



Appendix B-1

2000 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT



2000 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT

2000 Annual Report
U.S. Fish and Wildlife Service Protocol Level
Presence/Absence Surveys for the
Quino Checkerspot Butterfly
(*Euphydryas editha quino*)

Prepared for:

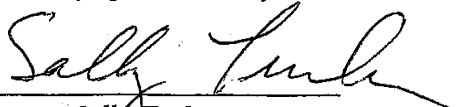
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East Otay Project Site
San Diego County
California

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(Threatened/Endangered Species Permit: TE778195-5)

June 9, 2000

Surveys performed by:


Sally Trnka

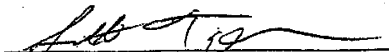

Scott Taylor

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INTRODUCTION/SITE DESCRIPTION

This report documents the results of HELIX Environmental Planning, Inc. (HELIX) quino checkerspot butterfly (QCB; *Euphydryas editha quino*) presence/absence surveys for the East Otay project site. All focused QCB surveys were performed under HELIX's endangered/threatened species permit (TE-778195-5).

The approximately 360-acre East Otay Project site is located in the southwest portion of San Diego County, in the southwestern foothills of the San Ysidro Mountains. The site is east of Brown Field Airport, east of the end of Otay Mesa Road. The border with Baja California is located less than a half of a mile to the south of the property. The site is described as: SW 1/4 of section 29 - 160 acres (APN 648-050-03); W 1/2 of the SE 1/4 section 29 - 80 acres (west half APN 648-050-04); N 1/2 of the NW 1/4 section 32 - 80 acres (APN 648-080-13, -14, -15); and NW 1/4 of the NE 1/4 of section 32 - 40 acres (APN 648-080-02).

The East Otay project site is in Area 1 of the U.S. Fish and Wildlife Service's (USFWS) mapped Year 2000 Quino Survey Area (USFWS 2000a). It is located within the County of San Diego and is mainly a County of San Diego MSCP Subarea Plan designated major amendment area. Land on the site is currently undeveloped. Land uses bordering the site include agricultural land to the west and south of the site and open space to the north and east.

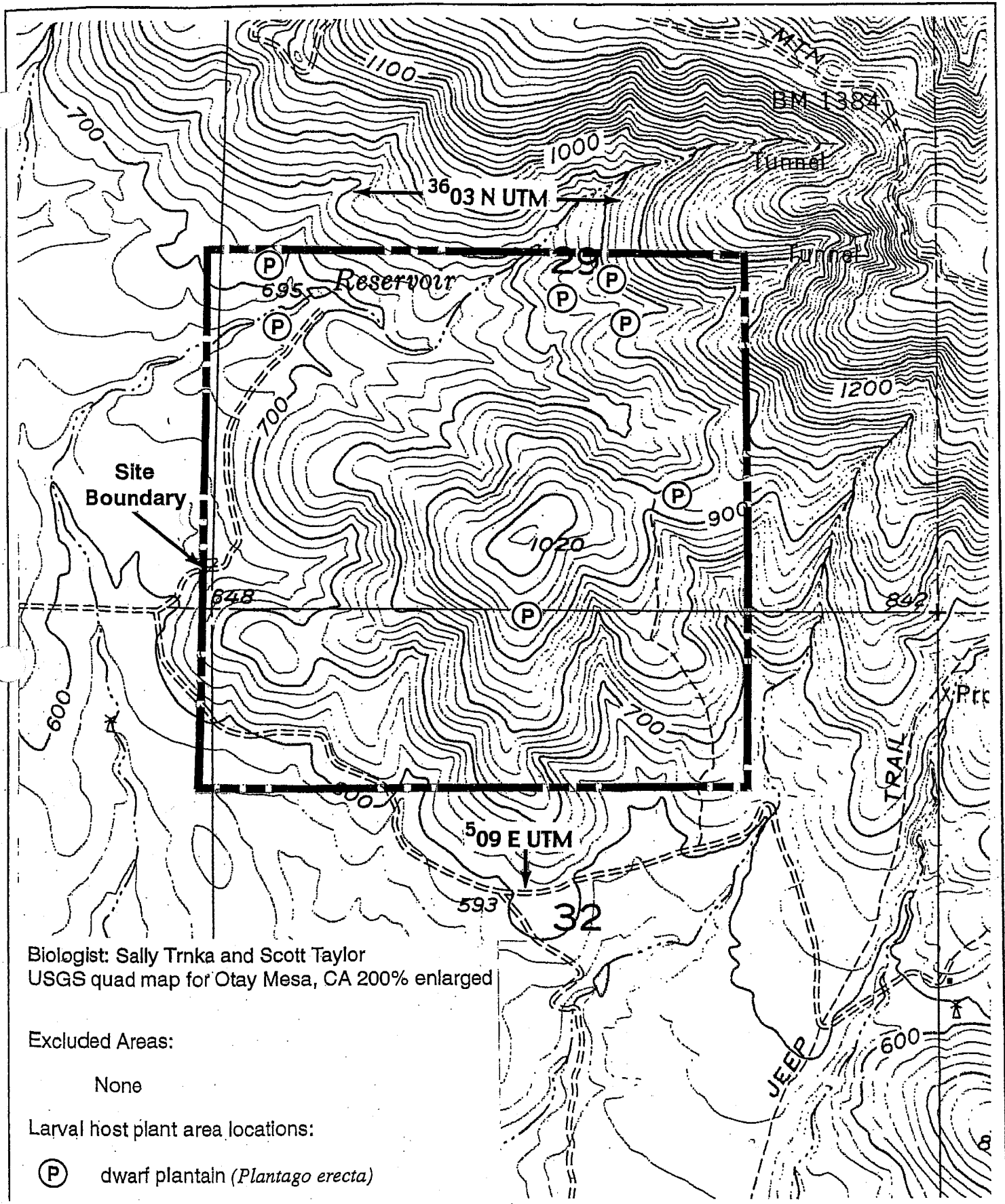
Topographically, the site contains one small and one large hilltop and a series of long wide ridges and deep broad canyons. Elevation on site ranges from approximately 575 feet above mean sea level in the western portion of the site to approximately 1,020 feet above mean sea level at the top of the central hill, and 1,050 along a ridgeline in the far northeast corner of the site. Higher elevation hilltops and mountains occur just north and east of the site.

METHODS

QCB HABITAT ASSESSMENT

The USFWS established its QCB Year 2000 Survey Protocol prior to the 2000 adult survey period (USFWS 2000b). The survey protocol defines a two-part strategy. The first part involves conducting a habitat assessment prior to the first weekly adult survey to identify and map, if present, areas which have the potential for adult or larval QCB to occur. Areas requiring QCB surveys are called non-excluded areas and are determined based on the presence of open or disturbed, native upland vegetation communities. Areas that may be excluded from surveys include (1) orchards, developed areas, or in-fill parcels largely dominated by non-native vegetation, (2) active/in-use agricultural fields without natural or remnant inclusions of native vegetation, or (3) areas which have closed-canopy vegetation, defined as dense vegetation where the upper portions of plants are overlap to a point where coverage between plants is approximates the coverage within a single plant.

Prior to QCB protocol surveys in 2000, Sally Trnka and Peter Allen of HELIX conducted a habitat assessment on March 23, 2000. All 360 acres were assessed for potential QCB habitat (Figure 1). The property is currently recovering from a large fire that swept through the site approximately three years ago. Because of this fire, and low levels of rainfall in the last few years, the site largely consists of open to sparsely vegetated coastal sage scrub. The eastern portions of the site also contain some non-native grassland, and small patches of native grassland (largely within the coastal sage scrub), southern mixed chaparral, mule fat scrub and disturbed habitat. Numerous dirt roads also occur throughout the site. No



Biologist: Sally Trnka and Scott Taylor
 USGS quad map for Otay Mesa, CA 200% enlarged

Excluded Areas:

None

Larval host plant area locations:

(P) dwarf plantain (*Plantago erecta*)

Site Assessment and Host Plant Location Map for East Otay Project Site

Figure 1

significant quantities of habitat on site qualified for any of the three survey exclusion categories, therefore, it was decided that surveys would be required for the entire property. Of the 360 surveyed acres, areas that were most intensely surveyed included the two main hilltops and all ridgelines. A more in depth description of each habitat type is provided in the Results section below.

QCB PROTOCOL SURVEYS

The second part of the 2000 survey protocol required that a focused survey be conducted once a week for adult QCB during the five-week flight period. The USFWS determined the flight period initiation date and notifies all permitted surveyors one week in advance. The flight period is based on the USFWS monitoring of QCB reference population activity in San Diego and Riverside counties. The USFWS notified HELIX on March 24, 2000 that the flight season had begun and QCB surveys should be initiated the following week. Surveys began on March 31, 2000 and were continued until May 2, 2000, at the termination of the five-week survey period.

Spring 2000 protocol (USFWS 2000b) level focused surveys for the QCB at the East Otay project site were conducted by HELIX biologists Scott Taylor and Sally Trnka (Table 1). Due to the large size of the site the 360-acre survey area was divided into four 90-acre sub-areas, the northwest, northeast, southwest and southeast corners of the site. Each individual area was covered by the same biologist each week. Each biologist surveyed according to USFWS protocol survey rates, typically covering one corner of the site per survey day. All potential habitat areas were surveyed at least once per week. Due to the variability in topography and large size of the site, temperature and wind conditions sometimes varied in different portions of the site. Each biologist recorded weather conditions separately to account for weather differences within each area being surveyed.

Biologists tried to be on site whenever possible to maximize potentially small windows of good weather. Unsuitable weather conditions did occur several times during the five-week survey period, but did not last for more than several days. Occasionally surveys were started, but were cancelled later the same day as weather conditions worsened to below protocol level conditions. These surveys were completed later the same week. The entire site was surveyed on a weekly basis according to protocol for all five weeks.

The surveys consisted of walking through potential QCB habitat (Figures 1) on site and identifying all butterflies observed. Butterfly species were identified by sight and with the aid of binoculars. Some butterfly species (namely those in the family Lycaenidae containing the blues and hairstreaks) were netted to aid identification and immediately released. No butterflies potentially resembling quino were netted. Any observed larval host plants (dwarf plantain [*Plantago erecta*], owl's clover [*Castilleja exserta*], and bird's beak [*Cordylanthus rigidus*]) were mapped throughout the 2000 adult survey period. Nectaring resources (*Lasthenia* spp., *Layia* spp., *Ericameria* spp., *Cryptantha* spp., and *Allium* spp.) were also noted in the field notes for each week. Areas of the highest quality potential QCB habitat were often revisited during each survey. These areas included hilltops, ridgelines, and large populations of nectar plants and/or host plants. The area where the one QCB was observed was revisited frequently.

A species list of all butterflies observed is included as Appendix A. A list of potential larval host plants and nectar sources is included as Appendix B. Original field notes are provided in Appendix C.

Nomenclature for this report is taken directly from Holland (1986) for vegetation communities, and Hickman (1993) and the Year 2000 Survey Protocol (USFWS 2000b) for plants. Identification of butterflies

Table 1
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS FOR THE EAST OTAY PROJECT SITE

Site Visit #	Date of Survey	Survey Time (24 hr) (start/end)	Weather Conditions (start / end)*	Biologist(s)	Results*
Week 1 summary	03/31/00 – 04/06/00	N/A	N/A	N/A	Quino detected on the west-facing slope of the main hilltop. Eleven butterfly species observed. Dwarf plantain (<i>Plantago erecta</i>) was observed in small discrete patches, in flower. Nectar resources include onion (<i>Allium</i> sp.), cryptantha (<i>Cryptantha</i> sp.) and goldfields (<i>Lasthenia</i> sp.).
1a SW corner	03/31/00	0830 / 1500	clear; wind 1-3 mph; 62° F / clear; wind 4-9 mph; 74° F	Sally Trnka	No quino detected. Five butterfly species observed. Nectar resources included cryptantha and onion.
1b SE corner	04/01/00	0800 / 1440	clear; wind < 1 mph; 62° F / clear; wind 4-9 mph; 79° F	Sally Trnka	No quino detected. Eight butterfly species observed. Dwarf plantain present. Nectar resources include cryptantha and goldfields.
1c NE corner	04/02/00	0900 / 1620	clear; wind 0-7 mph; 72° F / clear; wind 5-10 mph; 78° F	Scott Taylor	Quino detected. Eight butterfly species observed. Dwarf plantain observed. Nectar resources include onion and cryptantha.
1d NW corner	4/3/00	1115 / 1700	clear; wind 1-3 mph; 75° F / clear; wind 3-7 mph; 76° F	Sally Trnka	No quino detected. Seven butterfly species observed. Dwarf plantain present. No nectar resources observed.
Week 2 summary	4/7/00 – 4/13/00	N/A	N/A	N/A	No quino detected. Eleven butterfly species observed. Dwarf plantain is present. Nectar resources include onion and cryptantha.
2a SW corner	4/7/00	1200 / 1630	hazy; wind 0-7 mph; 72° F, / partly cloudy (but sunny); wind: 5-9 mph; 74° F	Sally Trnka	No quino detected. Four butterfly species observed. Nectar resources include onion and cryptantha.
2a NE corner	4/7/00	0920 / 1630	hazy (morning overcast burned off later in day); wind: 0-2 mph; 73° F / clear; wind: 5-12 mph; 75° F	Scott Taylor	No quino detected. Nine butterfly species observed.
2b NW corner	4/9/00	1030 / 1700	clear (hazy); wind: 1-3 mph; 76° F / clear; wind: 4-7 mph; 73° F	Sally Trnka	No quino detected. Seven butterfly species observed. Nectar resources include onion.

**Table 1 (cont.)
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS FOR THE EAST OTAY PROJECT SITE**

Site Visit #	Date of Survey	Survey Time (24 hr) (start/end)	Weather Conditions (start / end)*	Biologist(s)	Results*
2c SE corner (partial)	4/10/00	0830 / 1535	clear (also hazy until 1000); wind: <1 mph; 61° F / clear; wind: 1-5 mph; 74° F	Sally Trnka	No quino detected. Seven butterfly species observed. Nectar resources include cryptantha.
2d SE corner (finish)	4/11/00	1530 / 1745	clear; wind: to 7 mph; 82° F / clear but hazy; wind: to 7 mph; 76° F	Sally Trnka	No quino detected. Four butterfly species observed.
Week 3 summary	4/14/00 – 4/20/00	N/A	N/A	N/A	No quino detected. Nine butterfly species observed. Dwarf plantain is present. No new nectar resources.
3a NW corner (cancelled)	4/14/00	0930 / 1015	partly cloudy; wind: to 10 mph; 66° F / partly cloudy; wind: 4-7 mph; 63° F	Sally Trnka	No quino detected. No butterfly species observed. Cancelled survey due to poor weather conditions.
3b NW corner	4/16/00	0930 / 1625	clear, scattered clouds; wind: 0-3 mph; 71° F / clear; wind: 2-9 mph; 72° F	Sally Trnka	No quino detected. Five butterfly species observed. Nectar resources include onion.
3c SE corner (partial)	4/17/00	1010 / 1310	partly cloudy; wind: 2-7 mph; 75° F / overcast and cloudy; wind: >15 mph; 73° F	Sally Trnka	No quino detected. Five butterfly species observed. Nectar resources include goldenfields. Cancelled survey due to poor weather conditions.
3c NE corner (partial)	4/17/00	1010 / 1310	partly cloudy; wind: 2-10 mph; 75° F / overcast; wind: >15 mph; 78° F	Scott Taylor	No quino detected. Six butterfly species observed.
3d SE corner (partial)	4/18/00	1400 / 1630	partly cloudy; wind: 3-5 mph; 71° F / cloudy; wind: 5->15 mph; 67° F	Sally Trnka	No quino detected. Four butterfly species observed. Ended survey due to poor weather conditions.
3d NE corner (partial)	4/18/00	1400 / 1630	partly cloudy; wind: 3-5 mph; 7° F / cloudy; wind: 5->15 mph; 67° F	Scott Taylor	No quino detected. Five butterfly species observed. Ended survey due to poor weather conditions.
3e SE corner (finish) SW corner	4/19/00	0915 / 1350 and 1420 / 1715	clear; wind: 4-7 mph; 61° F / clear; wind: 4-9 mph; 72° F	Sally Trnka	No quino detected. Nine butterfly species observed.

Table 1 (cont.)
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS FOR THE EAST OTAY PROJECT SITE

Site Visit #	Date of Survey	Survey Time (24 hr) (start/end)	Weather Conditions (start / end)*	Biologist(s)	Results*
3f NE corner (finish)	4/20/00	1420 / 1550	clear; wind: 4-10 mph; 86° F / clear; wind: 4-7 mph; 86° F	Scott Taylor	No quino detected. Three butterfly species observed.
Week 4 summary	4/21/00 - 4/27/00	N/A	N/A	N/A	No quino detected. Nine butterfly species observed. <i>Plantago erecta</i> still present but drying. No new nectar resources.
4a NW corner (partial)	4/21/00	1220 / 1540	cloudy; wind: 4-9 mph; 71° F / overcast and cloudy; wind: 7-12 mph; 72° F	Sally Trnka	No quino detected. Three butterfly species observed. Ended survey due to poor weather conditions.
4b NW corner (finish)	4/23/00	1040 / 1750	partly cloudy; wind: 0-3 mph; 72° F / clear; wind: 1-3 mph; 70° F	Sally Trnka	No quino detected. Six butterfly species observed.
4c SE corner	4/24/00	1020 / 1705	clear; wind: 4-7 mph; 70° F / clear; wind: 4-7 mph; 74° F	Sally Trnka	No quino detected. Eight butterfly species observed.
4d NE corner	4/24/00	1020 / 1705	clear; wind: 4-7 mph; 70° F / clear; wind: 4-7 mph; 74° F	Scott Taylor	No quino detected. Seven butterfly species observed.
4e SW corner	4/25/00	1030 / 1700	clear but hazy; wind: 4-7 mph; 73° F / clear but hazy; wind: 4-9 mph; 75° F	Sally Trnka	No quino detected. Six butterfly species observed.
Week 5 summary	4/28/00 - 5/4/00	N/A	N/A	N/A	No quino detected. Twelve butterfly species observed. <i>Plantago erecta</i> present, but dry. No new nectar resources.
5a NW corner	4/29/00	0930 / 1630	clear and sunny; wind: 4-8 mph; 64° F / clear; wind: 4-7 mph; 72° F	Sally Trnka	No quino detected. Nine butterfly species observed.
5b SE corner (partial)	5/1/00	1100 / 1600	clear; wind: 3-6 mph; 88° F / clear; wind: 6-9 mph; 89° F	Sally Trnka	No quino detected. Six butterfly species observed.
5b NE corner (partial)	5/1/00	1100 / 1600	clear; wind: 3-6 mph; 88° F / clear; wind: 4-10 mph; 89° F	Scott Taylor	No quino detected. Nine butterfly species observed.

**Table 1 (cont.)
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS**

Site Visit #	Date of Survey	Survey Time (24 hr) (start/end)	Weather Conditions (start / end)*	Biologist(s)	Results*
5c SE corner (finish) and SW corner	5/2/00	1030 / 1545	clear; wind: 0-3 mph; 86° F / clear; wind: 5-9 mph; 89° F	Sally Trnka	No quino detected. Seven butterfly species observed.
5c NE corner (finish) and SW corner	5/2/00	1030 / 1545	clear; wind: 0-3 mph; 8 ° F / clear; wind 5-9 mph; 89° F	Scott Taylor	No quino detected. Eight butterfly species observed.

*Refer to Field Notes in Appendix C for specific survey information.

was based on personal knowledge, museum specimens, and field guides by Emmel & Emmel (1973), Scott (1986), Garth and Tilden (1986), Tilden and Smith (1986), Brown et al. (1992), Pyle (1995), and Stewart (1997).

RESULTS

The following is a list of vegetation communities present on site (Table 2). Descriptions of the vegetation communities on site are also provided as they relate to the QCB surveys.

Table 2
VEGETATION COMMUNITIES / HABITATS PRESENT
ON THE EAST OTAY PROJECT SITE

Mule Fat Scrub
Native Grassland
Diegan Coastal Sage Scrub
Diegan Coastal Sage Scrub - disturbed
Diegan Coastal Sage Scrub / Chaparral
Non-native Grassland
Disturbed Habitat

MULE FAT SCRUB

Mulefat scrub is a tall, herbaceous, riparian scrub community dominated by mule fat (*Baccharis salicifolia*) and interspersed with shrubby willows (*Salix* spp.). This habitat occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. This habitat occurs on a very small portion of the north west corner of the site. Portions of this habitat were sparsely vegetated and were surveyed for QCB.

NATIVE GRASSLAND

Native grassland is a community dominated by perennial bunchgrasses such as purple needlegrass (*Nassella pulchra*) with annual and perennial forbs such as common golden stars (*Bloomeria crocea* ssp. *crocea*) and California blue-eyed grass (*Sisyrinchium bellum*). Native grasslands generally occur on fine-textured soils that generally exclude the annual, exotic grasses. Almost all of the native grasslands in California have been displaced by non-native grassland dominated by introduced annual species. On site native grassland occurs on north-facing slopes. A few larger patches of this habitat occur on site, however, it is largely interspersed within openings in Diegan coastal sage scrub habitat. On site this habitat is dominated by purple needlegrass, but also contains a large number of non-native annual grasses. Other species found in this habitat include San Diego goldenstar (*Muilla clevelandii*) and California blue-eyed grass. Native grassland habitat was surveyed for QCB.

DIEGAN COASTAL SAGE SCRUB (INCLUDING DISTURBED AND COASTAL SAGE SCRUB/CHAPARRAL ECOTONE)

Coastal sage scrub is one of the two major shrub types that occur in California. This habitat type occupies xeric sites characterized by shallow soils. Sage scrub is dominated by subshrubs whose leaves abscise

during drought. This adaptation allows these species to better withstand the prolonged drought period in the summer and fall. Sage scrub species have relatively shallow root systems and open canopies that allow for the occurrence of a substantial herbaceous component.

The Diegan coastal sage scrub on site contains a diverse suite of plant species and species composition varied within different portions of the site. Dominant species include California sagebrush (*Artemisia californica*), and flat-top buckwheat (*Eriogonum fasciculatum*). Other, less numerous species included lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), white sage (*Salvia apiana*), deerweed (*Lotus scoparius*), and lessingia (*Lessingia filaginifolia* var. *filaginifolia*). In open canopy areas herbaceous understory plants include needlegrass (*Nassella* sp.) ashy spike-moss (*Selaginella cinerascens*), wishbone bush (*Mirabilis californica* var. *californica*), and San Diego barrel cactus (*Ferocactus viridescens*). Disturbed Diegan coastal sage scrub on site typically contained a lower diversity of shrub species, lower shrub cover, and higher cover by non-native annual grasses. All areas of Diegan coastal sage scrub were surveyed.

The Diegan coastal sage scrub/chaparral ecotone (or transitional habitat) on site contained a mixture of species from these two habitats. Southern mixed chaparral is composed of broad-leaved, sclerophyllous shrubs that grow to about 6 to 10 feet tall and form dense often nearly impenetrable stands. This habitat occurs on dry, rocky, often steep north-facing slopes with little soil. As conditions become more mesic, broad-leaved, sclerophyllous shrubs that resprout from underground root crowns become dominant. On-site dominant plant species observed within this ecotone include spiny redberry (*Rhamnus crocea*), laurel sumac, and California sagebrush. Portions of this habitat did not contain a closed canopy and were surveyed for QCB.

CHAMISE CHAPARRAL

Chamise chaparral is dominated by chamise (*Adenostoma fasciculata*). This habitat is found from Baja California, Mexico to northern California in pure or mixed stands. Mission manzanita (*Xylococcus bicolor*) and black sage are commonly minor associates within this community. On site, the chamise chaparral was dominated by a sparse cover of chamise. Because of the open canopy structure, this habitat was surveyed for the QCB.

NON-NATIVE GRASSLAND

Non-native grassland is a dense to sparse cover of annual non-native grasses. On-site this habitat occurred primarily in the western portion of the site and was dominated by wild oat (*Avena* sp.) and brome (*Bromus* spp.). This habitat was surveyed for QCB.

DISTURBED

In general, disturbed areas occur where native habitat has recently been disturbed by off-road vehicles. Some disturbed areas contain little, if any, vegetation. Other areas include ruderal vegetation dominated by non-native, weedy species. Many of the species characteristic of disturbed habitat also occur in non-native grassland, but disturbed habitat is dominated by invasive species other than grasses. On site disturbed habitat is largely the result of off-road vehicle use of the site. This habitat occurs along unvegetated dirt roads located within other habitat types and in the north west corner of the site, in an area that is dominated by mustard (*Brassica* sp.) and fennel (*Foeniculum vulgare*). All dirt trails and other sparsely vegetated portions of disturbed habitat on site were surveyed for the QCB.

As described in the methods section, hilltops, ridgelines, and dirt roads through all habitats were concentrated on during QCB surveys. Although nearly the entire site qualified for surveying under the existing protocol, areas that had more promise were identified in the course of the survey period. These areas tended to be along the tops of ridgelines, on the two main hilltops, and in the vicinities of the QCB larval host plant (Figure 1). Also, less disturbed portions of coastal sage scrub were thought to be more favorable habitat as these areas contained more open ground with cryptogamic crust (often containing ashy spike-moss [*Selaginella cinerascens*] and Bigelow's spike-moss [*Selaginella bigelovii*]) and lower cover by non-native grasses.

The largest populations of dwarf plantain occurred in two patches in the north east corner of the site. In other locations this plant occurred in small patches with 300-400 individuals. All plants observed on site were fairly small and had dried up by the last few weeks of the survey.

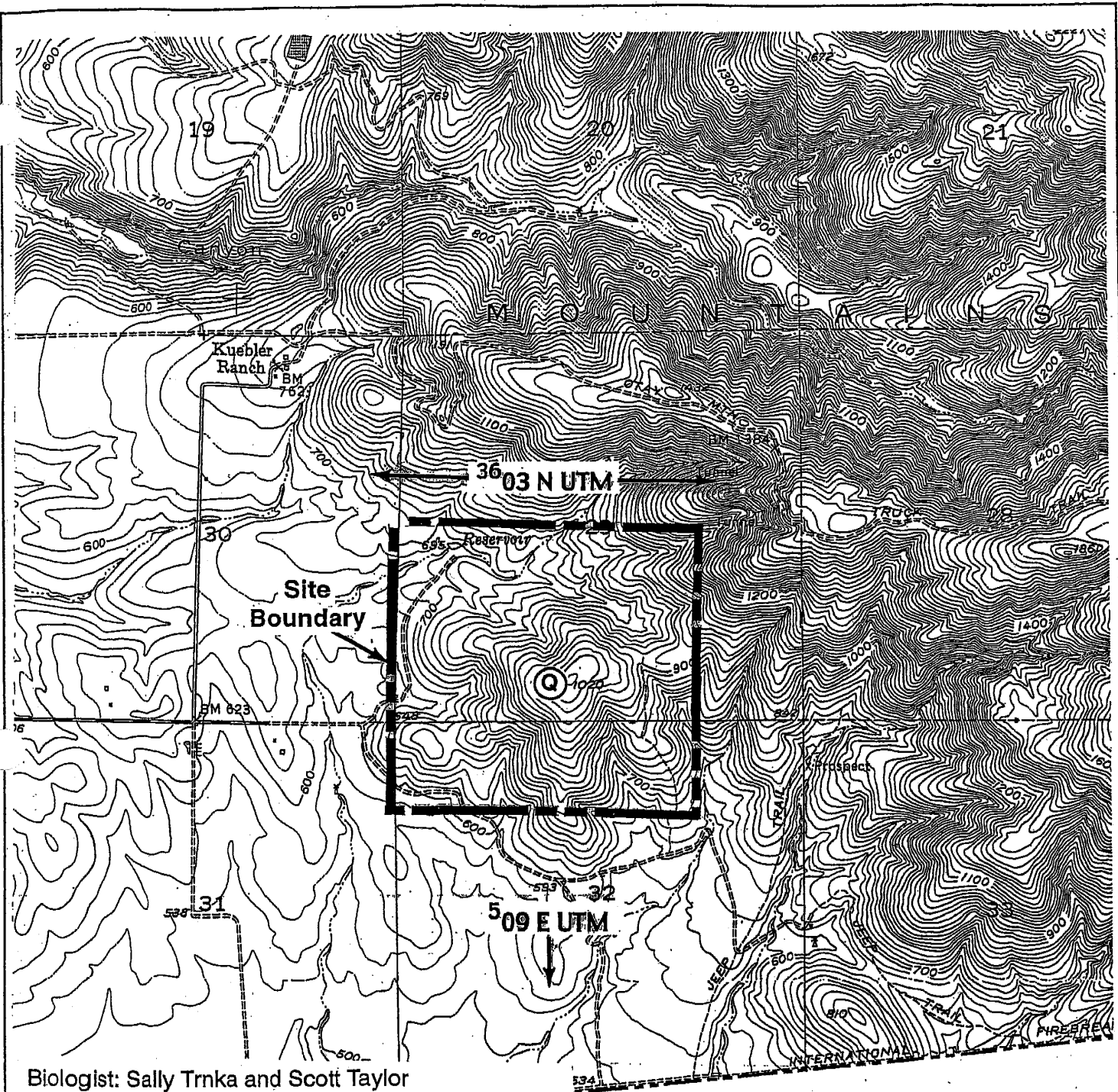
Potential nectar sources for the QCB were spread out throughout the site, and occurred in small patches (e.g., goldfields [*Lasthenia* sp.] and onion [*Allium* sp.]) or as scattered individuals (e.g., popcorn flower [*Cryptantha* sp.], and were generally located within coastal sage scrub habitat. A list of these and other potential nectar sources is presented in Appendix B.

A QCB was observed on site during the first week of surveys (Figure 2), just west of the main hilltop located at the center of the property. Only one sighting of this species occurred during the five-week survey period. The observed individual was flying near a dirt road leading to the main hilltop. The individual flew closer to the biologist, landed beside the road, and was able to be closely observed at a distance of approximately two yards for several seconds before it flew off. The biologist was not able to take a photograph of the butterfly because an off-road vehicle interrupted the taking of the photograph. The area of the sighting was searched thoroughly on the day of the observation and repeatedly during the following four weeks of surveys, but no additional observations of this species were made on site.

A total of twenty butterfly species were observed during the protocol surveys (Appendix A). During the five week survey period the species composition of observed butterflies changed. The species diversity present on site corresponds to the undeveloped and largely upland nature of the habitat present on site. Several species, namely the anise swallowtail (*Papilio zelicaon*), west coast lady (*Vannessa annabella*) and painted lady (*Vannessa cardui*) were often observed hilltopping on both of the hills on site.

CONCLUSION

Year 2000 protocol surveys for QCB were conducted on the 360-acre East Otoy Site. One individual QCB was observed on site during the first week of the season. Repeated attempts to relocate this individual and to locate any other individuals during the survey period were unsuccessful.



Biologist: Sally Trnka and Scott Taylor
 USGS quad map for Otay Mesa, CA 200% enlarged

Key:

- Ⓚ Quino checkerspot butterfly locations (1 total)
- Areas excluded from survey (none)

Quino Location Map for East Otay Project Site
 Figure 2

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APPENDIX A

BUTTERFLY SPECIES OBSERVED
(East Otay Project Site)

<u>Scientific Name</u>	<u>Common Name</u>
<i>Anthocharis sara</i>	Sara orangetip
<i>Apodemia mormo virgulti</i>	Behr's metalmark
<i>Pontia protodice</i>	Common white
<i>Brephidium exilis</i>	Pygmy blue
<i>Callophrus perlexa</i>	Perplexing hairstreak
<i>Celastrina ladon echo</i>	Echo blue
<i>Coenonympha californica</i>	California ringlet
<i>Colias harfordi</i>	Harford's sulfur
<i>Erynnis funeralis</i>	Funereal duskywing
<i>Euphilotes bernadino bernadino</i>	Bernadino blue
<i>Euphydryas editha quino</i>	Quino checkerspot
<i>Everes amyntula</i>	Western tailed blue
<i>Glaucopsyche lygdamus australis</i>	Southern blue
<i>Leptotes marina</i>	Marine blue
<i>Papilio eurymedon</i>	Pale swallowtail
<i>Papilio zelicaon</i>	Anise swallowtail
<i>Speyeria callippe comstocki</i>	Comstock's fritillary
<i>Strymon melinus</i>	Gray hairstreak
<i>Vannessa annabella</i>	West coast lady
<i>Vannessa cardui</i>	Painted lady

APPENDIX B

POTENTIAL LARVAL HOST PLANTS AND NECTAR SOURCES OBSERVED
(East Otay Project Site)

POTENTIAL LARVAL HOST PLANT SPECIES

Scientific Name

Common Name

Plantago erecta

Dwarf plantain

POTENTIAL NECTAR PLANT SPECIES

Scientific Name

Common Name

Most likely nectar sources

Allium sp.
Cryptantha sp.
Lasthenia sp.

Onion
Popcorn flower
Goldfields

Other possible nectar sources

Brassica sp.
Calystegia macrostegia
Dichlostema capitatum
Eriogonum fasciculatum
Eriophyllum confertiflorum
Erodium sp.
Eschscholzia californica
Hedynois cretica
Hypochaeris glabra
Lepidium sp.
Linanthus sp.
Mirabilis californica
Sisyrinchium bellum
Viola pedunculata

Mustard
Morning-glory
Blue dicks
California buckwheat
Golden yarrow
Filaree
California poppy
Crete weed
Smooth cat's ear
Peppergrass
Ground pink
Wishbone bush
Blue-eyed grass
Johnny-jump-up

APPENDIX C

QUINO CHECKERSPOT FIELD NOTES

QUINO CHECKERSPOT GENERAL FORM

SRM01

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 03/31/00 Site visit no. Week 1 1/3

Site name East Otay Mining

Locality Otay, San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6.5 Average acres surveyed per hour 13.8

Time	Sky	Wind	Temperature F
Start <u>8:30am</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> 4-7 8-12 12-15 >15	
End <u>3:00pm</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>62</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	<u>74</u>
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments

Surveyed the south west quadrant of the site. This area consisted mainly of open coastal sage scrub and non-native grassland. Also checked the main hilltop briefly.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Sulphur Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)	Unknown white	(1)
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	1	(1)
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. glippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Allides halesus</i>)		
Metalmark (<i>Apodemia mormo virgulti</i>)	11	(2)
Wright's Metalmark (<i>Calophelis wrighti</i>)		
Unknown blue	11	(3)

Funereal duskywing

11 (3)

sun / clear / winds
1-3 mph / 62°F

Quino Survey Week 1, survey 1/3

03/31/00 East Otay Mining Site
(south west quadrant)

Sally Trnka

animal species

sparrow
red tailed hawk
white 1
raven
CA ringlet 1
blue 11
lizard
brown unknown (not elfin)

Song sparrow (gray head, long rounded tail)
kestrel (♀)
Behr's metalmark 11
funereal duskywing 111
desert cottontail
Northern harrier
swallow

flowering plants

Caldentus - pink

Viola ped.

Dic. cap.

Oxalis sp. (big. yellow flowers)

Cryptantha sp. (~ 4cm tall, few individuals)

Dodacathemon

Eri. las

Lot sco

Vig lac

Isomeris arborea

Calystegia mac.

pink

Brassica sp.
sweet pea (Lathyrus sp.)

11:40am winds 4-9 / clear & sunny / 75°F

note: fields of Bras. sp in NNE to west of site
~ 1/4 mile - 1 mile

(pers. unid. 58)

end: 3pm / clear / 4-9 mph / 74°F

notes: surveyed all potential habitat - largely open CSS & non-native grass
chkd both hill tops
d.t. hikers numerous just off-site

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/01/00 Site visit no. Week 1 2/3

Site name East Otay Mining

Locality Otay, South San Diego County

Total site acres 300 Total acres surveyed 90

Total hours of field survey 6hrs 40min Average acres surveyed per hour 13.5

Time	Sky					Wind					Temperature F	
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15		>15
Start 8:00 am	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	62
End 2:40 pm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	79
Start	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
End	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Description of areas surveyed/comments

Surveyed the ~~west~~ ^{southeast} quad.

Numerous dirt bikers and ATV riders on site within the survey area.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies collected (partial list)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	2	
West Tiger Swallowtail (<i>P. rutulus</i>)		
S. orangeip (<i>Anthocharis sara</i>)	2	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	3	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	1	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	9	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)	1	
Gray Hairstreak (<i>Strymon mollis</i>)		
Brown Elfin (<i>Inisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmark (<i>Apodemia mormo virgulti</i>)	2	
Wright's Metalmark (<i>Calophelis wrighti</i>)		
Funereal duskywing	5	

East Otay Mining Site

04/01/00

SJT

quino 2/3 1st wk

Survey area: ~~north west~~ South east quadrat

start: 8am / clear / no wind
($< 1 \text{ mph}$) / 62° F

Species observed

Meadowlark

SDBTJ

~~the~~ Cooper's hawk

horned lark

raven

blue II

Sparrow

Behr's meadowlark III III II

Common white III

Funereal duskywing III
brown (not ethm, moth?)

(moth-like light blue margin)

Sara's song sparrow II

Perplexing hawk

Swallowtail (tiger) II (Arist)

Southern blue III III

Pigmy blue (?) I

gray head
brn body
sparrow

CA ringlet I

Flowering sp

Dic cap

Oxalis

Calypso, mac.

Phlox

Lot sco

ink

Mal las

euphorbia (Chamys.)

Eri las

sweet pea

Vig lac

Solanum sp.

Cry sp.

10:30am winds pick up 4-9mph
dirt bikers III II ; ATV riders II

end: 2:40pm / clear /
4-9mph with occasional
gusts / 79° F

new sp. Charize chap.

Aden. las. down

Vig lac

Sal mel

Hel. sco. down

Sel. con.

Yoc whip

Lot sco

Fer. vtr.

Eri las

Erd bot

Can mel

Mal las

Cry mic.

* numerous dirt bikers / ATV riders
on site throughout survey period

Ant cal

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 4/2/00 Site visit no. 1

Site name E. Otay Mining Site

Locality Western foothills of Otay Mtn.

Total site acres 360 Total acres surveyed 90

Total hours of field survey 7 1/3 Average acres surveyed per hour 12.3

Time	Sky					Wind					Temperature F	
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15		>15
Start <u>0900</u>	<u>Clear</u>					<u><1</u>	<u>1-3</u>	<u>4-7</u>				<u>72°</u>
End <u>1620</u>	<u>Clear</u>					<u><1</u>	<u>1-3</u>	<u>4-7</u>	<u>8-12</u>			<u>78°</u>
Start	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
End	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments _____

NE corner of site surveyed - see attached notes

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Otay Mining Site

4/2/00

NE corner

0900

72°F

0-7 mph

clear

Sora orange-tip ~~+~~

Calif. ringlet X

Behr's nictelmark ~~+~~

Common raven

Red-tailed hawk

House finch

Anise swallowtail ~~+~~

Southern blue ~~+~~

Funereal dusky wing ~~+~~

Bramblethroat ~~+~~

Loggerhead shrike

S.D. black-tailed jacks

Bott's pocket gopher

Flowering plants

Western meadowlark

Oxalis +

Desert cotton tail

Lathrus +

White-crowned sparrow

stus

Rufous-crowned sparrow

Dichostemma +

Greater roadrunner

Eriogonum -

Calif. ground squirrel

Allium

Rock wren

Fritularia

No. red-diamond rattler

Dodonea -

Western fence lizard

Carcharias +

American crow

Euphorbia (not misca) +

Calif. toad

Solanum +

Side-blotched lizard

Plantago +

Bobcat (scat)

Cryptantha +

Granite spiny lizard

Flowering plants (cont.)

Calyptrogyne +

Brassica -

Bramble hairstreak ~~X~~

West coast lady ~~XX~~

x Quino checker spot ✓

* See notes on attached form. Observed for a short time period, here is what happened: As I came around a road bend I ~~at~~ saw a butterfly near the road ahead. It landed facing me, flat (as a pancake) on the ground. As I approached (20 ft away, perhaps), it flew. The flight looked exactly like a quino's flight type.

(~~XXXXXXXXXX~~) Just then a jeep came around the bend towards me and the supposed quino. I put my hands out and stopped the jeep from coming up the road. I turned back to the butterfly and saw it land just 2 yards or so away. It spread its wings out completely and I was able to confirm it was a quino. Then it flew before I could ready my camera. It flew toward the jeep, which was slowly moving by on another road. The wind was gusty and the quino disappointed. I spent the next 1/2 hour trying to relocate it and got no picture.

During my time spent trying to relocate the butterfly, many ORVs came through the area. Almost every 5 to 10 minutes a motorcycle, Pulaski, or other vehicle came tearing up through the area.

There are so many openings on the site that it is difficult to pin down where the butterfly might have gone. Of course I am spending the most time where it was originally seen, ~~with~~ when someone isit zooming by on any number between 2 and 4 wheels.

No luck finding the quino. A couple of times I thought I saw something vaguely quino like, but never was able to confirm.

78° clear 5-10mph 1620

at Otay Mining Site 9/14/00

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Pink Swallowtail (<i>P. zelicaon</i>)	4	
Winter Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)	7	
Elder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogela rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Herne's Checkerspot (<i>Euphydryas chalcedona henet</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	1	
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliina Crescent (<i>Phycodes myliina</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	7	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	8	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Lepiotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brophidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>) = (Bramble)	8	
Grt Purple Hairstreak (<i>Atides halesus</i>)		
Schr's Metalmark (<i>Apodemia morio virgulti</i>)	4	
Wright's Metalmark (<i>Calophells wrightii</i>)		
Funeral dusky wing	6	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no.

Survey date 04/03/00 Site visit no. Week 1 3/3

Site name East Otay Mining

Locality Otay, South San Diego County

Total site acres 360 Total acres surveyed ~ 85

Total hours of field survey 5hr 45min Average acres surveyed per hour 14.8

Time	Sky	Wind	Temperature F
Start 11:15am	Clear Patch Overcast/Cloudy Drizzle Shower <u>hazy</u>	<1 (1-3) 4-7 8-12 12-15 >15	75
End 5:00pm	Clear Patch Overcast/Cloudy Drizzle Shower <u>sunny</u>	<1 (1-3) 4-7 8-12 12-15 >15	76
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments

Surveyed the northwest quadant.
Surveyed slightly less than 90 acres because Scott meandered through the south east corner of my survey area yesterday during his survey.
Checked vicinity of yesterday's quino siting.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	2	
W. Tiger Swallowtail (<i>P. rutulus</i>)		
S. Orangeip (<i>Anthocharis sara</i>)	15	
Felder's Orangeip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)	1	
California Ringlet (<i>Coenonympha californica</i>)	33	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliina Crescent (<i>Phyciodes myliina</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes anyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	25	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atilides halesus</i>)		
Metalmark (<i>Apodemia mormo virgulti</i>)	2	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funereal duskywing	6	

East Olay Mining Quino Survey

~~South~~ ~~west~~ quadrat
north west

Sally Trnka
04/03/00

start 11:15am / clear & hazy
1-3 mph / 75°F
mileage - 822 →

- Sarah's orangetip III III III
- Southern blue III III III III
- meadowlark III
- western meadowlark
- CA ringlet III III III III III III III III
- Funeral duskywing III /
- raven
- fox sparrow (red/white head w/ blk stripes)
- Behr's meadowlark III
- SD BTJ
- kestrel
- Amise swallowtail II
- red tailed hawk

- sm. brn naptor, squid, short slight red-tail
- desert cottontail
- ground squirrel
- beard
- CA towhee
- brown ~~off~~ moth
- phynx moth
- sulfur /
- loggerhead shrike

Flowering plants

- Bras. sp.
- Dic cap
- Lot see
- Sys bel
- Plago. sp.
- Lathyrus sp.
- Viola ped.
- Calys. mac.
- oxalis
- Dedac.

- ~~Catchment~~
- Eschdz. cal.
- pink
- pholistoma
- paintbrush & phnts 5
- tiny wht flwrs
- Chamys.
- Astragalus

~~Adel cat?~~
~~lycium?~~

Allium (pink flower - no onion smell)

winds 3-6 mph 12:30 →

end: 5pm / clear & sunny / 3-7 mph / 76°F

notes: 4 ATV's / 2 bikes on site during survey
* lots of butterflies today, especially first several hours, but conditions were excellent & winds mild for this area all afternoon

* checked vicinity of quino siting but did not observe it

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	✓	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara's Orange-tip (<i>Anthocharis sara</i>)	✓	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Arctegoia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	✓	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)	✓	
California Ringlet (<i>Coenonympha californica</i>)	✓	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	✓	
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Western Painted Lady (<i>V. annabella</i>)	✓	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polytonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Eucres ainyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	✓	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)	✓	
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elf (<i>Inisalis augustinus</i>)		
Perplexing Hairstreak (<i>Calliphrys perplexa</i>)	✓	
Git Purple Hairstreak (<i>Atlides halesus</i>)		
White Metalmark (<i>Apodemia mormo virgulti</i>)	✓	
Wright's Metalmark (<i>Catopheles wrighti</i>)	✓	
Funeral duskywing	✓	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. -

Survey date 04/07/00 Site visit no. Week 2 1/3

Site name East Olay Mining

Locality Olay, San Diego County

Total site acres 360 Total acres surveyed Approximately 60

Total hours of field survey 4 hrs 30 min Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>12 pm</u>	Clear Patch <u>Overcast/Cloudy</u> Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>72</u>
End <u>4:30 pm</u>	Clear Patch <u>Overcast/Cloudy</u> Drizzle Shower	<1 1-3 <u>4-7</u> <u>8-12</u> 12-15 >15	<u>74</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments Surveyed the southwest quadrant. Checked the main slope. Did not survey the entire section.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
W. Tiger Swallowtail (<i>P. rutulus</i>)		
S. Orangeip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	4	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. edlitha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	1	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philois sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elf (<i>Incisalla augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atides halesus</i>)		
s Metalmark (<i>Apodemia mormo virgulti</i>)	6	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funeral duskywing	3	

East Olay Mining Site

Sally Truka
04/07/00

Start 12pm / hazy / 70°
winds 0-7mph

week 2 survey 1/3

Species observed

raven
funereal duskywing III
western meadowlark
~~common white~~ I
ringlet III
West coast lady I
CA kingsnake I
Behn's metalmark III I
mockingbird
kingbird
CA towhee
desert cotton tail
SDBTJ
red tail hawk

tizard

lark sparrow

Sparrow dusky red cap, long tail

- few butterflies
- partly cloudy / hazy all day
- moderately windy during entire survey
- did not survey entire quadrant
- surveyed in the southwest quadrant
- also surveyed portion of main hill within this quadrant & briefly visited the top of the main slope

Flowering plants

Dic cap	tiny white
Eri pas	tiny yellow
Lot sco	conchalegna
Calyst. mac	Vig lac
Lathyrus	Erc. cal
Min. cal	Crypt.
Pholigstoma	Calchant. spl. (1)
Allium	lepidium sp.
Viola ped.	
Oxalis	wood sorrel

12:45 wind picked up -
to 12mph

2:30 6-9mph sost.

end! 4:30pm / patchy
cloudy but sunny between
winds 5-9mph / 70° F

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 4/7/00 Site visit no. 2

Site name E. Otag Mining Site

Locality Western Foothills of Otag Mtn

Total site acres 360 Total acres surveyed 90

Total hours of field survey 7 hrs 10 min Average acres surveyed per hour 12.6

Time	Sky					Wind						Temperature F
	Clean	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
Start <u>0920</u>	<u>Clean</u>					<u><1</u>						<u>73°</u>
End <u>1630</u>	<u>Clean</u>							<u>4-7</u>	<u>8-12</u>			<u>75°</u>
Start	Clean	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
End	Clean	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments NE corner of site

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogelia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	25	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbi</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
Coast Lady (<i>V. annabella</i>)	1	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	6	
Echo Blue (<i>Celasirina ladon echo</i>)	2	
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)	1	
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	1	
Grt Purple Hairstreak (<i>Atilides halesus</i>)		
's Metalmark (<i>Apodemia morio virgulti</i>)	3	
Wright's Metalmark (<i>Calophelis wrightii</i>)		
Funeral dusky wing	5	

Otag Mining site

4/7/00

0920 hazy clear 73° (ground) 0-2 ft
(morning overcast burnoff)

Painted lady \

American crow

No. mockingbird

SD black-tailed junc

Desert cottontail

side-blotched lizard

Anna's hawk

Mourning dove

Calif. towhee

Red-tailed hawk

Vest coast lady \

lesser goldfinch

American kestrel

Western kingbird

Western fence lizard

Anise swallowtail

Horned lark

Calif. ringlet ~~+~~ ~~+~~ ~~+~~

Rufous-crowned sparrow

Common raven

Funeral dusky wing ~~X~~

Southern blue ~~X~~

Loggerhead shrike

Spotted towhee

White-crowned sparrow

Calif. thrasher

Botta's pocket gopher

No red-diamond rattler

Greater roadrunner

Echo blue X

Rock wren

Pigmy blue \

Behr's metalmark X

Bramble hairstreak \

Flowering plants

Calif. kingsnake (banded)

Castilleja

Western meadowlark

Calendrina

Calif. ground squirrel

Blue-gray gnatcatcher

1030 75° (ground) clear 8-12 mph

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka
 HBLIX permit no. TE778195-5
 Subconsultant permit no. —

Survey date 04/09/00 Site visit no. Week 2 2/3

Site name East Otay Mining

Locality Otay; San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6.5 hrs Average acres surveyed per hour 13.8

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	Temperature F
Start <u>10:30am</u>			<u>hazy</u>				<u>1-3</u>	<u>4-7</u>				<u>76</u>
End							<u>1-3</u>	<u>4-7</u>				<u>73</u>
Start							1-3	4-7	8-12	12-15	>15	
End							1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments

Surveyed the northwest corner of the site.

Checked the main hill in the center of the property, especially in the vicinity of the previous quino siding.


- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Orange-tip (<i>Anthocharis sara</i>)	2	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	1	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Hartford's Sulfur (<i>C. hartfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	40	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. glippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. edlthae quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanita Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygona satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)	1 unknown blue	
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brevipedium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grn Purple Hairstreak (<i>Atilides halesus</i>)		
Metalmark (<i>Apodemia mormo virgulti</i>)	4	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Flowered duskywing	4	

East Olay Mining Site

Sally Trnka
04/09/00

species observed

Brown (CA) towhee
raven
CA ringlet IIII IIII IIII IIII IR
blue grosbeak IIII IIII II
oriole 
whit-crowned
sparrows
lady II
loggerhead shrike
funereal duskywing IIII
red-tailed hawk
common wht. I
Sara's orange tip II
sparrow (?) grey head

blue 1
bumblebee
Cryptantha sp.
western meadowlark
pocket gopher (burrows)
lizard
desert cottontail
roadrunner
Behr's meadowlark IIII
tiny orange butterfly (puffy-size)
grasshopper sparrow
swallow
mockingbird
* where are the Southern blues?
lots of Lot see in bloom

wk 2 2/3

Survey northwest
corner
10:30am / sunny &
hazy / 1-3 mph / 76

flowering plants

Bra. sp.
Dic cap
Caly mac
Erod. mos
Erod. cic.
wetch
Vig lae

Sys bel
Isomeris arb.
Lot see
Silene sp.
unknown purple
oxalis
Viola ped
Allium

pholis.
conchalgue.
Solanum sp.
Eri fas.

Phacelia sp
Lathyrus
Cast. aff.
albino
Sys bel!

Plagio
Euphorb.
Sidalcea
Mir cal

- Skes cleared around 11am ~~to north of desert~~

Fields of Bra. on side in NOG

- numerous dirt bikers / ATV's

end! Spm / clear / 4-7 mph / 73°
winds were mild all day, was
& sunny

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELLX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/10/00 Site visit no. Week 2 3/3

Site name East Olay Mining Site

Locality _____

Total site acres 360 Total acres surveyed 90

Total hours of field survey Five 5min Average acres surveyed per hour 12.8

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	Wind	Temperature F
Start <u>8:30am</u>						<1 1-3 4-7 8-12 12-15 >15	<u>61° F</u>
End <u>3:35pm</u>						<1 1-3 4-7 8-12 12-15 >15	<u>74° F</u>
Start						<1 1-3 4-7 8-12 12-15 >15	
End						<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

Surveyed south east corner of the site. No ATV/dirt bikers.
No blue butterflies were observed for a second day in a
row.

Only a moderate number of butterflies were observed
despite the great weather conditions.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	2	
West Tiger Swallowtail (<i>P. rutulus</i>)		
S. Orange-tip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	1	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coccytonympha californica</i>)	14	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrightii</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Eversmannia amynula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Inclisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	4	
Grt Purple Hairstreak (<i>Atlides halesus</i>)		
Orange Metalmark (<i>Apodemia mormo virgulti</i>)	7	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funereal duskywing	1	

East Otay Mining Site

Sally Trnka

04/10/00

wk 2 3/3

start: 8:30am / hazy / no wind (<A) / 61°F
SOUTHEAST CORNER

Species observed

domestic dog
 western meadowlark
 mockingbird
 Kingbird (yel belly, thick bill, no wht on tail)
 Sphinx moth
 Oriole (same sp. as yest.)
 red-tailed hawk
 SDBTJ
 kestrel
 raven
 desert cottontail
 wht crowned sparrow

CA ringlet IIII IIII IIII
 CA tooshee
 lady
 Sara's orangetip 1
 perplexing hairstreak IIII
 common wht 1 (blk wing tips; 2 blk dots on wings)
 sparrow - gray head
 wht gorget
 blk dot on chest
 Behr's metalmark IIII 11
 horned lark
 Anise swallowtail II
 swallow
 funeral duskywing

flowering plants

Bras. sp.	Vig lac
Dic cap.	Esch. cal
Erod. cic.	Lathy.
Lot sco	pholistoma
Caly mac	oxalis
Mir cal	Viola ped.
Eri fas	Chamys.
Sal mel	Solanum sp.
Crypt. sp.	

Conchalegua
 Lathraea sp.
 Phacelia sp. (cic?)

note: sunny by 9am but still hazy (smoggy too)

sunny & clear by 12; winds mild 1-5mph

end: 3:35pm / clear & sunny / 1-3mph (occasional gusts / 74°F to 7mph)

mileage - start 16320
 343 x new $\times \frac{23}{3}$
 46

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka
 HELIX permit no. TE778195-5
 Subconsultant permit no. —

Survey date 04/11/00 Site visit no. Week 2 - Finish survey 1/3

Site name Otay Mining

Locality Otay; San Diego County

Total site acres 360 Total acres surveyed Approximately 30

Total hours of field survey 2 hrs 15 min. Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>3:30pm</u>	Clear Patch Overcast/Cloudy Drizzle Shower <u>hot & sunny</u>	<1 <u>1-3 4-7</u> 8-12 12-15 >15	<u>82° F</u>
End <u>5:45pm</u>	Clear Patch Overcast/Cloudy Drizzle Shower <u>hazy but sunny</u>	<1 <u>1-3 4-7</u> 8-12 12-15 >15 <u>max during gusts</u>	<u>76° F</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments
Returned to the ~~with~~ south west corner to finish surveying
this area. Checked the small hill in this corner.
Few butterflies were observed.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Large Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	7	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennet</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliatta Cresent (<i>Phyciodes myliatta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Eucres amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Atlides halesus</i>)		
Ben's Metalmark (<i>Apodemia mormo virgulti</i>)	2	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funeral duskywing	2	

East Otay Mining Site

Sally Trule
4/11/00

Start: 3:30pm

Sunny, clear, hot;
mild winds gusting to
7mph; 82°F

Species observed

CA ringlet I/II II
western meadowlark
sphinx moth
swift

Behr's metalmark II
red-tailed hawk
sparrow
CA towhee
lizard

funereal duskywing III
moth
desert cottontail

pocket gopher (common)

West coast lady II hilltopping
tarantula! on small hill

SD BTJR

ground squirrel

end: 5:45pm

clear/hazy/sunny
winds to 7mph in gusts
overall very mild & warm
76°F

Flowering plants

Bras. sp.
tiny purple flower
Dic cap
Eri. Sas
Vig lac
Lot so
Caly mac
Mir cal
Viola ped.

note: few butterflies observed
still no blues

- 2 ATV's (border patrol) along southern
site boundary

- photographed the West coast lady's

Finished the ~~the~~ ^{south} west corner
of the site

Butterflies Observed (larvae or adults)	Number	Comments 04/13/08
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)	✓	
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Arctogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Portia protodice</i>)	✓	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Hartford's Sulphur (<i>C. hartfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	✓	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedonia chalcedonia</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leucira Checkerspot (<i>Thessalia leucira wrighti</i>)		
Myiitta Crescent (<i>Phyciodes myiitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	✓	
Western Painted Lady (<i>V. annabella</i>)	✓	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Eveos amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	✓	
Echo Blue (<i>Celastrina ladon echo</i>)	✓	
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)	✓	
Gray Hairstreak (<i>Stymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	✓	
Grainy Hairstreak (<i>Atides halesus</i>)		
Brown Metalmark (<i>Apodemia morino virgulit</i>)	✓	
Wright's Metalmark (<i>Calophelis wrightii</i>)	✓	
Funeral duskywing		

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/14/00 Site visit no. Week 3 1/3

Site name East Otay Mining

Locality Otay, San Diego County

Total site acres 360 Total acres surveyed NA

Total hours of field survey 45 min Average acres surveyed per hour NA

Time	Sky					Wind					Temperature F	
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
Start <u>9:30am</u>			<u>Overcast/Cloudy</u>						<u>8-12</u>			<u>66°F</u>
End <u>10:15am</u>			<u>Overcast/Cloudy</u>					<u>4-7</u>	<u>8-12</u>			<u>63°F</u>
Start			Overcast/Cloudy					4-7	8-12	12-15	>15	
End			Overcast/Cloudy					4-7	8-12	12-15	>15	

Description of areas surveyed/comments

Surveyed in the north west quadrant.
No butterflies were observed.
Cancelled survey due to poor weather conditions.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Great Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulphur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Cardinal Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Apple Hairstreak (<i>Atides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calophelis wrighti</i>)		

W
 2
 0
 2

East Olay Mining Site

04/14/00
Sally Truex

Dave Goodward w/ Bill Haas

start 9:00am

Species observed:

grasshopper sparrow
western meadowlark
raven
desert cottontail

9:30am

winds to 10mph
partly cloudy

66°F
no butterflies

10:15am

partly cloudy
winds 4-7mph
(occasional to 10mph)

63°F

leave site @ 10:30am

(drizzling on way home)

Flowering plants

Bras. sp.
Dic cap
Erod. c/c.
Lot sco
Eri las.
Caly mac.
Vig lac
Lup. sp.
Hymenoclea

North west corner

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no.

Survey date 04/16/00 Site visit no. Week 3 1/3

Site name East Otag Mining Site

Locality Otag, San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6 hrs 55 min Average acres surveyed per hour 13.0

Time	Sky	Wind	Temperature F
Start <u>9:30am</u>	Clear Patch Overcast/Cloudy Drizzle Shower <u>scattered clouds / sunny</u>	<1 <u>1-3</u> 4-7 8-12 12-15 >15	<u>71° F</u>
End <u>4:25pm</u>	Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>72° F</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
note:	<u>scattered clouds cleared around 12pm.</u>		

Description of areas surveyed/comments

Surveyed the northwest quadrant. Beautiful weather.
Many dirt bikers/ATV riders were present today (~30!)
Lots of ringlets, very few other butterflies were observed.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zellcaon</i>)	2	
Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orange tip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeta rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coccyonympha californica</i>)	31	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliitta Cresent (<i>Phyciodes myliitta</i>)		
Black and Red Lady (<i>Vannessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	1	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basillarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Blue Hairstreak (<i>Aclides halesus</i>)		
Behr's Metalmark (<i>Apodemia morio virgulti</i>)	9	
Wright's Metalmark (<i>Calophells wrightii</i>)		
Funeral duskywing	1	

East Otay Mining Site

4/16/00
Sally Trinke

Northwest corner

Start: 9:30am
Sunny, scattered cld
71° F
winds to 3mph,
beautiful weather!

species observed

western meadowlark
grasshopper sparrow
red-tailed hawk

pale yellow & black
died snake small head

CA ringlet IIII IIII IIII IIII IIII IIII
West coast lady I
ground squirrel

SDBTJ

desert cottontail
sharp-shinned hawk
sparrow red-crown

moth

Behr's metalmark IIII IIII

mourning dove
cdo blue I

Cabbage white I
lizard
raven

NNG:

bro hor
bro mad
bro dia
Avena bar

swallow

funereal duskywing I
pepitering hairstreak I

white-crowned sparrow
Anise swallowtail (on top of
main hill)
II

flowering plants

Bros. sp.
Erod. cic.

Chary.
Solomon sp.

Die cap
Caly mac
Lot seo

Lathyrus
Castil. aff
Viola ped
Allium sp.

Vig lac
Hymenoclea
Sys bel
Eri las

Oxalis sp.
Sidalcea
Hypoc gla
Son. ole
Mir. cal

(Starting abt. 12:30
winds increased to 7-10
(still died down to 4-7 most of the time)
some mph)

(clouds cleared around 12)

- dirt bikers / ATV riders
numerous today, at least
30 on site during course
of survey; all come from
nearby staging area

end - 4:25

clear & sunny
dirt bikers still on site
winds mild to moderate 2-9 mph
72° F

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka
 HELIX permit no. TE778195-5
 Subconsultant permit no.

Survey date 04/17/00 Site visit no. Week 3 2/3
 Site name East Olay Mining
 Locality Olay, San Diego County

Total site acres 360 Total acres surveyed ~40 acres
 Total hours of field survey 3 hrs Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start 10:10 am	Clear Patch ^{Overcast/Cloudy} Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	75°F
End 1:10 pm	Clear Patch ^{Overcast/Cloudy} Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	72.5°F
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments

Surveyed the south east corner of the site.
Conditions became too windy to continue survey - stopped
seeing flying butterflies

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Black Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponitis protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	3	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrightii</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Pink and Black Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	1	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leprotis marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	2	
Orange Hairstreak (<i>Atides halcesus</i>)		
Behr's Metalmark (<i>Apodemia morio virgulti</i>)	3	
Wright's Metalmark (<i>Calophelis wrightii</i>)		
Funereal duskywing	2	

East Otay Mining Site

04/17/00
Sally Trinke

Start: 10:10 a
75°F; 2-7 mph
partly cloudy

Species observed

lark sparrow
rufous-crowned sparrow
raven
CA ringlet III
perplexing hairstreak II
funereal duskywing II
lizard
moth
bumblebee

Winds from south!
fertilizing/plowing
south of the property
Survey south east corner

Western meadowlark
Behm's metalmark III
West coast lady I
mourning dove

SDBTJ
desert cottontail
CA towhee
Acron blue

Flowering plants

Erod. cic.
Lot soo
Lathyrus
Crypt. sp
Erod. bot.
Dic cep.
Sen ole
Eri las
Caly mac
Esch. cal
Mir cal.
Cham
Vig lac

Sol. sp.
Phacelia (cic ?)
Pholistoma sp.
Hymenoclea
Bras. sp.
Lasthenia

beginning ~12:30
winds increased to
8-12 mph

end: 1:10 pm
72.5°F windy >10 mph -15
overcast/cloudy gusts >20 mph

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 4/17/00 Site visit no. 3 (part 1 of 3)

Site name E. Otay Mining Site

Locality Western Foothills of Otay Mtn.

Total site acres 360 Total acres surveyed 41

Total hours of field survey 3 Average acres surveyed per hour 13.8

Time	Sky					Wind					Temperature F	
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15		>15
Start 1010			<u>Overcast/Cloudy</u>				<u>1-3</u>	<u>4-7</u>				75°
End 1310			<u>Overcast/Cloudy</u>						<u>8-12</u>	<u>12-15</u>		78°
Start			Overcast/Cloudy				1-3	4-7	8-12	12-15	>15	
End			Overcast/Cloudy				1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments _____

NE corner of site. Survey cancelled due to high winds.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	1	
Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogela rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	11	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)	1	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Lepidotes marina</i>)	1	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalla augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Atlides halesus</i>)		
Behr's Metalmark (<i>Apodemia morio virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrighti</i>)		
Funereal dusky wing	3	

Otay Mining Site

9/17/00

12:10 75° (ground) 2-10 mph partly cloudy

Rufous-crowned sparrow	Lesser goldfinch
Common raven	House finch
rise swallowtail \	Red-tailed hawk
West coast lady \	Botta's pocket gopher
Utif. ground squirrel	Calif. ringlet X \
D Black-tailed jack	Desert cottontail
Western meadowlark	Lark sparrow
Toyote (scat)	Call. towhee
Marine blue \	Rock wren
White-crowned sparrow	Costa's l-bird
Anna's l-bird	Finnish dusky-wing X
Coastal whiptail	Western fence lizard
Sara Orange-tip \	Turkey vulture

Wind started really blowing at around 1310, and sky became completely overcast, so we decided to stop surveying the site and came back.

1310 12-25 mph 78° (ground) overcast.

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/18/00 Site visit no. Week 3 2/3 (continued)

Site name East Olay Mining Site

Locality Olay; South San Diego County

Total site acres 360 Total acres surveyed ~35

Total hours of field survey 2.5 Average acres surveyed per hour 14.0

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	Temperature F
Start <u>2:00pm</u>			<u>Skyl</u>				<u>1-3</u>	<u>4-7</u>				
End <u>4:30pm</u>			<u>Overcast/Cloudy</u>								<u>>15</u>	71
Start			Overcast/Cloudy									67
End			Overcast/Cloudy									temp/wind taken @ 4:55pm, after end of survey

Description of areas surveyed/comments _____

Continue to survey south east corner of the site

Although rain was present in other parts of the County this morning, the soils at the site were dry when we arrived. It appeared to have rained on site earlier & dried out.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
✓ Lesser Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	2	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanra Checkerspot (<i>Thessalia leanra wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
✓ Pearly Lady (<i>Vanessa cardui</i>)	1	
✓ West Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elf (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	1	
✓ Purple Hairstreak (<i>Atlides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrighti</i>)		

East Otay Mining Site

4/18/00
Sally Truex

Species observed

CA ringlet 11 SDBTJ
raven

CA towhee

bumblebee

moth

perplexing hair streak 1

West coast lady 11B
(hill topping on main hill - 3)

lizard

Western meadowlark

mouse

kestrel

pocket gopher

kingbird

Painted lady 1111

Flowering plants

Lot sco

Min cal

Calv mac

Dic cap

Solan. sp.

Crypt. sp.

Lathyrus sp.

Chamy. sp.

Eni las

Lasthenia

Phacelia

Esch. cal

Start: 2:00pm; 71°F

partly cloudy; 3-5 mph

Survey south east corner
(cont. from 4/17)

rained earlier in day
throughout SD, but on site
veg & ground are dry -
ponded water in road pools
around perimeter of site
(not present yesterday)
Show that it did rain
on site

- west facing slope windy
8-12 mph, gusting to 15 mph

- east facing slope calm 1-5 mph

end: 4:30pm; cloudy

→ 67°F; 5-20 from southeast
varied by slope aspect

conditions worsened, ended sooner

(temp.
taken at
4:55pm)

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 4/18/00 Site visit no. 3 (part 2 of 3)

Site name E. Otay Mining Site

Locality Western Foothills of Otay Mtn.

Total site acres 360 Total acres surveyed 228

Total hours of field survey 2.5 Average acres surveyed per hour 13.8

Time	Sky	Wind	Temperature F
Start <u>1400</u>	Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> 4-7 8-12 12-15 >15	<u>71°</u>
End <u>1630</u>	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 <u>12-15</u> >15	<u>67°</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments
NE corner of site. Only 2 of the 2.5 hrs
surveyed count. High winds and low temps caused
us to cancel survey.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Orange Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogela rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	8	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedonia</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitia Crescent (<i>Phyciodes mylitia</i>)		
Red Lady (<i>Vanessa cardui</i>)	3	
West Coast Lady (<i>V. annabella</i>)	5	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basillarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Atides halesus</i>)		
Behr's Metalmark (<i>Apodemia mortuo virgultii</i>)	1	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funeral dusky wing	1	

Olday Mining Site

4/18/00

1400 3-5 mph 71° (ground) partly cloudy

Greater roadrunner

Calif. towhee

Funeral dusky-wing

Rufous-crowned sparrow

Wrentit

Coyote (scat)

Desert cottontail

Common raven

SD. Black-tailed jack

Red-tailed hawk

Western meadow lark

White-crowned sparrow

Both's pocket gopher

New flowering plants

Loggerhead shrike

Escholtzia

Calif. ringlet ~~XX~~

Triophyllum

Behr's metalmark ~~\~~

West coast lady ~~X~~

Calif. ground squirrel

Painted lady ~~X~~

Calif. quail

American kestrel

Weather conditions found bad, high winds starting and temperature getting lower.

Quit survey at approx. 1610, with ground temp approx. 70° still; by time back to car we took the following and temp, wind, etc.

1630 5-20 mph 67° (ground) partly cloudy

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/19/00 Site visit no. Week 3 finish survey ^{2/3} do survey ^{3/3}

Site name East Olay Mining Site

Locality Olay; San Diego County

Total site acres 360 Total acres surveyed 90 in the south east corner
 ~15 in the south east corner
 ~15 in south east corner

Total hours of field survey 7 hrs 30 min Average acres surveyed per hour 13.8 in south west corner

35 min
2 hrs
5 min

Time	Sky	Wind	Temperature F
Start 9:15 am	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	61
End 1:50 pm	Sunny	<1 1-3 4-7 8-12 12-15 >15	— not taken
Start 2:20 pm	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	— not taken
End 5:15 pm	Sunny	<1 1-3 4-7 8-12 12-15 >15	72

Description of areas surveyed/comments
Finish surveying the south east corner of the site
Survey the south west corner of the site

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	1	
✓ Lesser Swallowtail (<i>P. rutulus</i>)		
Sara Orange tip (<i>Anthocharis sara</i>)		
Felder's Orange tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	1	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	26	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
Coast Lady (<i>V. annabella</i>)	9	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	2 unknown blues	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philois sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	1	
Purple Hairstreak (<i>Artides halcsus</i>)		
Behr's Metalmark (<i>Apodemia morino virgulti</i>)	28	
Wright's Metalmark (<i>Calophelis wrightii</i>)		
Funereal duskywing	2	

East Olay Mining Site

4/19/00

Sally Truex

finish south east corner / survey southwest corner

start: 9:15am / clear & sunny / cool, 61°F / 4-7 mph

species observed

Western meadowlark
CA nighthawk III III
swallow
ground squirrel

mockingbird
whit-crowned sparrow
painted lady 1

Arise swallow 1 - a few dirt bikers on site
mouse

SDBTJ

West coast lady III III

honeyeater family

- around 11:45 winds increased 4-12 mph; still seeing butterflies

moth

EA towhee

desert cottontail

funereal duskywing II

* off-site 1:50 → (lunch) 2:20

oriole - Bullock's

blue (small) 1

Behr's metalmark III III III III

kestrel

blue 1 (big) III III III III

narrow lizard

CA towhee

Anna's

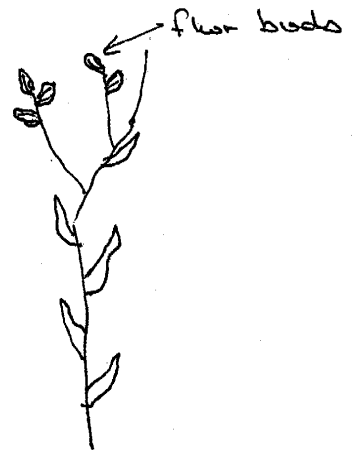
kingbird

red-tailed hawk

~~Cabbage~~ wht 1 corner

rufous-crowned sparrow

grasshopper sparrow
Pepperbird hawk 1



flowering plants

Bras. sp.

Sidalcea

Die cap.

Bloomeria cr

Caly mac

Dudleya var. (? chk Jap.) yes!

Eri fas.

Vig lac

San die

Erod cic

Sys bel
hordeum (NWG)

Lot sco

Viola ped

Chamy. sp.

Oxalis

Mir cal

Veget

Lathyrus sp.

Iso men

Calch. sp.

Lasthenia

end: 5:15pm / clear & sunny / 72°F

winds 4-9 mph (were at this level from around 3pm on)

approximately 1 hr spent finishing southeast corner of corner area

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 4/20/00 Site visit no. 3 (part 3 of 3)

Site name E. Otay Mining Site

Locality Western foothills of Otay Mtn.

Total site acres 360 Total acres surveyed 21

Total hours of field survey 1.5 Average acres surveyed per hour 13.8

Time	Sky	Wind					Temperature F	
		<1	1-3	4-7	8-12	12-15		>15
Start <u>1420</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1	1-3	<u>4-7</u>	8-12	12-15	>15	<u>86°</u>
End <u>1550</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1	1-3	<u>4-7</u>	8-12	12-15	>15	<u>86°</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1	1-3	4-7	8-12	12-15	>15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1	1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/commments
NE corner of site. ORV traffic a problem (see
notes.)

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogola rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliuta Crescent (<i>Phycodes myliuta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	3	
Coast Lady (<i>V. annabella</i>)	6	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina jason echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Arlides halesus</i>)		
Mohr's Metalmark (<i>Apodemis morio virgultii</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		

Otay Mining Site

4/20/00

1420 clear 4-10 ft 86° (ground)

Western meadowlark

Botta's pocket gopher

House finch

Desert cottontail

Westcoast ldy #

Western fence lizard

Painted lady X

Calif. ringlet \

Rufous-crowned sparrow

Anna's h-bird

Calif. towhee

Calif. ground squirrel

Red-tailed hawk

Coyote (scat)

S.D. Black-tailed jack

Lark sparrow

Common raven

Turkey vulture

ORV's present on site today in small but annoying numbers. 3 bikers were doing laps to top of hill, then around the west side, to the east side, then over the top again. I think these guys are seriously hampering the butterflies; disrupting them constantly

1550 clear 4-7 ft 86° (ground)

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	✓	
Western Swallowtail (<i>P. rutulus</i>)		
Sara Orangeip (<i>Anthocharis sara</i>)		
Felder's Orangeip (<i>A. cethura</i>)		
Cabbage White (<i>Arctegoia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	✓	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	✓	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbi</i>)		
Leandra Checkerspot (<i>Thessalia leandra wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	✓	
Western Painted Lady (<i>V. annabella</i>)	✓	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia cocnia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)	✓ (unknown blue)	
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acinon Blue (<i>Icaricia acinon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Stymon melinus</i>)		
Brown Elfin (<i>Inisalia augustinus</i>)		
Perplexing Hairstreak (<i>Calliphrys perplexa</i>)	✓	
Golden Hairstreak (<i>Adides halesus</i>)		
Brown Metalmark (<i>Apodemia mormo virgulti</i>)	✓	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funeral duskywing	✓	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/21/00 Site visit no. Week 4 1/3

Site name East Otay Mining

Locality Otay, San Diego County

Total site acres 360 Total acres surveyed ~45

Total hours of field survey 3 hrs 20 min Average acres surveyed per hour 13.5

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	Temperature F
Start <u>12:20pm</u>			<u>Overcast/Cloudy</u>					<u>4-7</u>				<u>72</u>
End <u>3:40pm</u>			<u>Overcast/Cloudy</u>					<u>4-7</u>	<u>8-12</u>			<u>72</u>
Start			Overcast/Cloudy					4-7	8-12	12-15	>15	
End			Overcast/Cloudy					4-7	8-12	12-15	>15	

Description of areas surveyed/comments _____

Surveyed the northwest corner of the site.

Temperatures dropped quickly after 3:40 as cloud cover increased.

California ringlets were observed but few other butterflies were seen flying.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Winter Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Cocononympha californica</i>)	22	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. glippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Learia Checkerspot (<i>Thessalia leaniira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adolpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Atlides halesus</i>)		
Burns Metalmark (<i>Apodemia mormo virgulti</i>)	2	
Wright's Metalmark (<i>Calophelis wrightii</i>)		

East Otay Mining Site

Survey north west corner

Sally Trnka

04/21/00

start: 12:20pm

cloudy, occasional sun
72°F; winds 4-9 mph

Species observed

raven

bumblebee

Western meadowlark

2:10pm; cloudy; 71° w
winds 7-12 mph

CA ringlet III III III III II

mourning dove

CA screech owl

desert cottontail

3:40; cloudy; 72°F

lizard

whit-crowned sparrow

winds 7-12 mph
but cold

ground squirrel

lesser goldfinch

West coast lark 4

moth

mockingbird

4pm; overcast & cloud
4-10 mph; 63°F
cold
stopped surveying

Behr's metalmark II

gopher snake (photo)

parrot

flowering plants

note: diskings of NMG/
Brassica fields to west
of site

Bras. sp.

Lupinus sp.

Erod. ic

Plantago erecta

Dic. cap.

Oxalis alb

Syn. hel

Cely. mac

Mtn cel

Eri. las

vetch

Hymenoclea

Stachys

Lot. scd

Sidalcea

Cal. spl

David

858-780 8748 (h)

573-1286 (w)

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/23/00 Site visit no. Week 4 1/3 (continued)

Site name East Olay Mining

Locality Olay; San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6 hrs 35 min Average acres surveyed per hour 13.7

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	Wind	Temperature F
Start 10:40 am			<u>Overcast/Cloudy</u>			<1 1-3 4-7 8-12 12-15 >15	72
End 5:15 pm			Overcast/Cloudy			<1 1-3 4-7 8-12 12-15 >15	
Start			Overcast/Cloudy			<1 1-3 4-7 8-12 12-15 >15	
End			Overcast/Cloudy			<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments
Finish surveying the north west corner. Redid earlier survey because of the poor weather conditions (within protocol but few butterflies were flying).

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Butterflies Observed (name of adult)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zellcaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sage Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	24	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
West Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)	1 unknown blue	
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina jason echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)	3	
Brown Elfin (<i>Inisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atlides halesus</i>)		
Brown Metalmark (<i>Apodemia mormo virgulti</i>)	23	
Wright's Metalmark (<i>Calephelis wrighti</i>)		

East Otay Mining Site

04/23/00
Sally Trnka

Species observed

CA ringlet ~~###~~ ~~###~~ ~~###~~ ~~###~~ ~~###~~ ~~###~~

Western meadowlark

Swallow

moth

lizard

CA towhee

desert cottontail

ground squirrel

raven

painted lady 1

gray hairstreak ~~###~~

orange dot on back of HW

rockingbird

lesser goldfinch

rufous-crowned sparrow

whit-crowned sparrow

quail

Belted meadowlark ~~###~~ ~~###~~ ~~###~~ ~~###~~ ~~###~~

honey bee

yellow-rumped warbler

kingbird

red-tailed hawk

sparrow. yellow around face

SD&TJ

west coast lady 11

CA rattlesnake

blue horned lizard (dead in dirt road)

start: 10:40am
partly cloudy / 0-3mph / 72
(but sunny)
finish the north west corner

around 1:30pm winds
increased 4-9mph

end: 5:15pm
clear & sunny; 70°F
1-3mph
(died back down
around 4:30pm)
only a few
floppy w/lt cloud

Flowering species

Bras. sp.

Silene ~~###~~ gallica

Erod. cic

Oxalis ~~###~~ albicans ssp. californica spiny tree/shrub

Hymenoclea

fragrant shrub Eri con ~~###~~ yellow

Cal. mac

Sidalcea

Eri. fas

Sys. bel

Lot. sco

Cast. affin.

Vig. lac

Lathy.

Cal. spl

Mim. aur. (red)

Hyp. gla

Blo. cro.

Min. cal

Phacelia cic ~~###~~ - in clear rocky patches surrounded by grasses

Str. cap

Dud. var. *

Solanum ~~###~~ parishii

Viola ped

Esch. cal.

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/24/00 Site visit no. Week 4 1/3 (continued)

Site name East Olay Mining Site

Locality Olay; San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6hrs 45min Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>10:20 am</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>70</u>
End <u>5:05 pm</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>74</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

Surveyed the south east corner of the site.

Most of the survey period was sheltered from the wind (which was from the west) Winds increased to 10mph mid-day, then died back down

Overall, beautiful weather but very few butterflies. Lots of lizards.

- Attached List of butterflies observed
 List of larval host plants, nectar plants, and plant communities observed on the site
 Field maps
 Copy of original field notes
 Photographs
 Other _____

Butterflies Observed (name of adult)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	1	
West. Tiger Swallowtail (<i>P. rutulus</i>)		
S. orangeip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	13	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. glippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	5	
Coast Lady (<i>V. annabella</i>)	10	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	12	
Aemon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)	12	
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atides halcusis</i>)		
Metalmark (<i>Apodemia morio virgulti</i>)	8	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funereal duskywing	2	

East Olney Mining Site

4/24/00
Sally Trnka

Species observed

funereal dusky wing }
road runner }
swallow
lizard
Western meadowlark
moth
maybee
raven
CA towhee
gray hairstreak III
CA ringlet III III III
~~grasshopper sparrow~~
SDBTJ
Costa's hum.
desert cottontail
marine blue II

kingbird
ground squirrel
red-tailed hawk
mockingbird
ground squirrel
Behr's metalmark III III
Amise swallowtail I
Bullock's oriole
gopher snake
CA rattlesnake
horned lizard * (near top of main hill)
rufous-crowned sparrow
bewick's wren - like
Painted lady III
West coast lady III III III increased to 8-10 uph
So alligator lizard
(gray, black red & white checkered blk)
side-blotched lizard (2:30 pm)
lark sparrow
sparrow - gray head

Start: 10:20 am
wind 4-7 mph
70° clear
from west
most of day was
sheltered from
winds by main
hill

like
faintly striped back & tail, long bill, ^{black} eye stripe (light)
starting 3pm winds
main
not in bodies on hill top
↓
present in
afternoon -
not late
morning

Flowering plants

Lot scd	Caly mac
Sil gal	Sol per
Ero cic	Vig lac
Hyp gla	Lathyrus sp.
Mir cal	Oxalis alb cal
Cal spl	Chery.
Cry sp.	Sidalcea sp.
Eri pas	Cast aff
Phac cic	Esch. cal.
Eri con	Lasthenia
Dic cap	lamarkia

beautiful weather - very
few butterflies, lots of lizards

end: 5:05 pm
74°F, clear, 4-7 mph

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 4/24/00 Site visit no. 4

Site name E. Otago Mining Site

Locality Western foothills of Otago Mtn

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6.75 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start 1020	<input checked="" type="radio"/> Clear <input type="radio"/> Patch <input type="radio"/> Overcast/Cloudy <input type="radio"/> Drizzle <input type="radio"/> Shower	<1 1-3 <input checked="" type="radio"/> 4-7 8-12 12-15 >15	70°
End 1705	<input checked="" type="radio"/> Clear <input type="radio"/> Patch <input type="radio"/> Overcast/Cloudy <input type="radio"/> Drizzle <input type="radio"/> Shower	<1 1-3 <input checked="" type="radio"/> 4-7 8-12 12-15 >15	74°
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

NE corner of site

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Species	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	2	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Jrangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogela rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	1	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	10	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Cresent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vannessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	1	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atilides halesus</i>)		
r's Metalmark (<i>Apodcinia morino virgulti</i>)	2	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Funereal dusky wing	2	

Otay Mining site

4/24/00

1020 4-7 up clear 70° (ground)

Calif. ringlet ~~XXXX~~

Bott's pocket gopher

Desert cottontail

Western meadowlark

Common raven

Greater roadrunner

Lesser goldfinch

Arise smalltail X

Red-tailed hawk

Plowman's plow

Common white \

Collins's heter.

Anna's L-bird

Clarkia

Western fence lizard

Erubium

Cliff swallow

Goldenrod CISTIS

Marine blue \

Mulla

Lark sparrow

Zenopsis

Rufous-crowned sparrow

Siddece

West coast lark X

Funereck dusky wing X

SD Black-tailed jack

Calif. bubea (2 nests
3 eggs ACAL
4 eggs RCRB)

Behr's meadowlark X

Calif. quail

White-crowned garrow.

Loggerhead shrike

Mo. mockingbird

Western kingbird

Calif. thrasher

Costa's h-bird

Coyote (eat)

Mourning dove

Calif. ground squirrel

Side-blotched lizard

Robber flies

Clear 1705 4-7 up 74° (ground)

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/25/00 Site visit no. Week 4 3/3

Site name East Olay Mining

Locality Olay, San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6 hrs 30 min Average acres surveyed per hour 13.8

Time	Sky	Wind	Temperature F
Start <u>10:30am</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	
End <u>5:00pm</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower <u>hazy</u>	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>73</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments Survey the south west corner.
No dirt bikers or ATV's today.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Species Name	Frequency	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
S. Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	32	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thissalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		1 unknown lady
Y. Toast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)	1 unknown blue	
Marine Blue (<i>Leptotes marina</i>)	4	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)	1	
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmark (<i>Apodcinia mormo virgulti</i>)	10	
Wright's Metalmark (<i>Calephelis wrightii</i>)		

East Olay Mining Site

4/25/00

Sally Trnka

Species observed

lizard		desert cottontail
CA nighthawk		all brown butterfly (not elfin)
western meadowlark		blue grosbeak
grasshopper sparrow		kingbird
mockingbird		pygmy blue
maine blue		ground squirrel
blue l		CA towhee
moth		lark sparrow
sparrow - striped face in NWG		pale swallowtail
loggerhead strike (pr)		Bullock's oriole
red-tailed hawk		wht-crowned sparrow
raven		
morning dove		Behn's nighthawk
		lady l
		sphinx moths

start: 10:30am
 hazy & clear / 73°F /
 winds 4-7mph (west)
 surveying ~~at~~^{south} west corner
 no dirt bikers / ATV's!

sparrow, yellow around face
 long tail
 West coast lady!

Flowering plants

Bras sp.	Sidal sp.
Hymen.	Sil gal
Erod. cic.	Lath
Lot so	Sol par
Dic cap	Min cal
Caly mac	Chamy
Vig lac	collinsia
Cal spl	Cast aff
Sys bel	Oralis alb cal
Vetch	Tha cic
Eri pas	Eri con
	Viola ped

end: 5:00pm / hazy & clear /
 4-9mph (west/northwest) / 75°

Pale Swallowtail (<i>Papilio eurymedon</i>)		✓
Anise Swallowtail (<i>P. zelicaon</i>)		✓
West Tiger Swallowtail (<i>P. rutulus</i>)		
Saragchop (<i>Anisocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Arctioidea rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		✓
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulphur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		✓
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leucira Checkerspot (<i>Thessalia leucira wrighti</i>)		
Myllitta Crescent (<i>Phyciodes myllitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		✓
Western Coast Lady (<i>V. annabella</i>)		✓
Virginian Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotus sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		✓
Aemon Blue (<i>Icaricia aemon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Stymon melinus</i>)		✓
Brown Elfin (<i>Icasiaria augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Git Purple Hairstreak (<i>Atides halesus</i>)		
Boreal Metalmark (<i>Apodemia mormo virgulti</i>)		✓
Wright's Metalmark (<i>Calophelis wrightii</i>)		
Funeral duskywing		✓

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 04/29/00 Site visit no. Week 5 1/3

Site name East Otay Mining Site

Locality Otay; San Diego County

Total site acres 360 Total acres surveyed 90

Total hours of field survey 6 hrs Average acres surveyed per hour 15

Time	Sky	Wind	Temperature F
Start <u>9:30am</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower <u>Sunny</u>	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>64</u>
End <u>4:30pm</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower <u>Sunny</u>	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>72</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments

Survey northwest corner of the site.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sage-tip (<i>Anthocharis sara</i>)	4	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponitis protodice</i>)	2	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	26	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	Unknown lady 2	
Moast Lady (<i>V. annabella</i>)	5	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antlopea</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Eversmannia ainyntula</i>)	2	
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)	1	
Sonoran Blue (<i>Philotis sonorensis</i>)	Unknown blue 2	
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)	1	
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Aclides halesus</i>)		
Metalmark (<i>Apodemia mormo virgulti</i>)	15	
Wright's Metalmark (<i>Calephelis wrighti</i>)		
Comstock Fritillary	15	

East Otay Mining Site

4/29/00
Sally Truoka

~~Western fence liz.~~
western fence liz.

gray hair streak

Bollocks oriole
ground squirrel

Start: 9:30am
64 / 4-8mph / clear & some

Species observed

CA ringlet IIII IIII IIII IIII

raven IIII IIII /

Swallow horned lark

grasshopper sparrow

moths

western meadowlark

yellow jacket

lizard

~~Scrub wren~~

Sara's orangetip IIII
Comstock hillclay IIII

mockingbird

bumblebee

Behr's metalmark IIII

CA towhee

common wht II

red-tailed hawk
red-winged

blackbird

Echo blue I

blue II

western tailed II

lady III

West coast lady IIII

starting ~ 11am
winds 8-12mph fr/w

Buddy Black - filling west
of site adjacent property -
went on site briefly - showe
him prop. boundaries

flowering plants

Bras sp.

Erod. cic.

Hymen. sp.

Cal y mac

Vig lac

Son ole

Lot sco

Dic cap

Cal spl

Hyp gla

Sidal.

Chamy

Mir cal

Sisy bel

Crys. cor

vetch

helian sco

Plagio sp

Lathy

Sil gal

Cast aff

Solan. & parishii

Collinsia sp.

Phac. cic.

Solanum wht.

Thelictoma

Viola ped.

Oxalis alb.

end: 4:30pm
clear / sunny / 4-7mph
72°F

few dirt bikers
in sunny area

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. —

Survey date 05/01/00 Site visit no. Week 5 2/3

Site name East Olay Mining

Locality Olay, San Diego County

Total site acres 360 Total acres surveyed 70

Total hours of field survey 5 hrs Average acres surveyed per hour 14

Time	Sky	Wind	Temperature F
Start <u>11:00 am</u>	<u>Sunny & hot</u>	<u><1 (1-3 4-7) 8-12 12-15 >15</u>	<u>88</u>
End <u>4:00 pm</u>	<u>Sunny</u>	<u><1 1-3 (4-7) 8-12 12-15 >15</u> <u>to 9 mph</u>	<u>89</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments Surveyed the south east corner of the site.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sage Butterfly (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)		1
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		2
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vannessa cardui</i>)		
Yeast Lady (<i>V. annabella</i>)	/	Unknown lady
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. aralanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)	/	Unknown blue
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes inarina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		1
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Ort Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmark (<i>Apodemia morio virgulti</i>)		51
Wright's Metalmark (<i>Calophelis wrighti</i>)		
Comstock fritillary		2

East Otay Mining Site

5/1/00

Sally Trnka

start: 11am

clear/sunny / 88°F

3-6°F

Sampling southeast corner

species observed

western meadowlark	common wht 1
desert cottontail	mockingbird
ground squirrel	blue 1
CA ringlet 11	SDBTJ
CA towhee	mourning dove
lady 1	swallow
honeybee	sparrow
raven	comstock nighthawk 11
Acmen blue 1	Bras sp.
Behr's metalmark IIII IIII IIII	Less. fil
(oth	woodchuck (nest)

* one row of filled soil in NUG at south end of source area (adjacent property - to south is filled)

flowering plants

Lot sco	Eri fas	Mir cal
Cal mac	Erod cic	oxalis
Cal spl	Behr's metalmark	Bras sp.
Dic cap	Sidalcea	Less. fil.
Vig lac	Cast aff	
Eri fas	Crypt. sp.	
Sol pari.	Lasthenia	
Chamy	Uropap.	
Mal fas	Esch. cal	
Cha cic	Cast pur (1 plant)	
Lathy	Collinsia	

* warm weather - very few butterflies or wildlife

end: 4pm / sunny, clear / 89°F / 6-9 mph

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. N/A

Survey date 5/1/00 Site visit no. 5 part 1 of 2

Site name E. Otay Mining site

Locality Western foothills of Otay Mtn

Total site acres 360 Total acres surveyed 70

Total hours of field survey 5 Average acres surveyed per hour 14

Time	Sky	Wind	Temperature F
Start <u>1100</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>88°</u>
End <u>1600</u>	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>89°</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments NE corner of site

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	1	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Orangetip (<i>Anthocharis sara</i>)	2	
Felder's Orangetip (<i>A. celhura</i>)		
Cabbage White (<i>Artogla rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	1	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	15	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliatta Crescent (<i>Phycodes myliatta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginian Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adolpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopteryx lydamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	1	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalla augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Ailides halesus</i>)		
's Metalmark (<i>Apodemia mormo virgulta</i>)	7	
Wright's Metalmark (<i>Calephelis wrighti</i>)		
Comstock's Fritillary	11	
Funeral Dusky wing	1	
Bernardino Blue	1	

E. Otago Mining Site

5/1/00

NE corner

1100 3-6 mft clear 88° (ground)

Comstock's fritillary XXXX \	No. mockingbird
Costa's h-bird	Sage sparrow
Botta's pocket gopher	Horned lark
Western meadowlark	Calif. ringlet XXXX X
Marine blue \	Behr's metalmark XX
Western fence lizard	Common raven
Red-tailed hawk	SD black-tailed junc.
Arise swallowtail \	Sara orange-tip X
Desert swallowtail	Coyote (scat)
Bush-tit	Robber fly
Red-winged blackbird	Tarantula hawk
Rufous-crowned sparrow	Calif. towhee
Funereal dusky wing \	Calif. quail
Anna's h-bird	White-throated swift
Bermuda (square-dotted) blue \	Granite spiny-lizard
Common white \	

Very hot day - not much animal activity.
Wind hot as well.

89° (ground) 9-10 mft clear 1600

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka
 HELIX permit no. TE778195-5
 Subconsultant permit no. —

Survey date 05/02/00 Site visit no. Week 5 do 3/3

Site name East Olay Mining

Locality Olay, San Diego County

Total site acres 360 Total acres surveyed 70

Total hours of field survey 5 hrs 15 min Average acres surveyed per hour 13.3

Time	Sky					Wind					Temperature F	
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15		>15
Start <u>10:30am</u>	<u>Clear</u>					<u><1</u>						<u>86</u>
End <u>3:45pm</u>	<u>Clear</u>					<u><1</u>	<u>1-3</u>	<u>4-7</u>	<u>8-12</u>	<u>12-15</u>	<u>>15</u>	
Start	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
End	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments Finished surveying southeast corner, Surveyed the south west corner of the site.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		2
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sagewing (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Hartford's Sulfur (<i>C. hartfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		6
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. edlthia quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Yarrow Toast Lady (<i>V. annabella</i>)		} Unknown lady
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes ainyntula</i>)	Bernadino blue	10
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmark (<i>Apodemis morio virgulti</i>)		29
Wright's Metalmark (<i>Calophelis wrightii</i>)		
Comstock fritillary		6
Funeral duskywing		1

East Otay Mining Site

5/2/00
Sally Trnka

Start: 10:30am

86°F / clear & sunny / 0-3mph

species observed

* Sage is Munz's not mellif.

coastal whiptail

Arise swallowtail 11

swallow

lady 1

Behr's metalmark

San Ben blue

moth

desert cottontail

CA ringlet

western meadowlark

raven

red-tailed hawk

robust-crowned sparrow

mourning dove

funereal duskywing 1

grasshopper sparrow

mockingbird

lesser goldfinch

CA towhee

honeybee

comstock butterfly

SDBTJ

flowering plants

Eri fas

Helian. sco

Mulla de

Cal mac

Esc. cal

Sil gal

Hymen. cret.

Cal spl

Min cal

Lot sco

Lathyrus

Dic cap

Bras sp

Vig lac

Osmac. benella

Sab munz

Cash aff

oxalis

no dirt bikers on site

end: 3:45pm / clear / sunny
5-9mph / 89° F

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	✓	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sarpedon (<i>Anthocharis sara</i>)	✓	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Arctogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	✓	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Cotias eurytheme</i>)		
Harford's Sulphur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	✓	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leontine Checkerspot (<i>Thessalia leontina wrighti</i>)		
Mytilus Crescent (<i>Phyciodes mytilus</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)	✓	
Virginian Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Busckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Eversmannia</i>)	✓	
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)	✓	
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Stymon melinus</i>)	✓	
Brown Elfin (<i>Inisfaia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys porphyrea</i>)		
Grass Purple Hairstreak (<i>Atides halesus</i>)		
Black Metalmark (<i>Apodemia mormo virgulti</i>)	✓	
Wright's Metalmark (<i>Colophelis wrightii</i>)		
Funereal duskywing	✓	
Comstock ribellid	✓	
Bernardino blue	✓	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Scott Taylor

HELIX permit no. TE778195-5

Subconsultant permit no. N/A

Survey date 5/2/00 Site visit no. 5 part 2 of 2

Site name E. Otay Mining Site

Locality Western foothills of Otay Mtn

Total site acres 360 Total acres surveyed 70

Total hours of field survey 5 hrs 15 min Average acres surveyed per hour 13

Time	Sky	Wind	Temperature F
Start <u>1030</u>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Patch <input type="checkbox"/> Overcast/Cloudy <input type="checkbox"/> Drizzle <input type="checkbox"/> Shower	<input checked="" type="checkbox"/> <1 <input checked="" type="checkbox"/> 1-3 <input type="checkbox"/> 4-7 <input type="checkbox"/> 8-12 <input type="checkbox"/> 12-15 <input type="checkbox"/> >15	<u>86°</u>
End <u>1545</u>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Patch <input type="checkbox"/> Overcast/Cloudy <input type="checkbox"/> Drizzle <input type="checkbox"/> Shower	<input type="checkbox"/> <1 <input type="checkbox"/> 1-3 <input checked="" type="checkbox"/> 4-7 <input checked="" type="checkbox"/> 8-12 <input type="checkbox"/> 12-15 <input type="checkbox"/> >15	<u>89°</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments

NE corner + SW corner

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	5	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	3	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	3	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Theoxalla leanira wrightii</i>)		
Myliina Crescent (<i>Phyciodes myliina</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)	1	
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglemwing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	2	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elf (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Ailides halesus</i>)		
's Metalmark (<i>Apodemia morio virgulti</i>)	15	
Wright's Metalmark (<i>Calophele wrightii</i>)		
Bernardine Blue	9	
Comstock's Fritillary	9	

E. Ohg. Mining Site

5/2/00

NW corner / SW corner

1030

0-3 mph

clear

86° (ground)

Western meadowlark

Mourning dove

Calif. towhee

Desert cottontail

Behr's meadowlark ~~XXXX~~

Robber fly

Walking stick

Bottal's pocket gopher

Red-tailed hawk

Common raven

Horned lark

Bernardio blue ~~XXXX~~

SD Black-tailed jay

SD horned lizard

Arise swallowtail ~~XX~~

Virginia lady

Terentula hawk

Comstock's fritillary ~~XXXX~~

Cassin's kingbird

No. mockingbird

Common white ~~X~~

Bell's sage sparrow

Western fence lizard

Merino blue ~~X~~

Calif. ringlet ~~X~~

Rufous-crowned sparrow

Grasshopper sparrow

Coyote (scent)

A good butterfly day. The
summer butterflies are really
coming on.

1545

5-9 mph

clear

89° (ground)

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Appendix B-2

2001 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT



2001 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT

2001
Quino Checkerspot Butterfly
(*Euphydryas editha quino*)
Survey Report for
The East Otay Project Potential Mitigation Site

Prepared for:

U.S. Fish and Wildlife Service

Prepared by:

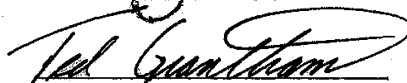
HELIX Environmental Planning, Inc.
8100 La Mesa Blvd., Suite 150
La Mesa, California 91941-6476
(Threatened/Endangered Species Permit: TE778195-5)

May 31, 2001

Surveys performed by:




Sally Trnka



Ted Grantham



Amy Bridgeman



Derek Langsford, Ph.D.

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APPENDIX A - PHOTOGRAPHS	
APPENDIX B - COPIES OF FIELD NOTES	

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INTRODUCTION

This report documents the results of quino checkerspot butterfly (QCB; *Euphydryas editha quino*) surveys conducted by HELIX Environmental Planning, Inc. (HELIX) biologists within six potential mitigation parcels located in Otay Mesa in southern San Diego County (Figure 1). The surveys were conducted under HELIX's U.S. Fish and Wildlife Service (USFWS) threatened/endangered species permit (TE778195-5). The focus of the surveys was to determine presence of the QCB within proposed mitigation areas. These surveys do not prove absence of the QCB in areas where it was not observed.

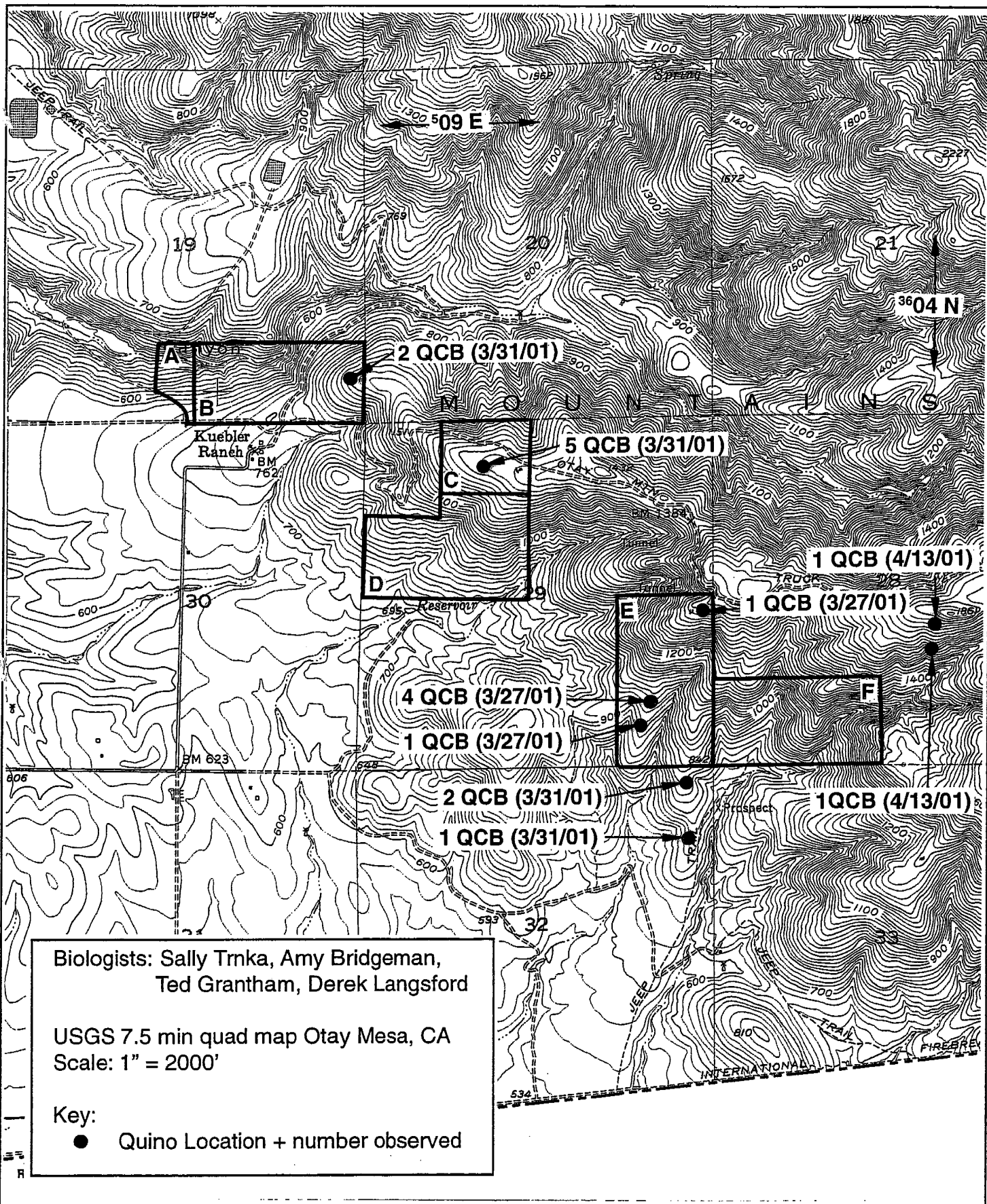
METHODS

The methods employed during the site assessment and during the presence surveys for the QCB recognized the guidelines in the USFWS Year 2000 Survey Protocol for the QCB (USFWS 2000). The mitigation area was divided into six parcels: Parcels A through F (Figure 1). During the site assessment Parcel A was excluded from surveys due to a lack of high quality QCB habitat. Parcels B and C were surveyed three times, Parcels E and F were surveyed two times and Parcel D was surveyed once. The frequency of the surveys was based on the quality of potential habitat and site accessibility. Every effort was made to do the presence surveys during the most favorable weather conditions (Table 1). See Appendix A for photographs of QCB observed. Copies of original field notes are provided in Appendix B.

Table 1
SURVEY INFORMATION

Survey Date	Personnel*	Location	Start/Stop Time	General Weather Conditions	QCB Observations
March 2, 2001	ST, DL	Habitat Assessment All Parcels	N/A	cloudy; under 60° F	None
March 15, 2001	ST, TG	Parcel B, C and D	B = 10:45 am/12:20 pm C = 12:35 pm/2:05 pm D = 2:50 pm/3:35 pm	partly cloudy to overcast wind 2-7 mph; mid 60's° F	None
March 27, 2001	ST, TG, AB	Parcels B, C and E	B = 3:00 pm/4:10 pm (TG) E = 11:30 am/4:20 pm (ST, AB) C = 4:25 pm/5:00 pm (ST, AB)	clear and sunny wind 0-5 mph; mid 70's° F	Yes (Parcel E)
March 31, 2001	ST, TG, AB	Parcels B, C, E and F	B = 10:30 am/12:10 pm (AB) C = 12:30 pm/1:40 pm (AB) E = 11:15 am/not noted (TG, ST) F = 1:45/not noted (TG, ST)	clear and sunny wind 2-10 mph; low 70's° F	Yes (Parcels B and C; south of Parcel E)
April 13, 2001	ST, TG, AB	Parcel F	2:00 pm/4:30 pm	clear and sunny wind 0-7 mph; low 70's° F	Yes (Northeast of Parcel F)

Sally Trnka = ST; Ted Grantham = TG; Amy Bridgeman = AB; DL=Derek Langsford



**Quino Checkerspot Location Map for the East Otay Project:
 Potential Mitigation Sites**

APPENDIX A
PHOTOGRAPHS



Parcel B.
Quino checkerspot butterfly.
Photo taken 3/31/01 by Amy Bridgeman



Parcel C.
Vicinity of Quino checkerspot butterfly.
Photo taken 3/31/01 by Amy Bridgeman



Parcel C.
Quino checkerspot butterfly.
Photo taken 3/31/01 by Amy Bridgeman



Parcel E; Hilltop.
Quino checkerspot butterfly.
Photo taken 3/27/01 by Sally Trnka



Parcel E; Eastern Ridgeline.
Nectaring resources.
Photo taken 3/31/01 by Sally Trnka

APPENDIX B

FIELD NOTES

TG & ST

SEM-01 Mitigation Land 3/15/01
Quinn Habitat Assessment
(Quinn 2)

Area X B 64° F part. cloudy
winds 2-5 mph

Brassica sp. West facing slope; rock outcrops

Eriogonum

Dark weed Sarah orange tip III

Art. Cali. Southern blue III II

Eriogonum Fungus dusting

Curved stem mac. perplexing hair break III

Gay-t. bush

Rhus integrifolia

mule fat

Shooting-stars

Blue-dick

Plantain erecta (10+ plants)

Orange stem flower

Popcorn flower

Western meadowlark

start: 10:45

end: 12:20 65° F, part. cloudy

winds 3-5 mph

TG 2 ST
3/15/01

Aren D
overcast, 60°F
wind 3-7 mph

Vigiera (S.D. Snyffera)
Morboll's cab.
Cryptantha - Carpet
Eriogonum
CA poppy
Celanone
Daisyseed
Among's safflet
Ceanothus (purple flowers)
White sage

mid: 3:35 pm
winds 2-7 mph
overcast

TG 2 ST
3/15/01

Aren C
start: 12:35 pm
recryst. fine, open sleep. 65°F
wind 3-7 mph
(except - soil)

Celanone
Pantoyocenta / Southern blue
Cryptantha (pop. core) / Arise small/total
St. Cal.
Small sarsan
Among's safflet (Eriogonum)
Ceanothus (white flowers)
Among's safflet (white flowers)
Ceanothus spp
Daisyseed

Crochium
Celanone (purple flower w/ yellow center)
Lucea Wikipaki
pop plant
Arenctos viridescens
Agriochthon (soil)
Helleborus Sciprius (dry flower)

mid: 2:05 pm
deep haze, 60°F
winds 2-7 mph

SRM-01

Q2

03/15/01

Sally Trnka

Area XB

animals

Amur's horn

Am. crow

Sara's orange top IIII

bumblebee

So. blue IIII IIII IIII IIII IIII

frilary Const. 1

common wht II

funereal duskywing 1

~~blue unknown~~

Beh's nettark II

Perplexing histrk IIII

raven

moth

ladybug

grey hairstk 1

flowering plants

Bra sp.

Caly mac

Lath sp. (sweet pea)

Ero nos/bot/cic

Lot sco

Son ~~sp~~ ole

Dodac.

Cry sp.

Bro med

Lep sp.

Pha wht

Aue bar

Cas aff

Dic cap

San arg (yel flower) Vig lac

Esc cal

start: 10:45am / 64° F / 1-5 mph / ~~clear~~ partly cloudy & sunny

Do / Pe

end: 12:20 / 1-5 mph / hazy / 65° F

SRM-01

02

AREA B?

3/15/01

Sally Truher
& TG

start 12:35pm / hazy / 1-5 mph / 65°F

animals

lark sparrow

blk-tailed jkubt

Song's orangebird 1/1/1

CA towhee

CA nighthawk 1

crow

moth

swallowtail 1

note: few flowering plants
other than Crys sp.

perplexing hawk 1

lady 1

flowering plants

Crys sp.

Sol. sp.

Cea (white, thick lvs)

Cea (purple) tom

Sal mon

end 2:05pm

Vio ped

2-7 mph / hazy / 60°

Lot sco

Sis bel

Ero nos/bot/csc

Dodac.

Graph cal

SRM-01

03/15/01

AREA D

SJT / TG

Start: 2:50pm / 60° / hazy/cloudy / 2-7 mph

Animals

peaked lady 1

sparrow

Flowering plants

Braes sp.

Sal sp.

pink

Lot sec

Cry sp.

Sal man

Lepidion sp.

Esc cal

Ero cic / was / bot

Caly mac

end 3:35pm / ^{overcast} / ~~hazy, cloudy~~ / 2-7 mph / 60°F

3/27/01 TG

Mitigation Level SRM-1

Area AB

3:00 pm

Sunny (part. hazy), winds 5-7 mph, 68°F

West coast lady III	Blue dicks
CA Kinglet III	Lotus Serrata
Painted lady II	CA poppy
Southern Blue II	" (white)
Phylloscopus thirstrak III	Erigeron
Serphid virens II	S.D. San Pedro
Funeral Duskywing	Erigeron

Art. Cali
 Geranium
 Chamise
 Indigo paintbrush

End 4:10 pm
 Sunny & clear, winds 6-8 mph
 70°F

Calluna
 White Sage
 Laurel sumac
 Yucca wip.
 Plantago arctica (15+)
 Brassica sp.
 Arundo

Go to 5:30

SRM-01 Mitig. parcels

Quino Sway Area E

03/27/01

SJT/AB

start: 11:30 am / sunny & clear / 76°F / 0-3 mph

- Cypripedium
- erodium
- Pichelostema
- deerweed - Lotus scoparius
- Lepidium
- Conchalagua
- Eriogonum
- ~~Hypochaeris glabra~~
- Sanidilion
- Silene gallica
- opposite leaves
- Lotus sp.
- Orziera laciniata
- monoglossy
- mustard
- sweet pea
- panicle
- Solanum
- mirabilis

hee
lyard
caterpillar
cut grass

~~composita~~

Plantago ☺

Gilia

Castilleja affinis ^{Indian paintbrush}

2nd Day

perplexing 4TT III

Behr II

Sara II

White IIII

Funeral IIII

Painted lady

Lupinus

Oxalis

SRM-01

Wino

SJT/AB

03/27/01

big will

Survey Area E

~~Survey Area E~~

white-1

Cirsium (purple calyx) near deerweed (not sure)

Ans

Allium

Dichelobium

deerweed

30 C aqua

Ceanothus - lilac

Solanum

Mustard

Indian paintbrush

Snapdragon

Lepidium

30 yellow

5m ant Cryptantha

Morabitis (not flower)

Plantago - 1

Flies Observed (larvae or adults)	Number	Comments
Swallowtail (<i>Papilio eurymedon</i>)		
Swallowtail (<i>P. zelicaon</i>)		
Tiger Swallowtail (<i>P. rutulus</i>)		
Empress (<i>Anthocharis sara</i>)	111	
Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogela rapae</i>)		
Black and Orange (<i>Eurama nicippe</i>)		
Common White (<i>Pontia protodice</i>)	11	
California Dogface (<i>Zerene eurydice</i>)		
California Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Cocononympha californica</i>)	1	
Black and White (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Black and White Checkerspot (<i>Euphydryas chalcedona henneli</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Black and White Checkerspot (<i>E. editha quino</i>)	111	(all same as Salsip)
Black and White Checkerspot (<i>Charidryas gabbi</i>)		
Black and White Checkerspot (<i>Thessalia leanira wrighti</i>)		
Black and White Checkerspot (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
Black and White Coast Lady (<i>V. annabella</i>)		
Black and White Coast Lady (<i>V. vigintiensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Black and White Checkerspot (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
Black and White Sister (<i>Adelpha bredowii californica</i>)		
Black and White Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Black and White Tailed Blue (<i>Everes myntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Black and White Blue (<i>Celastrina ladon echo</i>)		
Black and White Sonoran Blue (<i>Philotas sonorensis</i>)		
Black and White Marine Blue (<i>Leptotes marina</i>)		
Black and White Common Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Black and White Gray Hairstreak (<i>Stypon melinus</i>)		
Brown Elfin (<i>Inclisalia augustinus</i>)		
Black and White Complexing Hairstreak (<i>Callophrys perplexa</i>)	111	
Black and White Purple Hairstreak (<i>Aulides halesus</i>)		
Black and White Metalmark (<i>Apodemia morio virgulata</i>)	1111	
Black and White Wright's Metalmark (<i>Calophellis wrighti</i>)		

blue
 lady
 several checkers

111
 1111
 11

SRM - 01 Mitty. Parcels
Quino Survey Site E

03/27/01
SJT/AB

start: 11:30am / sunny & clear / 76°F / 0-3 mph

flowering plants

Lot sp	Dic cap	Lath sp
Lepidium sp.	Silene gal	Cry sp. (big)
conchalaqua	Eri les	Lot stri (?)
Cry sp. (med)	Bres sp.	Pha cic
Erod bot/mos/cic	Vlg lac	Esc cal
Hyp gla	pink	Sol sp.
Dand.	Caly nac	Phalago
Cas aff	Gilia sp.	oxalis

* tons of Cry spp

animals

CA ringlet 1	painted lady III	Kingbird
South. blue III	kestrel	Ac. raven
blue IIII	funerepl dorkwing IIII	
lady IIII III	perplexing III IIII	
moth	2 quino (same as Amy)! +1 +2	
Behn's Atlantic IIII IIII IIII	west coast lady III	
common wht III III	Sara's IIII IIII	

end: 4:20pm / 61°F / hazy / 0-5 mph

SRM-01
Parcel AC

03/27/01
SJT/AB

Flw plants

Solanum

Cry sp.

Cea tom

Yucca

Cea clayensis

Lathyr. sp.

Lot str

Eri con

Lepidium sp.

Erad cic/bot/nos

Lot sco

Vio peal

Mim avr

San yellow

Plantago ere

Lath.

Mal Ges

Dodac.

lady III III

CA ringlet 1

No warbler

CA towhee

waver

fox sparrow

Painted lady 1

start: 61° / hazy / 0-5 mph / 4:²⁵~~30~~ pm

end: ^{59°}~~59°~~ F / overcast / 0-5 mph / 5 pm

3/31/01
T&E SV

gilia (white w/ blue anthers)
Lupinus sat. (yellow)

1:45 pm
Ethereal F

happy, mild 8-10 mph, 72°F
recent fire disturbance (< 2 years)
high % of Eucalyptus

Flowering plants: Populus hybrid

Camellia sp. baby

Yucca praevaria common white

Dryobates (sp.) flower early

Alseodaphne (sp.)

Casahuate

Heliconia

Sida acuta

Alseodaphne sp. - fruit in flower

CA poppy

Calceolaria maculata

Lupinus

Morobaba chilifera

Stem sp.

Facelia sordida

"Break-apart plant"

& not flowering

1:45 pm
happy, mild 8-10 mph, 76°F

fox ground
Horned lizard

[Common along A.S. to a ridge]

Facelia sordida

Alseodaphne

Populus hybrid

Camellia sp. (?)

Yucca praevaria

Casahuate

Heliconia

Sida acuta

Alseodaphne (sp.)

CA poppy

Calceolaria

Lupinus

Morobaba chilifera

Stem sp.

Facelia sordida

"Break-apart plant"

& not flowering

Camellia chilifera - 10 plants, top of slope

3/31/01 AMY MNT-SITE

Begin 12:30 4-7 70 inside ground, slightly hazy
 End 1:40 4-7 69 , slight hazy.

flowering

Green
H/A

lady

painted lady,

blue
H/A

perplexing hair

quins!
- on dirt road @ almost end.

funereal
1

white
1

Plantago / Pyroechloa

Erigeron

Convolvulus

Ceanothus ^{occasional}
 + occasional white
 mostly flower

mustard

Erodium

sand lion

Eriogonum

desert

chamise

popcorn flower

yellow

sage

Johnny jumpers

blue eyed grass

yellow petal

Lythrum

619 502 628 7

628 7

fixed
 Nelson Anderson
 5-AH

252
 We bagging other butterfly counts to get
 photo of quins ~ 100 per

found territories - @ least 3 quins & chains 2 ^{amist} ~~swallowtail~~
 occasional passersby / 2 car. seen
 Plus on dirt path - clover to road (Plus 1 ^{seen} ~~at least~~ ^{at least})

3/31/01 AMU-MIT SITE

begin 1030 wind 0-3 ~~70~~ pigland in shade
end 1210, wind 0-7, ~~85~~

Sarah Orangehp
##

Funeral dirckenis
##

~~white~~ perplexing hamstark
##

white yule - cabbage

Blue common white
##

Lady ###

Anise swallowtail
|| - at top.

Caterpillar (not guano)

Counts up thru 1130

at base ~ 1145 AM

L guano

They're territorial,

defending their spots. I saw
the same 2 guano ^{specially} ~~drawing~~ ^{drawing} la.

draw for quite a while. Lit on base
n.e. near plantago.

flowering

Erosium
mulefat (by road)

mustard
dandelion
wild radish

deerweed

Orythya (pinks)

o

Erosium

poppy

viguiera

popcorn flower

Dichotoma

Calycotome macrostachya

bee flower

Lotus sp.

Camotium fruticosum
(@ top hill)

Phacelia

Solanum

Oxalis

morablis

Allium

chamuse

Graptolium

little br. bird

wasp

raven

bee

Graptolium

spurred

Plantago

Castilleja
elsertii - top hill

###

SRM-01

East Olay Mitig.

4/13/01

Parcel F

Sally Tucker
Amy Bridgema

start: 2:00pm / sunny & clear / 71°F / 0-7 mph

end: 4:30pm / sunny/clear / 73°F / 0-5 mph

11/21/21
Sun 21 4-79
F

Sun 21
suny clear with 3-5 mph, 70° F

Blue Jay

Parusoid Owl

Red-eyed Vireo

Redstart

Catbird

Common Grackle

Robin

Chipping Sparrow

Hummingbird

Starling

Crow

Red-shouldered Hawk

Ground Squirrel

Sweet pea (purple flowers)

Phytolacca esculenta

Common three-toed sloth



Appendix B-3

2002 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT



2002 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT

2002 Annual Report
U.S. Fish and Wildlife Service Protocol Level
Presence/Absence Surveys for the
Quino Checkerspot Butterfly
(*Euphydryas editha quino*)

Prepared for:

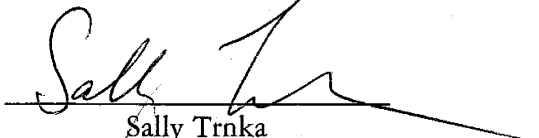
The Otay Hills Project Site

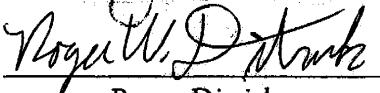
Prepared by:

HELIX Environmental Planning, Inc.
8100 La Mesa Blvd., Suite 150
La Mesa, California 91941-6476
(Threatened/Endangered Species Permit: TE778195-5)

May 13, 2002

Surveys performed by:


Sally Trnka


Roger Ditrick

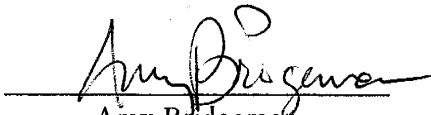

Amy Bridgeman

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INTRODUCTION

This report documents the results of HELIX Environmental Planning, Inc.'s (HELIX's) year 2002 quino checkerspot butterfly (QCB; *Euphydryas editha quino*) presence/absence surveys for the Otay Hills project site. All surveys were performed under HELIX's endangered/threatened species permit (TE-778195-5).

The approximately 50-acre Otay Hills project site and associated access road are located in the southwest corner of San Diego County, in the southwestern foothills of the San Ysidro Mountains (Figure 1) within the U. S. Fish and Wildlife Service (USFWS) QCB Adult Focused Survey Area 1 (USFWS 2002). The project area is situated east of Brown Field Airport, northeast of the end of Otay Mesa Road. The border with Baja California is located less than a mile to the south of the property. All of the surrounding lands are currently undeveloped.

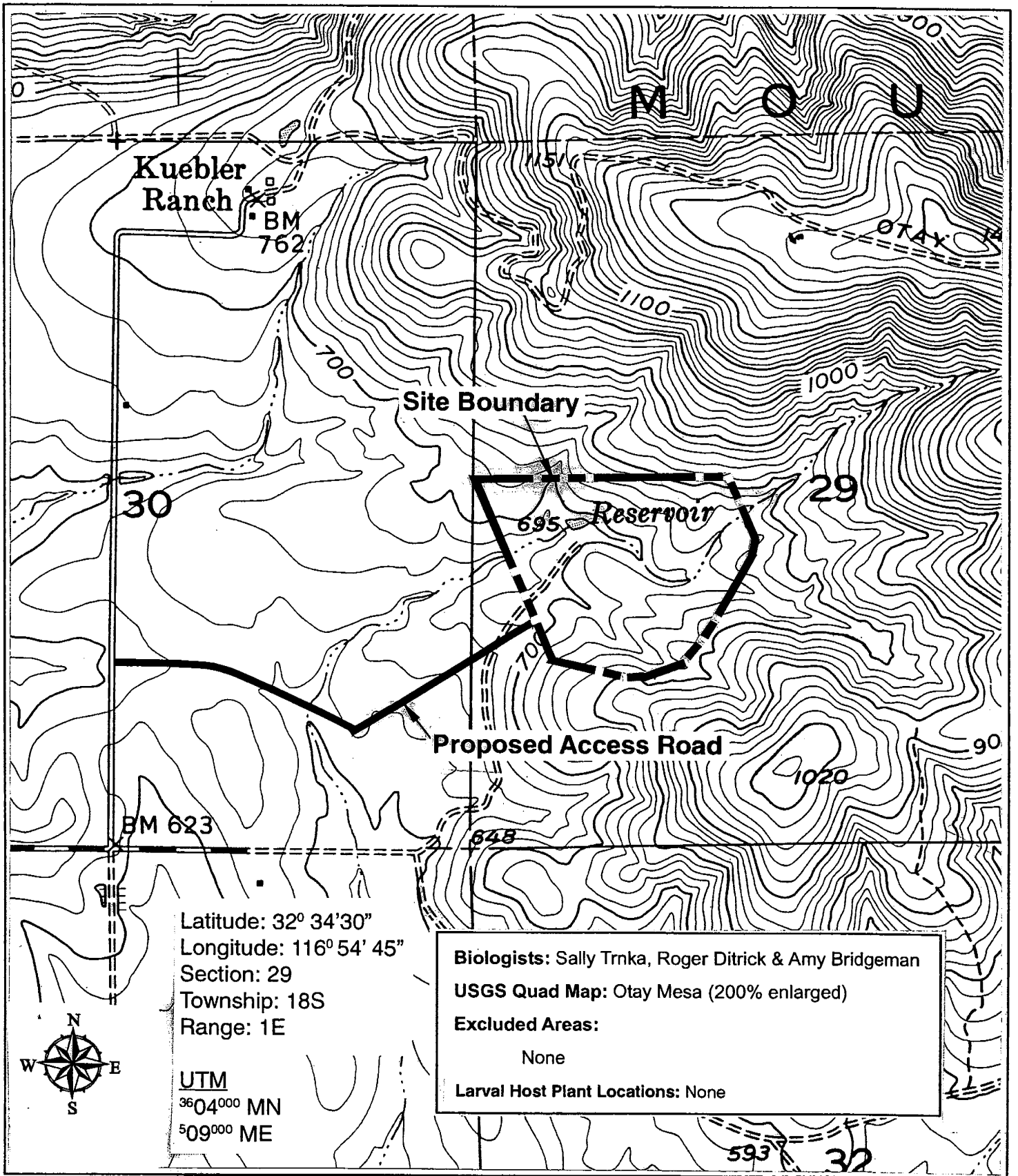
The project site is situated in the northwest corner of a site that was previously surveyed for QCB in 2000 (HELIX). On-site elevations range from approximately 670 feet to 800 feet above mean sea level. Native vegetation communities, namely Diegan coastal sage scrub, dominate the project site. Land located to the west of the project site has been previously disturbed while that located to the east, north and south is mainly undeveloped land dominated by Diegan coastal sage scrub. The proposed access road is situated in an area that has been disturbed in the past by agriculture activities and is currently dominated by non-native grassland.

The following is a discussion of survey methods, results, conclusions, field notes, maps, and species lists.

METHODS

The methods employed during the site assessment and presence/absence surveys for the QCB followed the USFWS Year 2002 Survey Protocol for the QCB (USFWS 2002). Prior to conducting the 2002 QCB protocol surveys, a QCB habitat assessment was performed on March 8, 2002 by Sally Trnka and Roger Ditrack. All 50 acres of the project site and proposed access road were assessed for potential QCB habitat (Figure 1). No significant quantities of habitat on site qualified for any of the survey exclusion categories, therefore, it was decided that surveys would be required for the entire property. Of the approximately 50 surveyed acres, areas that were most intensely surveyed included Diegan coastal sage scrub habitat and dirt roads.

Every effort was made to perform the presence/absence surveys during the most favorable weather conditions for QCB. Five presence/absence surveys were conducted between March 8 and April 4, 2002 (Table 1). All surveys were within the weather-condition parameters identified in the 2002 protocol. Approximately 50 acres of habitat were surveyed, the majority of which had also been surveyed during the 2000 flight season. The 2002 QCB survey area was mapped on a USGS quad (Figure 1). A species list, including all butterflies observed, is included as Appendix A. A list of all flowering plants observed during the 2002 surveys is included as Appendix B. Copies of field notes are provided in Appendix C.



Site Assessment and Host Plant Location Map

OTAY HILLS PROJECT

Figure 1

Table 1
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS

Site Visit #	Date of Survey	Survey Time (start/end)	Weather Conditions (start /end) ^{1,2}	Biologist ³	Results
1	03/08/02	1245/1430	Start: Temp ² 65° F, sunny and clear, wind 0-3 mph End: Temp 67° F, sunny and clear, wind 2-8 mph	ST/RD	No QCB observed
2	03/16/02	1015/1045	Temp 54° F, cloudy; occasional drizzles, wind 12-15 mph	ST/RD	Survey cancelled
2	03/19/02	1145/1505	Start: Temp 66° F, clear and sunny, wind 5-10 mph End: Temp 64° F, clear and sunny, wind 5-10 mph	ST	No QCB observed
3	03/22/02	1225/1415	Start: Temp 65-68° F, sunny with scattered light clouds, wind 3-8 mph End: Temp 68° F, sunny with scattered light clouds, wind 2-10 mph	ST/RD	No QCB observed
4	03/30/02	1345/1530	Start: Temp 67° F, sunny with haze, wind 8-12 mph End: Temp 64° F, sunny, wind 8-10 mph	ST/AB	No QCB observed
5	04/04/02	1335/1525	Start: Temp 67° F, clean and sunny, wind 10-12 mph End: Temp 66° F, clear and sunny, wind 7-12 mph	ST/RD	No QCB observed

¹ Refer to field notes in Appendix C for specific survey information.

² All temperatures were taken near ground level in the shade.

³ ST=Sally Trnka; RD=Roger Ditrack; AB=Amy Bridgeman

RESULTS

Most of the survey area is still recovering from a large fire that swept through the area approximately five years ago. Because of this fire, and low levels of rainfall since the fire, the site largely consists of open to sparsely vegetated coastal sage scrub and non-native grassland. The site supports four main vegetation communities: Diegan coastal sage scrub (including disturbed), non-native grassland, mule fat scrub, and disturbed habitat (HELIX 2000). Numerous dirt roads (many of which are used by off-road vehicles and dirt-bikes) occur throughout the site.

Although the entire project site was surveyed, its location at the base of the foothills of the San Ysidro Mountains suggests that it is less likely to support QCB than some of the surrounding slopes, ridgelines and hilltops where this species has been observed in the past few years.

The QCB was not observed within the project site or the access road during the survey period. Due to the low rainfall levels in the 2001-02 winter season, the habitat on site was very dry. Few flowering annual plants were observed and larval host plant species of the QCB were not present, though host plants (*Plantago erecta*) had previously been observed in the northwest corner of the survey area (HELIX 2000). Potential nectar sources that were noted include deerweed (*Lotus scoparius*), San Diego viguiera (*Viguiera laciniata*), and flat-top buckwheat (*Eriogonum fasciculatum*). Very few individuals of any of these species were flowering during the survey period. A complete list of flowering species observed is presented in Appendix B.

CONCLUSION

The project site is located at the base of the San Ysidro foothills, near several known locations of the QCB. The closest reported sightings were on slopes located just southeast and northeast of the project area. Despite the presence of QCB in the project vicinity within the past few years, no QCB were observed within the surveyed area.

The lack of the QCB within the survey area may be due to the low elevation of the site, disturbed nature of much of the habitat present, and/or this year's dry habitat conditions. No QCB host plants and few nectar sources were observed on site in 2002, though host plants were previously observed within the survey area. Most of the site is within a transitional zone between high quality habitat located on the surrounding hills and disturbed agricultural land to the west. While portions of the site have recovered post-fire to support moderate quality coastal sage scrub habitat, much of the site is currently dominated by non-native grasses.

Due to the low elevation of the site as compared to surrounding areas where QCB were previously observed, the large proportion of non-native grassland habitat, and negative results for QCB from the 2000 survey season, the site is considered to have a moderate to low potential for supporting the QCB.

REFERENCES CITED

- HELIX Environmental Planning, Inc. 2000. 2000 Annual Report, U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). June 9.
- U.S. Fish and Wildlife Service (USFWS). 2002. Quino Checkerspot Butterfly (*Euphydryas editha quino*) Year 2002 Survey Protocol. U.S. Fish and Wildlife Service Ecological Services Carlsbad Field Office, Carlsbad, California. February.

APPENDIX A

LIST OF ALL BUTTERFLY SPECIES OBSERVED

Species Observed (larvae or adults)	Number	Comments
Black Swallowtail (<i>Papilio eurymedon</i>)		
Swallowtail (<i>P. zelicaon</i>)	✓	
Spice Swallowtail (<i>P. rutulus</i>)		
Black Orange-tip (<i>Anthocharis sara</i>)	✓	
Black Orange-tip (<i>A. cethura</i>)		
Black-belted White (<i>Artigeia rapae</i>)		
Black Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
Black-belted White (<i>Zerene eurydice</i>)		
Black-belted White (<i>Colias eurytheme</i>)		
Black-belted White (<i>C. harfordi</i>)		
Black-belted White (<i>Cecononyma californica</i>)	✓	
Black-belted White (<i>Danaus plexippus</i>)		
Black-belted White (<i>D. gilippus</i>)		
Black-belted White (<i>Euphydryas chalcedona hennei</i>)		
Black-belted White (<i>E. chalcedona chalcedona</i>)		
Black-belted White (<i>E. editha quino</i>)		
Black-belted White (<i>Charidryas gabbi</i>)		
Black-belted White (<i>Thessalia leanira wrighti</i>)		
Black-belted White (<i>Phyciodes nylita</i>)		
Black-belted White (<i>Vanessa cardui</i>)		
Black-belted White (<i>V. annabella</i>)		
Black-belted White (<i>V. virginensis</i>)		
Black-belted White (<i>V. atalanta</i>)		
Black-belted White (<i>Junonia coenia</i>)		
Black-belted White (<i>Nymphalis antiopa</i>)		
Black-belted White (<i>Adolpha bredowii californica</i>)		
Black-belted White (<i>Polygonia satyrus</i>)		
Black-belted White (<i>Basilarchia lorquini</i>)		
Black-belted White (<i>Everes amyntula</i>)		
Black-belted White (<i>Glaucopsyche lygdamus australis</i>)	✓	
Black-belted White (<i>Celastrina ladon echo</i>)		
Black-belted White (<i>Philois sonorensis</i>)		
Black-belted White (<i>Leptotes marina</i>)		
Black-belted White (<i>Icaicia acmon</i>)		
Black-belted White (<i>Brephidium exilis</i>)		
Black-belted White (<i>Strymon melinus</i>)		
Black-belted White (<i>Inisaia augustinus</i>)	✓	
Black-belted White (<i>Calliphrys porphyra</i>)		
Black-belted White (<i>Artides halesus</i>)		
Black-belted White (<i>Apodemia morio virgulti</i>)	✓	
Black-belted White (<i>Calopholis wrightii</i>)		
Black-belted White (<i>Monereal Duskywing</i>)	✓	

APPENDIX A - LIST OF ALL BUTTERFLY SPECIES OBSERVED

APPENDIX B

POTENTIAL NECTAR SOURCES

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELLX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 03/08/02 Site visit no. 1

Site name East Otay Mining Otay Hills Project

Locality Otay Mesa

Total site acres ~50 Total acres surveyed 25

Total hours of field survey 1h 45 min Average acres surveyed per hour 14

Time	Sky	Wind	Temperature F
Start 12:45 pm	(Clear) Patch Overcast/Cloudy Drizzle Shower a sunny	<1 (1-3) 4-7 8-12 12-15 >15	65° F
End 2:30 pm	(Clear) Patch Overcast/Cloudy Drizzle Shower a sunny	<1 (1-3 4-7) 8-12 12-15 >15	67° F
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments Survey area contains some burned Coastal sage scrub habitat where larval host plants have been previously observed. No host or nectaring plants were observed. Southern blues in CSS; ringlets in grassland portions.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Species Observed (larvae or adults)	Number	Comments
Swallowtail (<i>Papilio eurymedon</i>)		
Swallowtail (<i>P. zelicaon</i>)		
Tiger Swallowtail (<i>P. rutulus</i>)		
Orangeip (<i>Anthocharis sara</i>)		
er's Orangeip (<i>A. cethura</i>)		
age White (<i>Arctia rapae</i>)		
py Orange (<i>Eurema nicippe</i>)		
imen White (<i>Pontia protodice</i>)		
omia Dogface (<i>Zerene eurydice</i>)		
ifa Butterfly (<i>Colias eurytheme</i>)		
ord's Sulfur (<i>C. harrfordi</i>)		
omia Ringlet (<i>Ctenonympha californica</i>)	27	
arch (<i>Danaus plexippus</i>)		
en (<i>D. gilippus</i>)		
ne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
cedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
no Checkerspot (<i>E. editha quino</i>)		
ob's Checkerspot (<i>Charidryas gabbi</i>)		
aira Checkerspot (<i>Thessalia leanira wrighti</i>)		
litta Crescent (<i>Phyciodes nylitta</i>)		
nted Lady (<i>Vanessa cardui</i>)		
st Coast Lady (<i>V. annabella</i>)		
ginia Lady (<i>V. virginensis</i>)		
d Admiral (<i>V. atalanta</i>)		
ckeye (<i>Junonia coenia</i>)		
urning Cloak (<i>Nymphalis antiopa</i>)		
ifornia Sister (<i>Adelpha bredowii californica</i>)		
yr Angleming (<i>Polygonia saevus</i>)		
erquin's Admiral (<i>Basilarchia lorquini</i>)		
estern Tailed Blue (<i>Everes amyntula</i>)		
uthern Blue (<i>Glaucopsyche lygdamus australis</i>)	5	
ho Blue (<i>Celastrina ladon echo</i>)		
onoran Blue (<i>Philotis sonorensis</i>)		
arine Blue (<i>Leptotes marina</i>)		
emon Blue (<i>Icaricia acmon</i>)		
gny Blue (<i>Brephidium exilis</i>)		
ray Hairstreak (<i>Stymon melinus</i>)		
rown Elfin (<i>Inisalia augustinus</i>)		
plexing Hairstreak (<i>Callophrys perplexa</i>)		
rt Purple Hairstreak (<i>Atides halesus</i>)		
chr's Metalmark (<i>Apodemia morio virgulii</i>)		
right's Metalmark (<i>CalypHELLis wrightii</i>)		

Sally Trnka 03/08/02 East Otter Mining Survey #1

SRM-01

03/08/02

Quino Survey #1
road + batch plant

Sally Truex
Roger Dietrich

Start: 12:45pm

Sunny / clear

0-3mph

65° in shade

animals

mourning dove

west. meadowlark

CA wrenlet IIII IIII IIII IIII

raven

So. blue IIII

side-blotched lizard

sparrow

CA towhee

1:30pm winds increased 2-8mph

end 2:30pm

Sunny / clear

2-8mph

67° F

QUINO CHECKERSPOT GENERAL FORM

Biologist name Roger D. Trick

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3-8-02 Site visit no. 1

Site name ~~East Olay Mining~~ Olay Hills Project

Locality Olay Mesa

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1 hr 45 min. Average acres surveyed per hour 14

Time	Sky	Wind	Temperature F
Start 12:45	Clear Patch Overcast/Cloudy Drizzle Shower <u>Clear & Sunny</u>	<1 (1-3) 4-7 8-12 12-15 >15	65
End 2:30	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 (4-7) 8-12 12-15 >15	67
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Observed (larvae or adults)

whail (<i>Papilio eurymedon</i>)		
lowtail (<i>P. zellcanon</i>)		
Swallowtail (<i>P. ruzulus</i>)		
cüp (<i>Antiocharis sara</i>)		
rangeip (<i>A. cethura</i>)		
White (<i>Argiole rapae</i>)		
inge (<i>Eurema nicippe</i>)		
White (<i>Pontia protodice</i>)		
Dogface (<i>Zerene eurydice</i>)		
utterfly (<i>Collas eurytheme</i>)		
Sulfur (<i>C. harfordi</i>)		
Ringlet (<i>Coenonympha californica</i>)	28	
(<i>Danaus plexippus</i>)		
(<i>D. gillippus</i>)		
Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Checkerspot (<i>E. chalcedona chalcedona</i>)		
heckerspot (<i>E. editha quino</i>)		
Checkerspot (<i>Charidryas gabbi</i>)		
Checkerspot (<i>Thessalia leantra wrighti</i>)		
Crescent (<i>Phyciodes mylitta</i>)		
Lady (<i>Vannessa cardui</i>)		
oast Lady (<i>V. annabella</i>)		
a Lady (<i>V. virginiensis</i>)		
Imiral (<i>V. atalanta</i>)		
re (<i>Junonia coenia</i>)		
ing Cloak (<i>Nymphalis antiopa</i>)		
nia Sister (<i>Adelpha bredowii californica</i>)		
Anglewing (<i>Polygonia saecurus</i>)		
in's Admiral (<i>Basilarctia lorquini</i>)		
rn Tailed Blue (<i>Everes myntula</i>)		
eni Blue (<i>Glaucopsyche lygdamus australis</i>)	5	
Blue (<i>Celastrina ladon echo</i>)		
ran Blue (<i>Philotes sonorensis</i>)		
ne Blue (<i>Lepiotes marina</i>)		
on Blue (<i>Icaricia acmon</i>)		
ny Blue (<i>Brephidium exilis</i>)		
r Hairstreak (<i>Styrion mellinus</i>)		
vn Elfin (<i>Incisalia augustinus</i>)		
lexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Adides halesus</i>)		
ir's Metalmark (<i>Apodemia morio virgula</i>)		
ight's Metalmark (<i>Calephelis wrighti</i>)		

Roger Dietrick

3-8-02 Otay - Jolly Trnka
Mining

~~Ringlet~~ ~~Ringlet~~ ~~Ringlet~~ ~~Ringlet~~ ~~Ringlet~~

1 Zebra Ouzel tip

~~Ringlet~~ S. Blue

Habitat ass. 1st 15 min

Start: 12:45 Temp: 65 W-1-4

Finish: 2:30 67° LAL-07 4-7 mph

3-8-02 Otay 2 ~~3-8-01~~

Ringlet 1 Mesa Project

2:45-4 Check Area.

Clear & sunny

67° F @ start & wind 2-8 mph

Finish @ 4pm clear & sunny

wind - 2-8 mph Temp - 61° F

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 03/16/02 Site visit no. 2

Site name ~~East Olay Mining~~ Olay Hills Project

Locality Olay Mesa

Total site acres 50 Total acres surveyed NA

Total hours of field survey NA Average acres surveyed per hour _____

Time	Clear Patch	Overcast/Cloudy	Drizzle	Shower	Wind	Temperature F
Start <u>10:15am</u>		<u>Overcast/Cloudy</u>			<1 1-3 4-7 8-12 <u>12-15</u> >15	
End <u>10:45am</u>		<u>Overcast/Cloudy</u>	<u>Drizzle</u>		<u>with gusts to 22 mph</u> <1 1-3 4-7 8-12 <u>12-15</u> >15	<u>54°</u>
Start		Overcast/Cloudy	Drizzle	Shower	<1 1-3 4-7 8-12 12-15 >15	
End		Overcast/Cloudy	Drizzle	Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

Survey cancelled due to bad weather.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

SRM-01 / LAL-03

03/16/02

Quino Survey #2

cancelled due to weather conditions
on site

cloudy; occasional drizzles;

54°F; winds 12-15mph

with gusts to 22mph

10:15 → 10:45

QUINO CHECKERSPOT GENERAL FORM

Biologist name Roger DiTrick

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3-16-02 Site visit no. 2

Site name East Otay Mining Otay Hills Project

Locality East Otay Mesa

Total site acres 50 Total acres surveyed _____

Total hours of field survey _____ Average acres surveyed per hour _____

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	Temperature F
Start <u>10:15</u>			<u>Overcast/Cloudy</u>							<u>12-15</u>		<u>54</u>
End <u>10:45</u>				<u>Drizzle</u>						<u>12-15</u>		<u>54</u>
Start												
End												

Description of areas surveyed/comments
Conditions not favorable for survey protocol.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

O'Day 3-16-02
Wind 12-15 mph gusts 22 mph
Temp. 54
M. Cloudy drizzle

10:15 - 10:45 Roger Ditrack
Sally Tonka

9:45 - 11:30 Total time w/ traveling

O'Day Mileage 380 - 407 -
3-19-02

QUINO CHECKERSPOT GENERAL FORM

Biologist name SALLY TRNKA

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 03/19/02 Site visit no. 2

Site name ~~East Olay Mining~~ Olay Hills Project

Locality Olay Mesa

Total site acres 50 Total acres surveyed 50

Total hours of field survey 3 hrs. 20 min. Average acres surveyed per hour 15

Time	Sky					Wind						Temperature F
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
Start <u>11:45 am</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<1	1-3	<u>4-7</u>	<u>8-12</u>	12-15	>15	<u>66° F</u>
End <u>3:05 pm</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<1	1-3	<u>4-7</u>	<u>8-12</u>	12-15	>15	
Start	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<1	1-3	4-7	8-12	12-15	>15	
End	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<1	1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments very few flowering plants

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other

Butterflies Observed (larvae or adults)	Number	Comments
Least Swallowtail (<i>Papilio eurymedon</i>)		
Common Swallowtail (<i>P. zolicaon</i>)	1	
Least Tiger Swallowtail (<i>P. rutulus</i>)		
Great Orange-tip (<i>Anthocharis sara</i>)		
Common Orange-tip (<i>A. cethura</i>)		
Abbey White (<i>Arioglossa rapae</i>)		
Common Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulphur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	39	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedonia chalcedonia</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leontine Checkerspot (<i>Thessalia leontina wrighti</i>)		
Myllitta Crescent (<i>Phyciodes myllitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antlope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Sage Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	} unknown blue 2	
Echo Blue (<i>Colostrina lachon echo</i>)		4
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmion Blue (<i>Icaricia acmion</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Atilides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	5	
Wright's Metalmark (<i>Callophelis wrightii</i>)		

Salt, Tunko SRM-01 03/19/02 Survey # 2

SRM-01

03/19/02

Quino Survey #2

start: 11:45 am 5-10mph gusts to 12mph
clear/sunny 66°F

animals:

CA ringlet ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

Amere swallowtail 1 loggerhead shrike

blue II western fence lizard

mourning dove swallows (old near)

Behr's nighthawk ~~||||~~ Western meadowlark

grasshopper house finch

desert cottontail

So. blue III 12:30 winds

raven 3-8mph

CA towhee

sparrows

flowering plants:

Lot sco

Vig lac

Yucca lili

end: 3:05pm 5-10mph

clear/sunny 64°F

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 03/22/02 Site visit no. 3

Site name ~~East Olay Mining~~ Olay Hills Project

Locality Olay Mesa

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1h. 50min. Average acres surveyed per hour 13.6

Time	Sky	Wind	Temperature F
Start <u>12:25pm</u>	Clear/Patch Overcast/Cloudy Drizzle Shower <u>Sunny, with scattered light clouds</u>	<1 1-3 4-7 8-12 12-15 >15	<u>68°F</u>
End <u>2:15pm</u>	Clear/Patch Overcast/Cloudy Drizzle Shower <u>Sunny a few scattered clouds</u>	<1 <u>1-3</u> 4-7 8-12 12-15 >15	<u>68°F</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Species Observed (larvae or adults)	Number	Comments
allowtail (<i>Papilio eurymedon</i>)		
wallowtail (<i>P. zelicaon</i>)	1	
ger Swallowtail (<i>P. rutulus</i>)		
angeip (<i>Amphiocharis sara</i>)	1	
s Orangetip (<i>A. cethura</i>)		
White (<i>Aricidea rapae</i>)		
Orange (<i>Eurema nicippe</i>)		
en White (<i>Pontia protodice</i>)		
nia Dogface (<i>Zerene eurydice</i>)		
Butterfly (<i>Colias eurytheme</i>)		
d's Sulfur (<i>C. harrfordi</i>)		
nia Ringlet (<i>Coenonympha californica</i>)	26	
ch (<i>Danaus plexippus</i>)		
(<i>D. gilippus</i>)		
's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
lon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Checkerspot (<i>E. editha quino</i>)		
s Checkerspot (<i>Charidryas gabbi</i>)		
ra Checkerspot (<i>Thessalia leanira wrighti</i>)		
ia Crescent (<i>Phyciodes mylitta</i>)		
d Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
nia Lady (<i>V. virginensis</i>)		
Admiral (<i>V. atalanta</i>)		
eye (<i>Junonia coenia</i>)		
ning Cloak (<i>Nymphalis antopa</i>)		
ornia Sister (<i>Adelpha bredowii californica</i>)		
Anglewing (<i>Polygonia satyrus</i>)		
uin's Admiral (<i>Basilarchia lorquini</i>)		
tem Tailed Blue (<i>Everes ainyntula</i>)		
hem Blue (<i>Glaucopsyche lygdamus australis</i>)	4	
Blue (<i>Celastrina ladon echo</i>)		
ran Blue (<i>Philotes sonorensis</i>)		
ine Blue (<i>Leptotes marina</i>)		
ion Blue (<i>Icaricia acmon</i>)		
my Blue (<i>Brephidium exilis</i>)		
y Hairstreak (<i>Stymon melinus</i>)		
wn Elfin (<i>Incisalia augustinus</i>)		
lexing Hairstreak (<i>Calliphrys porphyra</i>)		
Purple Hairstreak (<i>Atilides halesus</i>)		
ir's Metalmark (<i>Apodemia mormo virgulti</i>)	2	
ight's Metalmark (<i>Calophelis wrightii</i>)		
Unusual duskywing	2	

S. 00 T. L. SRM-01 03 122 102 Series # 3

SRM-01

03/22/02

Sally Truka

Roger Ditrick

start: 12:25pm, 68°F

3-8mph, sunny w/ scattered light clouds

animals: IIII

CA ringlet IIII IIII IIII IIII west. mead lark

CA gnatcatcher mocking bird

western fence lizard ladybug

raven rufous-sided towhee

mourning dove

Sav's o-tip 1

So blue IIII

Anise swallowtail 1

CA towhee

Behr's mtlark 1

moth

wasp

funeral duskywing 1

flowering plants:

Vig lac

end: 2:15pm

Lot scd

20-10mph, 68°F

Eri fas

Sunny, scattered clouds

QUINO CHECKERSPOT GENERAL FORM

Biologist name Roger Ditrick

DELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3-22-02 Site visit no. 3

Site name East Otay Mining Otay Hills Project

Locality Otay Mesa

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1 hr 50 min Average acres surveyed per hour 13.6

Time	Sky	Wind	Temperature F
Start <u>12:25</u>	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	
End <u>2:15</u>	Clear Patch Overcast/Cloudy Drizzle Shower <u>scattered light clouds</u>	<1 <u>1-3 4-7</u> 8-12 12-15 >15	<u>65</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	<u>68</u>
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Observed (Harris or similar)		
Swallowtail (<i>Papilio eurymedon</i>)		
Howtail (<i>P. zelicaon</i>)		
Swallowtail (<i>P. rutulus</i>)		
Empress (<i>Anthocharis sara</i>)	2	
Angelica (<i>A. celthura</i>)		
White (<i>Argiole rapae</i>)		
Orange (<i>Eurema nicippe</i>)		
White (<i>Pontia protodice</i>)		
Dogface (<i>Zerene eurydice</i>)		
Butterfly (<i>Collas eurytheme</i>)		
Sulfur (<i>C. hufordii</i>)		
Ringlet (<i>Coenonympha californica</i>)	24	
(<i>Danaus plexippus</i>)		
(<i>D. gilippus</i>)		
Checkerspot (<i>Euphydryas chalcedona hennelii</i>)		
Checkerspot (<i>E. chalcedona chalcedona</i>)		
Checkerspot (<i>E. editha gulno</i>)		
Checkerspot (<i>Charidryas gabbi</i>)		
Checkerspot (<i>Thessalia leanira wrightii</i>)		
Crescent (<i>Phyciodes myllitta</i>)		
Lady (<i>Vanessa cardui</i>)		
East Lady (<i>V. annabella</i>)		
West Lady (<i>V. virginensis</i>)		
Miral (<i>V. atalanta</i>)		
Queen (<i>Junonia coenia</i>)		
King Cloak (<i>Nymphalis antiopa</i>)		
Queen's Sister (<i>Adelpha bredowii californica</i>)		
Anglewing (<i>Polygonia satyrus</i>)		
Queen's Admiral (<i>Basilarchia lorquini</i>)		
Common Tailed Blue (<i>Eversmannia mynula</i>)		
Common Blue (<i>Glaucopsyche lygdamus australis</i>)	6	
Blue (<i>Celastrina ladon echo</i>)		
Mountain Blue (<i>Philoetes sonorensis</i>)		
Sea Blue (<i>Leptotes marina</i>)		
Common Blue (<i>Icaricia acmon</i>)		
Blue (<i>Brephidium exilis</i>)		
Hairstreak (<i>Strymon melinus</i>)		
Mountain Elfin (<i>Incisalia augustinus</i>)	1	
Lexing Hairstreak (<i>Callophrys perplexa</i>)		
Purple Hairstreak (<i>Ailides halesus</i>)		
Queen's Metalmark (<i>Apodemia morio virgulti</i>)	1	
Queen's Metalmark (<i>Calephelis wrightii</i>)		
Funereal Duskywing	1	

E. O'Jay Mining # ~~3~~ 3 3-22-02
wind 3-8 Temp 65°
Scattered clouds Start: 12:25

Behr's Metalmark 1
Southern Blue ~~1~~
ringlet ~~1~~ ~~1~~ ~~1~~ ~~1~~ ~~1~~
Saras Orange tip 11
Brown Elf in Blue 1
~~Cloudy wing~~
F Dusky wing 1
End 2:15 Temp: 68°
Wind 2-10 scattered clouds

Roger Ditrock
Sally trunka

EPS
595

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 03/30/02 Site visit no. 4

Site name East Olay Mining Olay Hills Project

Locality Olay Mesa

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1hr. 45 min. Average acres surveyed per hour 14.3

Time	Sky	Wind	Temperature F
Start 1:45pm	Clear Patch Overcast/Cloudy Drizzle Shower <u>Sunny with haze</u>	<1 1-3 4-7 <u>8-12</u> 12-15 >15	67° F
End 3:30pm	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 <u>8-12</u> 12-15 >15	64° F
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments
Dirt bikers (>5) were on site during portions of the survey.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Species Observed (larvae or adults)	Number	Comments
Swallowtail (<i>Papilio eurymedon</i>)		
Swallowtail (<i>P. zalficaon</i>)		
Tiger Swallowtail (<i>P. rutulus</i>)		
Orangeip (<i>Anthocharis sara</i>)	1	
er's Orangeip (<i>A. cethura</i>)		
age White (<i>Arctioia rapae</i>)		
py Orange (<i>Eurema nicippe</i>)		
imon White (<i>Pontia protodice</i>)		
ormia Dogface (<i>Zerene eurycle</i>)		
lta Butterfly (<i>Colias eurytheme</i>)		
ord's Sulfur (<i>C. harfordi</i>)		
ormia Ringlet (<i>Coccyonympha californica</i>)	13	
arch (<i>Danaus plexippus</i>)		
en (<i>D. gilippus</i>)		
ne's Checkerspot (<i>Euphydryas chalcedona hennet</i>)		
edon Checkerspot (<i>E. chalcedona chalcedona</i>)		
no Checkerspot (<i>E. editha gulno</i>)		
b's Checkerspot (<i>Charidryas gabbi</i>)		
nira Checkerspot (<i>Thessalia leanira wrighti</i>)		
litta Crescent (<i>Phyciodes nylitta</i>)		
ted Lady (<i>Vanessa cardui</i>)		
st Coast Lady (<i>V. annabella</i>)		
ginia Lady (<i>V. virginensis</i>)		
l Admiral (<i>V. atalanta</i>)		
ckeye (<i>Junonia coenia</i>)		
uming Cloak (<i>Nymphalis antopa</i>)		
lifornia Sister (<i>Adelpha bredowii californica</i>)		
yr Anglewing (<i>Polygonia sacyrus</i>)		
rquin's Admiral (<i>Basilarchia lorquini</i>)		
estern Tailed Blue (<i>Everes amyntula</i>)		
uthem Blue (<i>Glaucopsyche lygdamus australis</i>)		
ho Blue (<i>Celastrina ladon echo</i>)		
noran Blue (<i>Philonis sonorensis</i>)		
rine Blue (<i>Lepotes marina</i>)		
imon Blue (<i>Icaricia acmon</i>)		
gny Blue (<i>Brephidium exilis</i>)		
ay Hairstreak (<i>Stymon melinus</i>)		
own Elfin (<i>Inisalia augustinus</i>)		
plexing Hairstreak (<i>Callophrys perplexa</i>)		
rt Purple Hairstreak (<i>Artides halesus</i>)		
cke's Metalmark (<i>Apodemia morio virgulti</i>)		
right's Metalmark (<i>Calophelis wrightii</i>)		

Sall. Truka East Otay Mtns 03/30/02 Source #4

SRM-01

03/30/02

Survey #4

Amy B.

Sally T.

start: 1:45pm / sunny with haze /
8-12mph / 67°F

animals:

Sains ♂-tp 1

CA ruylet III III

white-crowned sparrow

desert cotton tail

Western wead. lark

mourning dove

dirt bikers on site >5

No harrier

flowering
plants:

Eri Cas

Vig lac

Lot scd

end: 8-10mph / sunny / 3:30pm / 64°F

QUINO CHECKERSPOT GENERAL FORM

Biologist name AMY BRIDGEMAN

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date SAT 3/30/02 Site visit no. 4

Site name ~~CRAY MINING SITE~~ (SRM-01) Otay Hills Project

Locality OTAY MESA

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1.75 Average acres surveyed per hour 14.3

Time	Sky				Wind					Temperature F		
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12		12-15	>15
Start <u>1:45</u>									<u>8-12</u>			<u>67°F</u>
End <u>3:30</u>									<u>8-12</u>			<u>64°F</u>
Start									8-12	12-15	>15	
End									8-12	12-15	>15	

Description of areas surveyed/comments _____

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Sat 3/30/02

QCB SURVEY #4
SRM-01 East Otay Mining

Amy Bridgeman
Sully Tronka

Start 1:45, wind S-12, lazy sun, 67°F

butterflies

funereal dusky wing III	(5)
blue - III	(4)
Sara Orange tip - II	(2)
PanCA ringlet # III III	(1)
Behr's metalmark III	(3)
caterpillars III III	(10)

flowering plant

Eriogonum fasc.
 Lot 500
~~Linnet~~ Vig luc
 Birch sal
 Birch sar
 Brassica
 Erodium
 Blue-eyed grass
 Rhus int.
 Isomeris alycea - (Gladstone)

Also not flowering -

Selagin conf Fern Vir.

end 3:30, wind S-10, sunny, 64°F

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Pale Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Orange-tip (<i>Anthocharis sara</i>)	(2)	
Herbert's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Pepper Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
California Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulphur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)	(11)	
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Hermione's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbi</i>)		
Manira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Say's Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celasirina jason echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Aemon Blue (<i>Icaricia aemon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Styrmon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Complexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Allides halesus</i>)		
Behr's Metalmark (<i>Apodemia morino virgulti</i>)	(3)	
Wright's Metalmark (<i>Calophylis wrighti</i>)	(2)	
<i>Other</i>	(5)	

Other
several de...ing

9/11/2012 East of Mendocino St. Santa Rosa, CA. 2012

QUINO CHECKERSPOT GENERAL FORM

Biologist name Sally Trnka

HELIX permit no. TE778195-5

Subconsultant permit no. _____

Survey date 04/04/02 Site visit no. 5

Site name East Otay ~~Mining~~ Otay Hills Project

Locality Otay Mesa

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1 hr. 50 min. Average acres surveyed per hour 13.6

Time	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	Temperature F
Start 1:35pm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67°F
End 3:25pm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	66°F
Start	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
End	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Description of areas surveyed/comments _____

No host plants or nectaring resources present.

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

ies Observed (larvae or adults)	Number	Comments
allowtail (<i>Peplio eurymedon</i>)		
wallowtail (<i>P. zelicaon</i>)		
ger Swallowtail (<i>P. rutulus</i>)		
angekip (<i>Amphocharis sara</i>)		
Orangetip (<i>A. cethura</i>)		
e White (<i>Arctegia rapae</i>)		
Orange (<i>Eurema nicippe</i>)		
an White (<i>Pontia protodice</i>)		
nia Dogface (<i>Zerene eurydice</i>)		
Butterfly (<i>Colias eurytheme</i>)		
d's Sulfur (<i>C. harrfordi</i>)		
nia Ringlet (<i>Coenonympha californica</i>)	4	
ch (<i>Danaus plexippus</i>)		
(<i>D. gilippus</i>)		
's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
lon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Checkerspot (<i>E. editha quino</i>)		
s Checkerspot (<i>Charidryas gabbii</i>)		
a Checkerspot (<i>Thessalia leantra wrighti</i>)		
a Crescent (<i>Phyciodes mylitta</i>)		
d Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
nia Lady (<i>V. virginensis</i>)		
Admiral (<i>V. atalanta</i>)		
eye (<i>Junonia coenia</i>)		
ning Cloak (<i>Nymphalis antiopa</i>)		
ornia Sister (<i>Adelpha bredowii californica</i>)		
Anglewing (<i>Polygonia satyrus</i>)		
uin's Admiral (<i>Basilarchia lorquini</i>)		
em Tailed Blue (<i>Everes myntula</i>)		
hem Blue (<i>Glaucopsyche lygdamus australis</i>)		
Blue (<i>Celastrina ladon echo</i>)		
ran Blue (<i>Philotus sonorensis</i>)		
ine Blue (<i>Leptotes marina</i>)		
ion Blue (<i>Icaricia acmon</i>)		
ny Blue (<i>Brephidium exilis</i>)		
y Hairstreak (<i>Stymon melinus</i>)		
wn Elfin (<i>Incisalia augustinus</i>)		
lexing Hairstreak (<i>Callophrys porphyra</i>)		
Purple Hairstreak (<i>Atides halesus</i>)		
ir's Metalmark (<i>Apodemia morio virgulti</i>)	1	
ight's Metalmark (<i>Calphelis wrightii</i>)		
Unreal Duskywing	1	

11 Tronka East Otter Mining 04/04/02 Survey #5

SRM-01

04/04/02

QUINO SURVEY #5

Sally Trnka
Roger Ditrack

start: 1:25pm / clear & sunny /
67°F / 10-12 mph

animals:

Belted titmouse 1

Funeral duskywing 1

moth

quail

rufous-sided towhee

lark sparrow

CA towhee

mockingbird

CA ringlet 1111

Western meadowlark

end: 6:00^{PM} / 7-12^{mph}

clear, sunny

flowering plants:

3:25pm

~~Eri. lac~~

Lot sco

Vig lac

QUINO CHECKERSPOT GENERAL FORM

Biologist name Roger Ditrack

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 4-4-02 Site visit no. 5

Site name East Olay Mining Olay Hills Project

Locality Olay Mesa

Total site acres 50 Total acres surveyed 25

Total hours of field survey 1 hr 50 min Average acres surveyed per hour 13.6

Time	Sky					Wind					Temperature F	
	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15		>15
Start <u>1:35</u>	<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>			<u>67</u>
End <u>3:25</u>	<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>			<u>66</u>
Start	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	
End	Clear	Patch	Overcast/Cloudy	Drizzle	Shower	<1	1-3	4-7	8-12	12-15	>15	

Description of areas surveyed/comments Observed Lark Sparrow

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

Observed (larvae or adults)	Number	Comments
Howtail (<i>Papilio eurymedon</i>)		
Blacktail (<i>P. zelicaon</i>)		
Great Swallowtail (<i>P. rutulus</i>)		
Orange-tip (<i>Anthocharis sara</i>)		
Orange-tip (<i>A. cethura</i>)		
White (<i>Argiolela rapae</i>)		
Orange (<i>Eurema nicippe</i>)		
Black White (<i>Pontia protodice</i>)		
Black Dogface (<i>Zerene eurydice</i>)		
Butterfly (<i>Collias eurytheme</i>)		
Black Sulfur (<i>C. harfordi</i>)		
Black Ringlet (<i>Coenonympha californica</i>)	10	
Black (<i>Danaus plexippus</i>)		
(<i>D. gilippus</i>)		
Black Checkerspot (<i>Euphydryas chalcedona henneli</i>)		
Black Checkerspot (<i>E. chalcedona chalcedona</i>)		
Black Checkerspot (<i>E. editha quino</i>)		
Black Checkerspot (<i>Charidryas gabbi</i>)		
Black Checkerspot (<i>Thessalia leanira wrighti</i>)		
Black Crescent (<i>Phyciodes mylitta</i>)		
Black Lady (<i>Vanessa cardui</i>)		
Coast Lady (<i>V. annabella</i>)		
Black Lady (<i>V. virginensis</i>)		
Admiral (<i>V. atalanta</i>)		
Black-eye (<i>Junonia coenia</i>)		
Black-winged Cloak (<i>Nymphalis antiopa</i>)		
Black-veined Sister (<i>Adelpha bredowii californica</i>)		
Black-ringed Anglewing (<i>Polygonia satyrus</i>)		
Black-veined Admiral (<i>Basilarchia lorquini</i>)		
Black-veined Tailed Blue (<i>Evers amyntula</i>)		
Black-throated Blue (<i>Glaucopsyche lygdamus australis</i>)		
Black-throated Blue (<i>Celastrina ladon echo</i>)		
Black-throated Blue (<i>Philotes sonorensis</i>)		
Black-throated Blue (<i>Leptotes marina</i>)		
Black-throated Blue (<i>Icaricia acmon</i>)		
Black-throated Blue (<i>Brephidium exilis</i>)		
Black-throated Hairstreak (<i>Strymon melinus</i>)		
Black-throated Elf (<i>Incisalia augustinus</i>)		
Black-throated Hairstreak (<i>Callophrys perplexa</i>)		
Black-throated Purple Hairstreak (<i>Ailides halesus</i>)		
Black-throated Metalmark (<i>Apodemia morio virgulti</i>)		
Black-throated Metalmark (<i>Calephelis wrighti</i>)		
Funereal Dusky Wing	1	

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

East Otay 4-4-02
Wind- 10-12mph Temp- 69 Roger Dietrich
Sunny, clear Time: 11:25 Sally Trinka

Anise Swallowtail 1

Finish Time 1:30 Temp: 67
Wind- 10-12mph Sunny clear

East Otay Mining
Start 1:35 Temp: 67
Sunny, clear Wind- 10-12

ringlet ~~||||~~
Funereal Duskywing 1

~~Cactus Wren~~ lark ~~1~~ sparrow
Finish 3:25 wind 7-10
Temp 66 Sunny

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Appendix B-4

2003 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT (42-ACRE PROJECT SITE)



2003 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT

(42-acre project site)

2003 Report
U.S. Fish and Wildlife Service Protocol Level
Presence/Absence Surveys for the
Quino Checkerspot Butterfly
(*Euphydryas editha quino*)

Prepared for:

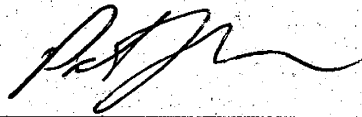
The Otay Hills Project Site

Prepared by:

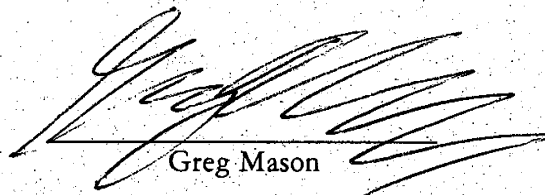
HELIX Environmental Planning, Inc.
8100 La Mesa Blvd., Suite 150
La Mesa, California 91941-6476
(Threatened/Endangered Species Permit: TE778195)

June 4, 2003

Surveys performed by:



Patrick McNicholas



Greg Mason

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CONCLUSION.....	2
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LIST OF APPENDICES

<u>Letter</u>	<u>Title</u>
A	Summary of Field Survey Conditions and Results
B	Copies of Field Notes
C	Lists of Butterflies Observed During Each Survey

FIGURE

<u>Number</u>	<u>Title</u>	<u>Follows Page</u>
1	Site Assessment and Host Plant Location Map	1

INTRODUCTION

This report documents the results of HELIX Environmental Planning, Inc.'s (HELIX's) year 2003 quino checkerspot butterfly (QCB; *Euphydryas editha quino*) presence/absence surveys on the Otay Hills project site. All surveys were performed under HELIX's endangered/threatened species permit (TE778195).

The approximately 42-acre Otay Hills project site and associated access road are located in the southwest corner of San Diego County, in the southwestern foothills of the San Ysidro Mountains (Figure 1) within the U.S. Fish and Wildlife Service (USFWS) QCB Adult Focused Survey Area 1. The project area is situated east of Brown Field Airport, northeast of the end of Otay Mesa Road. The Baja California, Mexico border is located less than one mile south of the property. All of the surrounding lands are currently undeveloped.

The project site was previously surveyed for QCB in 2002 (HELIX). On-site elevations range from approximately 670 feet to 800 feet above mean sea level. Native vegetation communities, namely Diegan coastal sage scrub, dominate the project site. Land located to the west of the project site has been previously disturbed while that located to the east, north and south is mainly undeveloped land dominated by Diegan coastal sage scrub. The proposed access road is situated in an area that has been disturbed in the past by agriculture activities and is currently dominated by non-native grassland.

The following text describes survey methods, results, conclusions, field notes, maps, and species lists.

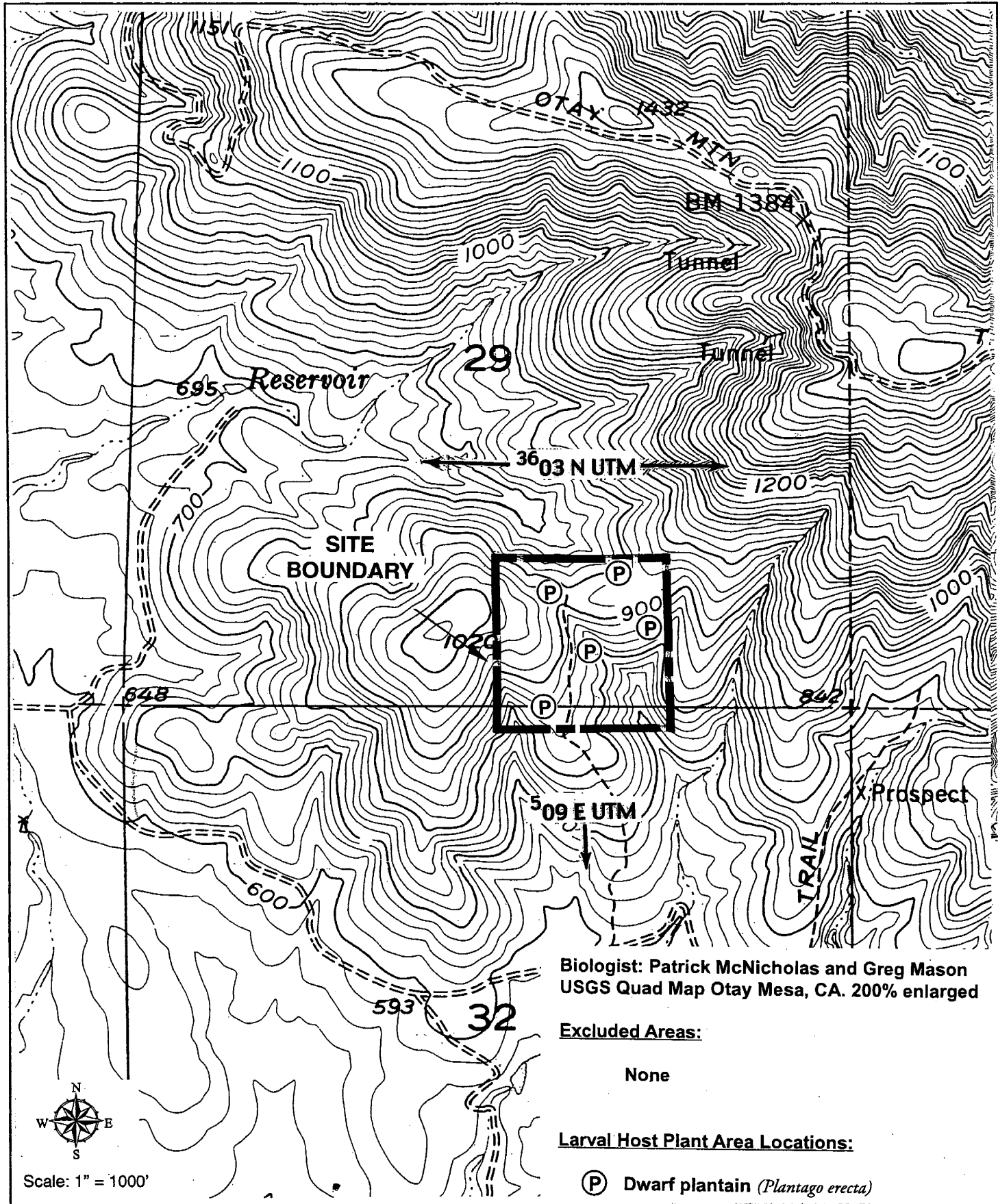
METHODS

The methods employed during the site assessment and presence/absence surveys for the QCB followed the USFWS Year 2002 Survey Protocol for the QCB (USFWS 2002). All 42 acres of the project site were assessed for potential QCB habitat (Figure 1). No significant quantities of habitat on site qualified for any of the survey exclusion categories; therefore, the entire site was surveyed.

Every effort was made to perform the presence/absence surveys during the most favorable weather conditions for QCB. Twelve presence/absence surveys were conducted between February 17 and April 29, 2003. All surveys were within the weather-condition parameters identified in the 2003 protocol. The 2003 QCB survey area was mapped on a U.S. Geological Survey quad (Figure 1). Dates, times, and weather conditions at the beginning and ending of each survey are presented in Appendix A. Copies of field notes from each survey are provided in Appendix B. Lists of butterflies observed during each survey are included in Appendix C.

RESULTS

Most of the survey area is still recovering from a large fire that swept through the area approximately six years ago. Because of this fire, and low levels of rainfall since the fire, the site largely consists of open to moderately vegetated coastal sage scrub and non-native grassland. The site supports four main vegetation communities: Diegan coastal sage scrub (including disturbed), non-native grassland,



Site Assessment and Host Plant Location Map

OTAY HILLS PROJECT

Figure 1

mule fat scrub, and disturbed habitat (HELIX 2000). Numerous dirt roads (many of which are used by off-road vehicles and dirt-bikes) occur throughout the site.

The QCB was not observed within the project site or the access road during the survey period. Although the area received average rainfall for the first time in several years, flowering annual plants were sparse and present in small patches. QCB host plant species dwarf plantain (*Plantago erecta*) was present but in sparse small patches. Potential nectar sources that were noted include deerweed (*Lotus scoparius*), San Diego viguiera (*Viguiera laciniata*), Cryptantha (*Cryptantha* sp.), goldfields (*Lasthenia californica*) and flat-top buckwheat (*Eriogonum fasciculatum*).

CONCLUSION

The project site is located at the base of the San Ysidro foothills, near several known locations of the QCB. The closest reported sightings were on slopes located just southeast and northwest of the site. Despite the presence of QCB in the project vicinity within the past few years, no QCB were observed within the site.

The lack of the QCB within the survey area may be due to the disturbed nature of much of the habitat present. Few QCB host plants and nectar sources were observed on site in 2003. Most of the site is within a transitional zone between high quality habitat located on the surrounding hills and disturbed agricultural land to the west. While portions of the site have recovered post-fire to support moderate quality coastal sage scrub habitat, portions of the site are currently dominated by non-native grasses.

Due to the sparse patches of host plants and nectar resources, and negative results for QCB from the 2002 survey season, the site is considered to have a low to moderate potential for supporting the QCB.

REFERENCES CITED

- HELIX Environmental Planning, Inc. (HELIX). 2002. Annual Report, U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). May 13.
2000. Annual Report, U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). June 9.
- U.S. Fish and Wildlife Service (USFWS). 2002. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.

Appendix A
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS

Site Visit #	Survey Date	Survey Time (start/end)	Weather Conditions (start /end) ^{1,2}	Biologist ³	Results
1	02/17/03	1030/1400	72° F, partly cloudy, wind gusty 72° F, Partly cloudy, wind 0-5 gusty	GM	No QCB observed
2	02/21/03	1130/1500	83° F, sunny and clear, wind 0-5 mph 74° F, sunny, wind 0-5 mph	GM	No QCB observed
3	03/05/03	1310/1630	72° F, clear and sunny, wind 3-5 mph 71° F, clear and sunny, wind 3-5 mph	GM	No QCB observed
4	03/08/03	1340/1545	72° F, clear, wind 3-7 mph 70° F, clear, wind 2-5 mph	GM/PM	No QCB observed
5	03/14/03	1330/1630	70° F, clear, wind 0-3 mph 68° F, clear, wind 0-3 mph	PM	No QCB observed
6	03/20/03	1300/1600	75° F, partly cloudy, wind 2-5 mph 68° F, partly cloudy, wind 3-5 mph	PM	No QCB observed
7	03/27/03	1130/1430	81° F, partly cloudy, wind 2-5 mph 75° F, partly cloudy, wind 0-2 mph	PM	No QCB observed
8	04/07/03	1115/1415	78° F, clear, wind 4-7 mph 86° F, clear, wind 4-7 mph	PM	No QCB observed
9	04/09/03	1015/1315	78° F, clear, wind 0-2 mph 86° F, clear, wind 2-5 mph	PM	No QCB observed
10	04/24/03	1145/1500	80° F, sparse clouds, wind 0-2 mph 82° F, sparse clouds, wind 2-5 mph	PM	No QCB observed
11	04/26/03	1130/1430	84° F, clear, wind 2-5 mph 80° F, clear, wind 5-10 mph	PM	No QCB observed
12	04/29/03	1230/1515	79° F, partly cloudy, wind 4-8 mph 74° F, clear, wind 4-8 mph	PM	No QCB observed

¹Refer to field notes in Appendix C for specific survey information.

²All temperatures were taken near ground level in the shade.

³GM=Greg Mason; PM=Patrick McNicholas

Appendix B
COPIES OF FIELD NOTES

QUINO CHECKERSPOT GENERAL FORM

Biologist name Greg Mason

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 2/17/03 Site visit no. 1

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3.5 Average acres surveyed per hour 11.4

Time	Sky	Wind	Temperature F
Start <u>1030</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7 8-12</u> 12-15 >15	<u>72</u>
End <u>1400</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3 4-7</u> 8-12 12-15 >15	<u>72</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

- Attached List of butterflies observed
 List of larval host plants, nectar plants, and plant communities observed on the site
 Field maps
 Copy of original field notes
 Photographs
 Other _____

#2 (12/17/03) mileage
 SRM-d QCS 2/17/03

1030 / 72 Fynd / 14 Fair / PH+ / Gusts

1400 / 72 Fynd / 69 F air / PH+ / 10-5 per gusts

Plants	in flower	Birds	B. Flies	Animals
Seed	Amscilia		S. atq. n.	M. Lark
Leaf	B. n. x		B. n. 1	Mada
F. L.	V. L. x		U. L. ad. 1	Anna's
Ar. Ca.	B. N. x			moth
P. Ca.	A. m. x			Towhee
M. l. g.	F. n.			Solitary bee
So. Ci.	C. p. t. l. x			Cricket
M. i. Av.	S. O. x			grasshopper
M. l. Ca.	Ar. F. x			Raven
L. So.	Ch. m. d. x			C. p. t. e.
S. Ap.	Ch. n. x			bee mimic
F. Vi.	S. B. x			w. F. lizard
D. O. c.				Trapdoor spider
L. p. i. n. e.				whiptail
P. I. E. r.				
D. i. c. a.				
P. i. n. t. u. n. a.				
C. e. l. o.				
A. c. a.				
A. l. t. a.				
C. e. n. t. e.				

Most of survey area shielded
 from winds from west.

QUINO CHECKERSPOT GENERAL FORM

Biologist name Greg Mason

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 2/21/03 Site visit no. 2

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3.5 Average acres surveyed per hour 11.4

Time	Sky	Wind	Temperature F
Start <u>1130</u>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Patch <input type="checkbox"/> Overcast/Cloudy <input type="checkbox"/> Drizzle <input type="checkbox"/> Shower	<u><1</u> <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>83</u>
End <u>1500</u>	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Patch <input type="checkbox"/> Overcast/Cloudy <input type="checkbox"/> Drizzle <input type="checkbox"/> Shower	<u><1</u> <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>74</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

- Attached List of butterflies observed
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- Field maps
- Copy of original field notes
- Photographs
- Other _____

2/21/03 Sun-d. QCB #2

mileage

Start 1130 / 0 smth / Sunny + clear / 88° F ground / 82° Air

End 1500 / 0 S / Sunny / 84° smd / 72° air

Beats ^{Prayer} - BFLies Other Animals

Winkles ^{FCA} S-Otip ^{||||} Grasshopper

Angly ^{Canch} Anise 1 moth

Mals ^{Jepson's} pale 11 APMe

lea ^{hardhand} S. Blue ^{||||} Solitary bee

pred ^{AFa} WCLady 11 wasp mimic

CrCa ^{Zisselhaus} Preh's ^{|||||} CicCa ♂

SeAp ^{I. Fairhurst} Can White 11 velvet beetle

ArCa ^{Lr M} P. Lady ^{||||} Fly

ErFa ^{LuAr} Raven

NEr ^{Sr Bug} L-Bug

Prans ^{Phantia} Ca tarant

duvas ^{CrMe} Drosophila

FCA ^{Defa} M-Larv

SeCi ^{Amsulbia} Bwck

LuSe ^{J-Jacti} carpenter ants

QlCa ^{Anole}

Prans ^{Chetublen}

UsLu ^{Salt}

Erp ^{Wald Cva.}

FrUs

Prans

QUINO CHECKERSPOT GENERAL FORM

Biologist name Greg Mason

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3/5/03 Site visit no. 3

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3.3 Average acres surveyed per hour 12.1

Time	Sky	Wind	Temperature F
Start 1310	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Patch <input type="checkbox"/> Overcast/Cloudy <input type="checkbox"/> Drizzle <input type="checkbox"/> Shower	<1 <input checked="" type="checkbox"/> 1-3 <input checked="" type="checkbox"/> 4-7 8-12 12-15 >15	72
End 1630	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Patch <input type="checkbox"/> Overcast/Cloudy <input type="checkbox"/> Drizzle <input type="checkbox"/> Shower	<1 <input checked="" type="checkbox"/> 1-3 <input checked="" type="checkbox"/> 4-7 8-12 12-15 >15	71
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

3/5/03 SRM-dl. #3 QCB

Start 1310 / Sunny / 70° Fair / 72° F ground / 3-5 mph
End 1630 / Sunny / 70° Air / 71° ground / 3-5

<u>BFlies</u>	<u>Plants</u> ^{in flower}	<u>Other Animals</u>
WC Lady III	Mala MaMa	Raven
com wht I	Erfa ⁺ Chactrochica ⁺	hammer
B-Mam I	ArCa ⁺ Phacelia ⁺	Ap Me
Plady III	M-glady ⁺ SaTr	soliter
	ered ⁺ Nalu	Crickets
	Red-brane ⁺ Mirabilis	Ca Towhee
	Zigadous Lupine	
	Bramble Psinthus ⁺	
	Vika ⁺ SaAp	
	LoSc ⁺ Dica ⁺	
	CoCo DaR	
	RiCa mushrooms	
	Popcorn ⁺ Allium?	
	Lepidium ⁺ Amseintia ⁺	
	SeCi ⁺ LaCa ⁺	
	NEI ⁺ J-Vact ⁺	
	Ursaria	
	Brvi ⁺	
	Felvi	
	CeMe	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Greg Mason

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3/8/03 Site visit no. 4

Site name Atay Hills Project

Locality Atay Mesa

Total site acres 40 Total acres surveyed 20

Total hours of field survey 2 Average acres surveyed per hour 10

Time	Sky	Wind	Temperature F
Start <u>1340</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>72</u>
End <u>1545</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>70</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

#4
3/8/03 SRM-Q QCB 6M/PM

Start / 1340 / 72° and / 70° Air / 3-7, occasional gusts
End / 1545 / 70° / 70° Air / clear / 2-5 occasional gusts

Bf Flies | Plants: ⁱⁿ Flower
Behr III | Cryptantha ^{Salama}
P-lady II | ErA ^{FeVi}
S-otip) | Mala CrCa ^{SeBi}
| | Zigarette ^{Grandlitt}
| | Vile ^{Calom}
| | Lepidiv ^{SaTr}
| | Jump up ^{Jepsonia}
| | oval ^{Amole}
| | ArFa ^{Wdka}
| | LaSc
| | Paintbrush
| | SaAp
| | FiCa
| | Brownhcc
| | M-glory
| | P/Er
| | DiCa
| | mirabils
| | Phentia

Other
Animals:
raven
hammer & ♂
Cricket
towhee
M-lark
dragon fly
W-whitkail
WF lizard

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3/8/03 Site visit no. 4

Site name ~~East Otay Mining Site~~ Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 20

Total hours of field survey 2 Average acres surveyed per hour 10/hr

Time	Sky	Wind	Temperature F
Start <u>1:40</u>	<input checked="" type="radio"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3 4-7</u> 8-12 12-15 >15	<u>72°F</u>
End <u>3:45</u>	<input checked="" type="radio"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3 4-7</u> 8-12 12-15 >15	<u>70°F</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commrnts CSS

- Attached List of butterflies observed
 List of larval host plants, nectar plants, and plant communities observed on the site
 Field maps
 Copy of original field notes
 Photographs
 Other _____

April 19 Summer 6m 3/8/03

Start 1340 | 72.5 gal | 70° air | 5-7 sec gnd
End 1345 | 70.5 gal | 74° air | 2-5 sec gnd

Butterflies Plants Animals

Red tailed hawk II Erythronium sp. silene sp. 21 Harris

Red winged blackbird II Eri. Fax Er. vir

Common chickadee Mal. lark Sil. big

Lesser orange-cup II Ad. cat. Sil. con yellow gnatcatcher

Virginia Creeper sp.

Lup. sp. 3rd yr. 1st yr.

Trillium Arisaema

Broomrape sp. cat. spp.

Trillium wild rose

Lactuca 1st yr.

gal. api.

red scilla

fil. cat.

con. rose

blue pt.

blue rose

blue pines (add. count)

lup. sp.

blue eye daisy

brodiaea sp.

mineralia plantain

phlox sp.

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3/14/03 Site visit no. 5

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>1:30</u>	<input checked="" type="radio"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>(1-3)</u> 4-7 8-12 12-15 >15	<u>70</u>
End <u>4:30</u>	<input checked="" type="radio"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>(1-3)</u> 4-7 8-12 12-15 >15	<u>68</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments CSS

- Attached List of butterflies observed
- List of larval host plants, nectar plants, and plant communities observed on the site
- Field maps
- Copy of original field notes
- Photographs
- Other _____

QUB #5 3/14/07 SRM-01
 70°F / clear / 0-3 mph 1:30 pm
 68°F / clear 0-3 mph 4:30 pm

Butterflies	Plants	Animals
Common white IIII	Jack-o-lantern & Larkspur	Green lizards
Small orange IIII	Crabapple to tree	snails
Red-tipped black IIII	Ed. for d. tree	Long leg
Small blue IIII	Conart & 50' tree	rabbit
White with black	Brown grass	the ground
Printed leaf III	red leaf	side of
and brown black	hyacinth	in garden
at bottom of	leafy	
Black wing	willow	change place
	tree	partly with
	cherry	& trunk
	Apple	with black
	Artichoke	slope
	Verbena	
	Blaze	
	Camellia	
	Fern	
	Blue die	
	Sul. sp.	
	Trich. part	
	Ground pine	
	Japanese	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3/20/03 Site visit no. 6

Site name Atay Hills Project

Locality Atay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>1:00</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>75</u>
End <u>4:00</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>68</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments CSS

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

QCB #6 - 3/20/03 SRM

75° F partly cloudy / 2-5 mph / 1:00 pm
68° F partly cloudy 2-5 mph 4:00

Botanical	Plants	Animals
Compositae - 156	Compositae sp.	long tail
drumstick	Ericaceae - Adulphia?	birdcatcher
Scrophulariaceae - 107	Rubiacae - Labium plant	
Pinaceae - 144	Leguminosae -	
Salicaceae - 111	Urticaceae -	

Palmer's mapland
107

grand
 tobacco
 bird
 flower
 vine
 plant

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 3/27/03 Site visit no. 1

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>11:30</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>81</u>
End <u>2:30</u>	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> 4-7 8-12 12-15 >15	<u>75</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments CSS

- Attached
- List of butterflies observed
 - List of larval host plants, nectar plants, and plant communities observed on the site
 - Field maps
 - Copy of original field notes
 - Photographs
 - Other _____

QOB SRM-01. 5/27/97 H/T

81° F | 2-5 mph | partly cloudy | 11-30

75° F | 0-2 | partly cloudy | 2-30

R.M.A.

Q.A.A.

From 0000 to 1111

To 1111

1111

with 0000

to 1111

1111

and 1111

to 1111

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QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 4/7/03 Site visit no. 8

Site name Otag Hills Project

Locality Otag mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>11:15</u>	<input checked="" type="checkbox"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>78</u>
End <u>2:15</u>	<input checked="" type="checkbox"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>86</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments CSS

- Attached List of butterflies observed
- List of larval host plants, nectar plants, and plant communities observed on the site
- Field maps
- Copy of original field notes
- Photographs
- Other _____

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 4/9/03 Site visit no. 9

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>10:15</u>	<input checked="" type="radio"/> Clear Patch <input type="radio"/> Overcast/Cloudy <input type="radio"/> Drizzle <input type="radio"/> Shower	<input checked="" type="radio"/> <1 <input type="radio"/> 1-3 <input type="radio"/> 4-7 <input type="radio"/> 8-12 <input type="radio"/> 12-15 <input type="radio"/> >15	<u>78</u>
End <u>1:15</u>	<input checked="" type="radio"/> Clear Patch <input type="radio"/> Overcast/Cloudy <input type="radio"/> Drizzle <input type="radio"/> Shower	<1 <input checked="" type="radio"/> 1-3 <input checked="" type="radio"/> 4-7 <input type="radio"/> 8-12 <input type="radio"/> 12-15 <input type="radio"/> >15	<u>86</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments CSS

- Attached List of butterflies observed
- List of larval host plants, nectar plants, and plant communities observed on the site
- Field maps
- Copy of original field notes
- Photographs
- Other _____

QLB #9

52m201

4/19/03

78°F

0-2 mph | clear | 10:15 am

66°F

2-5 mph | clear | 1:15 pm

Plant	Butterflies
Ericaceae	Common white
Asteraceae	Blue veined
Cruciferae	Black veined
Aspen	Black and white
White pine	1 butterfly
Yew tree	
Juniper	
Redwood	
Maple	
Prunella	
Cryptanthus	
Birch	
Willow	
Rose	
Yucca	
Spotted	
Cherry laurel	
Salmon	
Red poppy	
Blue poppy	
White poppy	
Apple	

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McWhorter

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 4/24/03 Site visit no. 10

Site name Otay Hills Project

Locality Otay Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3.25 Average acres surveyed per hour 12.3

Time	Sky	Wind	Temperature F
Start <u>1145</u>	Clear <input checked="" type="checkbox"/> Patch Overcast/Cloudy Drizzle Shower	<u><1</u> <u>1-3</u> 4-7 8-12 12-15 >15	<u>80</u>
End <u>1500</u>	Clear <input checked="" type="checkbox"/> Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> 8-12 12-15 >15	<u>82</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/comments _____

- Attached List of butterflies observed
- List of larval host plants, nectar plants, and plant communities observed on the site
- Field maps
- Copy of original field notes
- Photographs
- Other _____

04B SEM-01 #10

East stay primary site

4/24/03

11:45 am / space cloudy / 0-2 mph / 80°F
3:00 pm / ~~partly cloudy~~ / 2-5 mph / 82°F

Plants

- Fern sp.
- Broadleaf
- Aster
- Big sp.
- mid lan
- Hem sp.
- Lepid sp.
- Endium sp.
- antelope
- the med
- at sea
- lamin
- sunflower
- plagi
- cup
- Phac
- Avena sp.
- col poppy
- Brasica sp.
- Mirab sp.
- lino vie
- corn
- soap plant
- ly sp.
- pa ere
- lathen
- Grand pink
- sel sp.
- Lilium sp.
- Bractia
- chickweed
- Stamm sp.
- Antenn
- Wild ger
- Wild yarrow
- Sil sp.
- Yellow
- Honoria
- red
- Chamae
- Colony

Butterflies

- Common white
- same orange tip
- west coast
- Painted lady
- Anise
- Mame
- l buckeye

top corner

Gen's Toyota
binoculars

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patrick McNicholas

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 4/26/03 Site visit no. 11

Site name Osage Hills Project

Locality Osage Mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 3 Average acres surveyed per hour 13.3

Time	Sky	Wind	Temperature F
Start <u>1130</u>	<input checked="" type="checkbox"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	<u>84</u>
End <u>1430</u>	<input checked="" type="checkbox"/> Clear Patch Overcast/Cloudy Drizzle Shower	<1 <u>1-3</u> <u>4-7</u> <u>8-12</u> 12-15 >15	<u>80</u>
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

- Attached List of butterflies observed
 List of larval host plants, nectar plants, and plant communities observed on the site
 Field maps
 Copy of original field notes
 Photographs
 Other _____

QUINO CHECKERSPOT GENERAL FORM

Biologist name Patricio M. Delgado

HELIX permit no. TE778195

Subconsultant permit no. _____

Survey date 4/29/03 Site visit no. 12

Site name Otay Hills Project

Locality Otay mesa

Total site acres 40 Total acres surveyed 40

Total hours of field survey 2.75 Average acres surveyed per hour 14.5

Time	Sky	Wind	Temperature F
Start 1230	Clear <u>Patch</u> Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	79
End 1515	<u>Clear</u> Patch Overcast/Cloudy Drizzle Shower	<1 1-3 <u>4-7</u> 8-12 12-15 >15	74
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments _____

- Attached List of butterflies observed
 List of larval host plants, nectar plants, and plant communities observed on the site
 Field maps
 Copy of original field notes
 Photographs
 Other _____

S.M. of OCB #12 4/21/53

12:30 PM Partly cloudy 4-8 mph LX 272

3:45 PM Clear 10-15 mph LX 283

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Appendix C
LISTS OF BUTTERFLIES OBSERVED DURING EACH SURVEY

SRM-01 Butterfly Summary

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)	✓	
Purplish Swallowtail (<i>P. zelicaon</i>)	✓	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)	✓	
Felder's Orangetip (<i>A. celthura</i>)		
Cabbage White (<i>Arctocia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	✓	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Nonarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylina Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	✓	
West Coast Lady (<i>V. annabella</i>)	✓	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)	✓	
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	✓	
Echo Blue (<i>Celasirna ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	✓	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Alides halesus</i>)		
Bebr's Metalmark (<i>Apodernia morio virgulti</i>)	✓	
Wright's Metalmark (<i>Calophelis wrighti</i>)		

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)	3	
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Arctocya rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighii</i>)		
Myliina Crescent (<i>Phycodes myliina</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarctia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celasarina ladon echo</i>)		
Sonoran Blue (<i>Phyllotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Ailides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgula</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)	2	
Vanise Swallowtail (<i>P. zelicaon</i>)	1	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)	8	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Arctogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	2	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leannia Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylina Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	4	
West Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antlopea</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Angleming (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basiliarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	4	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Phlotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Gr. Purple Hairstreak (<i>Adides halesus</i>)		
Behr's Metalmark (<i>Apodemia morio virgulti</i>)	8	
Wright's Metalmark (<i>Calephelis wrightii</i>)		

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Vest Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)		
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		1
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliina Crescent (<i>Phycodes myliina</i>)		
Painted Lady (<i>Vanessa cardui</i>)		3
West Coast Lady (<i>V. annabella</i>)		3
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyx Angewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celasirina jason echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Adides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulta</i>)		1
Wright's Metalmark (<i>Calephelis wrighti</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)	SRM-01 # 4 3/8/03	
Vivise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)	3	
Felder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Arctogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	1	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliina Crescent (<i>Phycodes myliata</i>)		
Painted Lady (<i>Vanessa cardui</i>)	4	
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes mynula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Gri Purple Hairstreak (<i>Ailides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	5	
Wright's Metalmark (<i>Calcephelis wrightii</i>)		

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Unise Swallowtail (<i>P. zelicaon</i>)		
Vest Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anchocharis sara</i>)	11	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogicia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	18	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myliina Cresent (<i>Phycodes myliina</i>)		
Painted Lady (<i>Vanessa cardui</i>)	3	
West Coast Lady (<i>V. annabella</i>)	1	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiope</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basiaarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	4	
Echo Blue (<i>Celasirina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Ailides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	4	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Dusk wing	1	

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Vermilion Swallowtail (<i>P. zelicaon</i>)		
Vest Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orange-tip (<i>Anthocharis sara</i>)	6	
Elder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Artogetia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	5	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Nonarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylina Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	10	
West Coast Lady (<i>V. annabella</i>)	2	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Angleming (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basiaeschna lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	6	
Echo Blue (<i>Celasurina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Calliphrys perplexa</i>)		
Grt Purple Hairstreak (<i>Allides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	1	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Dusky Wing	1	

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Panise Swallowtail (<i>P. zelicaon</i>)		
Vest Tiger Swallowtail (<i>P. rutulus</i>)		
Pala Orangetip (<i>Anthocharis sara</i>)	21	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Arctogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	5	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona henneyi</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mytila Crescent (<i>Phycodes mytila</i>)		
Painted Lady (<i>Vanessa cardui</i>)	6	
West Coast Lady (<i>V. annabella</i>)	7	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)	2	
Mourning Cloak (<i>Nymphalis antopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarctia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	6	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotis sonorensis</i>)		
Marine Blue (<i>Lepotes marina</i>)	1	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Green Purple Hairstreak (<i>Ailides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	10	
Wright's Metalmark (<i>Calcephelis wrightii</i>)		

Butterflies Observed (larvae or adults)	SRM-01 #8 4/7/03	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)			
Vinise Swallowtail (<i>P. zelicaon</i>)		1	
West Tiger Swallowtail (<i>P. rutulus</i>)			
Sara Orangeip (<i>Anthocharis sara</i>)		28	
Felder's Orangeip (<i>A. cethura</i>)			
Cabbage White (<i>Artogeia rapae</i>)			
Sleepy Orange (<i>Eurema nicippe</i>)			
Common White (<i>Ponila protodice</i>)		33	
California Dogface (<i>Zerene eurydice</i>)			
Alfalfa Butterfly (<i>Colias eurytheme</i>)			
Harford's Sulfur (<i>C. harfordi</i>)			
California Ringlet (<i>Coenonympha californica</i>)			
Monarch (<i>Danaus plexippus</i>)			
Queen (<i>D. gilippus</i>)			
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)			
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)			
Quino Checkerspot (<i>E. editha quino</i>)			
Gabb's Checkerspot (<i>Charidryas gabbii</i>)			
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)			
Mylina Crescent (<i>Phycodes mylitta</i>)			
Painted Lady (<i>Vanessa cardui</i>)		2	
West Coast Lady (<i>V. annabella</i>)		3	
Virginia Lady (<i>V. virginensis</i>)			
Red Admiral (<i>V. atalanta</i>)			
Buckeye (<i>Junonia coenia</i>)			
Mourning Cloak (<i>Nymphalis antiope</i>)			
California Sister (<i>Adelpha bredowii californica</i>)			
Satyr Anglewing (<i>Polygonia satyrus</i>)			
Lorquin's Admiral (<i>Basilarchia lorquini</i>)			
Western Tailed Blue (<i>Evers amyntula</i>)			
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)			
Echo Blue (<i>Celasrtna ladon echo</i>)			
Sonoran Blue (<i>Philotes sonoriensis</i>)			
Marine Blue (<i>Leptotes marina</i>)		2	
Acmon Blue (<i>Icaricia acmon</i>)			
Pygmy Blue (<i>Brephidium exilis</i>)			
Gray Hairstreak (<i>Strymon melinus</i>)			
Brown Elfin (<i>Incisalia augustinus</i>)			
Perplexing Hairstreak (<i>Callophrys perplexa</i>)			
Orn Purple Hairstreak (<i>Adides halesus</i>)			
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)			
Wright's Metalmark (<i>Calcephelis wrightii</i>)			

Pale Swallowtail (<i>Papilio eurymedon</i>)		
Panise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anihocharis sara</i>)	9	
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Ponila protodice</i>)	50+	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylina Crescent (<i>Phycodes mylira</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)	1	
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adolpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basiaethia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celasrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Ailides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulif</i>)	9	
Wright's Metalmark (<i>Calephelis wrightii</i>)		

Butterflies Observed (larvae or adults)	SPM-01 #10 4/24/03	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)			
Vermise Swallowtail (<i>P. zelicaon</i>)		3	
West Tiger Swallowtail (<i>P. rutulus</i>)			
Sara Orangeip (<i>Anthocharis sara</i>)		13	
Felder's Orangeip (<i>A. cethura</i>)			
Cabbage White (<i>Artogeia rapae</i>)			
Sleepy Orange (<i>Eurema nicippe</i>)			
Common White (<i>Pontia protodice</i>)		18	
California Dogface (<i>Zerene eurydice</i>)			
Alfalfa Butterfly (<i>Colias eurytheme</i>)			
Harford's Sulfur (<i>C. harfordi</i>)			
California Ringlet (<i>Coenonympha californica</i>)			
Monarch (<i>Danaus plexippus</i>)			
Queen (<i>D. gilippus</i>)			
Henne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)			
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)			
Quino Checkerspot (<i>E. editha quino</i>)			
Gabb's Checkerspot (<i>Charidryas gabbii</i>)			
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)			
Mylitta Crescent (<i>Phyciodes mylitta</i>)			
Painted Lady (<i>Vanessa cardui</i>)		17	
West Coast Lady (<i>V. annabella</i>)		12	
Virginia Lady (<i>V. virginensis</i>)			
Red Admiral (<i>V. atalanta</i>)			
Buckeye (<i>Junonia coenia</i>)		1	
Mourning Cloak (<i>Nymphalis antiopa</i>)			
California Sister (<i>Adelpha bredowii californica</i>)			
Satyr Anglewing (<i>Polygonia satyrus</i>)			
Lorquin's Admiral (<i>Basilarchia lorquini</i>)			
Western Tailed Blue (<i>Everes amyntula</i>)			
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)			
Echo Blue (<i>Celastrina ladon echo</i>)			
Sonoran Blue (<i>Philotes sonorensis</i>)			
Marine Blue (<i>Leptotes marina</i>)		1	
Acmon Blue (<i>Icaricia acmon</i>)			
Pygmy Blue (<i>Brephidium exilis</i>)			
Gray Hairstreak (<i>Strymon melinus</i>)			
Brown Elfin (<i>Inisalia augustinus</i>)			
Perplexing Hairstreak (<i>Callophrys perplexa</i>)			
Grt Purple Hairstreak (<i>Allides halesus</i>)			
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)			
Wright's Metalmark (<i>Calephelis wrightii</i>)			

Butterflies Observed (larvae or adults)

2011-11 4/24/10

Species Name	Count	Conditions
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Flora Orange-tip (<i>Anthocharis sara</i>)	3	
Elder's Orange-tip (<i>A. cethura</i>)		
Cabbage White (<i>Arctogeia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	33	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Collas eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona henesi</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbi</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Myllita Crescent (<i>Phycodes myllita</i>)		
Painted Lady (<i>Vanessa cardui</i>)	8	
West Coast Lady (<i>V. annabella</i>)	4	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antipopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Evers amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon mellinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Green Purple Hairstreak (<i>Atlides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	2	
Wright's Metalmark (<i>Calephelis wrightii</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
SRM-01 #12 4/29/03		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
West Tiger Swallowtail (<i>P. rutulus</i>)		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Arctoisia rapae</i>)		
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	24	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gillippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Jeanira Checkerspot (<i>Thessalia jeanira wrighti</i>)		
Mylitta Crescent (<i>Phycodes mylitta</i>)		
Painted Lady (<i>Vanessa cardui</i>)	7	
West Coast Lady (<i>V. annabella</i>)	7	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)		
Echo Blue (<i>Celasrtna iadon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	1	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Grt Purple Hairstreak (<i>Ailides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	5	
Wright's Metalmark (<i>Calephelis wrightii</i>)		

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Appendix B-5

2003 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT (269-ACRE MITIGATION
PARCEL)



2003 QUINO CHECKERSPOT BUTTERFLY
SURVEY REPORT

(269-acre mitigation parcel)

2003 Report
U.S. Fish and Wildlife Service Protocol Level
Habitat Assessment Surveys for the
Quino Checkerspot Butterfly
(*Euphydryas editha quino*)

Prepared for:


The Otay Hills Mitigation Parcel

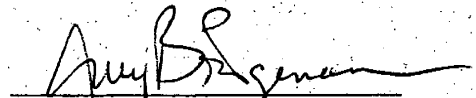
Prepared by:


HELIX Environmental Planning, Inc.
8100 La Mesa Blvd., Suite 150
La Mesa, California 91941-6476
(Threatened/Endangered Species Permit: TE778195)

June 4, 2003

Surveys performed by:


Patrick McNicholas


Amy Bridgeman


Greg Mason


Roger Dittrick

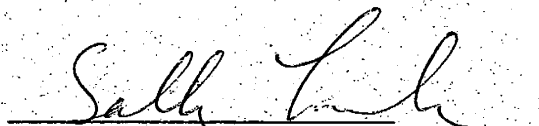

Sally Trnka

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RESULTS	1
CONCLUSION.....	2
REFERENCES CITED	2

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<u>Letter</u>	<u>Title</u>
A	Summary of Field Survey Conditions and Results
B	Copies of Field Notes
C	List of Butterflies Observed During Surveys

FIGURE

<u>Number</u>	<u>Title</u>	<u>Follows Page</u>
1	Quino Checkerspot and Host Plant Location Map.....	1

INTRODUCTION

This report documents the results of HELIX Environmental Planning, Inc.'s (HELIX's) year 2003 quino checkerspot butterfly (QCB; *Euphydryas editha quino*) habitat assessment surveys on the Otay Hills mitigation parcel. All surveys were performed under HELIX's endangered/threatened species permit (TE778195).

The approximately 269-acre Otay Hills mitigation parcel is located in the southwest corner of San Diego County in the southwestern foothills of the San Ysidro Mountains within the U.S. Fish and Wildlife Service (USFWS) QCB Adult Focused Survey Area 1 (Figure 1). The Baja, California Mexico border is located less than one mile south of the project site.

The project site was previously surveyed for QCB in 2001 (HELIX 2001). On-site elevations range from approximately 670 feet to 800 feet above mean sea level. Native vegetation communities, namely Diegan coastal sage scrub, dominate the site. All of the surrounding lands are currently undeveloped, although the land to the west of the project site was previously disturbed. The mitigation survey site consists of two parcels: east (166.92 acres) and west (101.61 acres).

METHODS

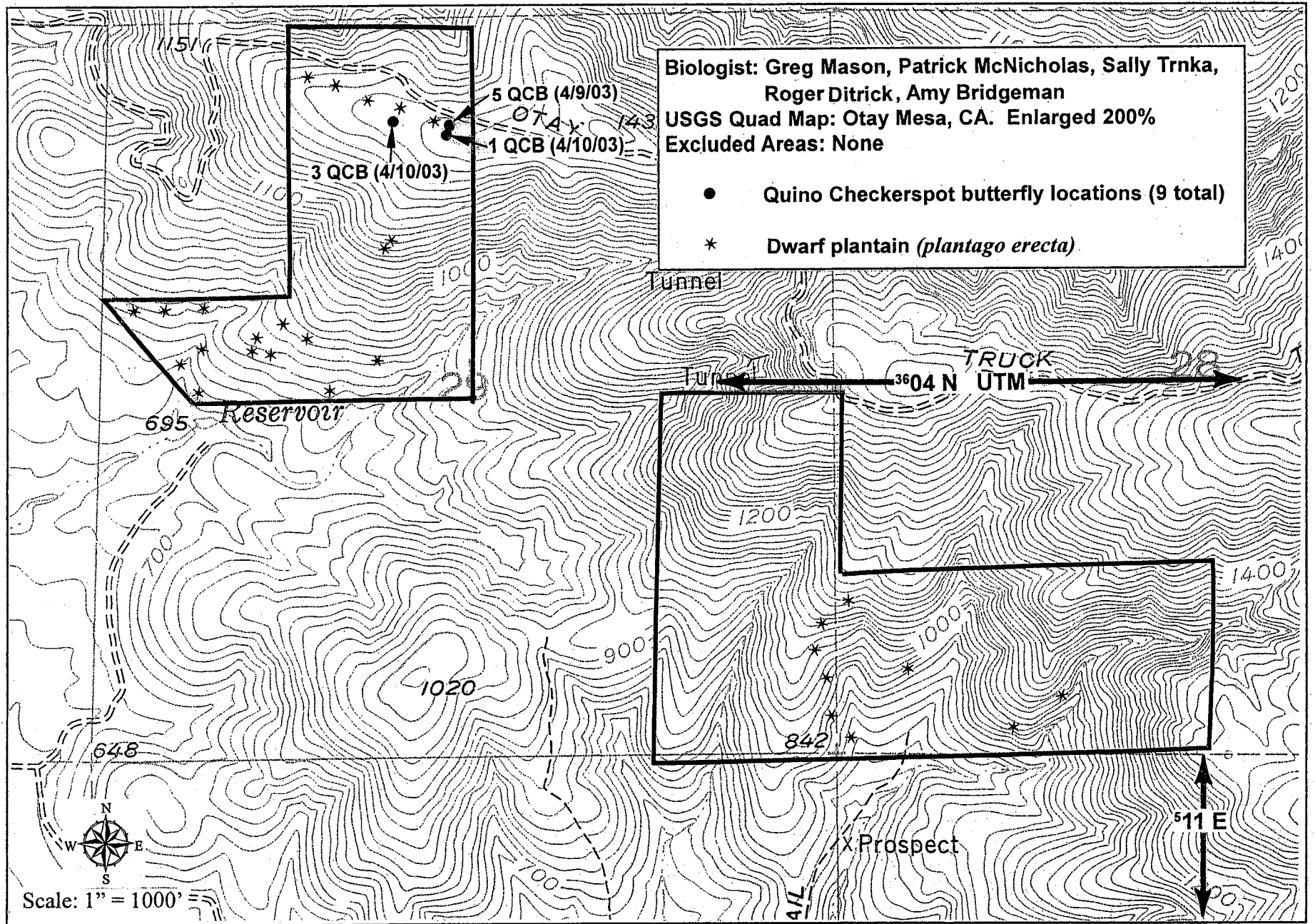
The methods employed during the habitat assessment surveys for the QCB did not follow the USFWS Year 2002 Survey Protocol for the QCB; rather, the amount of time spent surveying areas within the mitigation survey site was based on the quality of potential habitat and site accessibility. All 269 acres of the project site were assessed for potential QCB habitat. No habitat on site qualified for any of the survey exclusion categories; therefore, the entire site was surveyed.

Three presence/absence surveys for the QCB were conducted on April 7, 9, and 10, 2003. All surveys were within the weather-condition parameters identified in the 2002 protocol (USFWS 2002). The 2003 QCB habitat assessment survey area was mapped on a U.S. Geological Survey quad (Figure 1). Survey biologists, dates, and weather conditions during each survey are presented in Appendix A. Copies of field notes from each survey are provided in Appendix B. A list of all butterflies observed is included in Appendix C.

RESULTS

The site largely consists of open to moderately vegetated Diegan coastal sage scrub and non-native grassland and supports five main vegetation communities: Diegan coastal sage scrub (including disturbed), non-native grassland, mule fat scrub, chaparral, and disturbed habitat (HELIX 2000). Numerous dirt roads (many of which are used by off-road vehicles and dirt bikes) occur throughout the site.

Nine QCB were observed within the western parcel along a dirt road just south of the Otay Mountain Truck Trail (Figure 1). The sightings occurred within sparse chaparral containing dwarf plantain (*Plantago erecta*) and popcorn flower (*Cryptantha* sp.).



Quino Checkerspot and Host Plant Location Map

OTAY HILLS MITIGATION PARCEL

Figure 1

Despite receiving average rainfall for the first time in several years, flowering annual plants were sparse and present only in small patches. QCB host plant species dwarf plantain was present but in sparse small patches. Potential nectar sources that were noted include deerweed (*Lotus scoparius*), San Diego viguiera (*Viguiera laciniata*), popcorn flower, and ground pink (*Linanthus dianthiflorus*).

CONCLUSION

The project site is located near several known QCB locations. Nine QCB were observed within the western parcel of the mitigation survey site. In 2001 surveys, five QCB were observed in this same area (HELIX 2001). Although no QCB were observed within the eastern parcel during this year's surveys, six QCB were observed in 2001, and other reported sightings have occurred just south of the eastern parcel in the past (HELIX 2001).

The northern portion of the western parcel is considered to have high potential for QCB due to the observation of fifteen QCB and availability of host plants and nectar resources. The western portion of the eastern parcel is considered to have moderate to high potential for supporting QCB due to past observations of QCB in the area and the availability of nectar sources and host plant patches. The southern portion of the western parcel and the eastern portion of the eastern parcel have a moderate potential because they contain steep slopes and limited nectar sources.

REFERENCES CITED

- HELIX Environmental Planning, Inc. (HELIX). 2001. Quino Checkerspot Butterfly (*Euphydryas editha quino*) Survey Report for The East Otay Project Potential Mitigation Site. May 31.
2000. Annual Report, U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). June 9.
- U.S. Fish and Wildlife Service (USFWS). 2002. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.

Appendix A
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS

Site Visit #	Survey Date	Biologist	Results
1	04/07/03	Greg Mason Patrick McNicholas Amy Bridgeman	No QCB observed
2	04/09/03	Roger Ditrack	5 QCB observed
3	04/10/03	Sally Trnka Roger Ditrack Amy Bridgeman	4 QCB observed

Appendix B
COPIES OF FIELD NOTES

4/7/03 QCB Mining mitigation site
 start: 1130 / clear 10-5 /

end:

B. flies	Plants ^{in Pines}	Other Animals
Cowbird IIIIII	Aronia ⁺ ErCo ⁺ SeCi ⁺	C. Quail
P. Swallow I	DiCa ⁺ EsCa ⁺ Matiscappi ⁺	m-lark
O-Tip IIIIII	MaLa ⁺ Mslong ⁺ MaMa ⁺	wrenth
P-lady II	BmV ⁺ SaMu Teate ⁺ C. Pass ⁺	lark
m-moth IIIIII	Lanatis ⁺ LuBi ⁺ HeAr ⁺	coyote scat
perching I	r-brass Lotus sp Fern	fly
S-blue IIII	LoCa ⁺ Crantath ⁺ MaVU ⁺	Aprak
F-dog II	AcCa De sp Fernth	Sulphur tree
WC lady IIII	ErFa ⁺ SeBi Paikthush	bee mine
P lady IIII	Coma ⁺ DuV ⁺ CaEx ⁺	Bark sp
	Loupe ⁺ PIEr ⁺ GuCa ⁺	Edx bug
	daddy MaPa Allium ⁺	Tsantula hawk
	Pea ⁺ NaV ⁺ AnAr ⁺	dragonfly
	CrCa Phareli ⁺ Chia ⁺	moth
	SiCa ⁺ G-pint ⁺ FeV ⁺	sphinx moth?
	Ycca ⁺ Stillecter sp. Anale	W. fence
	ered ⁺ AdFa ⁺ FiCa ⁺	
	SaTr Matchweed Resista Wood Chan	
	H+G1 SaAp Solanum	
	LoSc ⁺ R+Cr	
	LeNi ⁺ Ceanehus ⁺ + ⁺	
	Viba ⁺ Oxalis ⁺	
	Mirabilis ⁺ Manzanita	

4/7/03

SRM-01 788 Open Mining Co.

→ ~~Ammons~~ OCB Survey

4/7/03 11:30 Sunny wind 3-7 mph
end

→ Silene ?	→ Fuchsia	White III III III
→ Zinnia	→ Chamaecrista	III III III III
→ Bromelads.	→ Yucca	fly, grasshopper, bee
→ Zinnia	→ Echinopsium	big 4-8" dia
→ Bon-mad	→ FV	green, yellow, purple
→ Lot 20	→ pink	blue !!
→ <i>Cochlosia coccinea</i>	→ Phloxia - 4 purple	Behr
→ <i>Lepidolobos</i>	→ Mal bar	
→ <i>Dich. sp.</i>	→ <i>Synaptosom</i>	Sea !!
→ <i>Chamaecrista</i>	→ morning glory	Mal
→ <i>Cyrtanthus</i>	→ <i>Pantago acida</i>	
Art. cal	→ purple	bird, orange, blue, white, purple, green, black
→ Lupine	→ Italy crot	
→ <i>Panicum crinale</i>	→ <i>O. sals.</i>	White III III III III
→ <i>Lamarckia</i>	→ <i>Mirabilis</i>	III
→ <i>Plagiobolus</i>	→ Malva	Red
→ <i>Sceloporus</i>	→ <i>Gnaphalium</i>	
→ <i>Malva</i>	→ <i>Salsola</i>	tree
→ <i>Dir. ba. (red)</i>	→ <i>Solanum</i> ?	
→ <i>Archa</i>	→ <i>Chia</i>	
→ <i>grass</i>	→ <i>Chamaecrista</i>	
→ <i>Lupine</i>	→ <i>Synaptosom</i>	

11/2/03 cont.

- ✓ ~~Spina - found book~~
- ✓ ~~Compass~~
- ✓ ~~Map~~
- ✓ ~~Fuzzy purple tube flowers~~
- ✓ ~~Prunus magoc leaves~~
- ✓ ~~Yellow flower~~
- ✓ ~~Many leafy sapling~~
- ✓ ~~Cardinalis~~
- ✓ ~~Sassa and~~
- ✓ ~~Prunus leaves / some yellow leaves~~
- ✓ ~~Large green tree~~
- ✓ ~~Red flowers~~

- 8:30
- 10 Point of View Survey Area 8:00 - 3:00
- White diff. #11111111
- Black ex. low tree
- Pink/white pr. th. et
- Maple
- Blueness (leaves)
- Tree #1
- Maple
- Orange #11111111
- Tree
- Gibbs
- Tree
- Shrub

Roger W. Dittrock

4-9-03 East Otay.

Top of Ridge Start: 10:05 End: 4:00 pm
Temp St 63°F End temp 70 wind: 0-5

GCB IN 5-8 end

Behrs Metal mark IN IIII

Common White IN IIII

[Pencil] Cactus IN IN

Saras O.T. IN IIII IN I

Anise ST IN IIII

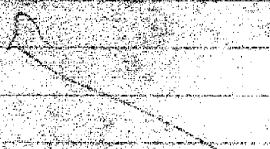
Pale ST IN IN

West Tiger ST IIII

Gabb II

[Sphinx] Moth

Painted Lady XU I



Roger W. Ditrack

4-10-03 East Olay

Top of Area

Time: 9:30 End: 3:10

Temp: 62°F Wind: 0-5 End 5-7

End Temp: 72°F

Saras OT IIII IIII IIII IIII IIII

Painted Lady IIII

X Quino I

Common White IIII IIII IIII IIII IIII IIII IIII

W. C. Lady IIII

Behr's Metal Mark IIII

• Barrell Cactus IIII IIII IIII

East Olay Mitigation Areas

04/10/03

Sally Trinka

rare plants to watch for:

barrel cactus

Dudleya variegata

start: 9:30am / 62°F in shade / clear & sunny / 0-2 mph

end: 2:45pm / clear & sunny / 2-7 mph / 76°F

common wht 	(red/old blk head)	
W coast lady 	lark sparrow	no-foss-sided towhee
side-blotched lizard	raven	kangaroo rat (photo)
honeybee	Behr's wrenlet 	wht-crown sparrow
Saras o-tip 	sphinx moth	coyote scat
Anna's hum	CA towhee	golden eagle
Painted lady	lady	
	horned liz.	

Crys sp.	Uro lin	Yucca whi	Vig lca
Bras. sp.	Erod cic	wooly blue-cowls	(hem sp. present)
Sal lew?	Cry sp #2	Cal sp1	(not in flower yet)
Lot sco	Die cap	Eri fas	Ant. sp.
Hel sco	Cean olay (arida)	Calv mac	Esch. cal
	Mal fas	Aple fas	Cean white
Matilija poppy (not in bloom)		Silene sp	tiny lvs
ground plant (fls senescing)		little light pink	
	Ortho pur	Sol. sp	Acua. die.
Sisy. bel.		Pha cic	Pla are

Biolog SRM of East Bay Mining Co. DMY

WCB

6270903

Wed 9:30 Sunny 3-5

WCB

Wed 3:15 " "

749

* Barica sp	* Cryptanthus	aniso 1
Stadium	sun minty green	white
* Alnus?	* Sphincter	
* Avena	* mallow	grasshopper
* P. maculata	* poppy	buckeye
* Cornel	* black c. c.	
* Erica fasc	* Pleurostachya	Lady
* Pichia sp	* Y. plant	parasitoid 1
* P. plant	* white daisy-like	lygid flywarp
* P. sp. a	bluish	white 2 BT
* lot 500	* yellow white from	
Bacillus	* white flower	orange tip
thistle	* Mirabilis	Bera 1
* Caly naga	* purple white	lady bug
lot cal	* Lotus sp.	black fly pupa
* Cras comm	* H. purple sheath	white fly pupa
Sol. air / G.	* Solanum	white fly pupa
* L. amarilla	* March ant	white
* Lepidoptera sp	* Chamaecyp	
* Juncus sp		
wing leaf / so. P.		
* Digitalis		

NOTE - plants in yellow crusty patches.

1/10/03 SEM-01 OCT cont.

- * Gray bell
- * Lohum - species
- * Ramokrup
- * Gachal
- * Atriglan
- * Wok bins - gho
- * Nalla
- * Inoph con
- * S. S. api
- * S. S. g. g. Miss
- * G. g. g. g.

White ~~...~~
 White ~~...~~
 Belant

July 11

- S. S. g. g. g.
- D. g. g. g.
- C. g. g. g.
- D. g. g. g.
- Blue
- D. g. g. g.
- R. g. g. g.
- P. g. g. g.
- W. g. g. g.
- g. g. g. g.

OCBIN = 3
 ...
 ...

- * Ch. g. g.
- W. g. g.
- W. g. g.
- g. g. g. ?
- g. g. g.
- * Ch. g. g.
- * S. g. g. g.
- * S. g. g. g.

g. g. g. g.
 g. g. g. g.
 g. g. g. g.

1/10/03 SEM-01

OCT, cont. 11

- * White
- * G. g. g. g.
- (S. g. g.)

White ~~...~~
 ...

S. g. g. g.
 S. g. g. g.

July 11
 g. g. g. g.

Appendix C
LIST OF BUTTERFLIES OBSERVED DURING SURVEYS

OTAY HILLS MITIGATION PARCEL

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Pink Swallowtail (<i>P. zelicaon</i>)	6	
West Tiger Swallowtail (<i>P. rutulus</i>)		
Orange Orangetip (<i>Anthocharis sara</i>)	173	
Welder's Orangetip (<i>A. cethura</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Hoopy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)	307	
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
California Ringlet (<i>Coenonympha californica</i>)		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. glippus</i>)		
Henne's Checkerspot (<i>Euphydryas chalcedona hennel</i>)		
Calcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	15	
Gabb's Checkerspot (<i>Charidryas gabbii</i>)	1	
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
Painted Lady (<i>Vannessa cardui</i>)	24	
West Coast Lady (<i>V. annabella</i>)	34	
Virginia Lady (<i>V. virginensis</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)	3	
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basiliarchia lorquini</i>)		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	7	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)	6	
Acmon Blue (<i>Icaricia acmon</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	4	
Gr Purple Hairstreak (<i>Allides halesus</i>)		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	25	
Wright's Metalmark (<i>Calephelis wrightii</i>)		