2	5								
	C	Totar Ins II-	· · · ·		-	-		d Busid	C.	Utha P	LUTNER.
	Observer(s)	1460 7/15						* Birch	.Nex.	DIME	UISIN
		Start 0553	-	-	-	-					
	30	Stop (105	-						_		
		Total hrs 5.7	-					-			
	Overall Site St Totals do not equa each column, Inclu- resident adults. D migrar(s, neatling, Godol each	ummary of the sum of use anly o rue include s, and	Total Adult Residents	ifosal Paors	Total Temuones	Total Nexts	Were any Willow Flycatel	ters co	lor-ba	nded? Yes	_No 🖌
	De czreful nat to c individuals Tistal Survey Hrs	louhle court 25.1	ø	ø	ø	ø	If yes, report color combin section on back of form an	iation(s id repo	s) in th ri to 13	e comments SFWS.	

Reporting Individual Drs. Conference Date Report Completed US Fish and Wildlife Service Permit # TCS13545-6 State Wildlife Agency Permit #

Submit farm to USFWS and State Wildlife Agency by September 18. Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

Fill in the following information completely. <u>Submit</u> form by September 1st. Retain a copy for your records.

Reporting Individual Brak Orfege Phone # 160-942-5147 Adiiliation
Did you verify that this site name is consistent with that used in previous years? Yes No Not Applicable $\underline{\checkmark}$. If site name is different, what name(s) was used in the past? N/A. If site was surveyed last year, did you survey the same general area this year? Yes No If no, summarize below. N/A.
Did you survey the same general area during each visit to this site this year? Yes 🔀 No If no, summarize below.
Management Authority for Survey Area : Federal Municipal/County & State Tribal Private Name of Management Entity or Owner (e.g., Tonto National Forest) of Sam Drego
Length of area surveyed: ~37,400 (nuclers) = Approximite length of Entire Frozent Alignment
Vegetation Characteristics: Mark the category that best describes the predominant tree/shrub foliar layer at this site (check one):
Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)
Mixed native and exotic plants (mostly native, 50 - 90% native)
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Salex of . , Bacharis salestotia j flataaus sp.
Average height of canopy (Do not include a range): 20 (meters)
Attach copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections.

Attach copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections. Attach sketch or aerial photo showing site location, patch shape, survey route, location of any WIFLs or WIFL nests detected. Attach photos of the interior of the patch, exterior of the patch, and overall site; describe any unique habitat features.

Comments (attach additional sheets if necessary)

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM N	UTM E	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (c.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (<u>http://www.fws.gov/</u> southwest/es/arizona/) for the most up-to-date version.

		P	1. 1	w Elycatel	her (WEF)	L) Survey an	d Detection Form (revised	а Арги	2010)			
	State Name Several - See, report Elevation 29 Creek, River, Wolland, or Lake Name Several the school of USCS man marked with survey area and WFEL significant attached (as real									(net	ers).	
Gurrey	Survey Coordinates: Start: E 491057, 27 N 3624102.48 UTM Datum MD27 (See instructions) Stop: E 508963.00 N 3642957,87 UTM Zone 115 If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page. ** Fill in additional site information on back of this page **											
2	Survey # Observer(s) {Fid] Name)	Date (m/d/y) Survey tame 2016	Number of Aduli WIFLs	Estamated Number of Pairs	exted exted Estimated ber of Number of Iremtories Demtorial Spain State WIFL of nesrs Estimated Nesroek Comments (e.g., bird beha- evidence of pairs or breedi potential threads (breatwork) covbirds, Drashabda spp. Dischabda found, contact USPWS and State WIFL coverding in			GPS Coordinates for WIFL Detections (thus as an optional solumn for documenting individuals, pairs, or groups of builts found on cach survey), include additional sheets of necessary.				
	Survey # 1 Observer(s) Jeff Priest	User 5/17 Start 0450 Stop 1035 Total 1035.74	0	0	Õ	N		# Bic\$1	¥ea 	DIME	א אדע	
	Survey # 2 Observen(s) IP	Date 6/1 Start 0:500 Stop 1100 Total 345 6	Q	Ο	0	N		# Birds	Srs.	ЛШЕ		
	Survey # 3 Observentst	Date 6/17 Start 0500 Stop 11022 Total has 62	Ο	υ	Ø	N		# Birds	Side .	171M E	א אודט	
	Survey # 4 Observer(s) JP	Dake G /90 Start (FSC) Slop [[(X> Total hrs (D	0	0	O	Ν	BHCO 38,12	Birds	Sex	L WL	LETIM N	
	Survey # 5 Observer(s)	Date 7/14 Start (2005) Stop 11(20) Total his <u>62</u>	0	0	0	N	BHCO 28,12	ř Rink	Sex	UTM E	UTM 4	
	Overall Site Sti Topis de not equa cach column. India resident incluts. Di migrants, nestings Recisiusas	(mmary 1 the sum of 26 only 5 nat include 5, and	Total Adult Residents	Total Paus	Total Territories	Total Nexis	Were any Willow Flycatchers color-banded? YesNo				.No	
	Be careful not to d undividuals. Total Survey Hrs	0	0	0	0	to yes, report dotor combin section on back of form an						

US Fish and Wildlife Service Permit # <u>TC 34CX316</u> - <u>State Wildlife Agency Permit #</u> <u>3C-2211</u> <u>Submit form to USFWS and State Wildlife Agency by September 1[®]. Retain a copy for your records.</u>

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Elycatcher

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	Fill in the following information completely. <u>Submit</u> form by September 1 st . Retain a copy for your records.
Repor Affilia	ning Individual Jeff Priest Phone # 160 942-5147
Site N	arre Pore Water San Diego Program Date Report Completed
Did ye If site If site	but verify that this site name is consistent with that used in previous years? Yes No Not Applicable $\sum_{n=1}^{\infty}$ pame is different, what name(s) was used in the past? N/A .
Did y	bu survey the same general area during each visit to this site this year? Yes <u>'</u> No If no, summarize below.
Mana, Name	gement Authority for Survey Area : Federal Municipal/County 🗠 State Tribal Private of Management Entity or Owner (e.g., Tonto National Forest) of Sen Drege
1.engt	not area surveyed: ~37,400 (motors) = Approximate length of Gutine Project Alignment
Veget	ation Characteristics: Mark the category that best describes the predominant tree/shrub foliar layer at this site (check one);
	Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)
X	Mixed native and exotic plants (mostly native, 50 - 90% native)
— -	Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
	Exotic/introduced plants (entirely or almost entirely, > 90% exotic)
(Willow)	ly the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Salix fasiolopsis, Sugaror Matanus racewosa (Mule fat y Brichon's salicifol)
Avera	ge height of eanopy (Do not include a range): (meters)
Attach Attach Attach	copy of USGS quad/topographical map (REQUIRED) of survey area, outlining, survey site and location of WIFL detections. sketch or aerial photo showing, site location, patch shape, survey route, location of any WIFLs or WIFL nests detected. a photos of the interior of the patch, exterior of the patch, and overall site; describe any unique habitat features.
Comm	No WIFL observed .
<u>.</u>	

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM N	UTM E	Pair Continned? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/ southwest/es/arizona/) for the most up-to-date version.

		Willow	Flycateb	er (WIFL	.) Survey And	t Detection Form (revised	April	2010)	Dura	
Site Name_ USGS Ouad	Pure Name	- Wo	crel-	see	report	Elevation 28 -	21	0 t	(mete	rs)
Creek, Rive Is copy	r, Wetland, (of USGS m	os Lake N ap marki	lame ed with su	Sever rvey area	and WIFL si	ightings attached (as requi	red)?	I	esit No	
Survey Coo	ordinates: Sto Sto ev coordinate	art: E <u>45</u> op: E <u>56</u> is change	01051. 28963	27 .00 1 visits, en	N 3624 N 3642 ter coordinate	1902.48 UTM 1 159.87 UTM 2 es for each survey in comm	Datum	IAP 22	KSee instruct	ions) page.
II OU I	.,	**1	fill in ad	lditional	site inform	nation on back of this	page	* **	a word Day	1
Survey # Ohserver(s) (Full Name)	Date (m/d/y) Survey tone 2010-	Number of Adult WiFL4	Estimated Number of Parts	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior, avidence of puirs or breeding; potential threats (Investock, cowbirds, <i>Diarhabda</i> spp.). If <i>Diarhabda</i> found, contact USFWS and State WIFL coordinator	(this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1	a. che	-					# Birds	Sex	UTM 6	VCM N
Anita Hayworth	Stan 0554 Stap (109	0	0	0	N					
CAN)	Total hrs			-			# Birds	See	VEN 2	N אנגת
Observa(3)	Date le Z					1.04	-	-		
ALL	Star Or Of	0	0	0	N					
AH	Step 1009	5 8					-			
C	Total hrs?			-			9 Benis	Sea	UTM B	UTM N
Observer(s)	Due $G[t^n]$						-		5 TA	
8.1	Stan Or O	0	0	Ö	N	0				
PH	Step [00]									
0 84	Total hers 2						# Birds	Sex	ID M B	UTMIN
Onserver(S)	Date 7/1							-		
1.4	Start 0535	0	0	C	N		-			
AH	Stop OLD							_		
	Total hrs 9.0			-			# Birds	Sea	ОТМ К	CTM 8
Survey # 5 Cosetvet(s)	Date 7/14									
	31=10530	0	0	Ũ	N		-	-		
AH	stop 105		-							
	foul hrs 4.7	£						-		
Overall Site Summary Toxils do not equal the sum of each column. Include only resident schuls. Do not include inigrants, nextlings, and fledglings Be sareful not on doubte count individuals.		Total Adult Residents	Total Paus	Tocal Territorie	Total s Nesis	Were any Willow Flycatchers color-banded? Yes No			_No	
		0	000		0	If yes, report color combination(s) in the comments section on back of form and report to USPWS.				
Total Survey Hr	610	1 1	Have	varth		Dute Report Complete	d_S	ate	wher Zi	2:6

US Fish and Wildlife Service Permit # 15:19:1084-8 State Wildlife Agency Permit # 10810 Submit form to USFWS and State Wildlife Agency by September 1". Retain a copy for your records.

Gurray Area 3

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A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher 32

Fill in the following information completely. <u>Submit</u> form by September 1 st . Retain a copy for your records.
Reporting Individual Anta Hayworth Phone # 160-942-5147 Affiliation <u>Consultant Dick</u> E-mail <u>abequingethe dick cenn</u> Site Name Pure Water Son Diege Program Date Report Completed Sept 2016
Did you verify that this site name is consistent with that used in previous years? Yes No Not Applicable $\underline{\times}$ If site name is different, what name(s) was used in the past? N/A If site was surveyed last year, did you survey the same general area this year? Yes No If no, summarize below. N/A Did you survey the same general area during each visit to this site this year? Yes $\underline{\times}$ No If no, summarize below.
Management Authority for Survey Area : Federal Municipal/County & State Tribal Private Name of Management Entity or Owner (e.g., Tonto National Forest) City of Som Diego
Longth of area surveyed: ~37,400 (motors) = Approximatic length of Entire Project Al. ynment
Vegetation Characteristics: Mark the category that best describes the predominant tree/shrub foliar layer at this site (check one):
Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)
Mixed native and exotic plants (mostly native, 50 - 90% native)
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Tawarisk Sp.; Salix agree, Baccharis schafter
Average height of canopy (Do not include a range): 6.1 (meters)
Attach copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections.

Attach sketch or aerial photo showing site tocation, patch shape, survey route, location of any WIFLs or WIFL nests detected. Attach photos of the interior of the patch, exterior of the patch, and overall site; describe any unique habitat features.

- <u>d</u>

Comments (attach additional sheets if necessary)

Territory Number	All Dates Detected	UTM N	UTM E	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary