

BLM
Results of the Quino Checkerspot

Butterfly Surveys on Otay Mountain,
Shockey Truck Trail, and Tecate Peak

San Diego County, California

*Greenwing
Fritillary*

**RESULTS OF THE
QUINO CHECKERSPOT BUTTERFLY
SURVEYS AT VARIOUS LOCATIONS
WITHIN THE INTERNATIONAL FUEL BREAK
SAN DIEGO COUNTY, CALIFORNIA**

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SECTION 1.0 – INTRODUCTION AND METHODOLOGY

1.1 INTRODUCTION

Chambers Group, Inc. was retained by the Bureau of Land Management (BLM), to conduct a habitat assessment and focused adult surveys to determine the presence/absence of the Quino checkerspot butterfly (*Euphydryas editha quino*), within three sections of the International Fuel Break (fuel break). The total survey area encompasses approximately 438 acres in San Diego County, California (Figure 1). The fuel break is approximately 45 miles in length of which 18 miles is BLM. The average width of the fuel break is 200 feet. The majority of the fuel break has not been maintained for approximately 5 years and is retained as a right-of-way by the California Department of Forestry. Fuel break maintenance includes mechanical, hand clearing, or controlled burning of vegetation that occurs within the fuel break limits. The fuel break extends from the west slope of Otay Mountain to Campo. Immediate access to each of the fuel break sections was provided through a series of dirt roads heavily patrolled by U.S. Border Patrol. Elevation on the project site ranges from approximately 1,500 feet above mean sea level (MSL) to 3,600 above MSL.

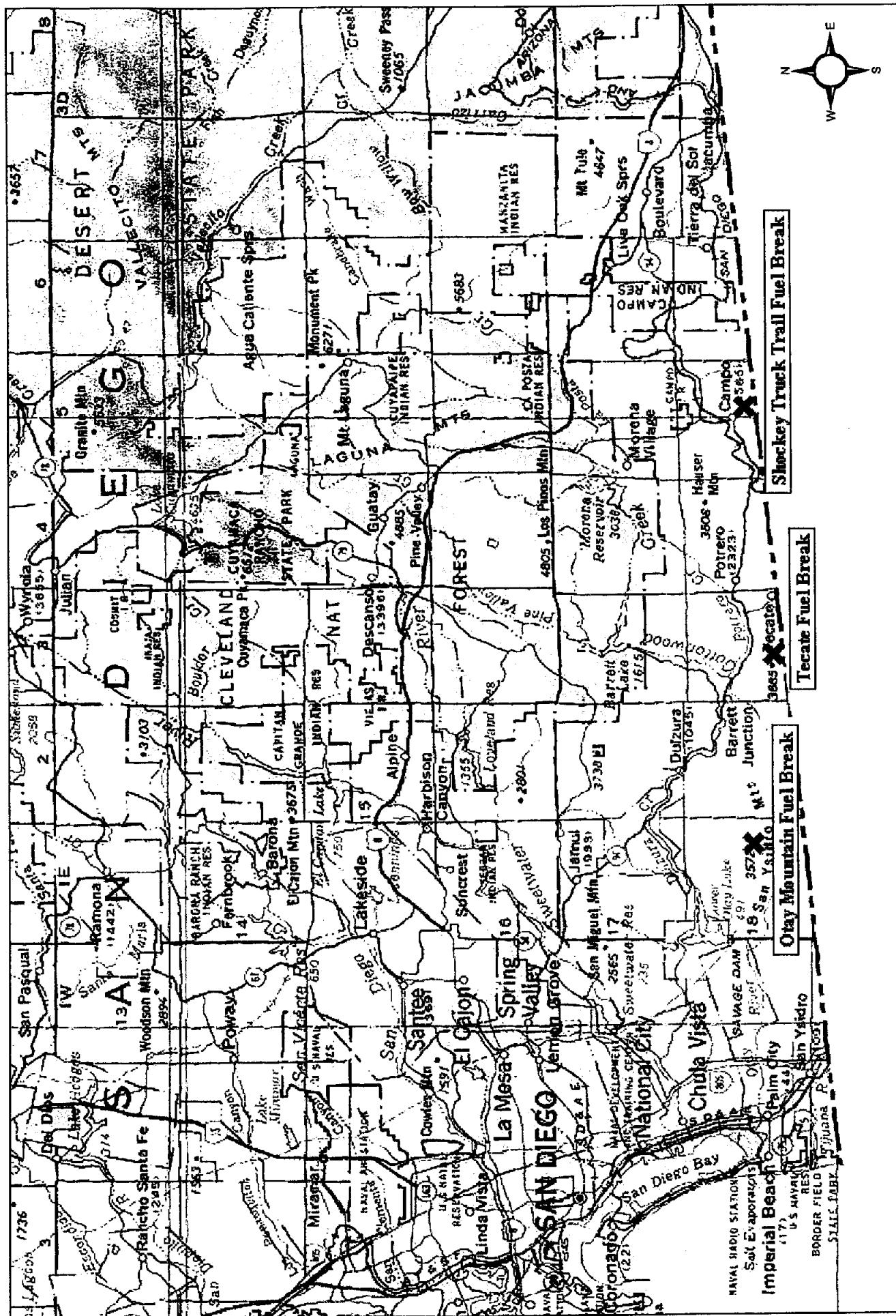
The International Fuel Break is located within the U.S. Fish and Wildlife Service (USFWS) designated “adult survey area” for the Quino checkerspot butterfly. A Quino habitat assessment was conducted prior to the 2002 flight season of the butterfly. Focused surveys were conducted on a weekly basis to determine the presence/absence of the butterfly. The purpose of this report is to document the site conditions and results of the Quino surveys. This report is divided into separate sections that detail each of the three sections of the fuel break. Section 2.0 documents the site conditions and the results of the Quino surveys along the Shockey Truck Trail. Section 3.0 documents site conditions and the results of the Quino surveys within Tecate Peak fuel break. Section 4.0 documents site conditions and the results of the Quino surveys along the Otay Mountain fuel break.

1.1.1 Proposed Project

BLM plans to conduct fuel reduction activities along the International Fuel Break. Due to the lack of maintenance over the years, vegetation has grown back over the fuel break, reducing its effectiveness as a wildfire deterrent. The action would involve the use of hand tools and/or chainsaws to cut the vegetation on the fuel break. The cut material would then either piled or scattered on the fuel break to be burned later on under a prescribed fire plan.

1.1.2 Quino Checkerspot Butterfly

The Quino checkerspot butterfly was listed as an endangered species by the USFWS in January 1997. Drought, loss of habitat, and displacement of the species' larval host plants by invasive non-native grasses and other weedy annuals have contributed heavily to the decline of this once abundant southern California butterfly species. Larval host plant species include western plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), other plantain species (*Plantago* spp.), white snapdragon (*Antirrhinum coulterianum*), bird's beak (*Cordylanthus rigidus*), and purple's owl's clover (*Castilleja exserta*). The Quino checkerspot is primarily found in Riverside, Orange, and San Diego counties in areas with clay soils, which support western plantain and other host plants. In addition to the presence of its larval host plants, the Quino checkerspot requires certain topographic features and plants that serve as a nectar source for the adult butterflies. Adults are found in open grasslands, and on low hilltops, rocky outcrops, and ridges which are patrolled by the butterflies when they are in search of a mate. Nectar sources most likely utilized include, but are not limited to: members of the sunflower (Asteraceae) family, including goldfields (*Lasthenia* spp.), tidy-tips (*Layia* spp.), and pinebush (*Ericameria* spp.); members of the borage (Boraginaceae) family, including common fiddleneck (*Amsinckia menziesii*) and popcorn flowers (*Cryptantha* spp. and *Playgiobothrys* spp.); members of the waterleaf (Hydrophyllaceae) family, including yerba santa (*Eriodictyon* spp.); members of the figwort (Scrophulariaceae) family, Indian paintbrush



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Scale 1:400,000

International Fuel Break
Project Vicinity
Figure 1

(*Castilleja* spp.), Chinese houses (*Collinsia* spp.), and flowering annuals including strigose lotus (*Lotus strigosus*) and onion (*Allium* spp.). Quino checkerspots are associated with sage scrub, open chaparral, grasslands, and vernal pools and are typically active from mid-February to mid-May.

1.1.3 Reference Population Information

The Carlsbad Fish and Wildlife Office monitors eight reference sites in western Riverside and southwestern San Diego counties. During the 2002 flight season, three of the eight reference sites contained specific larval habitat patches where larvae were consistently found. The three reference sites were, Lake Skinner, site south of Anza in Riverside County, and the Marron Valley site in San Diego County.

Southwestern San Diego County Monitored Reference Site Information

- 1) Marron Valley larval habitat patch: located on a ridge top above Marron Valley at an elevation of 2,000 feet (ft);
- 2) Rancho Jamul: located in the vicinity of the intersection of Otay Lakes Road and State Route 94 between 800-1,000 ft in elevation;
- 3) Northeast of the Sweetwater Reservoir between 500 and 800 ft in elevation; and
- 4) Western slope of Otay Mountain at an elevation of 2000 ft.

The first adult observation at these reference sites occurred on February 13, 2002, when two adult Quino checkerspot butterflies were observed at the Marron Valley larval habitat patch. Adult Quino were observed in the vicinity of this reference site through March 26, 2002, when two male Quino were observed on the Marron Valley ridge top along the road. No adults or larvae were observed at any of the other San Diego County reference sites.

Although abundant host plants germinated during early rains, host plant abundance was reduced and overall host plant quality was poor throughout the 2002 flight season. Environmental conditions were atypically dry at all reference sites in San Diego County. The Rancho Jamul and Sweetwater Reservoir sites were the only other sites in San Diego County where germinated host plants were observed.

1.2 SURVEY METHODOLOGY

1.2.1 Quino Checkerspot Habitat Assessment

A Quino checkerspot butterfly habitat assessment was conducted by permitted Chambers Group biologists Stacie Tennant (TE-834489), Sophie Chiang (TE-781217), and Lisa Allen (TE-050450), on March 1 and 5, 2002. Conditions during the site visit were clear, with winds ranging between 2 to 6 miles per hour (mph) and temperatures ranging from 56 to 73°F. Surveys were conducted in accordance with guidelines set forth by the USFWS 2002 Quino survey protocol. Each section of the fuel break was surveyed to determine the suitability of the site as potential Quino habitat. Developed areas, orchards/agricultural fields, in-fill parcels largely dominated by non-native vegetation, closed canopy forests or riparian areas, dense chaparral, and small openings completely enclosed within a closed-canopy or dense chaparral area were regarded as unsuitable habitat and designated as excluded areas. All excluded areas are shown on the Quino checkerspot butterfly survey and excluded areas maps, located within each site's respective section. All host plants and nectar sources were noted and host plants were mapped on a 7.5-minute USGS topographic quadrangle. In addition, some areas were deemed unsuitable due to the rugged terrain, steep-sided ridges, and dense vegetation, which limited access to these areas. All non-excluded areas (regardless of the presence/absence of host plants and nectar sources) were regarded as potential habitat that required focused adult surveys. All plants and wildlife encountered during the habitat assessment survey were recorded on standardized data sheets and are included as Appendix B. Adult focused surveys were based on the findings of the habitat assessment.

1.3 EXISTING PLANT COMMUNITIES

During the Quino surveys, all habitat types were visited to identify dominant plant species. Vegetation types were classified according to California Native Plant Society's nomenclature (Sawyer and Keeler-Wolf 1995) or other systems, as applicable (e.g., Holland 1986; Boyd et al. 1995; Beauchamp 1986).

All plant species observed during the surveys were recorded in field notes. Plants of uncertain identity were collected and subsequently identified from keys and descriptions, in Hickman (1993) and Munz (1974). Separate plant lists for each of the three sections within the fuel break were complied. The lists of plant species observed at Shockey Truck Trail, Tecate Peak, and Otay Mountain during the surveys are included as Appendices D1, D2, and D3, respectively.

1.4 ADULT FOCUSED SURVEYS

Focused Quino adult surveys were conducted by permitted Quino checkerspot butterfly biologists Sophie Chiang (TE-781217), Christine Mukai (TE-781217), Stacie Tennant (TE-834489), Lisa Allen (TE-050450), and Michelle Dohm (TE-838742), along the Shockey Truck Trail, Tecate Peak, and Otay Mountain sections of the International Fuel Break. Surveys were conducted in accordance with guidelines set forth by the USFWS 2002 Quino Checkerspot survey protocol. The Quino season for the International Fuel Break was abnormal due to unusually dry conditions prior to and during the adult flight season. Weather and access issues prevented surveys to be conducted on a weekly basis for the normal five-week flight season. Given these field conditions, three surveys were completed at Shockey Truck Trail and Otay Mountain and four surveys were completed at Tecate Peak. Quino surveys along the fuel break started on March 6, 2002 and continued through April 12, 2002. Surveys were not conducted during adverse weather conditions including excess wind, cold weather, fog, drizzle, and rain and surveys were postponed until survey conditions were suitable. Therefore, surveys were not conducted on March 13, 14, 15, 26, 27, and 29, 2002. Surveys were conducted by walking meandering transects at approximately 15 acres per hour within survey areas considered suitable Quino checkerspot habitat and recording data on standardized data sheets (Appendix B). In general, the survey area extended 100 meters north of the tick fence that runs along the southern border of the fuel break. Temperatures and wind speeds were recorded at regular intervals. Summary tables of survey dates, hours, field conditions, and personnel are included in each respective section of this document. Surveys covered all non-excluded areas and concentrated on areas of high Quino potential such as hilltops, ridgelines, rocky outcrops, and areas containing host plants or nectar sources. A list of host plants and nectar sources observed in the survey areas are included as Appendix C. In some instances, dense vegetation (chaparral) did not permit all areas to be accessed and surveyed. Special care was taken to eliminate the crushing of host plants and potential Quino larvae. All butterfly species observed during the surveys were recorded and are included as Appendix E.

Quino surveyors had access to butterfly nets and appropriate reference materials to identify butterflies observed in the field. A signature page signed by the five Quino checkerspot butterfly biologists that conducted the focused surveys is included in Appendix F. All host plants and nectar sources were noted and host plants were mapped on a 7.5-minute United States Geological Survey (USGS) topographic quadrangle.

SECTION 2.0 – SHOCKEY TRUCK TRAIL

2.1 SITE LOCATION AND DESCRIPTION

The survey areas within the Shockey Truck Trail contain approximately 169 acres of habitat located east of the city of Tecate and State Highway 805, and south of State Highway 94 in San Diego County, California. The fuel break runs through the city of Campo and ends just west of the Campo Indian Reservation. It can be accessed via Highway 94 and the Shockey Truck Trail. Elevation ranges from approximately 2,400 feet above MSL to 3,600 feet above MSL. As identified on USGS topographic quadrangles, the survey area crosses a blue-line drainage (Campo Creek) on the west end of the site along with two unnamed blue-line drainages in the far east end of the site. Figure 1 shows the vicinity map of where these surveys were conducted. Specifically, the Shockey Truck Trail portion of the fuel break is located within Sections 19 and 20 of T. 18 S and R. 6 E and Sections 20, 22, 23, and 24 of T. 18 S and R. 5 E on the USGS Campo, California, 7.5-minute topographic quadrangle. The Shockey Truck Trail also runs through Sections 24 and 28 of T. 18 S and R. 4 E on the USGS Potrero, California, 7.5-minute topographic quadrangle (Figures 2.1-1 through 2.1-5).

2.2 SURVEY METHODOLOGY

Survey methodology was based upon the USFWS 2002 Quino checkerspot survey protocol and included walking the project site along the maintained sections of the fuel break, areas that BLM intends to reclaim for the fuel break, and areas containing host plants and nectar sources. Excluded areas (approximately 30 acres) along Shockey Truck Trail include closed canopy chaparral and coastal sage scrub, areas containing heavy grassland and non-native species, graded areas, and steep slopes located around Horse Shoe Canyon and in the vicinity of Scraper Loop Road and Campo Creek. The excluded areas are shown in Figures 2.1-1 through 2.1-5. A total of three focused surveys were completed along Shockey Truck Trail. Table 1 is a summary of the survey dates and field conditions.

Table 1
Summary of Survey Dates, Hours, Field Conditions, and Personnel for
Quino Checkerspot Butterfly Surveys Along Shockey Truck Trail

Date 2002	Hours	Field Conditions			Personnel	
		General	Winds (Beaufort)	Temperature (°F) Start	End	
March 8	1100-1645	Clear skies	1-3	61	57	S Chiang S. Tennant L. Allen M. Dohrn
March 15	Survey cancelled due to unsuitable weather conditions	Partly cloudy- overcast	1-7	53	55	S Chiang S. Tennant L. Allen M. Dohrn
March 20	1115-1500	Clear skies	1-7	67	72	S Chiang S. Tennant L. Allen M. Dohrn

International Fuel Break

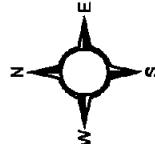
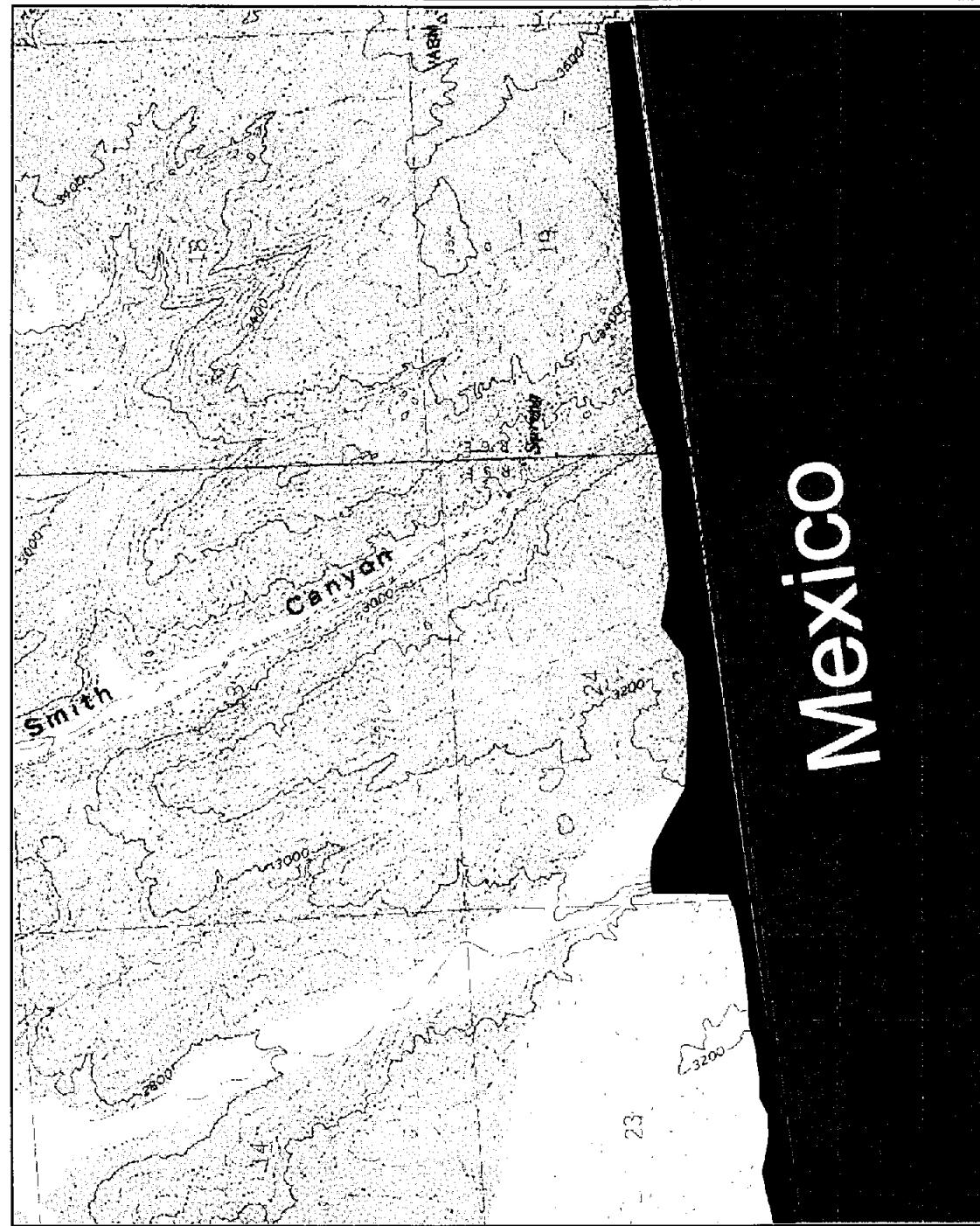
Shockey Truck Trail

Legend

Survey Area

Excluded Areas

International Border



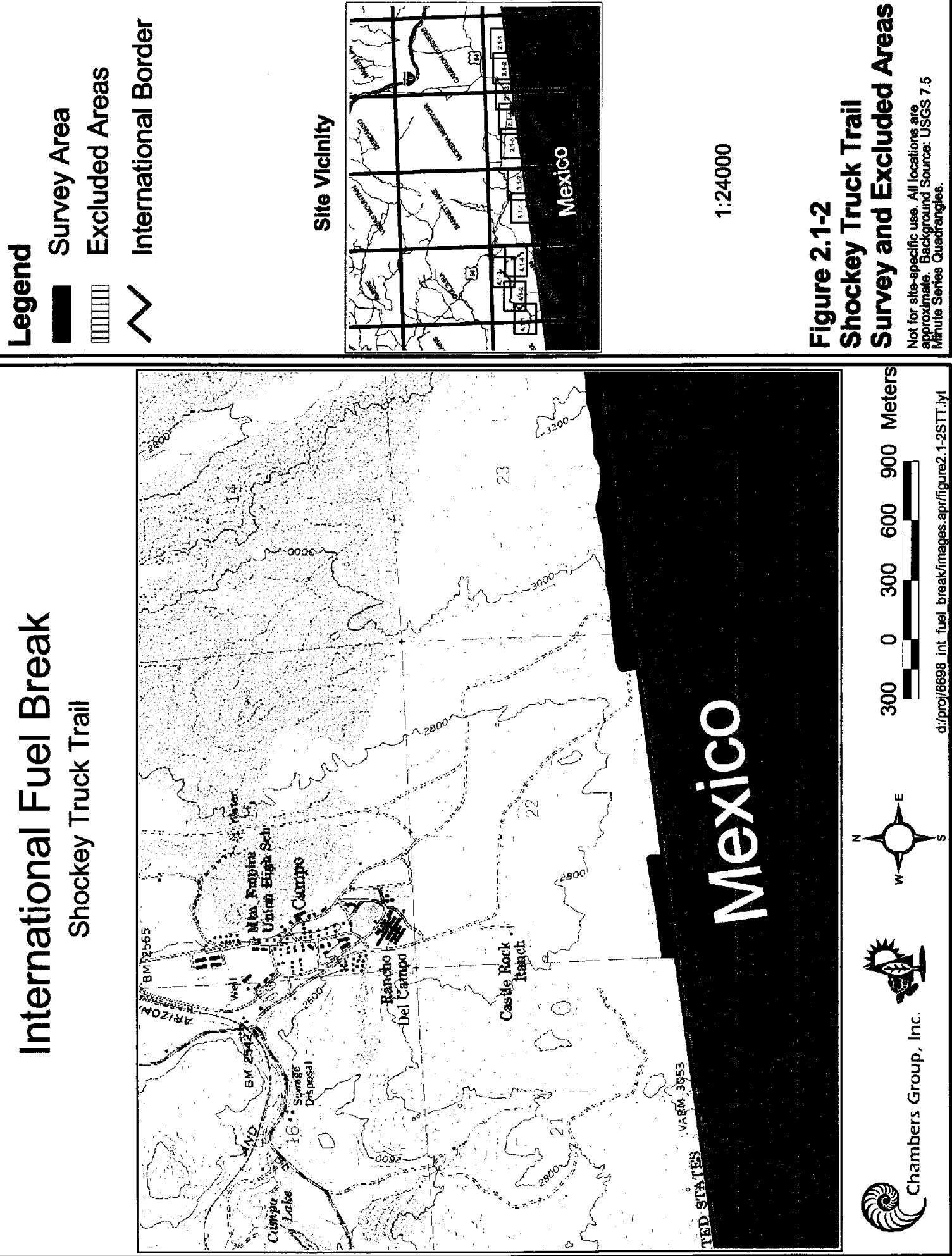
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**Figure 2.1-1
Shockey Truck Trail
Survey and Excluded Areas**

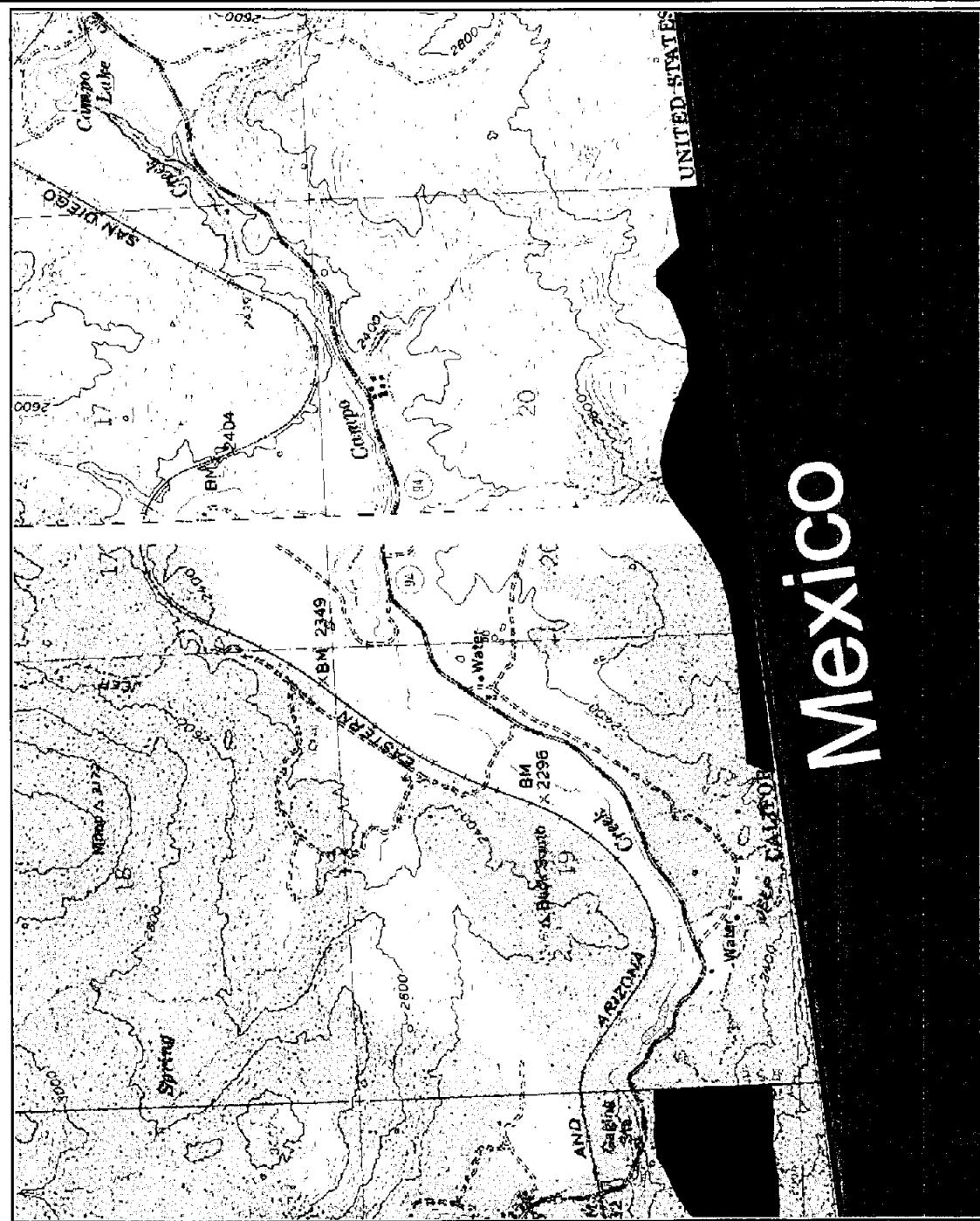
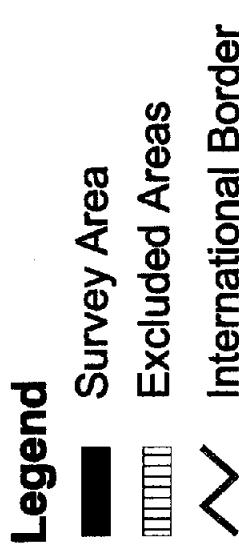
Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

1:24000

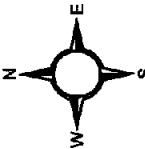
International Fuel Break Shockey Truck Trail



International Fuel Break Shockey Truck Trail



Chambers Group, Inc.



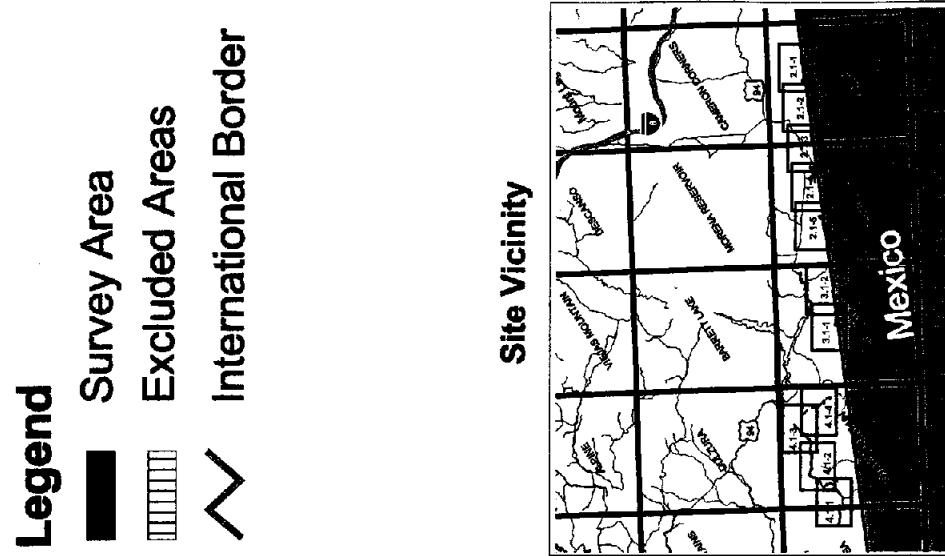
d:/proj/6638_int_fuel_break/images.apr/figure2.1-3STTT.lyt
300 0 300 600 900 Meters



**Figure 2.1-3
Shockey Truck Trail
Survey and Excluded Areas**

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

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International Fuel Break Shockey Truck Trail

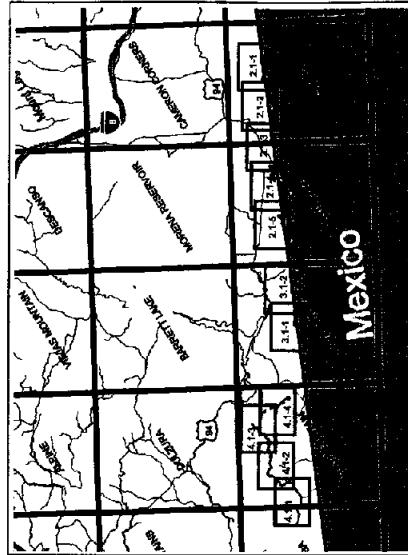
Legend

Survey Area

Excluded Areas

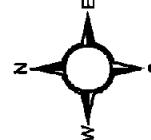
International Border

Site Vicinity



1:24000

Mexico



Chambers Group, Inc.

300 0 300 600 900 Meters

d:/proj/6698_int_fuel_break/images.apr/figure2.1-4STT.M

**Figure 2.1-4
Shockey Truck Trail
Survey and Excluded Areas**

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

International Fuel Break Shockey Truck Trail

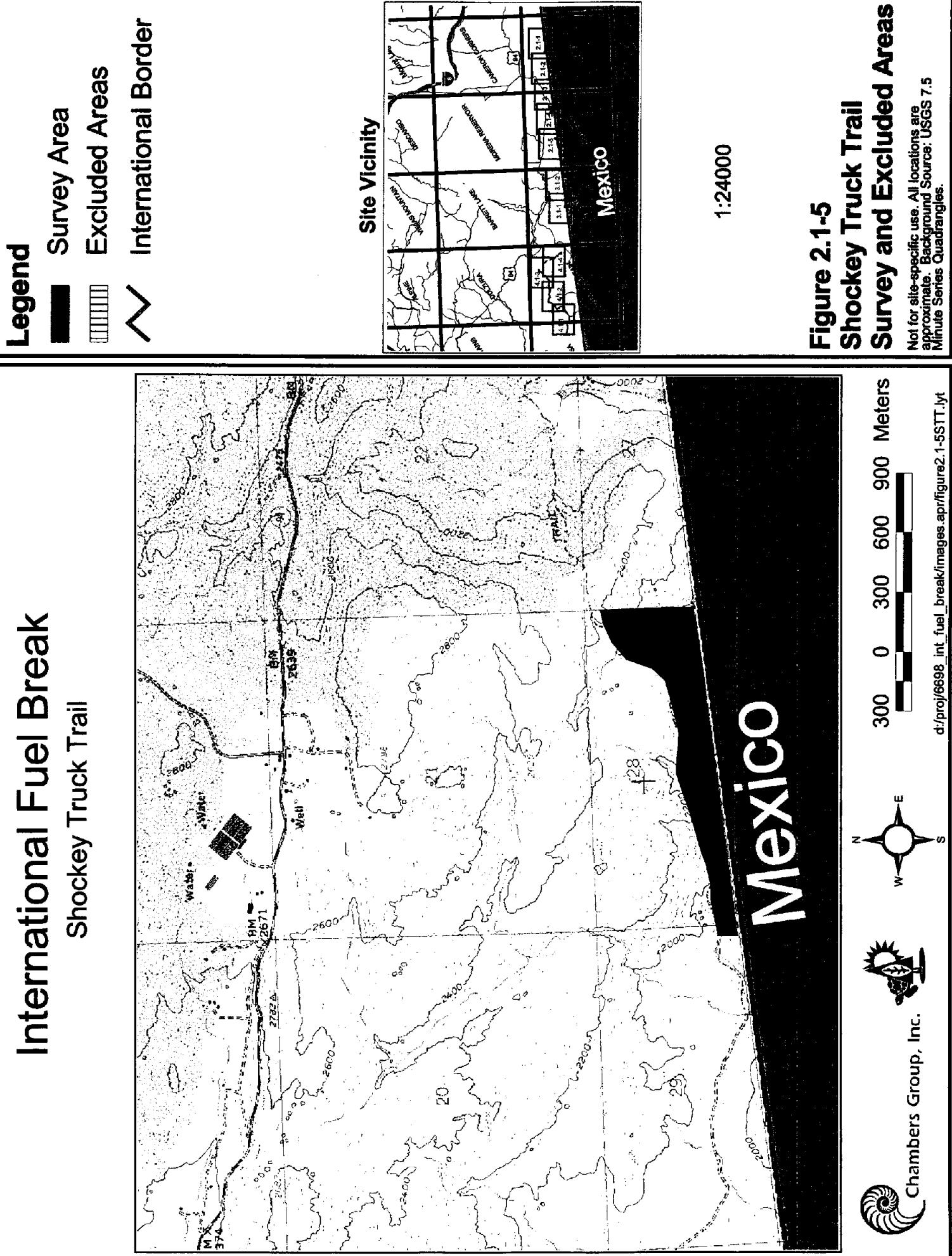


Table 1 (Continued)
Summary of Survey Dates, Hours, Field Conditions, and Personnel for
Quino Checkerspot Butterfly Surveys Along Shockey Truck Trail

Date 2002	Hours	Field Conditions			Personnel	
		General	Winds (Beaufort)	Temperature ("F")		
Start	End					
March 26-27	Survey cancelled due to unsuitable weather conditions	Overcast		<70		S Chiang S. Tennant L. Allen M. Dohrn
April 2	1030-1530	Partly cloudy	1-3	78	72	S Chiang S. Tennant L. Allen C. Mukai

2.3 EXISTING PLANT COMMUNITIES

A diversity of plant communities occurs on the Shockey site. Six plant communities were identified along the Shockey Truck Trail. In addition, ruderal and disturbed areas are present also. A description of each plant community is presented below. The list of plant species identified during the surveys along this section of the fuel break is presented in Appendix D1. Representative site photographs are included as Figures 2.3-1 and 2.3-2.

2.3.1 Scrub and Chaparral Habitats

The coastal sage scrub and chaparral habitat on the site is highly variable in terms of the quality of habitat. Many areas of the coastal sage scrub and chaparral show evidence of fire and mechanical clearing and are in the process of recovering and slowly growing back. These areas are considered disturbed. Regeneration of shrubs after fire tends to be more rapid than after mechanical removal and is clearly seen. Resprouts of most major species (California sagebrush (*Artemesia californica*), California buckwheat (*Eriogonum fasciculatum*), chamise (*Adenostoma fasciculatum*), and deerweed (*Lotus scoparius*) are evident. Herbs dominate the areas in terms of species, cover, and biomass. Areas with prior disturbance contain an open canopy with sparsely distributed California buckwheat, California sagebrush, deerweed, and chamise and a higher percentage of non-native weedy species. Whereas, areas that haven't been disturbed, the shrub cover is generally more continuous with very little understory present. Three types of shrub/chaparral habitats are present on the site and include: Diegan coastal sage scrub, chamise chaparral, and coastal sage-chamise chaparral.

Diegan Coastal Sage Scrub

The Diegan coastal sage scrub vegetation consists primarily of low, drought-deciduous and evergreen shrubs. It typically occurs on steep, xeric (dry) slopes or clay-rich soils that are slow to release water. Dominant species present onsite include California sagebrush and California buckwheat with laurel sumac (*Malosma laurina*) and white sage (*Salvia apiana*) also occurring. Associated species present include deerweed, California matchweed (*Gutierrezia californica*), and pine bush (*Ericameria pinifolia*) with a sparse understory of felter everlasting (*Gnaphalium canescens*) and golden yarrow (*Eriophyllum confertiflorum*). Non-native weedy species present include black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), soft chess (*Bromus hordeaceus*), and foxtail chess (*Bromus madritensis* ssp. *rubens*).



PHOTO 1. REPRESENTATIVE AREA SURVEYED FOR QUINO CHECKERSPOT BUTTERFLY.

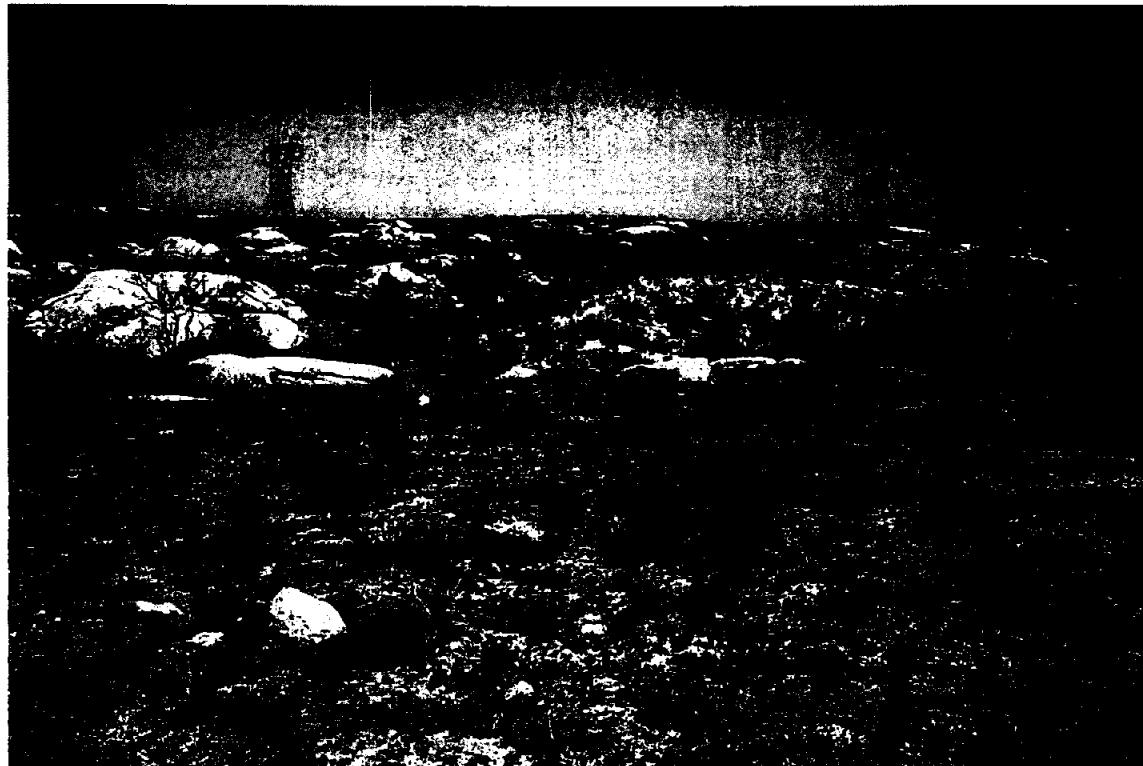


PHOTO 2. REPRESENTATIVE HABITAT SURVEYED FOR QUINO CHECKERSPOT BUTTERFLY SHOWING SPARSELY VEGETATED AREAS, ROCK OUTCROPS, AND CLAY SOILS.

INTERNATIONAL FUEL BREAK
SHOCKEY TRUCK TRAIL
SITE PHOTOGRAPHS
Figure 2.3-1



Chambers Group



PHOTO 3. VIEW OF EXCLUDED AREA SHOWING DENSE CHAPARRAL HABITAT.

INTERNATIONAL FUEL BREAK
SHOCKEY TRUCK TRAIL
SITE PHOTOGRAPHS
Figure 2.3-2

Diegan coastal sage scrub occurs in the western section of the fuel break in dense patches near Scraper Loop Road, within Horse Shoe Canyon through Sacred Canyon and the Rope Road areas (Figure 2.1-3 and 2.1-5). Disturbed coastal sage scrub occurs near Smith Canyon (Figure 2.1-1 and 2.1-2).

Chamise Chaparral

Chaparral generally consists of evergreen, medium to tall shrubs that are adapted to occasional wildfires. Chamise chaparral consists of vegetation that is dominated by chamise. Mature stands are densely interwoven with very little herbaceous understory or litter. Species present on the site include chamise and hairy yerba santa (*Eriodictyon trichocalyx*), with an understory of deerweed, white sage, and California buckwheat. Dense chamise chaparral occurs on steep slopes in the central sections of the fuel break and the Rope Road areas (Figure 2.1-1 and 2.1-3). Several areas of chamise chaparral were disturbed as a result of previous fires and clearing as stated above. These areas occur near Smith Canyon and the east end of the fuel break (Figure 2.1-1).

Coastal sage-Chamise Chaparral

Coastal sage-chamise chaparral scrub is an intergradation of chaparral and sage scrub communities, and is characterized by component plant species of both community types. The species observed in the coastal sage-chaparral scrub onsite include chamise, California buckwheat, California sagebrush, ceanothus (*Ceanothus* sp.), scrub oak (*Quercus berberidifolia*), bigberry manzanita (*Arctostaphylos glauca*), and laurel sumac. Dense coastal sage-chamise chaparral occurs near Scraper Loop Road (Figure 2.1-5) in the west end and disturbed coastal sage-chamise chaparral occurs near Smith Canyon and the east end of the fuel break (2.1-1 and 2.1-2).

2.3.2 Riparian and Woodland Habitats

Mule Fat Scrub

Mule fat scrub is a tall, herbaceous riparian scrub community dominated by mule fat (*Baccharis salicifolia*). This community is an early seral stage that forms in damp sandy soils and is maintained by frequent flooding. When such flooding is absent, this community usually changes into cottonwood-sycamore riparian forest or woodland (Holland 1986). Mule fat scrub occurs in a small area within Campo Creek in the western portion of the fuel break (Figure 2.1-4).

Southern Cottonwood-Willow Riparian Forest

Southern cottonwood-willow riparian forest is an open, broadleaved, winter deciduous riparian forest dominated by Fremont's cottonwood (*Populus fremontii*) and several species of willow trees (*Salix* sp.). Several herbaceous species onsite including cattail (*Typha latifolia*) and annual beard grass (*Polypogon monspeliensis*) are present in the understory. This vegetation community occurs along Campo Creek (Figure 2.1-4).

Coast Live Oak Woodland

Coast live oak woodland is dominated by coast live oak (*Quercus agrifolia*), but unlike the coast live oak riparian forest, the woodland is not always directly associated with a drainage. The coverage of the canopy is generally more open in this type of woodland than that found in the riparian community. These areas support a dense closed-canopy coast live oak woodland dominated by coast live oak with very little understory. This community occurs within Smith and La Gloria Canyons located in the eastern portion of the fuel break (Figure 2.1-1).

2.3.3 Other Areas

Ruderal

Ruderal areas are generally a result of disturbances caused by humans. Ruderal areas are typically characterized by heavily compacted or frequently disturbed soils. Plant species occurring in ruderal areas are adapted to survive in these conditions and readily colonize disturbed ground. Ruderal areas on the site exhibit varying degrees of past surface disturbance. The plant species that occur in this area onsite include black mustard, tocalote (*Centaurea melitensis*), deerweed, California buckwheat, red-stemmed filaree (*Erodium cicutarium*), felty everlasting, and California matchweed. Ruderal communities within the fuel break occur in the eastern portion near Forest Gate Road and in a large portion of the fuel break after La Gloria Canyon (Figure 2.1-1 and 2.1-2).

Disturbed Areas

Disturbed areas are those areas that are either devoid of native vegetation (cleared or graded) including dirt roads, or areas dominated by a sparse cover of ruderal vegetation. The disturbed areas on the site include the dirt roads that access the fuel break and the numerous immigrant trails scattered throughout the site.

2.4 HOST PLANT DISTRIBUTION AND NECTARING SPECIES

Only one host plant for the Quino, bird's beak, was observed during the focused surveys. However, only senescent bird's beak was observed along the fuel break; no individuals from this spring were in bloom. Low to moderate amounts of nectar sources occur throughout the fuel break including: onion (*Allium* sp.), common fiddleneck, cryptantha (*cryptantha* sp.), popcorn flower (*Plagiobothrys* sp.), pinebush, California buckwheat, red-stemmed filaree, and coast goldfields (*Lasthenia californica*). These nectar resources are generally scattered throughout the survey area and vary according to the habitat quality of the fuel break. Cryptogamic crusts and clay soils were observed at various locations along Shockey Truck Trail. The list of host plant and nectaring species identified during the surveys is presented in Appendix C. All host plants were mapped on a 7.5 minute topographic quadrangle (Figures 2.4-1 through 2.4-5).

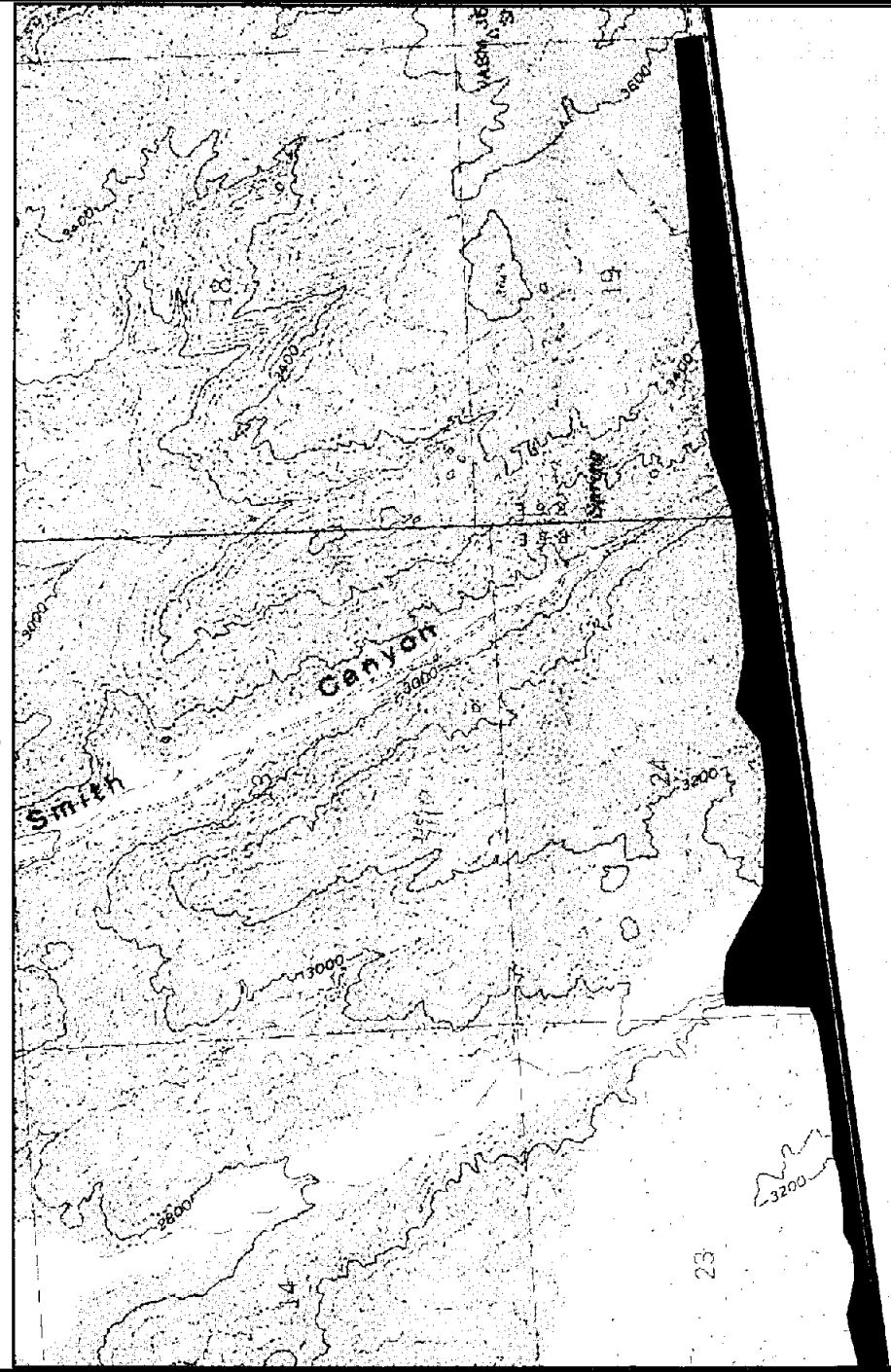
2.5 ADULT FOCUSED SURVEYS

Quino checkerspot butterflies were not observed along the Shockey Truck Trail section of the fuel break. A total of 20 butterfly species were observed during the survey season. Behr's metalmark, perplexing hairstreaks, and funeral duskywings were by far the most abundant species observed. The complete list of butterflies is included in Appendix E. Despite the presence of suitable topographical features (i.e., rock outcrops, hilltops, and ridgelines) and nectar sources, the results of the focused surveys for adult Quino conducted along the Shockey Truck Trail section of the International Fuel Break during the 2002 flight season were negative.

International Fuel Break

Quino Checkerspot Butterfly Survey Areas

Shockey Truck Trail



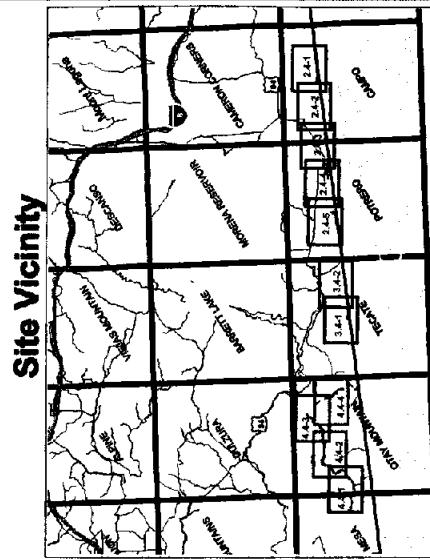
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Survey Area

International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



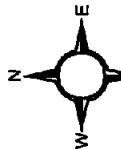
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Figure 2.4-1
Shockey Truck Trail
Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.



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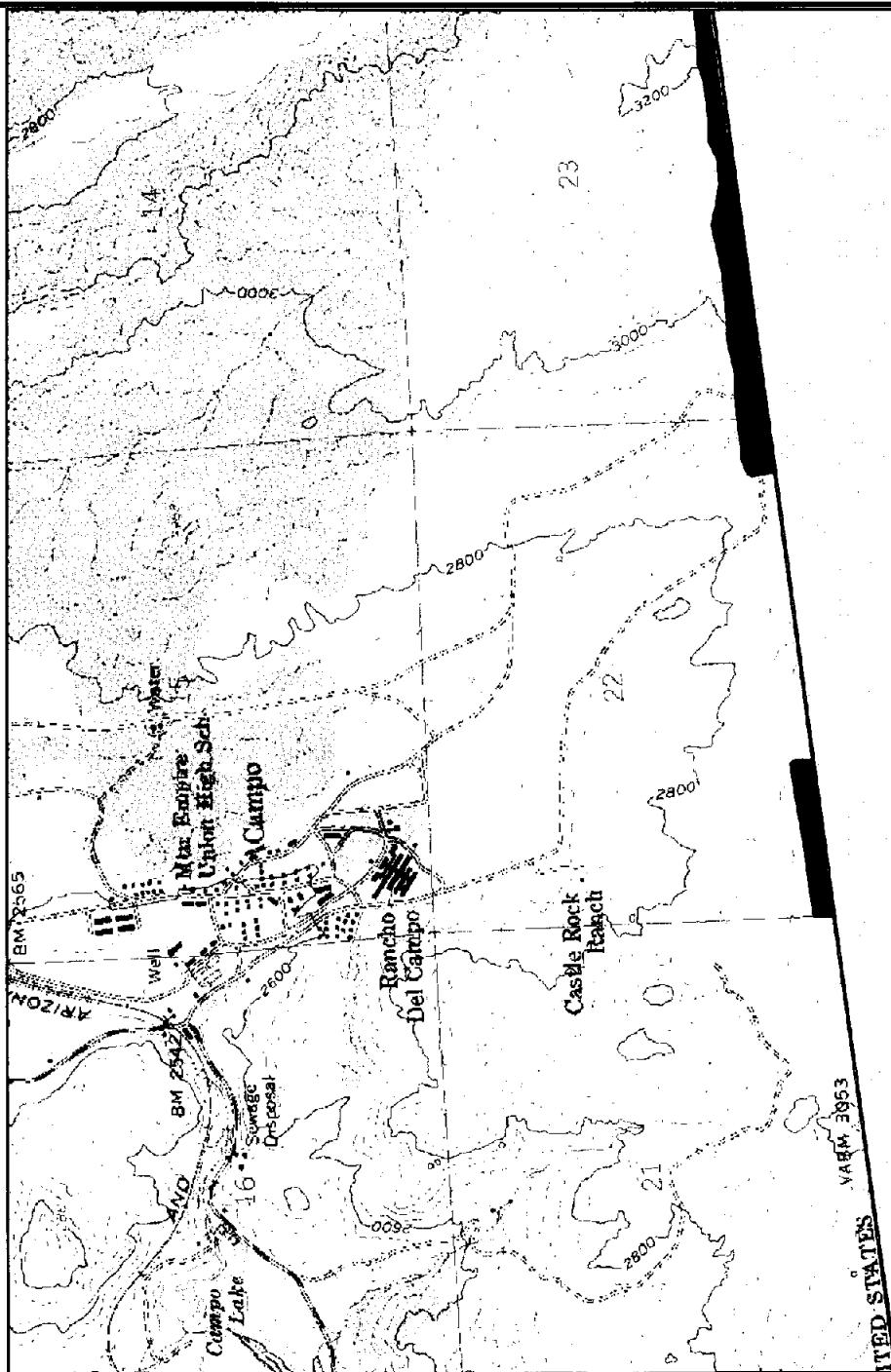


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International Fuel Break

Quino Checkerspot Butterfly Survey Areas

Shockey Truck Trail



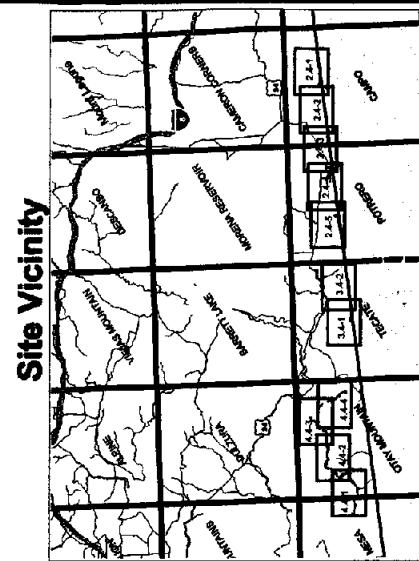
Legend

Survey Area

International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*

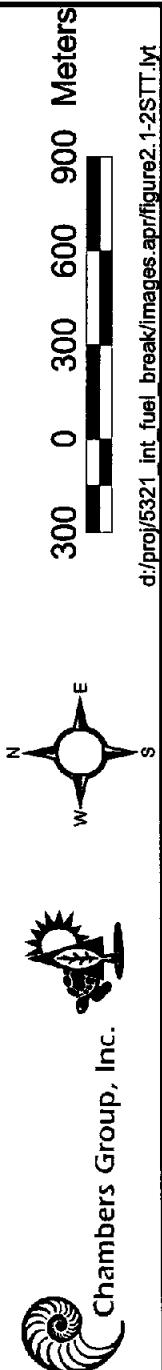


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Figure 2.4-2
Shockey Truck Trail
Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

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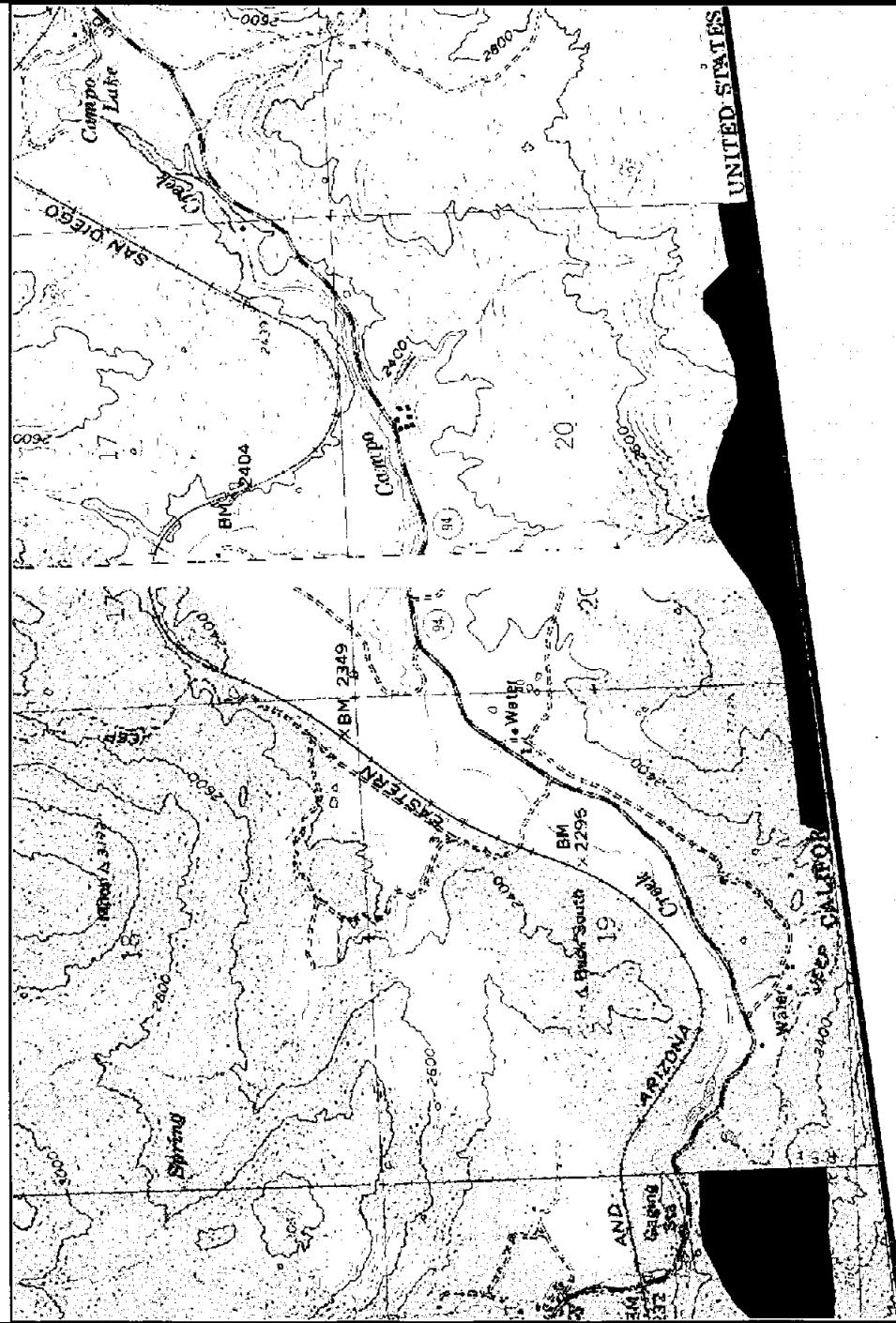


Chambers Group, Inc.

International Fuel Break

Quino Checkerspot Butterfly
Survey Areas

Shockey Truck Trail



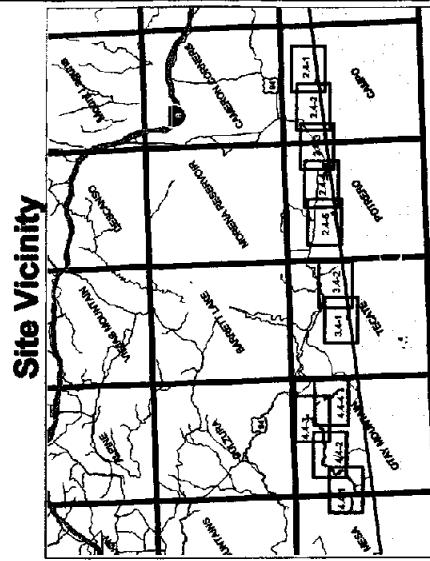
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Survey Area

International Border

Host Plant Locations

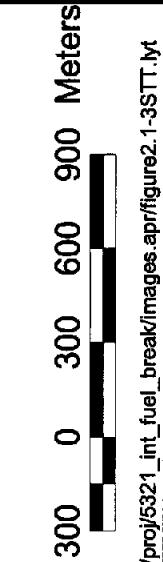
- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



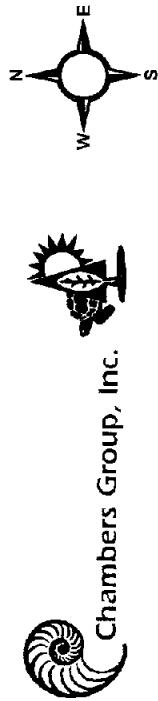
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Figure 2.4-3
Shockey Truck Trail
Host Plant Locations

Not for site-specific use. All locations are approximants. Background Source: USGS 7.5 Minute Series Quadrangles.



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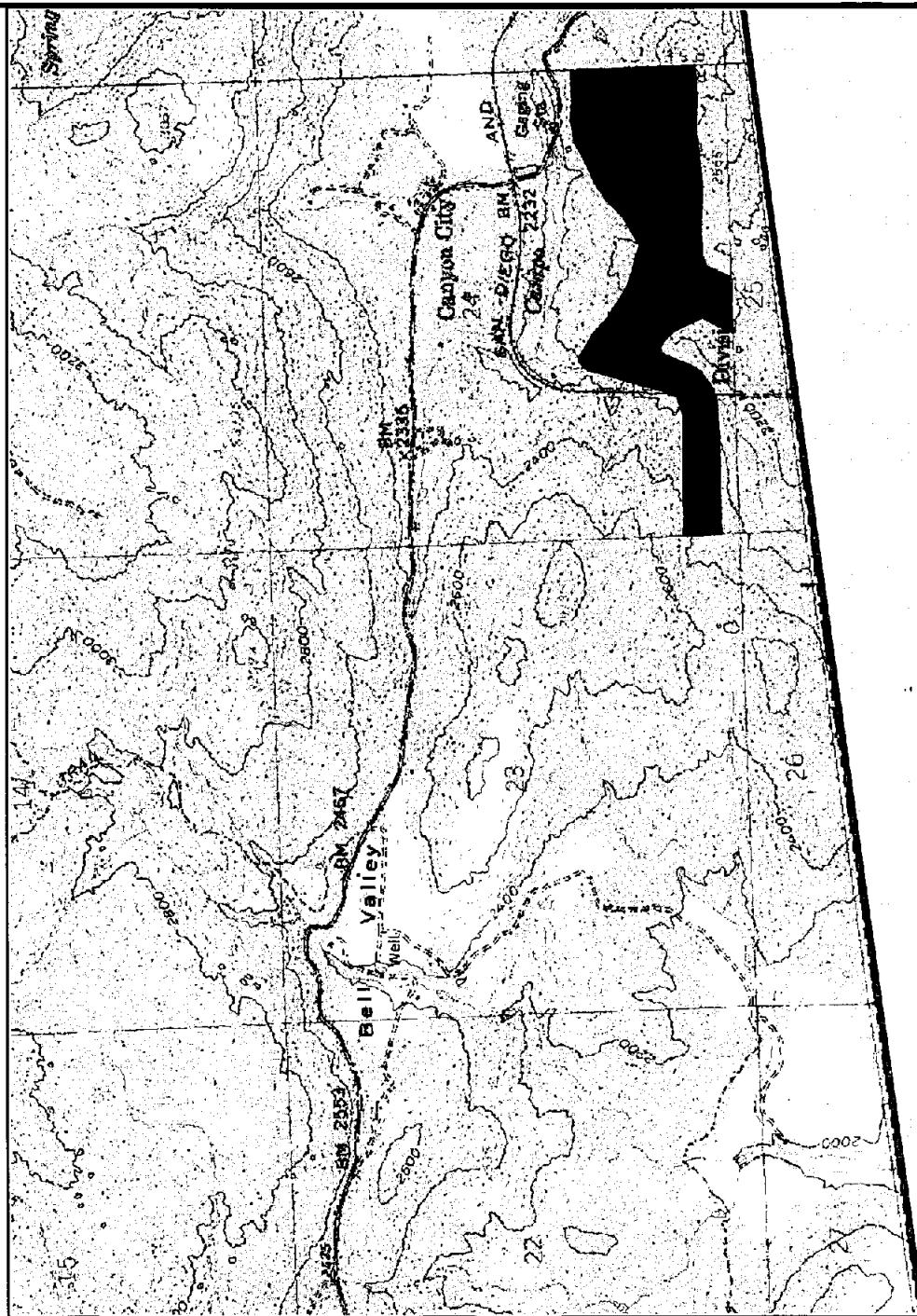


International Fuel Break

Quino Checkerspot Butterfly

Survey Areas

Shockey Truck Trail



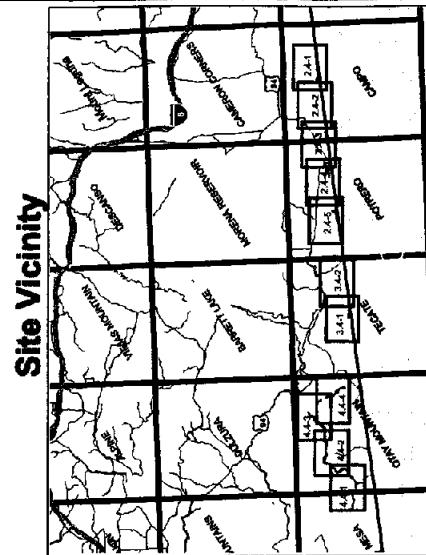
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Survey Area

International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



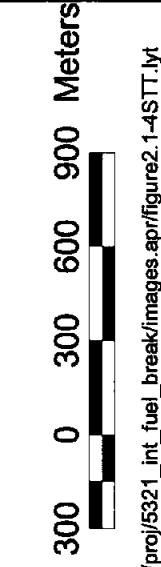
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Figure 2.4-4

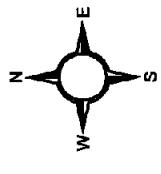
Shockey Truck Trail

Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.



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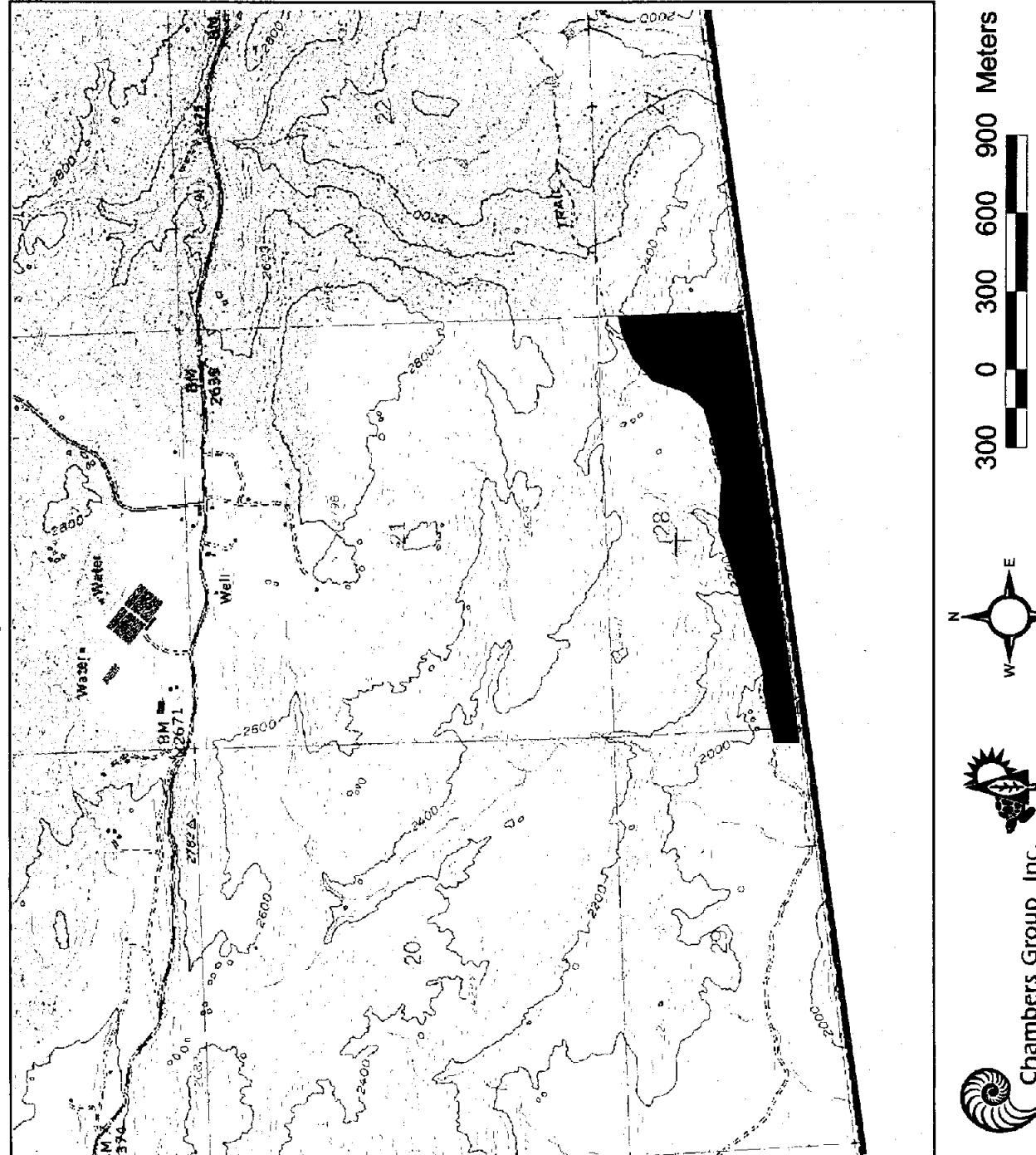


Chambers Group, Inc.

International Fuel Break

Quino Checkerspot Butterfly
Survey Areas

Shockey Truck Trail



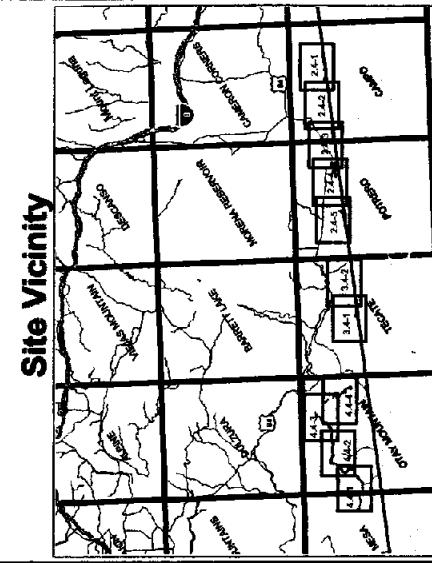
Legend

Survey Area

International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



1:24000

Figure 2.4-5

Shockey Truck Trail Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.



Chambers Group, Inc.



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SECTION 3.0 – TECATE PEAK FUEL BREAK

3.1 SITE LOCATION AND DESCRIPTION

The survey area for the Tecate Peak portion of the fuel break contains approximately 75 acres of habitat located southwest of the city of Tecate, east of State Highway 805, and south of State Highway 94 in San Diego County, California. It begins just south of the Tecate Peak lookout tower and ends east of Tecate Road (Highway 188). The fuel break runs east to west and can be accessed via State Highway 94. Elevation on the Tecate Peak fuel break ranges from approximately 2,200 feet above MSL to 3,200 feet above MSL. Although USGS blue-line drainages do not cross the survey area, there are several USGS blue-line drainages located in the vicinity including: Cottonwood Creek to the west, Potrero Creek to the north and Campo Creek to the east. These are all tributaries of the Tijuana River. Figure 1 shows the vicinity map of where these surveys were conducted. Specifically, the site is located within Sections 26 and 28 of T.18 S and R. 3 E on the USGS Tecate, California, 7.5-minute topographic quadrangle (Figures 3.1-1 and 3.1-2).

3.2 SURVEY METHODOLOGY

Survey methodology was based upon the USFWS 2002 Quino checkerspot survey protocol and included walking the project site along the maintained sections of the fuel break, areas that BLM intends to reclaim for the fuel break, and areas containing host plants and nectar sources. All habitat within the Tecate Peak portion of the fuel break was considered suitable Quino habitat and is shown on Figures 3.1-1 and 3.1-2. A total of four focused surveys were completed at Tecate Peak. Table 2 is a summary of the survey dates and field conditions.

Table 2
Summary of Survey Dates, Hours, Field Conditions, and
Personnel for Quino Checkerspot Butterfly Surveys at Tecate Peak

Date 2002	Hours	Field Conditions			Personnel	
		General	Winds (Beaufort)	Temperature (°F)	Start	End
March 13-14	Surveys cancelled due to unsuitable weather conditions	Overcast		<70		S. Chiang S. Tennant L. Allen M. Dohrn C. Mukai
March 20	1530-1730	Clear skies	1-3	70	60	S. Chiang S. Tennant L. Allen M. Dohrn
March 22	1100-1315	Partly cloudy	1-3	74	79	S. Chiang S. Tennant L. Allen C. Mukai
March 26-27	Survey cancelled due to unsuitable weather conditions	Overcast		<70		S. Chiang S. Tennant L. Allen M. Dohrn

Table 2 (Continued)
Summary of Survey Dates, Hours, Field Conditions, and
Personnel for Quino Checkerspot Butterfly Surveys at Tecate Peak

Date 2002	Hours	Field Conditions				Personnel
		General	Winds (Beaufort)	Temperature (°F)		
				Start	End	
April 2	1530-1615	Partly cloudy	1-3	72	72	S Chiang S. Tenant L. Allen C. Mukai
April 3	1130-1300	Clear skies	1-3	75	80	S Chiang S. Tenant L. Allen C. Mukai

3.3 EXISTING PLANT COMMUNITIES

Two plant communities were identified on the Tecate site. In addition, ruderal and disturbed areas occur on the site also. A brief description of each plant community is presented below. The list of plant species identified during the surveys along this section of the fuel break is presented in Appendix D2. Representative site photographs are included as Figure 3.3-1.

3.3.1 Sage Scrub and Chaparral Habitats

Southern Mixed Chaparral

Chaparral habitat is characterized by large, evergreen shrubs that are adapted to occasional wildfires. Southern mixed chaparral, is the most mesic expression of the southern California chaparral types and it is extremely dense. It is present at higher elevations on steep canyon slopes and intergrades with coast live oak woodland and coastal sage scrub communities. Shrub species found in this community onsite include chamise, Eastwood's manzanita (*Arctostaphylos glandulosa*), bigberry manzanita, birch-leaf mountain-mahogany (*Cercocarpus betuloides*), smooth mountain-mahogany (*Cercocarpus minutiflorus*), laurel sumac, and scrub oak. Other species found in the occassional openings in the plant community include felty everlasting, hairy yerba santa, and California matchweed. This community is present in the western section along the steeper elevations of the fuel break (Figure 3.3-1).

Coastal Sage – Chamise Chaparral

The chaparral species observed in the coastal sage-chamise chaparral scrub onsite include chamise, bigberry manzanita, and laurel sumac. California sagebrush, deerweed and California buckwheat are common sage scrub species occurring in this community. This community occurs throughout the fuel break with several disturbed areas recovering from previous fires and habitat clearing (Figures 3.1-1 and 3.1-2).

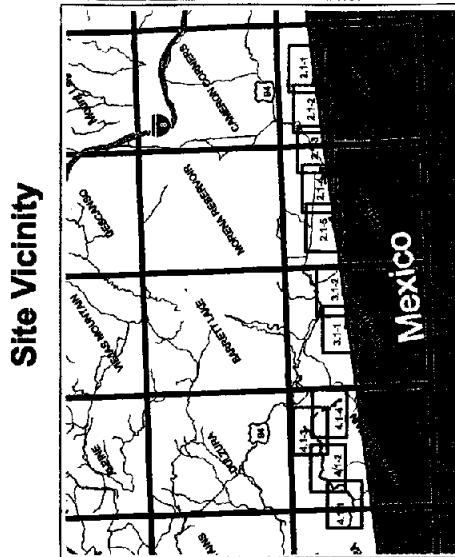
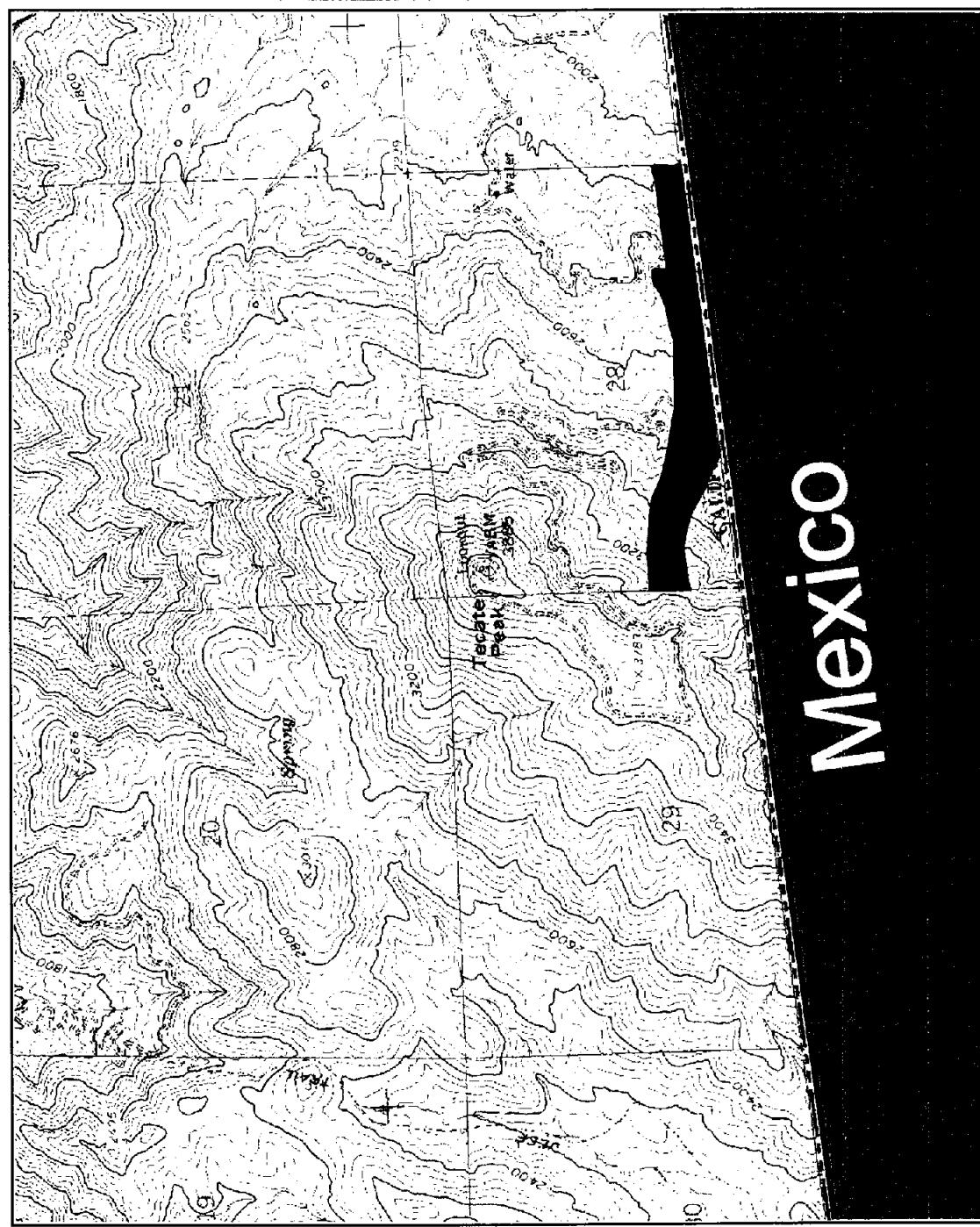
3.3.2 Other Areas

Ruderal

Ruderal communities occur in the eastern section of the Tecate fuel break along the border fence areas. This community is dominated by broad-lobed filaree (*Erodium botrys*) with black mustard, foxtail chess, and deerweed occurring also.

International Fuel Break

Tecate



1:24000

Figure 3.1-1
Tecate
Survey and Excluded Areas

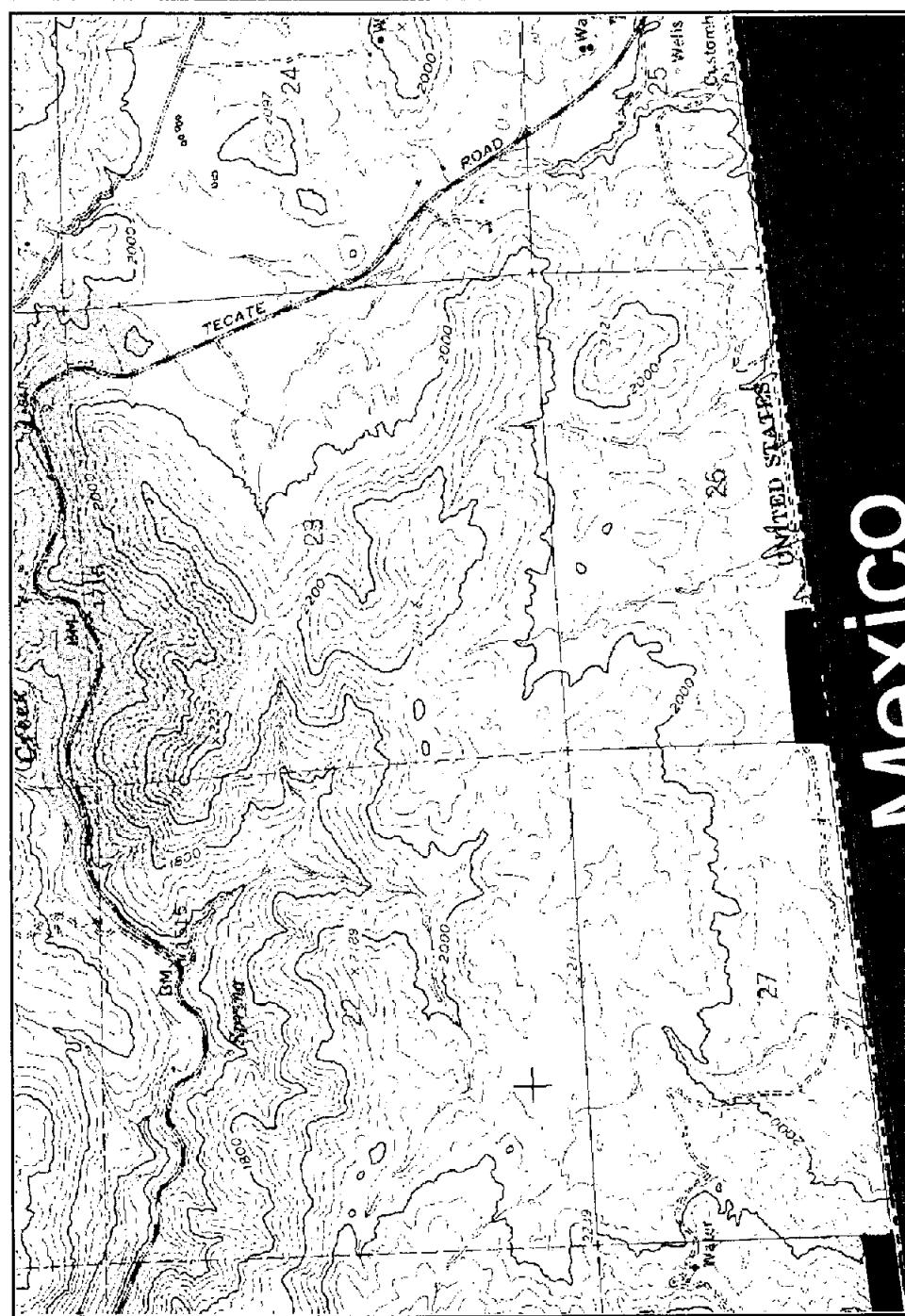
Not for site-specific use. All locations are approximate. Background source: USGS 7.5 Minute Series Quadrangles.

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International Fuel Break

Tecate



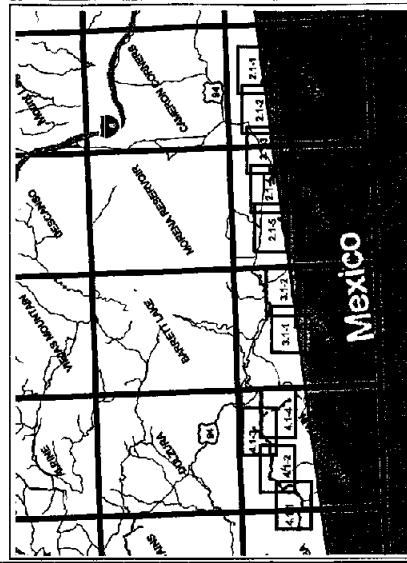
Legend

Survey Area

Excluded Areas

International Border

Site Vicinity



1:24000

Figure 3.1-2
Tecate
Survey and Excluded Areas

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

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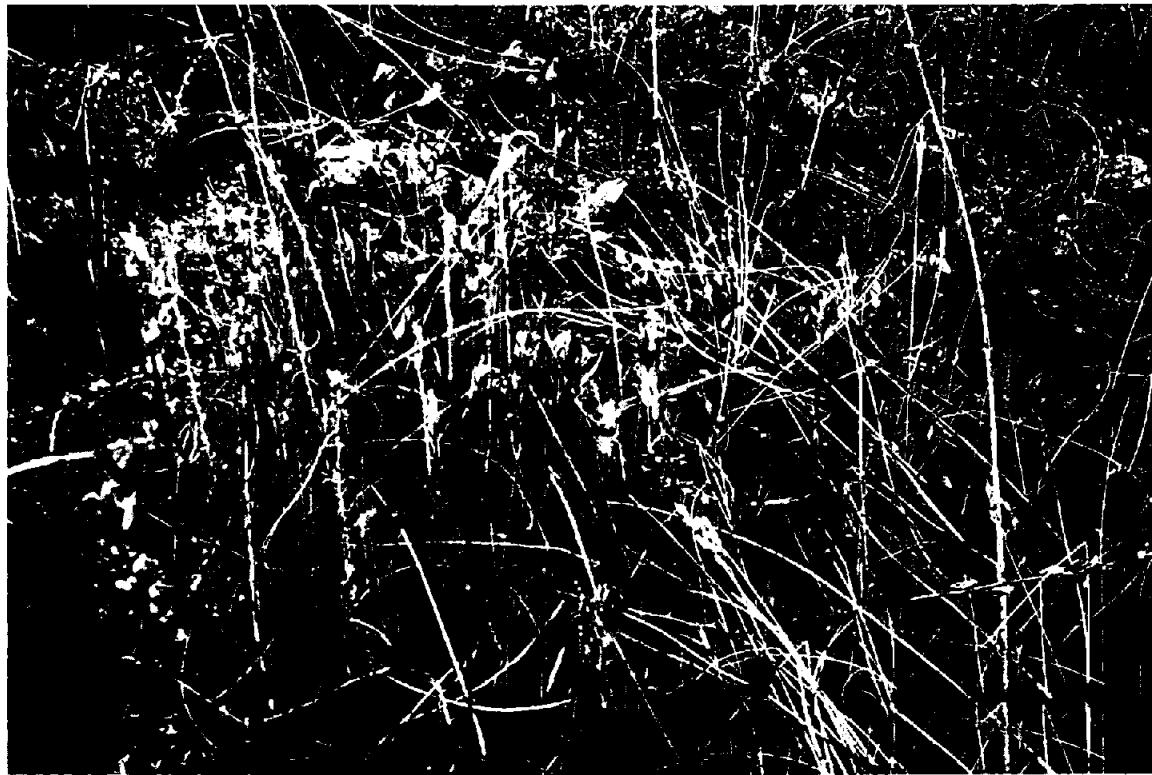


PHOTO 1. REPRESENTATIVE AREA SURVEYED FOR QUINO CHECKERSPOUT BUTTERFLY. CLOSE-UP OF QUINO HOST PLANT, PURPLE OWL'S CLOVER (*Castilleja exserta*).



PHOTO 2. REPRESENTATIVE HABITAT SURVEYED FOR QUINO CHECKERSPOUT BUTTERFLY SHOWING SPARSELY VEGETATED AREAS AND HILTOPS.

INTERNATIONAL FUEL BREAK
TECATE PEAK
SITE PHOTOGRAPHS
Figure 3.3-1

Disturbed Areas

The disturbed areas on the site include the dirt roads that access the fuel break and the numerous immigrant trails scattered throughout the site.

3.4 HOST PLANT DISTRIBUTION AND NECTARING SPECIES

Various host plants for the Quino including, western plantain, bird's beak, and purple owl's clover, were observed along Tecate Peak during the focused surveys. The western plantain varied from moderate to high quality with several dense habitat patches. The purple owl's clover was not as abundant as the plantain and was just beginning to flower. Although the bird's beak was the most abundant host plant observed, all plants were senescent. Bird's beak was scattered throughout the fuel break, with the highest concentrations located in the eastern portions, while the plantain and purple owl's clover were restricted to the western portions of the fuel break closer to the Tecate Peak lookout tower. Low to moderate amounts of nectar sources occur throughout the fuel break including: popcorn flower, pinebush, hairy yerba santa, California buckwheat, red-stemmed filaree, coast goldfields, strigose lotus, and chia (*Salvia columbariae*). Cryptogamic crusts and clay soils were observed onsite. The list of host plant and nectar species identified during the surveys is presented in Appendix C. All host plants were mapped on a 7.5 minute topographic quadrangle (Figures 3.4-1 and 3.4-2).

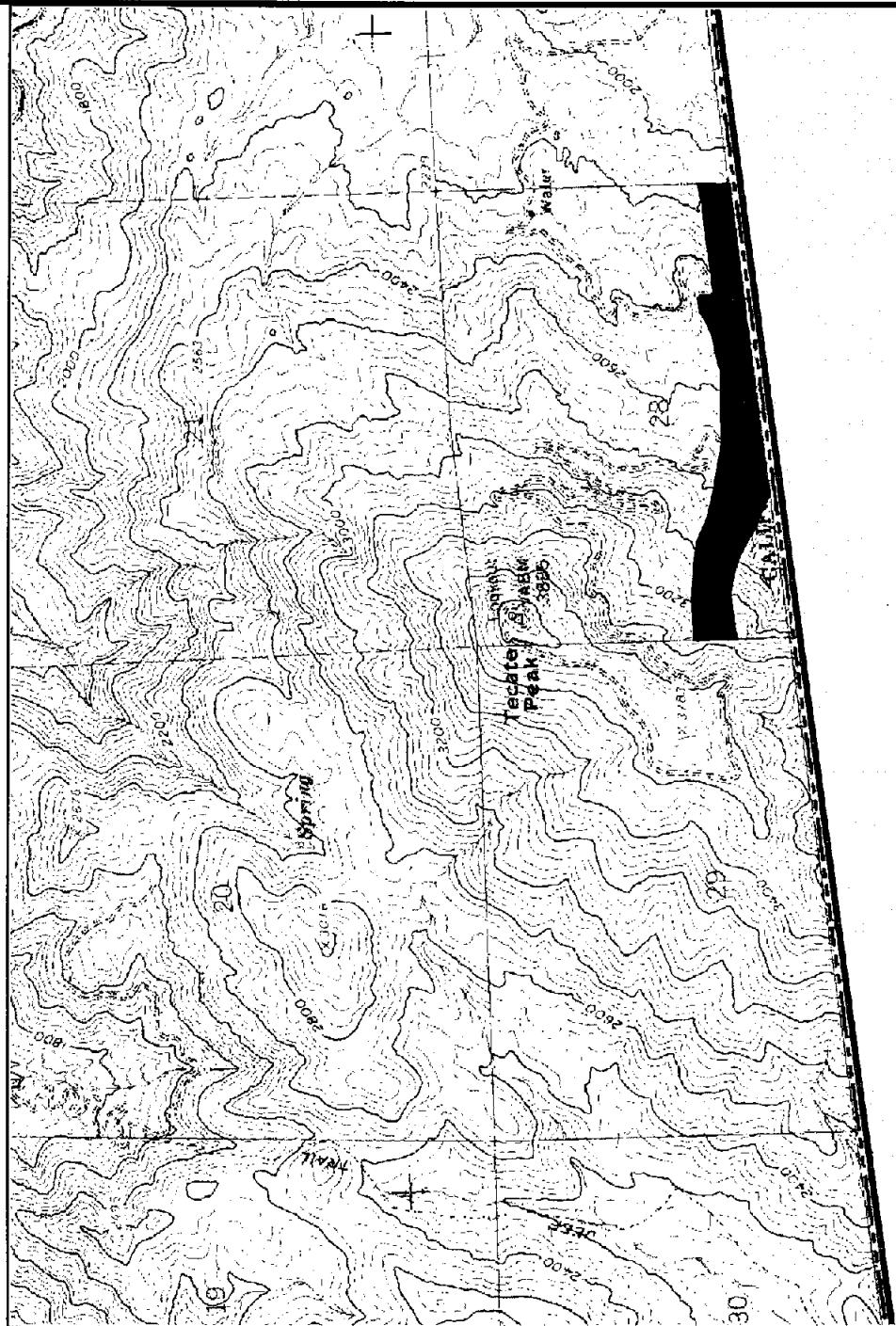
3.5 ADULT FOCUSED SURVEYS

Quino checkerspot butterflies were not observed along the Tecate Peak section of the fuel break. A total of 11 species of butterflies were observed during the survey season. Southern blue, perplexing hairstreaks, and funeral duskywings were the most abundant species observed. The complete list of butterflies is included in Appendix E. Despite the presence of host plants, suitable topographical features, open and clay soils, old roads, and rocky outcrops, the results of the focused surveys for adult Quino checkerspots conducted at the Tecate Peak portion of the International Fuel Break during the 2002 flight season were negative. In addition, following the survey on April 2, 2002, the biologists looked for larval/egg clustering on western plantain and purple owl's clover within the western portion of the fuel break. No larval or egg clusters were observed.

International Fuel Break

Quino Checkerspot Butterfly
Survey Areas

Tecate



Legend

Survey Area

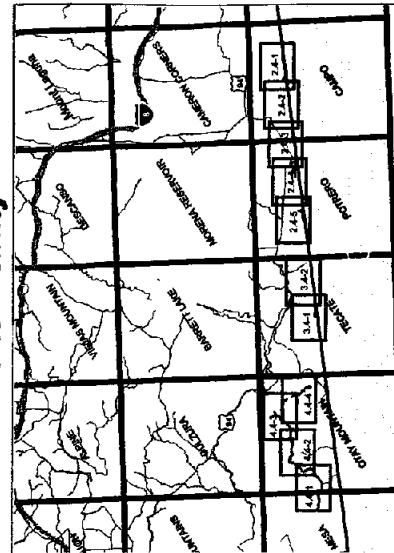
International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



Site Vicinity



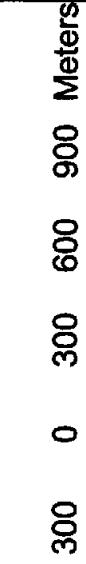
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Figure 3.4-1

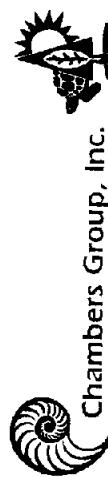
Tecate

Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.



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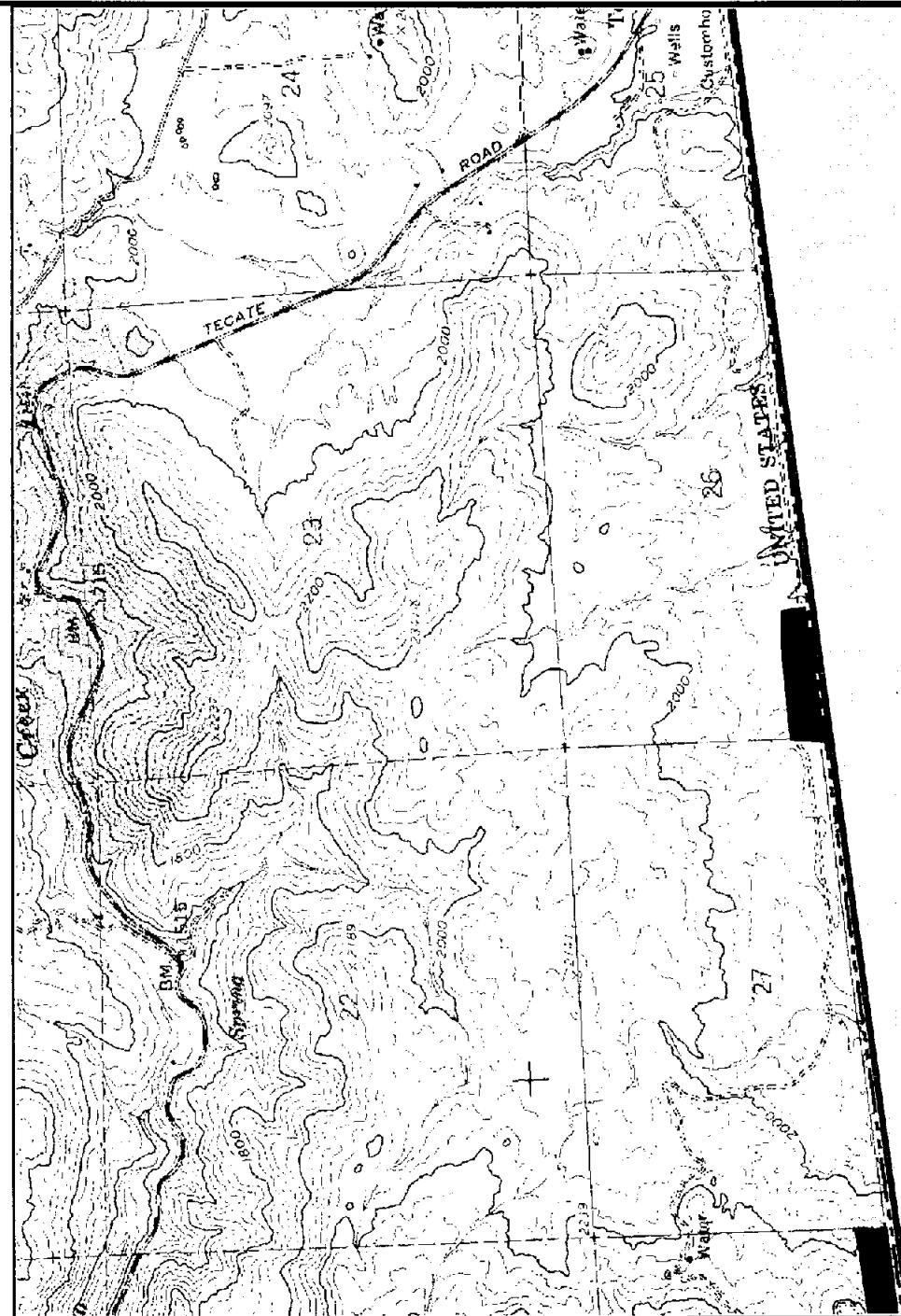


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International Fuel Break

Quino Checkerspot Butterfly
Survey Areas

Tecate



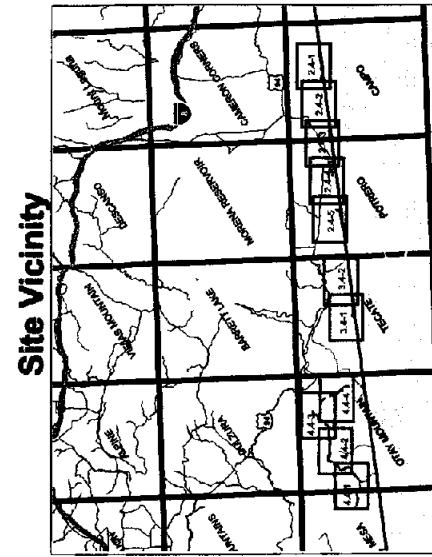
Legend

Survey Area

International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*

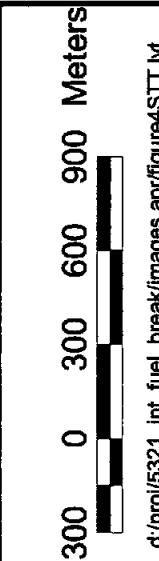


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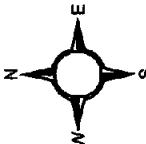
Figure 3.4-2

Tecate Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.



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SECTION 4.0 – OTAY MOUNTAIN

4.1 SITE LOCATION AND DESCRIPTION

The Otay Mountains are part of the San Ysidro Mountains, which lie on both sides of the U.S.-Mexico border. The survey areas within the Otay Mountain portion of the fuel break contain approximately 194 acres of habitat located west of the city of Tecate, east of State Highway 805 and south of State Highway 94 in San Diego County, California. The site is located north of the Mexican border and runs east to west and can be accessed via State Highway 94 and Marron Valley Road. The Otay Truck Trail crosses Otay Mountain and elevation ranges from 1,500 feet above MSL to 3,200 feet above MSL. As identified on the USGS topographic quadrangle, a blue-line drainage (Donohoe Spring) occurs at the far east end of the site. Figure 1 shows the vicinity map of where these surveys were conducted. Specifically, the site is located within Section 28 of T. 18 S and R. 1 E on the USGS Otay Mesa, California, 7.5-minute topographic quadrangle and ends in Section 27 of T. 18 S and R. 2 E on the Otay Mountain, California, 7.5-minute topographic quadrangle. The majority of the linear survey site runs through the San Ysidro Mountains on unnumbered sections of the Otay Mountain quadrangle (Figures 4.1-1 through 4.1-4).

4.2 SURVEY METHODOLOGY

Survey methodology was based upon the USFWS 2002 Quino checkerspot survey protocol and included walking the project site along the maintained sections of the fuel break, areas that BLM intends to reclaim for the fuel break, and areas containing host plants and nectar sources. Excluded areas (approximately 39 acres of dense chaparral and steep slopes) are shown in Figures 4.1-1 through 4.1-4. A total of three focused surveys were completed at Otay Mountain. Table 3 is a summary of the survey dates and field conditions.

Table 3
Summary of Survey Dates, Hours, Field Conditions, and Personnel for
Quino Checkerspot Butterfly Surveys at Otay Mountain

Date 2002	Hours	Field Conditions			Personnel	
		General	Winds (Beaufort)	Temperature ("F)		
				Start	End	
March 6	1020-1600	Partly cloudy	<1	71	60	S Chiang S. Tennant L. Allen M. Dohrn
March 13-14	Surveys cancelled due to unsuitable weather conditions	Overcast		<70		S Chiang S. Tennant L. Allen M. Dohrn
March 22	1400-1600	Partly cloudy	1-3	72	67	S Chiang S. Tennant L. Allen C. Mukai

Table 3 (Continued)
Summary of Survey Dates, Hours, Field Conditions, and Personnel for
Quino Checkerspot Butterfly Surveys at Otay Mountain

Date 2002	Hours	Field Conditions			Personnel	
		General	Winds (Beaufort)	Temperature (°F)		
Start	End					
March 29	Survey cancelled due to unsuitable weather conditions	Overcast		<70		S Chiang S. Tennant L. Allen M. Dohrn
April 3	1330-1700	Clear skies	<1	73	60	S Chiang S. Tennant L. Allen C. Mukai
April 10	1030-1700	Clear skies	1-3	68	78	S Chiang S. Tennant L. Allen C. Mukai
April 12	1030-1645	Clear skies-partly cloudy	1-3	67	65	S Chiang S. Tennant L. Allen C. Mukai

4.3 EXISTING PLANT COMMUNITIES

A diversity of plant communities occurs on the Otay Mountain fuel break. The Otay Mountains contain an assemblage of very restricted and unique plants. The predominant vegetation is chaparral with coastal sage scrub intermixed at lower elevations. Five plant communities were identified within the Otay Mountain fuel break. A description of each vegetation community is presented below. The list of plant species identified during the surveys along this section of the fuel break is presented in Appendix D3. Representative site photographs are included as Figures 4.3-1 through 4.3-3.

4.3.1 Sage Scrub and Chaparral Habitats

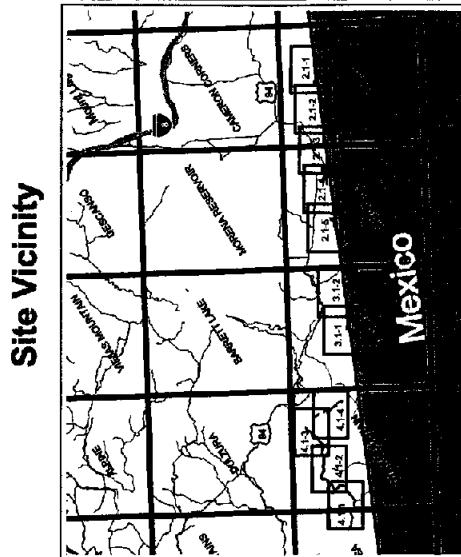
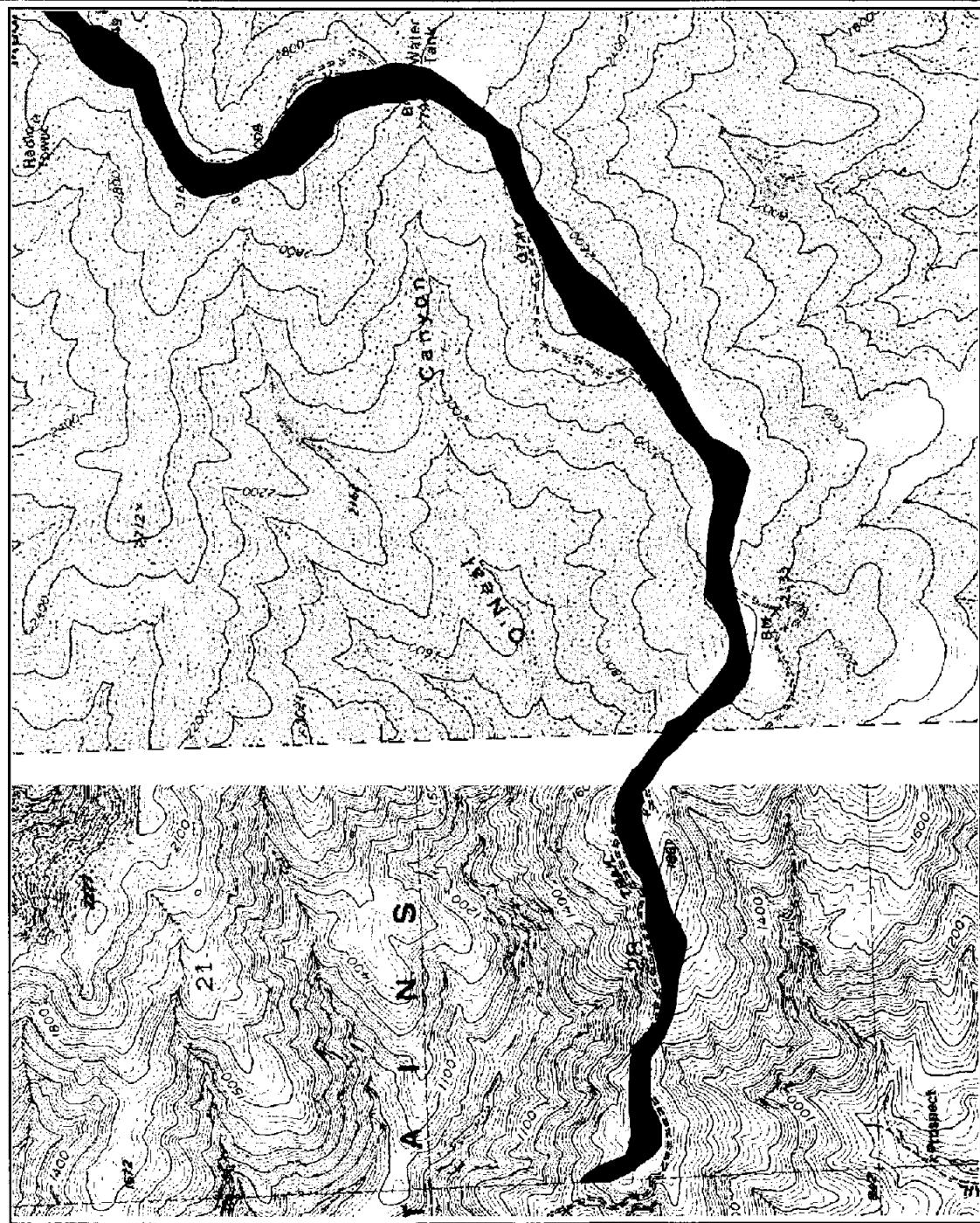
As stated above, the coastal sage scrub and chaparral habitat on the site is highly variable in terms of the quality of habitat. Many areas of the coastal sage scrub and chaparral show evidence of fire and mechanical clearing and are in the process of recovering. These areas are considered disturbed. Areas with prior disturbance contain an open canopy with sparsely distributed California buckwheat, California sagebrush, deerweed, and chamise and a higher percentage of non-native weedy species. Diegan coastal sage scrub, coastal sage-chamise chaparral, chamise chaparral, and southern mixed chaparral habitats are present on the site.

Diegan Coastal Sage Scrub

This community is dominated by California buckwheat and California sagebrush with a grassy understory. Other vegetation present include hairy yerba santa, deerweed, California matchweed, California bush sunflower (*Encelia californica*), saw-toothed goldenbush (*Hazardia squarrosa*), and laurel sumac. Coastal sage scrub is scattered throughout the fuel break (Figures 4.1-3 and 4.1-4).

International Fuel Break

Otay Mountain



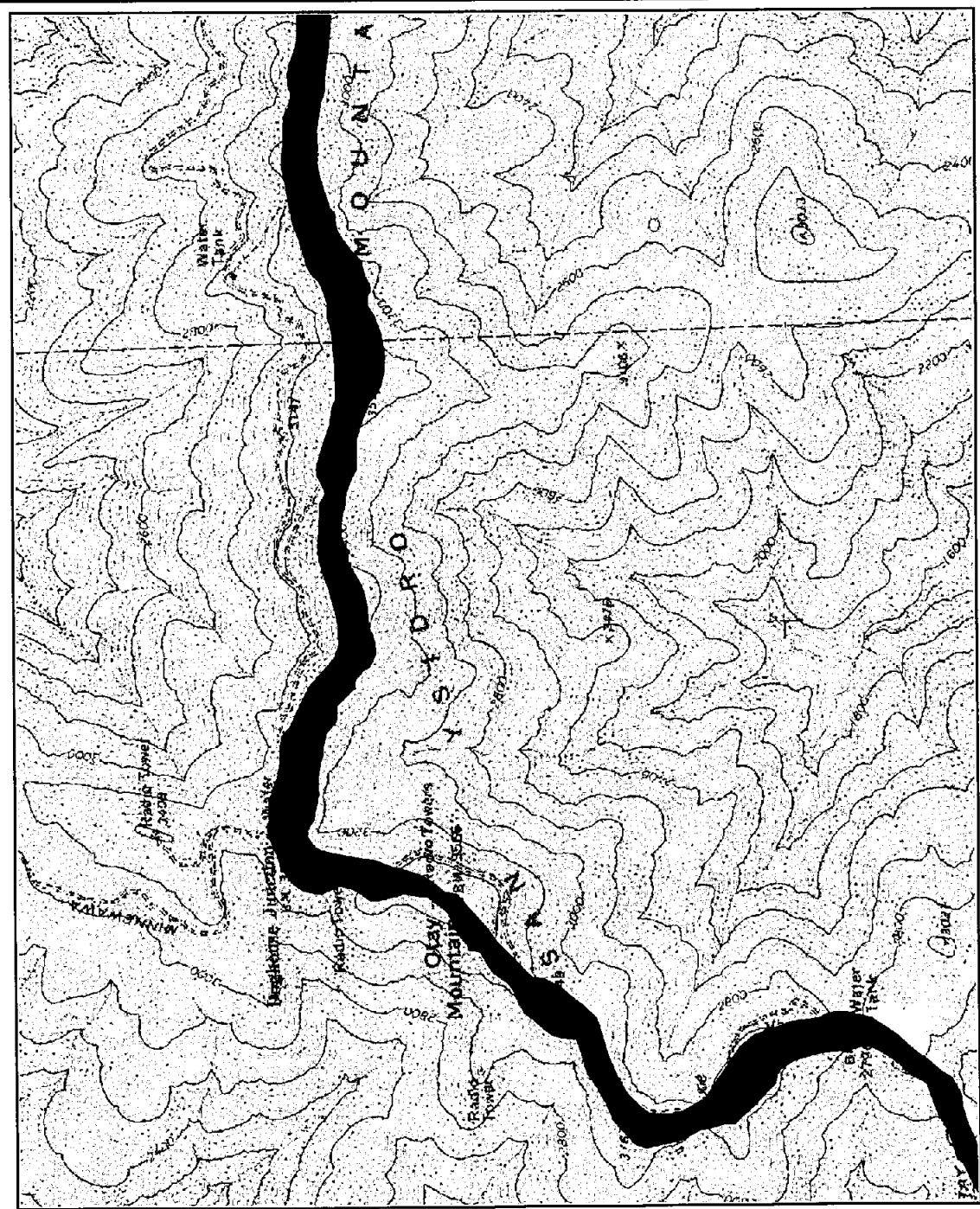
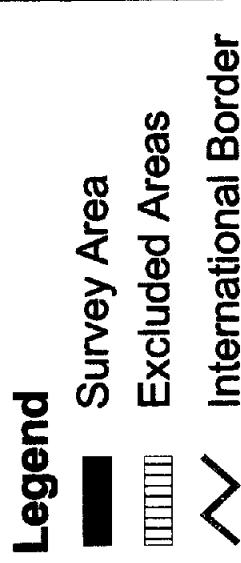
1:24000

**Figure 4.1-1
Otay Mountain
Survey and Excluded Areas**

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

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International Fuel Break Otay Mountain

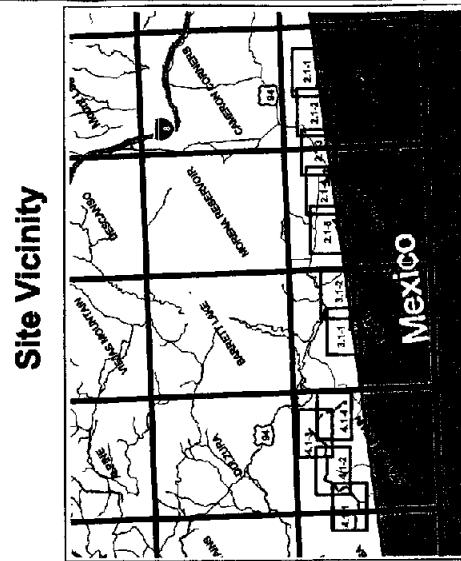


Chambers Group, Inc.

Figure 4.1-2
Otay Mountain
Survey and Excluded Areas

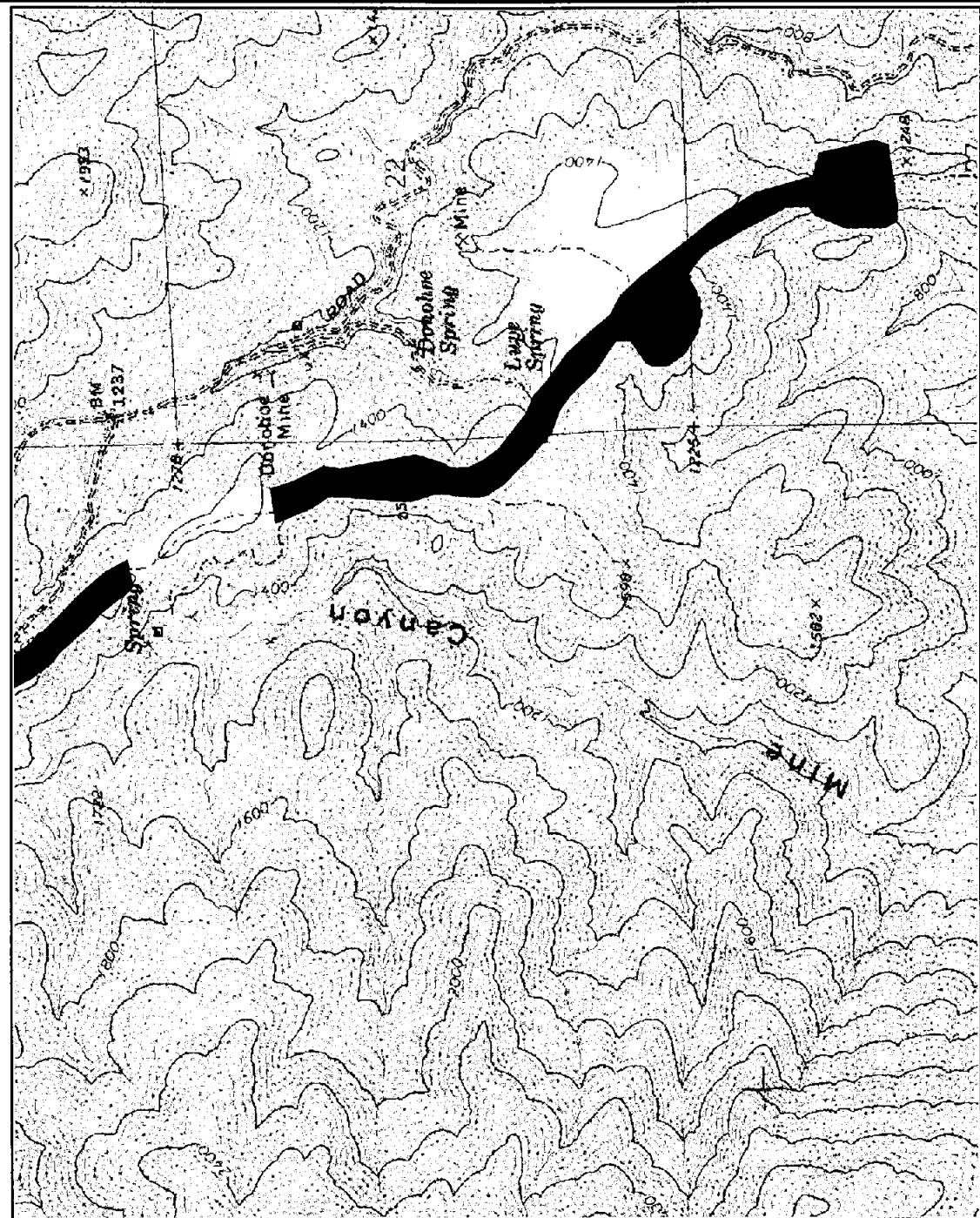
Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

1:24000



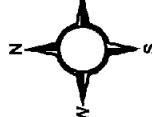
International Fuel Break

Otay Mountain



Chambers Group, Inc.

300 0 300 600 900 Meters



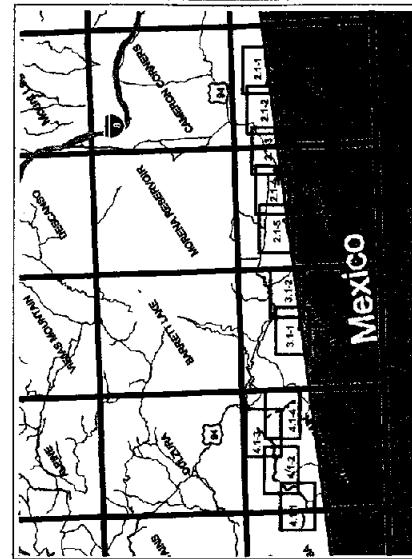
Legend

Survey Area

Excluded Areas

International Border

Site Vicinity



1:24000

Figure 4.1-4

Otay Mountain Survey and Excluded Areas

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

d:\proj\6698_int_fuel_break\images.apr\figure2-3-4\otay.ljf



PHOTO 1. REPRESENTATIVE HABITAT SURVEYED FOR QUINO CHECKERSPOT BUTTERFLY
SHOWING HILLTOPS AND DIRT ROADS.



PHOTO 2. REPRESENTATIVE AREA SURVEYED FOR QUINO CHECKERSPOT BUTTERFLY. CLOSE-UP OF
QUINO HOST PLANT, WESTERN PLANTAIN (*Plantago erecta*).

INTERNATIONAL FUEL BREAK
OTAY MOUNTAIN
SITE PHOTOGRAPHS
Figure 4.3-1



PHOTO 3. REPRESENTATIVE AREA SURVEYED FOR QUINO CHECKERSPOT BUTTERFLY. CLOSE-UP OF QUINO HOST PLANT, PURPLE OWL'S CLOVER (*Castilleja exserta*).



PHOTO 4. REPRESENTATIVE HABITAT SURVEYED SHOWING CLAY SOILS, SAGE SCRUB VEGETATION, HILLTOPS, AND DIRT ROADS.

INTERNATIONAL FUEL BREAK
OTAY MOUNTAIN
SITE PHOTOGRAPHS
Figure 4.3-2



PHOTO 5. VIEW OF EXCLUDED AREA (STEEP HILLSIDE AND DENSE CHAPARRAL HABITAT).

INTERNATIONAL FUEL BREAK
OTAY MOUNTAIN
SITE PHOTOGRAPHS
Figure 4.3-3



Chambers Group

Coastal Sage-Chamise Chaparral

The chaparral species observed in the coastal sage-chaparral scrub onsite include chamise, ceanothus (*Ceanothus* sp.), birch-leaf mountain mahogany, manzanita, Otay ceanothus (*Ceanothus otayensis*) and laurel sumac. California sagebrush, deerweed, and California buckwheat are common sage scrub species occurring in this community. This community occurs in the central portion of the fuel break with several disturbed areas occurring due to previous fires and clearing (Figures 4.1-3 and 4.1-4).

Southern Mixed Chaparral

This community on the site is dominated by mountain misery (*Chamaebatia foliolosa*), manzanita, chamise, chaparral pea (*Pickeringia montana* ssp. *tomentosa*), laurel sumac, and birch-leaf mountain-mahogany. Other species found in the understory and in the occasional openings in the plant community include golden yarrow, black sage (*Salvia mellifera*), hairy yerba santa, Pride of California (*Lathyrus splendens*), and bush poppy (*Dendromecon rigida*). This community is present in the central and western sections of the fuel break (Figures 4.1-1 and 4.1-2).

Chamise Chaparral

Chamise chaparral occurs on steep slopes in the central portion of the fuel break within O'Neal Canyon and other areas along the Otay Mountain Truck Trail. Several areas of chamise chaparral are disturbed as a result of a 1996 fire, which burned throughout the fuel break area. This community is dominated by chamise, laurel sumac, black sage, Otay ceanothus, and hairy yerba santa with an understory of deerweed, bush poppy, and chaparral pea (Figure 4.1-3).

4.3.2 Woodland Habitat

Tecate Cypress Stands

Tecate cypress stands are dominated by tecate cypress (*Cupressus forbesii*) and are adapted to infrequent fires as is the chaparral habitat generally adjacent to them. Other species present in this community include chamise, ceanothus, and scrub oak. This community occurs scattered along the fuel break mainly in the western portion of the site (Figure 4.1-1 and 4.1-2).

4.4 HOST PLANT DISTRIBUTION AND NECTARING SPECIES

Western plantain, purple owl's clover, and senescent bird's beak, the primary host plants for the Quino, were observed along Otay Mountain during the focused surveys. The host plants were most abundant on the southeastern portion of the survey area. Moderate to abundant amounts of nectar sources occur throughout the fuel break including: coast paintbrush (*Castilleja affinis*), pinebush, yerba santa, popcorn flower, strigose lotus, California buckwheat, and coast goldfields. These resources were scattered throughout the fuel break. Cryptogamic crusts and clay soils were observed onsite. A list of host plant and nectar species identified during the surveys is presented in Appendix C. All host plants were mapped on a 7.5-minute topographic quadrangle (Figures 4.4-1 through 4.1-4).

4.5 ADULT FOCUSED SURVEYS

Quino checkerspot butterflies were observed along the Otay Mountain portion of the fuel break. A total of four individuals at four different locations were observed during the March 6, 2002 survey. Only one individual was observed offsite. The first observation occurred on a hilltop on the southeastern portion of the Otay Mountain fuel break survey area. The hilltop consisted of open canopy coastal sage/chaparral scrub with clay soils, western plantain (habitat patch approximately 30 plants per foot²), and nectar sources (popcorn flower and deerweed). The western plantain varied from young individuals to more

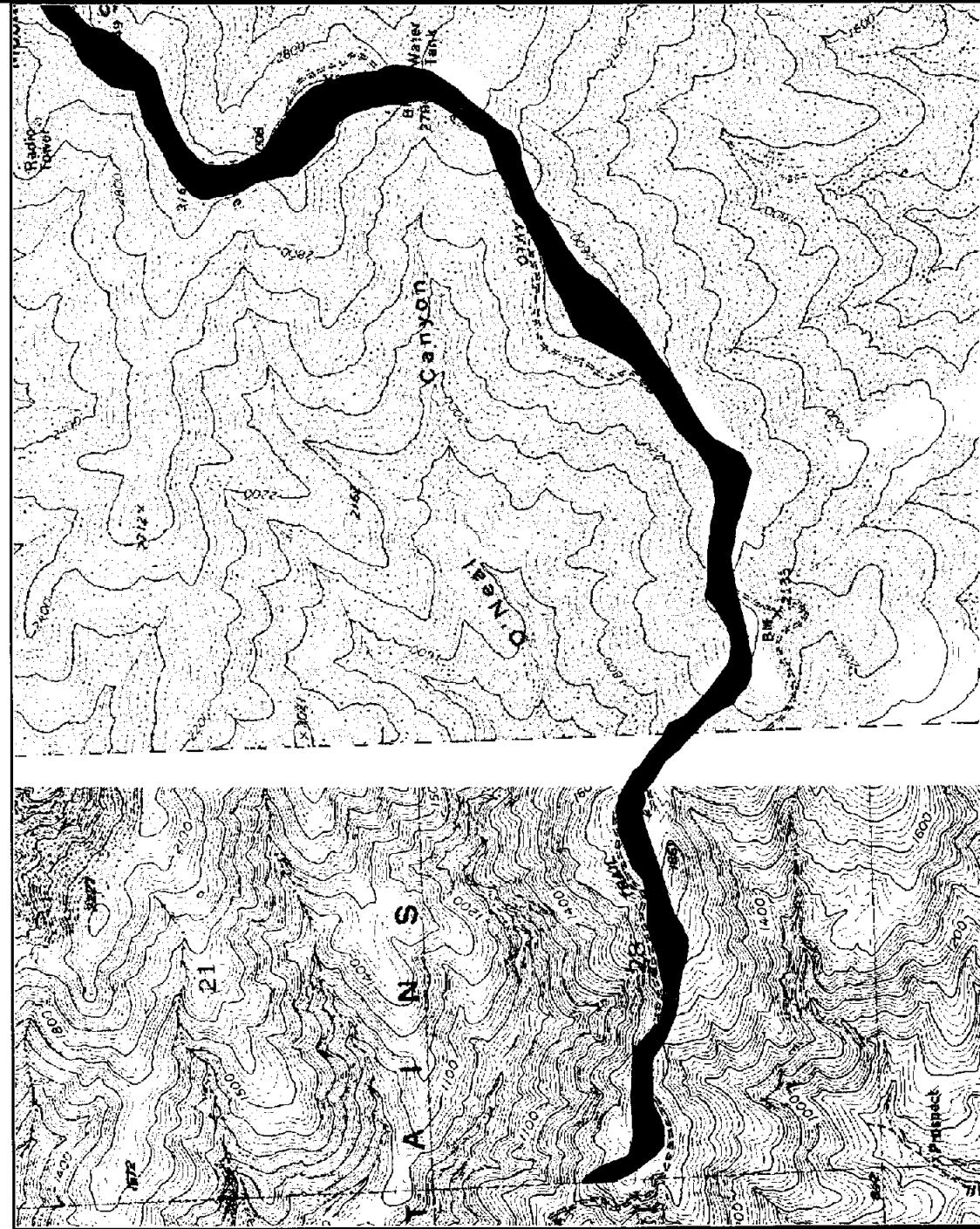
mature flower heads and was considered good quality habitat. A greater abundance of western plantain and nectar sources were located on the slopes below the hilltop. The second observation occurred on southeastern portion of the fuel break, as well. Two individuals were observed on the jeep trail sunning, flying, and chasing primarily perplexing hairstreaks. The area surrounding the trail consists of coastal sage-chaparral scrub with clay soils, western plantain (habitat patch approximately 65-80 plants per foot²), and nectar sources (coast goldfields and deerweed) occurring along the west and east sides of the trail. Purple owl's clover (habitat patch approximately eight plants per foot²) was observed on the hilltops adjacent to the trail. The western plantain varied from young individuals to more mature flower heads and was considered good quality habitat. The purple owl's clover was just beginning to flower. Please refer to the Quino detection form included as Appendix A for more information on these observations.

The other Quino individual that was observed during the March 6, 2002 survey occurred in the same general vicinity, but was located further northeast along the fuel break less than 1 mile of the onsite observations. Data was recorded for the onsite observations, but the locations for all Quino observations were mapped using global positioning systems (GPS) and are shown on the maps (Figures 4.4-3 and 4.4-4).

A total of twelve species of butterfly were observed during the survey season. Southern blue, perplexing hairstreaks, Behr's metalmarks, and funereal duskywings were by far the most abundant species observed. The complete list of butterflies is included in Appendix E. A signature page signed by the five Quino checkerspot butterfly biologists that conducted the focused surveys is included in Appendix F. In addition, following the survey on April 3, 2002, the biologists looked for larval/egg clustering on western plantain and purple owl's clover within the southeastern portion of the fuel break. No larval or egg clusters were observed.

International Fuel Break

Quino Checkerspot Butterfly
Survey Areas
Otay Mountain



Chambers Group, Inc.

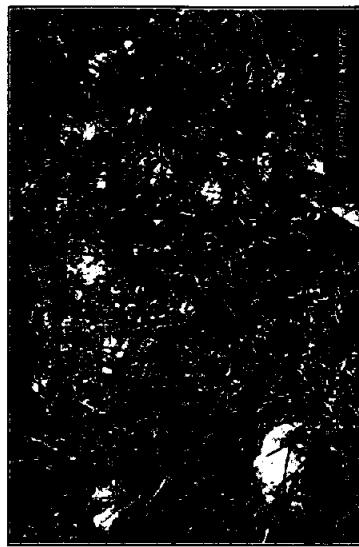
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Survey Area

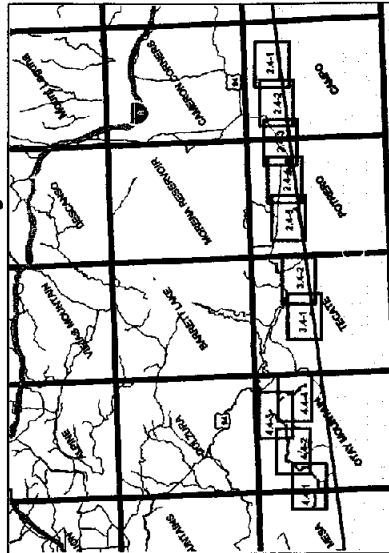
International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



Site Vicinity



1:24000

Figure 4.4-1

Otay Mountain

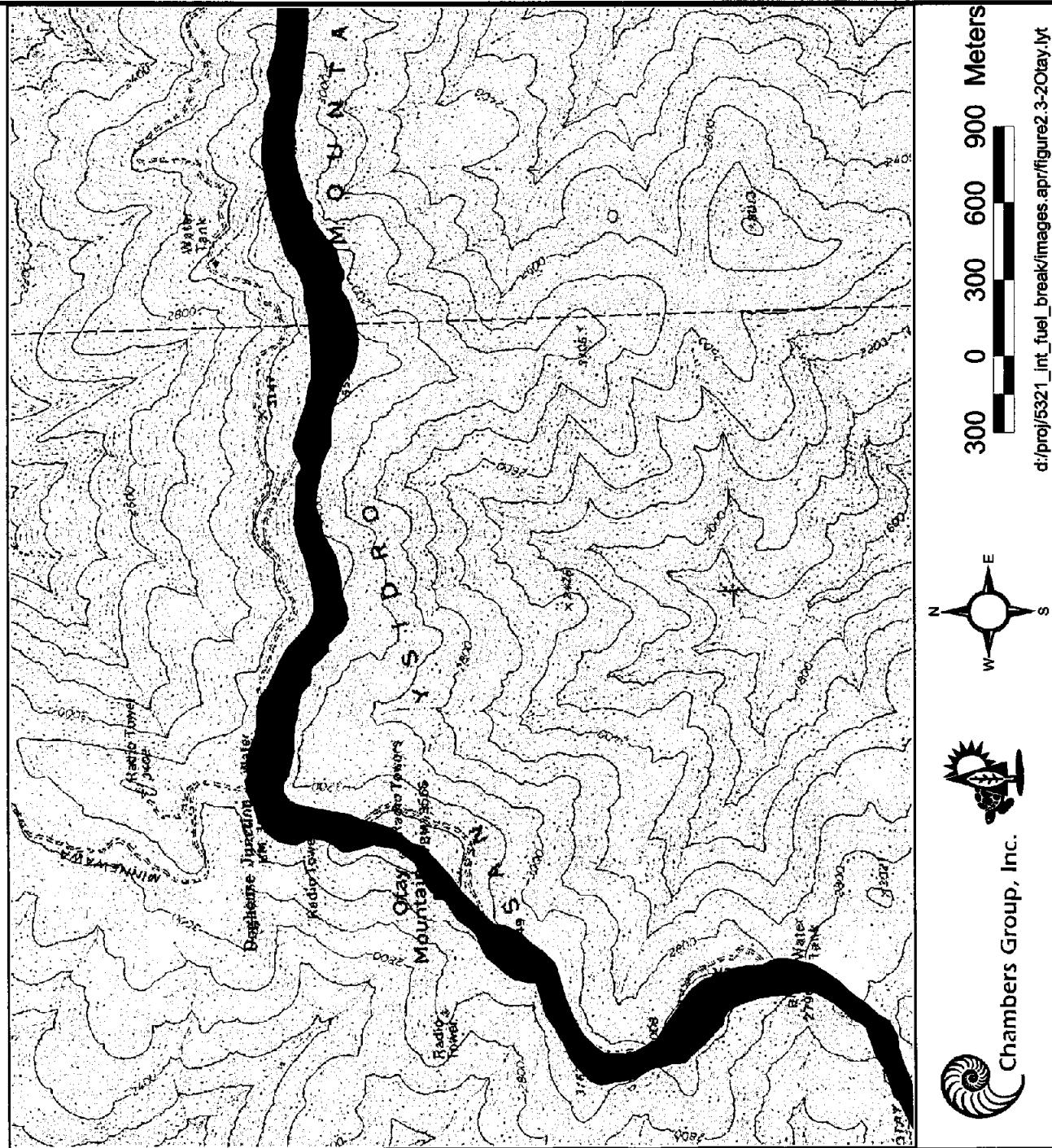
Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

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International Fuel Break

Quino Checkerspot Butterfly
Survey Areas
Otay Mountain



Legend

Survey Area

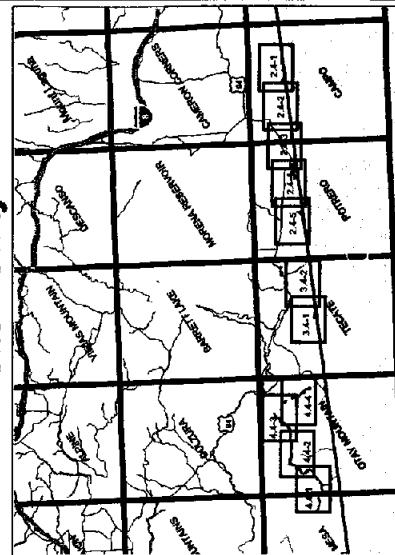
International Border

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



Site Vicinity



1:24000

Figure 4.4-2

Otay Mountain Host Plant Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.

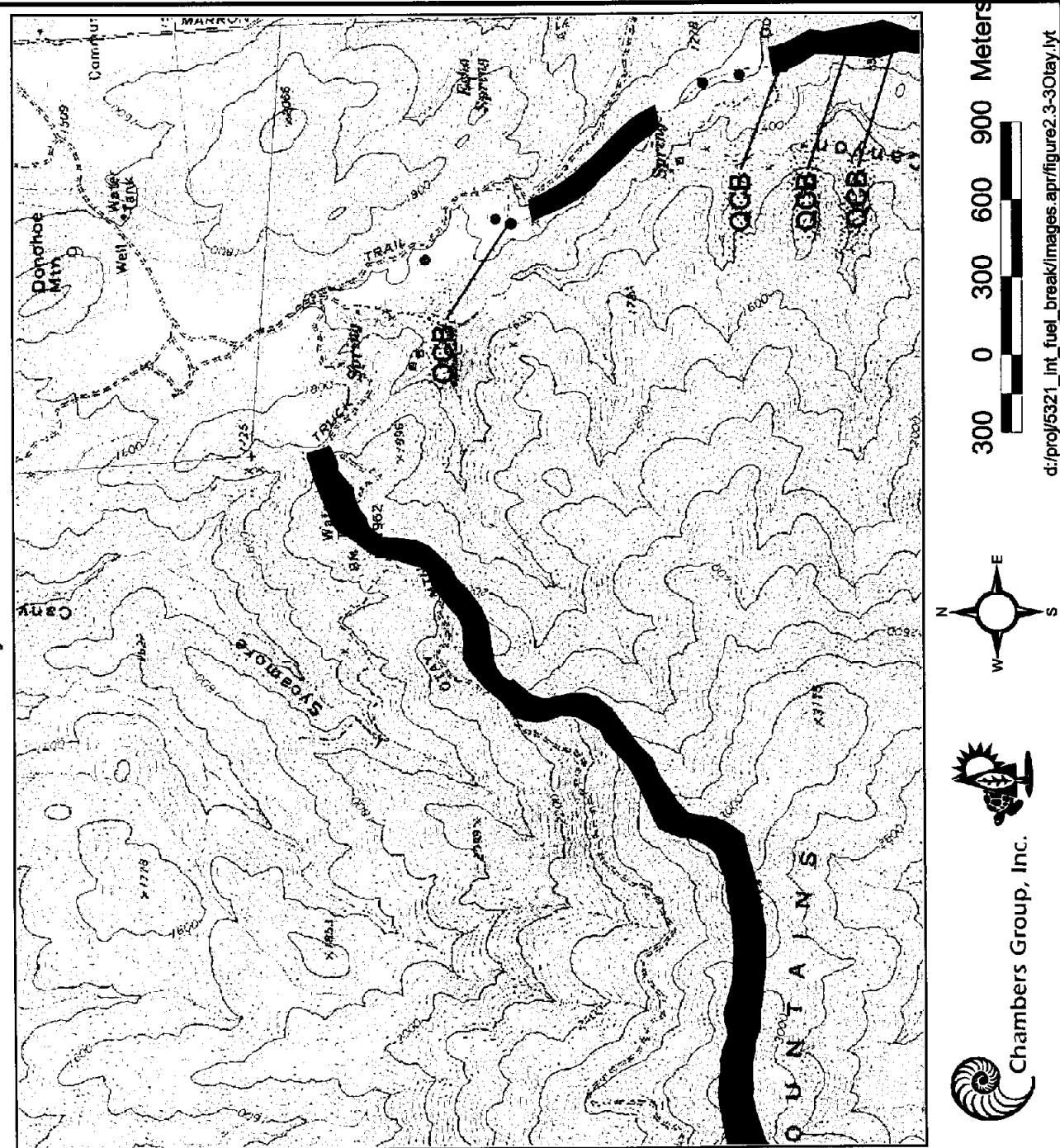


Chambers Group, Inc.

International Fuel Break

Quino Checkerspot Butterfly Survey Areas

Otay Mountain



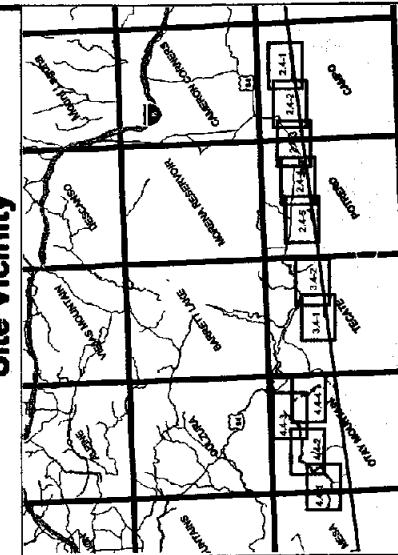
Legend

Survey Area

International Border
Quino Checkerspot Butterfly
(QCB)

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



1:24000

Figure 4.4-3
Otay Mountain
Host Plant & Quino Checkerspot
Butterfly Locations

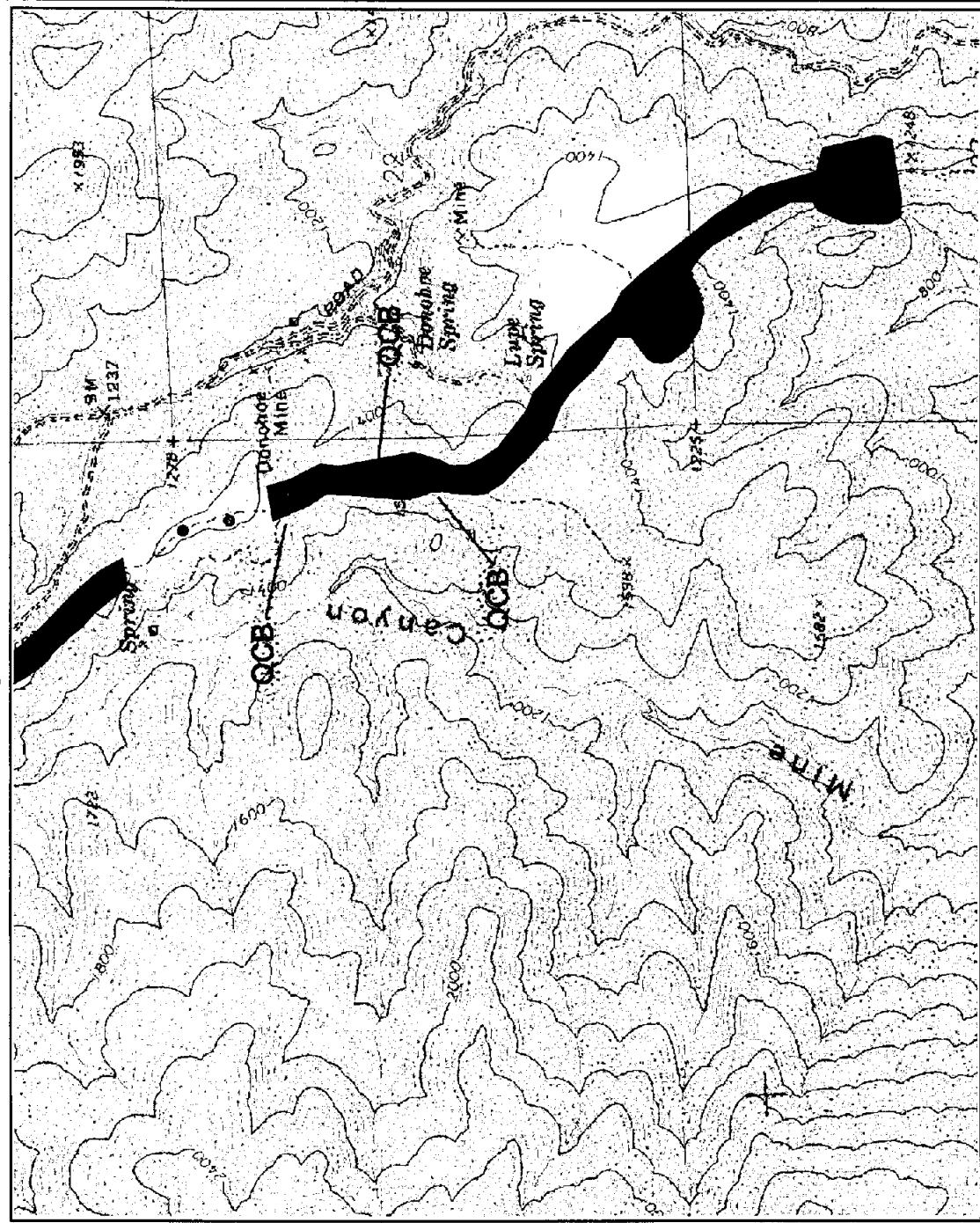
Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.



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International Fuel Break

Quino Checkerspot Butterfly Survey Areas
Otay Mountain



Chambers Group, Inc.

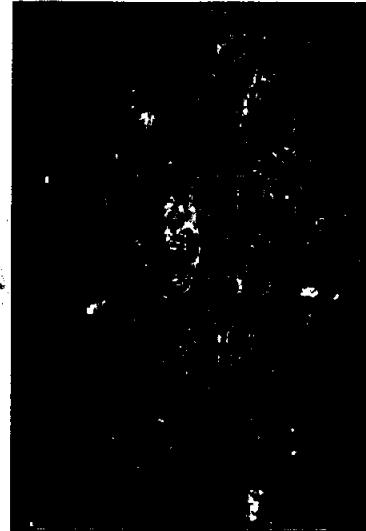
Legend

Survey Area

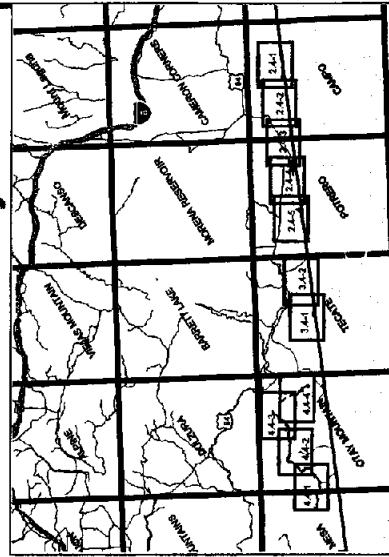
International Border
Quino Checkerspot Butterfly
(QCB)

Host Plant Locations

- *Castilleja exserta*
- *Cordylanthus rigidus*
- *Plantago erecta*



Site Vicinity



1:24000

Figure 4.4-4
Otay Mountain Host Plant & Quino Checkerspot Butterfly Locations

Not for site-specific use. All locations are approximate. Background Source: USGS 7.5 Minute Series Quadrangles.
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SECTION 5.0 – CONCLUSION

5.1 HABITAT SUITABILITY FOR QUINO CHECKERSPOT BUTTERFLY ON SURVEY AREAS

Based on existing literature and information contained within the USFWS Quino checkerspot butterfly survey protocol and draft recovery plan, the Quino checkerspot is known to occur in topographically diverse landscapes and a variety of habitat types. In addition, soil, climatic conditions and physical factors affect the habitat suitability for this species. Quino are most notably associated with bare or sparsely vegetated areas containing clay soils, cryptogamic crusts, primary host plants, and appropriate nectar sources. Loss of suitable habitat, grazing, invasion of non-native species, and fragmentation of habitat from expanding development and agriculture have been a major factor in the decline of this species. This section summarizes the primary disturbance factors at each survey area and how disturbance has affected the habitat suitability either positively or negatively at each site.

The 2002 flight season was an atypical season highly affected by the dry conditions and poor host plant abundance and quality throughout southern California, specifically in San Diego County. Although abundant host plants germinated during early rains, overall host plant abundance was reduced and host plant quality was poor. Environmental conditions were atypically dry at all reference sites and adult Quino were only observed at the Marron Valley reference population site (www.fws.gov).

5.1.1 Shockey Truck Trail

Disturbances along the Shockey Truck Trail include a series of dirt roads that are used by U.S. Border Patrol agents on a daily basis, and two wildfires that occurred in 1999 (Clay Howe, BLM, personal communication). Several areas within the survey route are natural areas that BLM intend to reclaim as part of the fuel break. These disturbances can destroy host plants, compact soils, create trails with non-native vegetation, increase the mortality of eggs and larvae, and destroy butterfly populations. However, they can also create habitat by reducing canopy cover. Increased fire frequency and habitat clearing tends to result in loss of shrubs and an increase in non-native grasslands. The overall affect of clearing and fire on the Quino checkerspot butterfly depends on the intensity and frequency of occurrence. Although the habitat is regularly manipulated for fire management practices and these disturbances seem to have had a negative affect on habitat due to the presence of non-native vegetation and compact soils, the overall habitat connectivity has been maintained along the fuel break.

All habitats along Shockey Truck Trail, with the exception of the dense chaparral and steep slopes, contained habitat presumed suitable for the Quino checkerspot butterfly. Although clay soils were observed at various locations along Shockey Truck Trail, the majority of the fuel break contains sandy soils that are not suitable for host plants. Cryptogamic crusts, suitable topographical features (i.e., rock outcrops, hilltops, and ridgelines), and nectar sources were also observed onsite. However, the survey area was very dry and the habitat was still recovering from the 1999 wildfire. Many areas contain non-native fire following species that are not conducive to prime Quino habitat. In conclusion, of the three survey areas, the habitat along Shockey Truck Trail has the lowest quality Quino habitat.

5.1.2 Tecate Peak

The following disturbances occur on Tecate Peak: a series of dirt roads that are used by U.S. Border Patrol agents on a daily basis, wildfires in 1995 and 1998, a prescribed burn and habitat clearing in 1998 (Clay Howe, BLM, personal communication). These disturbances can destroy host plants, compact soils, create trails with non-native vegetation, increase the mortality of eggs and larvae, and destroy butterfly populations. However, they can also create habitat by reducing canopy cover. Increased fire frequency and habitat clearing tends to result in loss of shrubs and an increase in non-native grasslands. The overall affect of clearing and fire on the Quino checkerspot butterfly depends on the intensity and frequency of occurrence. The prescribed burn in 1998 resulted in the grassland habitat along the lower portion of the survey area. Because this area is a closed canopy of grassy species, it is not suitable

Quino habitat. With the exception of the grassy area, these disturbances seem not to have a negative affect on habitat due to the presence of host plants and nectar sources. However, if these disturbances continue to occur, the impacts will most likely be negative.

With the exception of the grassy area, the other portions of Tecate Peak contain high to moderate quality habitat for the Quino checkerspot butterfly. It contains diverse topography and vegetation, rich clay soils, crytogamic crusts, a variety of host plants, and nectar sources. Despite the high quality habitat, butterfly abundance was surprisingly low at Tecate Peak. It seems possible that the unusually dry conditions affected butterfly abundance and Quino occurrence at Tecate Peak.

5.1.3 Otay Mountain

The following disturbances occur on Otay Mountain: a series of dirt roads that are used by U.S. Border Patrol agents on a daily basis, a wildfire in 1996, and habitat clearing in 2002 (Clay Howe, BLM, personal communication). These disturbances can destroy host plants, compact soils, create trails with non-native vegetation, increase the mortality of eggs and larvae, and destroy butterfly populations. However, they can also create habitat by reducing canopy cover. Increased fire frequency and habitat clearing tends to result in loss of shrubs and an increase in non-native grasslands. The overall affect of clearing and fire on the Quino checkerspot butterfly depends on the intensity and frequency of occurrence. The wildfire occurred from Copper Canyon west to Alta Road. The hand clearing in 2002 was restricted to a small area of the fuel break. Although BLM leaves islands of habitat and piles of brush in hand cleared areas, it does not represent suitable Quino habitat due to the general lack of vegetation. In general, these disturbances seem not to have a negative affect on habitat due to the presence of host plants and nectar sources. However, if these disturbances continue to occur, the impacts will most likely be negative.

Although some areas are heavily dominated by non-native grasses, host plants and nectar sources are scattered throughout the open canopy portions of the fuel break and most of the fuel break contains moderate to high quality Quino habitat. Habitat characteristics for the Quino occurring on the Otay Mountain survey area include open soils, hilltops, ridgelines, a variety of larval host plants, soil crusts, old roads, nectar sources, clay soils, and rock outcrops. The Otay Mountain survey area is located in close proximity to the Marron Valley reference population site and was the only survey area where Quino were observed. Some habitat patches in this area contain dense western plantain and other larval host plants and therefore represent high quality Quino habitat. Despite the traffic pattern, healthy patches of western plantain occur along the dirt roads and the Quino observations actually occurred along the dirt roads.

5.2 SUMMARY

Of the three survey areas along the International Fuel Break during the 2002 flight season, Quino checkerspot butterfly was only observed on the Otay Mountain portion of the fuel break. Although Shockey Truck Trail and Tecate Peak had suitable topographical features (hilltops and ridgelines, etc.), host plants, and nectar sources, the results of the focused surveys were negative at these two locations. Overall butterfly activity was moderate, with over 25 species of butterfly observed during the course of the 2002 surveys. The most detrimental activities to Quino include an increase in frequency of hand clearing and prescribed burns in areas along the fuel breaks that contain suitable topography and abundant host plants and nectar sources.

The International Fuel Break lies within the boundaries of critical habitat for the Quino checkerspot butterfly. Approximately 171,605 acres in Riverside and San Diego Counties, California are designated as critical habitat for the Quino checkerspot butterfly (USFWS 2002). The fuel break lies within the boundaries of critical habitat according to Unit 3: Otay Unit as designated in the USFWS Federal Register on April 15, 2002, final determination of critical habitat for the Quino. Unit 3 encompasses approximately 64,430 acres within southwestern portion of San Diego County. Lands designated by this unit stretch south from the San Diego National Wildlife Refuge Otay-Sweetwater Unit and State Route 94 to the international border with Mexico, west along Otay River Valley and the northern rim of Otay Mesa, and east to the town of Tecate.

SECTION 6.0 – LITERATURE CITED

- Abrams, L.
1923 *Illustrated Flora of the Pacific States, Volumes I-III.* Stanford University Press, Stanford,
1944 California.
1951
- Abrams, L. and R.S. Ferris
1960 *Illustrated Flora of the Pacific States, Volume IV.* Stanford University Press, Stanford,
California.
- Beauchamp, R. M.
1986 *A Flora of San Diego County, California.* Sweetwater River Press, National City.
- Boyd, S.D., et al.
1995 Vascular Flora of the San Mateo Canyon Wilderness Area, Cleveland National Forest,
California. *Aliso* 14(2): 109-139.
- California Department of Fish and Game
1997 Special plants list. Unpublished report available from CDFG Natural Heritage Division,
Sacramento, California.
- Hickman, J. (ed.)
1993 *The Jepson Manual: Higher Plants of California.* University of California Press, Berkeley,
California.
- Holland, R.F.
1986 Preliminary descriptions of the terrestrial natural communities of California. Unpublished
report available from California Department of Fish and Game, Sacramento, California.
- Knopf, Alfred A.
1995 *National Audubon Society: Field Guide to North American Butterflies.* Chanticleer Press,
Inc., New York.
- Mayer, K.E. and W.F. Laudenslayer, Jr. (eds.)
1988 *A Guide to the Wildlife Habitats of California.* California Department of Fish and Game,
Sacramento.
- Munz, P.A.
1974 *A Flora of Southern California.* University of California Press, Berkeley.
- Sawyer, J.O., Jr. and T. Keeler-Wolf
1995 A Manual of California Vegetation. California Native Plant Society, Sacramento, California.
- Skinner, M. W. and B. M. Pavlik
1994 Inventory of Rare and Endangered Vascular Plants of California. California Native Plant
Society, Sacramento, California.
- Stewart, Bob
1997 *Common Butterflies of California.* West Coast Lady Press, Patagonia, Arizona.

U.S. Department of the Interior, Bureau of Land Management (BLM)
2001 BLM Environmental Assessment (EA #CA-660-01-03) of the Otay Fuel Break Maintenance, San Diego County, California. Unpublished paper.

U.S. Fish and Wildlife Service

- 1993 Endangered and threatened wildlife and plants; review of plant taxa for listing as endangered or threatened species. Federal Register 58:51144-51190.
- 1996 Endangered and threatened wildlife and plants; review of plant and animal that are candidates for listing as endangered or threatened species. Federal Register 61:7595-7613.
- 2000 Quino Checkerspot Butterfly (*Euphydryas editha quino*) Year 2000 Survey Protocol. Unpublished paper.
- 2001 Draft Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*) Portland, Oregon. +123 pp.
- 2002 Quino Checkerspot Butterfly (*Euphydryas editha quino*) Year 2002 Survey Recommendations. Unpublished paper.
- 2002 Final Determination of Critical Habitat for the Endangered Quino Checkerspot in Riverside and San Diego Counties, California. Federal Register 67: 18355-18395.

U.S. Geological Survey

- 1959 Campo, California 7.5-minute quadrangle.
- 1960 Potrero, California 7.5-minute quadrangle. Photorevised 1975.
- 1960 Tecate, California 7.5-minute quadrangle.
- 1972 Otay Mountain, California 7.5-minute quadrangle.

PERSONAL COMMUNICATION

Clay Howe, Bureau of Land Management, June 4, 2002.

APPENDIX A

**QUINO CHECKERSPOT BUTTERFLY
DETECTION FORMS**

Quino Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: L. AllenDate: 03/06/02Site Visit No: 1 2 3 4 5 6 7 8 9 10On-siteTotal site acres: 465Site Name: Intern.F.B.Site Location: Otay Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin <u>1020</u>	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>71°</u>
<u>1340</u>	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>69°</u>
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres:

Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

a. Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North open space / BLM + CDFG
 South
 East
 West

Distance _____ ft./mile
 Distance _____ ft./mile
 Distance _____ ft./mile
 Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
 nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: BLM Fuelbreak - NO recent activ. in past 3 years

Quino Checkerspot Detection Form

Surveyor: L. Allen

Date: 03/06/2002 Site Visit No. 1 2 3 4 5 6 7 8 9 10
(mm/dd/yyyy)

Total acres: 46.5 AC. Site Name: Int. Fuel Break Site Location: Otay Truck Trail

Time detected: 11:30 Sky Condition: clear Part Cloudy Overcast Fog Drizzle Showers
(24 hour)

Wind: <1 1-3 4-7 8-12 >12 (Beaufort)

Temp: 71° F/C

Topo Description: T R 1/4 of 1/4 Sec

Elev: 15-1600 ft % Slope >10 11-25 26-50 >50 Aspect: N S E W hilltop

Distance to Water: _____ ft Water Type: Spring Earwigs yes/no Sowbugs yes/no
= ~1/2 m. to the

Veg Comm/Habitat type: east-west CSS/Chaparral

Co-occur butterfly spp: Anise swallowtail, perp. hairstreak

Dominant

Plant Species present: Chamise, buckwheat, Artemisia californica

Distance to Plantago: ~40 ft. No. Plants 30 Patch size 1 ft²

Castilleja: ft. No. Plants Patch size ft²

 ft. No. Plants Patch size ft²

 ft. No. Plants Patch size ft²

QCB Behavior: sit nectar mate fly chase Sex: M F unk Wing Wear: fresh intermed worn

Comments: Chasing perplexing hairstreak

Nectar spp: plagiothecium sp. Type substrate or soils: clay Defend area Y/N

Number of QCB: 1 adult/larva Size of occupied area: .25 acres ft²

Habitat w/in 100 ft. of QCB (circle all that apply): open soils hilltop ridge Plantago Castilleja soil crusts
old roads nectar clay soils rock outcrops recent fire grading other?

Habitat Quality: Poor Fair Good Excellent
(disturbed-----native stand)

Comments? Hilltop was open with clay soils. Plantago (young) areas were located along jeep road below hilltop area. Deerweed present on hilltop

Surrounding land uses:

North Open space
South BLM/CDF
East
West

Distance _____ ft.

Distance _____ ft.

Distance _____ ft.

Distance _____ ft.

Otay TT. Site D

3/6/02

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)	I	
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	I	SEE Detection form:
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	III	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	II	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	III	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)		
Mournful Duskywing (<i>Ernnis tristis</i>)		
Laevius Duskywing (<i>Ernnis orzo iacusura</i>)		

Quino Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: S. Chiaro / S. Tenn Date: 03-06-2002

L. Allen / M. Dohrn

(mm/dd/yyyy)

Site Visit No. 1 2 3 4 5 6 7 8 9 10

Total site acres: 400.5 acres Site Name: Int'l Fuel Break Site Location: OFF SITE ON SITE

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 1020	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	71°F
1310	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	69°F
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed: 3.0

Focused Survey Acres: _____ Elev Min: 1500 ft Max: 1600 ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c
Plantago erecta		65 / ft ²	DENSE	near QCR1
Plantago erecta		80 / ft ²	Dense	

a. Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North Open space - BLM COF
 South fuel break
 East _____
 West _____

Distance _____ ft./mile
 Distance _____ ft./mile
 Distance _____ ft./mile
 Distance _____ ft./mile

Habitat onsite (circle): open soils (hilltop) ridge Plantago Castilleja soil crusts old roads
 nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)
 Other: BLM fuelbreak - no recent fire activity in last 3 years

Quino Checkerspot Detection Form

Surveyor: S. Ching / S. Terrant
 (M. Durbin) Date: 03/04/2002 Site Visit No. 1 2 3 4 5 6 7 8 9 10
 Total acres: 4.05 ac. Site Name: Int'l Firebreak Site Location: City Trail T-21

Time detected: 10:30 Sky Condition: clear Part Cloudy Overcast Fog Drizzle Showers
 (24 hour) Wind: <1 1-3 4-7 8-12 >12 (Beaufort)
 Temp: 71° F/C

Topo Description: T R 1/4 of 1/4 Sec

Elev: 5400 ft % Slope: <10 11-25 26-50 >50 Aspect: N S E W flat saddle

Distance to Water: ~2 mft Water Type: spring Earwigs yes/no Sowbugs yes/no
 to me East: West

Veg Comm/Habitat type: LSS / chaparral / disturbed / jeep trail

Co-occur butterfly spp: southern blue, purplewing hairstreak, metalmark,
 Dominant

Plant Species present: Chamise, eriogonum fasciculatum, artemisia californica,
Ianthus elatus, sumac

Distance to Plantago:	<u>50-70</u> ft.	No. Plants <u>65</u>	Patch size <u>1</u> ft ²
	<u>55</u> ft.	No. Plants <u>80</u>	Patch size <u>1</u> ft ²
Castilleja:	<u>100</u> ft.	No. Plants <u>3</u>	Patch size <u>1</u> ft ²
	ft.	No. Plants _____	Patch size _____ ft ²

QCB Behavior: sit nectar mate fly chase Sex: M F Unk Wing Wear: fresh intermed worn

Comments: chasing hairstreak, sunning
 (more than utility)

Nectar spp: Castilleja, castanea Type substrate or soils: clay, rocky Defend area: Y/N

Number of QCB: 2 adult/larva Size of occupied area: 0.50 acres ft²

Habitat w/in 100 ft. of QCB (circle all that apply): open soils hilltop ridge Plantago Castilleja soil crusts
 old roads nectar clay soils rock outcrops recent fire grading other?

Habitat Quality: Poor Fair Good Excellent
 (disturbed native stand)

Comments? Jeep trail well travelled by Border Patrol. Sun shot pellets
on ground. 35' stem of plantago along W-E side of jeep trail.
Nectar source scarce in watershed. Deer used blooming

Plantago is young, short stalks, flower heads + clearly visible

Surrounding land uses:

North	<u>open space - PLN CDF</u>	Distance _____ ft.
South	<u>_____</u>	Distance _____ ft.
East	<u>_____</u>	Distance _____ ft.
West	<u>_____</u>	Distance _____ ft.

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	11	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	11	see detection form.
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	X.T. 111	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	X.T. 1111	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	X.T.	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mournful Duskywing (<i>Erynnis tristis</i>)		
Iacusta Duskywing (<i>Erynnis orzo iacusta</i>)		

3-6-02

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Feider's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	11	(see detection form) chasing pecking banking flying observed at 10:30 am
Gabb's Checkerspot (<i>Charaxes gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	11/1	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acorn Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	11/11	
Great Purple Hairstreak (<i>Thaumantis halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	11/1	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mournful Duskywing (<i>Erynnis tristis</i>)	1	
Lucustra Duskywing (<i>Erynnis brizo lucustra</i>)		
Thornc's Hairstreak	11/11/11	

APPENDIX B

FIELD DATA SHEETS

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)	1	
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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)	1	
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	11	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	111	
Great Purple Hairstreak (<i>Atlides halesus</i>)	111	
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	11	
Mournful Duskywing (<i>Erynnis tristis</i>)		
Lacustra Duskywing (<i>Erynnis brizo lacustra</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: S. Chiang
(M. Dehn)Date: 03/08/2002Site Visit No: 1 2 3 4 5 6 7 8 9 10

(mm/dd/yyyy) Maps

Total site acres: 465 ac.Site Name: Int'l Fuel Break Site Location: Shorey Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin			
1250	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	61°F
1510	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	62°F
1645	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	57°F
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a floral or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North open space - BLN
South fuel break private
East _____
West _____

Distance _____ ft./mile

Distance _____ ft./mile

Distance _____ ft./mile

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
ecotone clay soils rock outcrops

in excluded area

Conditions: (e.g., grazing, agriculture, sowbugs/earwigs, recent fire, grading)

Other: managed fuel break. Most recent fire ~3 yrs ago on E. portion of fuel break

ST

3/7/02

Shockey

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amavntula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	11 (2)	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	11 11 7	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	11 3	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	11 (2)	
Mourning Duskywing (<i>Ernnis tristis</i>)		
Iacustra Duskywing (<i>Ernnis dixea iacustra</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</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>)		
Aemon Blue (<i>Icaricia aemon</i>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	HTT HTT	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metamarks		
Behr's Metamark (<i>Apodemia mormo virgulti</i>)	LTT	
Wright's Metamark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mourning Duskywing (<i>Erynnis tristis</i>)		
Lucasta Duskywing (<i>Erynnis tages lucasta</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pine Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
San Onge tip (<i>Anthocharis sara</i>)	1	
Feller Orangetip (<i>A. cethura</i>)		
Crinell's Marble (<i>A. lanceolata australis</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>)		
Hartford's Sulfur (<i>C. hartfordi</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)	11	
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	1111	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	1111	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	11111111	nesting on Sugar bush
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	1	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mourning Duskywing (<i>Erynnis tristis</i>)		
Iacustra Duskywing (<i>Erynnis brizo iacustra</i>)		

LA Shocky TT 3/8
QCB 2

Note

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurvinenon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	III	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	III	
Great Purple Hairstreak (<i>Altides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia norma virgulti</i>)	III	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)		
Mourning Duskywing (<i>Ernnis tristis</i>)		
Castor Duskywing (<i>Ernnis orizo jacchus</i>)		

Quino-Checkerspot General Form

Surveyor: ST/SC/LA/MO Date: 3/15/02

Survey type: Habitat Assessment Adult Survey

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465

Site Name: International (mm/dd/yyyy)

Site Location: Shockey Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 11:30	sunny	<1 1-3 4-7 8-12 >12 gusts of 5	59° - sun, 55°-shrub
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
1:00pm	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	53°
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	You cold
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres:

Elev Min: _____ ft Max: _____ ft

Storm moving
in, Silver
Cancelled

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c
Candytuft neglecta	3-5		sparse	8
(dead) No fresh, all dead from last				

^a floral or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____
South _____
East _____
West _____Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
soil clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading) _____

51 Shockey 3/20/02 VOB # 3

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)	111 (3)	
Sleepy Orange (<i>Eurema niceppe</i>)	1 (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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vannessa 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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</i>)		
Southern Blue (<i>Glaucomysche lygdamus australis</i>)	11 (2)	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Aemon Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	1 (1)	
Perplexing Hairstreak (<i>Callophrys periplexa</i>)	(1)	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgini</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		(1)
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrus communis</i>)		
Duskywings		
Duskywing (<i>Ernnis funeralis</i>)		
Duskywing (<i>Ernnis tristis</i>)		
Duskywing (<i>Ernnis hrzo leucostria</i>)		(15)

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)	1	
Steepy 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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	11	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Aemon Blue (<i>Icaricia aemon</i>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	28	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Sehr's Metalmark (<i>Apodemia mormo virgulti</i>)	11	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	11	
Jovurnal Duskywing (<i>Erynnis juvenalis</i>)		
Acustra Duskywing (<i>Erynnis trizo acustra</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		homed (adult)
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	11	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)	111	
Sleepy Orange (<i>Eurema nicippe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)	1	
Harford's Sulfur (<i>C. harfordi</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amytula</i>)		
Southern Blue (<i>Glaucoopsyche lygdamus australis</i>)	1	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	111	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	111	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mourning Duskywing (<i>Erynnis tristis</i>)	1?	
Lucustra Duskywing (<i>Erynnis trizo lucustra</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: SJ/LA/SU/CM Date: 4/2/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 4.65

(mm/dd/yyyy) Site Name: International Snorkey

Site Location: Shockey Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 10:30	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12 gusts of 6	78°
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End 3:30	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	72°

Total hours surveyed: 5.0

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

Butterflies Observed (larvae or adults)	Number	
Papilionidae-Swallowtails	14	
Pale Swallowtail (<i>Papilio eurymedon</i>)	14	
Anise Swallowtail (<i>P. zelicaon</i>)	11	
Western Tiger Swallowtail (<i>P. rutulus</i>)	11	
Pieridae-Whites, Sulfurs, & Orangetips	11(2)	
Sara Orangetip (<i>Anthocharis sara</i>)	11(2)	
Felder's Orangetip (<i>A. cethura</i>)	11	
Grinnell's Marble (<i>A. lanceolata australis</i>)	11	
Cabbage White (<i>Artogeia rapae</i>)	11	
Sleepy Orange (<i>Eurema nicippe</i>)	11	
Common White (<i>Pontia protodice</i>)	11	
California Dogface (<i>Zerene eurydice</i>) checkered white white 5	5	
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Harford's Sulfur (<i>C. harfordi</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	11(3)	
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>)	11	
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)	11(1)	
Brown Elfin (<i>Incisalia augustinus</i>)	11(1)	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	11(1)	
Great Purple Hairstreak (<i>Atlides halesus</i>)	11(1)	
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	11(2)	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funeral Duskywing (<i>Ernnis funeralis</i>)	11(1)	
Mournful Duskywing (<i>Ernnis tristis</i>)	11(1)	
Lacustra Duskywing (<i>Ernnis brizo lacustra</i>)	11(1)	
? - ask	11(1)	

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Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	RECKLESSLY	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)	4	
Sleepy Orange (<i>Eurema nicefora</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Hartford's Sulfur (<i>C. harfordi</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)	1	
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>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	+++	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acorn Blue (<i>Icaricia acmon</i>)	111	
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys periplexa</i>)	+++	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Ben's Metalmark (<i>Apodemia mormo virginiensis</i>)	111	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	+++ 1111	
Stouffer's Duskywing (<i>Erynnis stoufferi</i>)		
Acuta Duskywing (<i>Erynnis tages acuta</i>)		

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)	1	
Harford's Sulfur (<i>C. harfordi</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Savv Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amynula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	III III	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	1	
Perplexing Hairstreak (<i>Culophrys perplexa</i>)	III III	
Great Purple Hairstreak (<i>Thaumatoctenia halesus</i>)		
Metalmarks		
Boehr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	III III III	
Mourning Duskywing (<i>Erynnis tristis</i>)		
Leustra Duskywing (<i>Erynnis leustra acte</i>)		
Brinker's white	1	
		esp. on silver-leaf lotus

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/LA/SC/MO Date: 3/13/02

Site Visit No. 1 2 3 4 5 6 7 8 9 10

Total site acres: 465

(mm/dd/yyyy)

Site Name: International

Site Location: Tecate

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	COLD
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	76° all day
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres:

Elev Min: _____ ft Max: _____ ft

Survey Cancelled

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^aCarval or nectar resources. Identify species.^b Sparse= plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: SISCUA/CM Date: 2/14/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465

(mm/dd/yyyy)

Site Name: International Site Location: Tecate

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	76°
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	cold
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	all day
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres:

Elev Min: _____ ft Max: _____ ft

Survey cancelled

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c
Plantago erecta			dense in some areas	F
Castilleja exserta			sparse	F
Cordylanthus rigidus				F

^a Larval or nectar resources. Identify species.^b Sparse= plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North: open space/BLM
South: _____
East: _____
West: _____Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads

nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: SK IMD Date: 3/20/02Site Visit No. 1 2 3 4 5 6 7 8 9 10Total site acres: 4.65Site Name: International Site Location: Tecate

(mm/dd/yyyy)

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin <u>5:30 pm</u>	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>70°</u>
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End <u>5:30</u>	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>60°</u>

Total hours surveyed: 2.0

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c
Castilleja	1-2 alive		Sparse alive	
	valley 15		dense dead	F
Plantago	old stand	just coming	dense	
Castilleja	Scattered	all live		
Castilleja	all live	up		
Castilleja	all live			
Castilleja	all dead			
Castilleja	scattered		sparse dead	F

Larval or nectar resources. Identify species: Plantago Castilleja

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads

nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

ST/MD

Tecate

QCB#1

3/20/02

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amynula</i>)		
Southern Blue (<i>Glaucoopsyche 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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia agustinius</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Altides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)		
Mournful Duskywing (<i>Ernnis tristis</i>)		
Lucustra Duskywing (<i>Ernnis orizo lucustra</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/LA/sc/cm Date: 3/28/02Site Visit No: 1 2 3 4 5 6 7 8 9 10Total site acres: 41.5Site Name: InternationalSite Location: Tecate

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin <u>11:00 am</u>	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12 gusts of 7	<u>74°</u>
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End <u>1:15</u>	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>79°</u>

Total hours surveyed: 2.25 hazy

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

L. AHN / S. Ternant 5/22/14 Lerate VUBZ #2

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amytula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	111 (3)	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)	(1)	
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	TH (5)	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	111 (4)	
Mournful Duskywing (<i>Ernnis tristis</i>)		
Lucustra Duskywing (<i>Ernnis hirzo lucustra</i>)		

S. Ching & C. Mutz

EL-MAR-2002

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucomysche lygdamus australis</i>)	HTT HTT III	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Aemon Blue (<i>Icaricia aemon</i>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	HTT HTT	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	HTT HTT HTT	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	HTT HTT HTT I	
Mourning Duskywing (<i>Ernnis tristis</i>)		
Lucasta Duskywing (<i>Ernnis lucasta</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: TKC/LA/cm Date: 9/2/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465Site Name: International Site Location: Tecate

(mm/dd/yyyy)

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin <u>3:30</u>	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>72°</u>
	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End <u>4:15 pm</u>	clear/ part cloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>72°</u>

Total hours surveyed: .75

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

4:15-5:15 - looked for larval/egg clustering on
 Plantago ovata & Castilleja exserta
 none found - lots of Plantago

4/2/02

CM14 LH
NO Butterflies Observed

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>Charidras gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrightii</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche 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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Atalides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)		
Mourning Duskywing (<i>Ernnis tristis</i>)		
Lucasta Duskywing (<i>Ernnis orizo lucasta</i>)		

S1150

7/12/02

NCS #7 Lecate

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Aemon Blue (<i>Icaricia aemon</i>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mourning Duskywing (<i>Erynnis tristis</i>)		
Lacustra Duskywing (<i>Erynnis horio lacustra</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/LA/S/CM Date: 4/3/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465

(mm/dd/yyyy)

Site Name: International

Site Location: Tecate

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 11:30 am	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	75°
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End 1:00 pm	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	80°

Total hours surveyed: 1.5

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

ST

4/13/02

Leave

WIB=19

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona henneli</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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)	1 (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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygona satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amvtula</i>)		
Southern Blue (<i>Glaucoopsyche lygdamus australis</i>)		
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Aemon Blue (<i>Icaricia aemon</i>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	11 (3)	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Bohr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	THH THH II (1)	
Mournful Duskywing (<i>Ernnis tristis</i>)		
Lacustra Duskywing (<i>Ernnis brizo lacustra</i>)		

4/3/02

ST/LA

JCBIA

TECATE

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)	11	
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona</i> <i>ennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona</i> <i>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>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amynula</i>)		
Southern Blue (<i>Glauopsyche lygdamus</i> <i>australis</i>)	11	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	11	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	HTT	
Great Purple Hairstreak (<i>Thaumatoxena halesi</i>)	11	
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgini</i>)	11	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus</i> <i>communis</i>)		
Duskywings		
Funeral Duskywing (<i>Ernnis funeralis</i>)	HT	
Tourmaline Duskywing (<i>Ernnis tisamenus</i>)		
Acusta Duskywing (<i>Ernnis acustra</i>)		

Tecate Peak S. N. 3 Apr - 2002

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	11	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona</i> Hennei)		
Chalcedon Checkerspot (<i>E. chalcedona</i> <i>chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)		
Gabb's Checkerspot (<i>Charidryas gabbii</i>)	1	
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus</i> <i>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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	WT WT 1	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>C. eupheleis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	111	
Tourmaline Duskywing (<i>Ernnis tisamenus</i>)		
Acraea Duskywing (<i>Ernnis acraea</i>)		

Quino Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/sc/mplif Date: 3/6/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465 acres Site Name: International D Site Location: DTAY Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 10:20 am	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	71°
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
1:10 pm	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	69°
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants*	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

a. Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North open space / BLM COF
South " "
East "
West "Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mileHabitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture, sowbugs/earwigs recent fire, grading)

Other: permanent BLM fuel break, no recent activity in past

3 years

3/6/02

ST ~~K~~

D

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)	7	(ATO - V)
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)	11 (2)	CPTO - V
Quino Checkerspot (<i>E. editha quino</i>)	11 (2)	URTF - V
Gabb's Checkerspot (<i>Chariavas gabbii</i>)		coyote - O
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		Bear - O
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amynula</i>)		
Southern Blue (<i>Glaucomysche lygdamus australis</i>)	11 (2)	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	11 (3)	
Great Purple Hairstreak (<i>Thaumatoctenia halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	1	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mourning Duskywing (<i>Erynnis tristis</i>)		
Lucasta Duskywing (<i>Erynnis brizo lucasta</i>)		

SC. /M.D 3/6/02

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Page Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
West 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 antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucoopsyche 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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virginuli</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funeral Duskywing (<i>Erynnis funeralis</i>)		
Mournful Duskywing (<i>Erynnis tristis</i>)		
Laeustra Duskywing (<i>Erynnis brizo laeustra</i>)		
Least Hairstreak		
Tecate Cuorese ⁺ Mitoura sharni		

3/6/02 LA ~~sites~~ Otay Mesa, CA 92107

Butterflies Observed (larvae or adults)	Number	Comments	NOFL CATH
Papilionidae-Swallowtails			
Pale Swallowtail (<i>Papilio eurymedon</i>)			
Anise Swallowtail (<i>P. zelicaon</i>)			Hermit Thrush
Western Tiger Swallowtail (<i>P. rutulus</i>)			WFII/2
Pieridae-Whites, Sulfurs, & Orangetips			2 Harford's
Sara Orangetip (<i>Anthocharis sara</i>)			DP
Felder's Orangetip (<i>A. cethura</i>)			or de
Grinnell's Marble (<i>A. lanceolata australis</i>)			ready
Cabbage White (<i>Artogeia rapae</i>)			W
Sleepy Orange (<i>Eurema nicippe</i>)			W
Common White (<i>Pontia protodice</i>)			W
California Dogface (<i>Zerene eurydice</i>)			W
Alfalfa Butterfly (<i>Colias eurytheme</i>)			W
Harford's Sulfur (<i>C. harfordi</i>)			W
Satyrinae-Satyrids			
California Ringlet (<i>Coenonympha californica</i>)			
Danaidae-Milkweed Butterflies			
Monarch (<i>Danaus plexippus</i>)			
Queen (<i>D. gilippus</i>)			
Nymphalidae-Brush Footed Butterflies			
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>)			
Mylitta Crescent (<i>Phyciodes mylitta</i>)			
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)			
California Sister (<i>Adelpha bredowii californica</i>)			
Satyr Anglewing (<i>Polygonia satyrus</i>)			
Lorquin's Admiral (<i>Basilarchia lorquini</i>)			
Blues			
Western Tailed Blue (<i>Everes amyntula</i>)			
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	1		
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>)			
Edward's Blue (<i>Lycaeides melissa samuelis</i>)			
Pygmy Blue (<i>Brephidium exilis</i>)			
Hairstreaks			
Gray Hairstreak (<i>Strymon melinus</i>)			
Brown Elfin (<i>Incisalia augustinus</i>)			
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	+++		
Great Purple Hairstreak (<i>Atlides halesus</i>)			
Metalmarks			
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)			
Wright's Metalmark (<i>Calephelis wrightii</i>)			
Hesperiidae-Common Skippers			
Common Checkered Skipper (<i>Pyrgus communis</i>)			
Duskywings			
Funereal Duskywing (<i>Erynnis funeralis</i>)			
Mourning Duskywing (<i>E. tristis</i>)			
Lacustra Duskywing (<i>E. nizo lacustra</i>)			
Tecate Cypress Hairstreak	11		

Quino Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: STSC/MO LA Date: 3/6/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 405

(mm/dd/yyyy)
Site Name: GPD

Site Location: OAM truck trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 11:00	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	69°
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End 4:05	clear/ partcloudy/overcast/fog/drizzle/shower	(<) 1-3 4-7 8-12 >12	60°

Total hours surveyed:

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c	

a. Larval or nectar resources. Identify species.

b. Sparse= plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North open space
South _____
East _____
West _____Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mileHabitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing, agriculture, sowbugs/earwigs, recent fire, grading)

Other: fuel break maintenance

3/6/02

C+D

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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 wrightii</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amynula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	11(2)	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	111(3)	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	1(i)	
Mournful Duskywing (<i>Erynnis tristis</i>)		
Lacustra Duskywing (<i>Erynnis brizo lacustra</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/LA/SC/MO Date: 3/13/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 46.5 acres Site Name: International Site Location: *Territory A* Stay Tuck Trail

(mm/dd/yyyy)

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres:

Elev Min: _____ ft Max: _____ ft

Survey cancelled

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

a. Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/SC/LA/CM Date: 3/14/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465

(mm/dd/yyyy)
Site Name: International

Site Location:

Otay Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	100 all
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	Cold
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	day
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed: _____

Focused Survey Acres: _____

Elev Min: _____ ft Max: _____ ft

Survey Cancelled

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

a. Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

Quino Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/LA/SCLCM Date: 3/22/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

(mm/dd/yyyy)

map

Total site acres: 405

Site Name: International

Site Location: Otay Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin: 2:00 pm	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12 gusts of 6	72°
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End 4:10	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	67°

Total hours surveyed: 2 hrs 10 min

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

LA/cm 3/22/02 Map D QCB# UTay Truck Trail

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>I. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucoopsyche lygdamus australis</i>)	(5)	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	(3)	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	(5)	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	(3)	
Mournful Duskywing (<i>Ernnis tristis</i>)		
Lacustra Duskywing (<i>Ernnis hrizo lacustra</i>)		

S. Ching, ~~L. Hutton~~ (2) 22-Mar-2002

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	HTT	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys peruviana</i>)	HTT HTT	
Great Purple Hairstreak (<i>Attilides halesus</i>)	1	
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virginiri</i>)	HTT HTT HTT	
Wright's Metalmark (<i>Calephelis wrighti</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	111	
Mournful Duskywing (<i>Erynnis tristis</i>)		
Lucusta Duskywing (<i>Erynnis lucusta</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST

Date: 3/29/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 465

(mm/dd/yyyy)
Site Name: International

Site Location: Day truck trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	

Total hours surveyed:

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____
South _____
East _____
West _____Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mileHabitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: SSC/LA/CT Date: 4/3/02Site Visit No: 10 4 5 6 7 8 9 10Total site acres: 466 Site Name: International (mm/dd/yyyy) Site Location: Otay Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
begin <u>1:30 pm</u>	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>73°</u>
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End <u>5:00</u>	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	<u>34 mph</u> <u>60°</u>

Total hours surveyed:

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____
South _____
East _____
West _____Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mileHabitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

ST Otay

4/3/02

JCB #3

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amvnula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	III (5)	
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>)		
Edward's Blue (<i>Lycaeides melisa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	I (1)	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	II (2)	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	III (4)	
Mournful Duskywing (<i>Ernnis tristis</i>)		
Lucustra Duskywing (<i>Ernnis trizo lucustra</i>)		

Otay
4/30/02

LA

ac 3

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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 wrightii</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche 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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	111	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)	111	
Mournful Duskywing (<i>Erynnis tristis</i>)		
Lucasta Duskywing (<i>Erynnis brizo lucasta</i>)		

SB OTAY T.T. S. Chiang 21-Apr-2002

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Male Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>I. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</i>)		
Common White (<i>Pontia protodice</i>)		
California Dogface (<i>Zerene eurydice</i>)		
Alfalfa Butterfly (<i>Colias eurytheme</i>)		
Hartford's Sulfur (<i>C. hartfordi</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	111	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philoctetes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Stirtonia melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	111	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskwings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	11	
Mourning Duskywing (<i>Ernnis crameri</i>)		
Acraea Duskywing (<i>Ernnis acraea</i>)		

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: ST/LA/SC/CM Date: 4/10/02

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 4.05

(mm/dd/yyyy)

Site Name: International Site Location: Otay fruct trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 10:30 am	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	68°
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
12:30 pm	clear/ partcloudy/overcast/fog/drizzle/shower hazy	<1 1-3 4-7 8-12 >12	75°
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End 5:00 pm	clear/ partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	78°

Total hours surveyed: 6.5

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

Larval or nectar resources. Identify species.

b. Sparse = plants not touching; dense = plants touching

c. Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____

Distance _____ ft./mile

South _____

Distance _____ ft./mile

East _____

Distance _____ ft./mile

West _____

Distance _____ ft./mile

Habitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcropsConditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)
Other: _____

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	1111 5	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)	1	
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona hennei</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)		
Quino Checkerspot (<i>E. editha quino</i>)	2 NO	
Gabb's Checkerspot (<i>Charidryas gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vannessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	1 1	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	1 2	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Attilides halesus</i>)	11 11 17	
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)	11 11 10	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	11 11 11 13	
Mourning Duskywing (<i>Ernnis tristis</i>)		
Lacustra Duskywing (<i>Ernnis brizo lacustra</i>)		
Callippe Fritillary	11 11 10	

Otay Truck Trail

LCB #4

4/10/02
LA

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>Charidrys gabbii</i>)		
Leanira Checkerspot (<i>Thessalia leanira wrighti</i>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucopsyche lygdamus australis</i>)	11	
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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	11	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	1111	
Great Purple Hairstreak (<i>Attides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Erynnis funeralis</i>)		
Mourning Duskywing (<i>Erynnis tristis</i>)		
Lacustra Duskywing (<i>Erynnis priso lacustra</i>)		

10-Apr-2002 OTAY T.T. S. Mukerji

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)	HTT	
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i> Pieris 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>)		
Hartford's Sulfur (<i>C. hartfordii</i>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
Henne's Checkerspot (<i>Euphydryas chalcedona henrici</i>)		
Chalcedon Checkerspot (<i>E. chalcedona chalcedona</i>)	1	⇒ looked freshly emerged
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>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)	1	
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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Saryr Anglewing (<i>Polygonia saryrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	III	
Echo Blue (<i>Celastrina echo</i>)		
Sonoran Blue (<i>Philotes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia agustinius</i>)	HTT	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	HTT HTT HTT HTT III	
Great Purple Hairstreak (<i>Attides halesius</i>)		
Metalmarks		
Benn's Metalmark (<i>Apodemia nemo virgulti</i>)	HTT	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	HTT HTT HTT HTT HTT HTT	
Tourmaline Duskywing (<i>Ernnis tisamenus</i>)		
Lucusta Duskywing (<i>Ernnis lucteo-lucustris</i>)		
Calippe Fritillary (\downarrow month back)	HTT HTT III	

Quino-Checkerspot General Form

Survey type: Habitat Assessment/Adult Survey

Surveyor: 51/SC/LA/CM Date: 4/12/62

Site Visit No: 1 2 3 4 5 6 7 8 9 10

Total site acres: 415

(mm/dd/yyyy)
Site Name: International

Site Location: Stay Truck Trail

Time (24 hr)	Sky	Wind (Beaufort)	Temp F or C
Begin 10:30 am	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	67°
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
2:00 pm	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	73°
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	
End 4:45 pm	clear/partcloudy/overcast/fog/drizzle/shower	<1 1-3 4-7 8-12 >12	65°

Total hours surveyed: 6.15 hrs

Focused Survey Acres: _____ Elev Min: _____ ft Max: _____ ft

Describe, map, and estimate areas surveyed below.

Host Plants ^a	Patch Size (ft ²)	No Plants/ft ²	Sparse/Dense ^b	Map ID ^c

^a Larval or nectar resources. Identify species.^b Sparse = plants not touching; dense = plants touching^c Corresponds to polygon on a map.

Surrounding land uses (including adjoining properties):

North _____
South _____
East _____
West _____Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mile
Distance _____ ft./mileHabitat onsite (circle): open soils hilltop ridge Plantago Castilleja soil crusts old roads
nectar clay soils rock outcrops

Conditions: (e.g., grazing agriculture sowbugs/earwigs recent fire grading)

Other: _____

4/12/02 (HayTruck NBS#)

51

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)		
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips	(1)	
Sara Orangetip (<i>Anthocharis sara</i>)	1	
Felder's Orangetip (<i>A. cethura</i>)	(1)	
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)	1	
Sleepy Orange (<i>Eurema niceippe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)		
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polgonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amytula</i>)		
Southern Blue (<i>Glauopsyche lygdamus australis</i>)	7 11 (7)	
Echo Blue (<i>Celastrina ladon echo</i>)		
Sonoran Blue (<i>Philotrodes sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)		
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Bear's Metalmark (<i>Apodemia mormo virgullii</i>)	1 1 1 (4)	
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funeral Duskywing (<i>Erynnis funeralis</i>)		
Mournful Duskywing (<i>Erynnis tristis</i>)		
Lacustra Duskywing (<i>Erynnis brizo lacustra</i>)		
Calypso Metalmark		
ATA-0 Western-0	ATA-0	
AFEL-0	AFEL-0	
MDSC-0	MDSC-0	
ISSP-0	ISSP-0	
COTINTAND-0	COTINTAND-0	

Otay Mesa NWR.
LA/LM

QCB⁴⁵

QCB
4/12/02

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Anise Swallowtail (<i>P. zelicaon</i>)	11	
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)	1	
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</i>)		
Painted Lady (<i>Vanessa cardui</i>)		
West Coast Lady (<i>V. annabella</i>)		
Virginia Lady (<i>V. virginiana</i>)		
Red Admiral (<i>V. atalanta</i>)		
Buckeye (<i>Junonia coenia</i>)		
Mourning Cloak (<i>Nymphalis antiopa</i>)		
California Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adelpha bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		→
Lorquin's Admiral (<i>Basilarchia lorquini</i>)		
Blues		
Western Tailed Blue (<i>Everes amyntula</i>)		
Southern Blue (<i>Glaucomysopsyche lygdamus australis</i>)	HTT 41	
Echo Blue (<i>Celastrina ladon echo</i>)	1	
Sonoran Blue (<i>Phloeotribus sonorensis</i>)		
Marine Blue (<i>Leptotes marina</i>)		
Acmon Blue (<i>Icaricia acmon</i>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)	HTT III	
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	HTT + HTT + HTT - HTT III	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Apodemia mormo virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	HTT HTT HTT	
Mourning Duskywing (<i>Ernnis tristis</i>)		
Iacusta Duskywing (<i>Ernnis dixona iacusta</i>)	1	Painted Meadow

Otay T.T. 12-Apr-2002 S. Lennan / S. Chiang

Butterflies Observed (larvae or adults)	Number	Comments
Papilionidae-Swallowtails		
Pale Swallowtail (<i>Papilio eurymedon</i>)	1	
Anise Swallowtail (<i>P. zelicaon</i>)		
Western Tiger Swallowtail (<i>P. rutulus</i>)		
Pieridae-Whites, Sulfurs, & Orangetips		
Sara Orangetip (<i>Anthocharis sara</i>)		
Felder's Orangetip (<i>A. cethura</i>)		
Grinnell's Marble (<i>A. lanceolata australis</i>)		
Cabbage White (<i>Artogeia rapae</i>)		
Sleepy Orange (<i>Eurema niceppe</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>)		
Satyrinae-Satyrids		
California Ringlet (<i>Coenonympha californica</i>)	1	
Danaidae-Milkweed Butterflies		
Monarch (<i>Danaus plexippus</i>)		
Queen (<i>D. gilippus</i>)		
Nymphalidae-Brush Footed Butterflies		
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>)		
Mylitta Crescent (<i>Phyciodes mylitta</i>)		
California Patch (<i>Chlosyne californica</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 Tortoiseshell (<i>Nymphalis californica</i>)		
California Sister (<i>Adeiphya bredowii californica</i>)		
Satyr Anglewing (<i>Polygonia satyrus</i>)		
Lorquin's Admiral (<i>Basilarchia lorquinii</i>)		
Blues		
Western Tailed Blue (<i>Everes amynula</i>)		
Southern Blue (<i>Glauopsyche 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>)		
Edward's Blue (<i>Lycaeides melissa samuelis</i>)		
Pygmy Blue (<i>Brephidium exilis</i>)		
Hairstreaks		
Gray Hairstreak (<i>Strymon melinus</i>)		
Brown Elfin (<i>Incisalia augustinus</i>)		
Perplexing Hairstreak (<i>Callophrys perplexa</i>)	HT HT	
Great Purple Hairstreak (<i>Atlides halesus</i>)		
Metalmarks		
Behr's Metalmark (<i>Aeolochima norma virgulti</i>)		
Wright's Metalmark (<i>Calephelis wrightii</i>)		
Hesperiidae-Common Skippers		
Common Checkered Skipper (<i>Pyrgus communis</i>)		
Duskywings		
Funereal Duskywing (<i>Ernnis funeralis</i>)	HT HT HT HT HT	
Mourning Duskywing (<i>Ernnis tristis</i>)		
Locusta Duskywing (<i>Ernnis locusta</i>)		
Comstock's (falling) Fritillary	HT HT	
W. D. Comstock		
Dark Hair streak		

APPENDIX C

HOST PLANTS AND NECTAR SOURCES OBSERVED

Appendix C
Quino Checkerspot Butterfly Host Plants and Nectar Sources
Observed at the International Fuel Break

Scientific Name	Common Name	Location Observed
Host Plants	Scientific Name	Location Observed
<i>Plantago erecta</i>	western plantain	TP, OM
<i>Cordylanthus</i> sp.	bird's beak	STT, TP, OM
<i>Castilleja exserta</i>	purple owl's-clover	OM, TP
Nectar Sources		Location Observed
<i>Allium</i> sp.	onion	STT
<i>Amsinckia menziesii</i>	common fiddleneck	STT
<i>Castilleja affinis</i>	coast paintbrush	STT, OM
<i>Cryptantha</i> sp.	cryptantha	STT, TP, OM
<i>Dichelostemma capitatum</i> ssp. <i>pauciflorum</i>	blue dicks	STT, TP, OM
<i>Ericameria</i> sp.	pinebush	STT, OM
<i>Eriodictyon trichocalyx</i>	hairy yerba santa	STT, TP, OM
<i>Eriogonum fasciculatum</i>	California buckwheat	STT, TP, OM
<i>Eriophyllum confertiflorum</i>	golden yarrow	STT, TP, OM
<i>Erodium cicutarium</i>	red-stemmed filaree	STT, TP, OM
<i>Lasthenia californica</i>	coast goldfields	STT, TP
<i>Lomatium</i> sp.	lomatium	OT
<i>Lotus strigosus</i>	strigose lotus	TP
<i>Lupinus</i> sp.	lupine	STT, TP, OM
<i>Plagiobothrys</i> sp.	popcorn flower	STT, TP, OM
<i>Rhus ovata</i>	sugar bush	STT, OM
<i>Salvia columbariae</i>	chia	STT, TP

STT = Shockey Truck Trail
 TP = Tecate Peak
 OM = Otay Mountain

APPENDIX D1

PLANT SPECIES OBSERVED AT SHOCKEY TRUCK TRAIL FUEL BREAK

Appendix D1
Plant Species Observed on Shockey Truck Trail

Scientific Name	Common Name	Map Location
VASCULAR PLANTS		
FERNS AND FERN ALLIES		
PTERIDACEAE	BRAKE FAMILY	
<i>Pellaea andromedifolia</i>	coffee fern	2.1-1
<i>Pellaea mucronata</i>	bird's-foot fern	2.1-1, 2.1-3
SELAGINELLACEAE	SPIKE-MOSS FAMILY	
<i>Selaginella bigelovii</i>	Bigelow's spike-moss	2.1-5
<i>Selaginella cinerascens</i>	ashy spike-moss	2.1-1, 2.1-2
GYMNOSPERMS		
PINACEAE	PINE FAMILY	
<i>Pinus sp.</i>	pine	2.1-3
ANGIOSPERMS (DICOTYLEDONS)		
ANACARDIACEAE	SUMAC OR CASHEW FAMILY	
<i>Malosma laurina</i>	laurel sumac	All map locations
<i>Rhus ovata</i>	sugar bush	2.1-1, 2.1-2, 2.1-3
<i>Toxicodendron diversilobum</i>	poison oak	2.1-3, 2.1-5
ASTERACEAE	SUNFLOWER FAMILY	
<i>Ambrosia psilostachya</i>	western ragweed	2.1-3, 2.1-5
<i>Artemisia californica</i>	California sagebrush	2.1-3, 2.1-5
<i>Artemisia tridentata</i>	Great Basin sagebrush	2.1-1, 2.1-2
<i>Baccharis salicifolia</i>	mule fat	2.1-1, 2.1-3, 2.1-5
<i>Baccharis sarothroides</i>	broom baccharis	2.1-3, 2.1-5
<i>Centaurea melitensis*</i>	tocalote	2.1-1, 2.1-2, 2.1-3, 2.1-4
<i>Cirsium occidentale</i>	cobweb thistle	2.1-1
<i>Cirsium vulgare*</i>	bull thistle	2.1-1
<i>Encelia californica</i>	California bush sunflower	2.1-5
<i>Encelia farinosa</i>	brittlebush	2.1-3, 2.1-5
<i>Ericameria pinifolia</i>	pinebush	2.1-1, 2.1-2, 2.1-3, 2.1-4
<i>Eriophyllum confertiflorum</i>	golden yarrow	2.1-1, 2.1-2, 2.1-5
<i>Filago californica</i>	California fluffweed	2.1-1, 2.1-2, 2.1-3, 2.1-4
<i>Gnaphalium bicolor</i>	bicolored cudweed	2.1-5
<i>Gnaphalium canescens</i>	felty everlasting	2.1-1
<i>Gutierrezia californica</i>	California matchweed	2.1-1, 2.1-2, 2.1-3, 2.1-5
<i>Hazardia squarrosa</i>	saw-toothed goldenbush	2.1-3, 2.1-5
<i>Heterotheca grandiflora</i>	telegraph weed	2.1-5
<i>Isocoma menziesii</i>	coastal goldenbush	2.1-3
<i>Lasthenia californica</i>	coast goldfields	2.1-1, 2.1-2
<i>Lessingia filaginifolia</i>	cudweed aster	2.1-1, 2.1-2, 2.1-3
<i>Malacothrix saxatilis</i>	cliff malacothrix	2.1-1
<i>Sonchus oleraceus*</i>	common sow thistle	2.1-1
<i>Tetradymia comosa</i>	hairy horsebrush	2.1-5
<i>Xanthium strumarium</i>	cocklebur	2.1-3

Scientific Name	Common Name	Map Location
BORAGINACEAE <i>Amsinckia menziesii</i> <i>Cryptantha</i> sp. <i>Pectocarya linearis</i> ssp. <i>ferocula</i> <i>Plagiobothrys</i> sp. <i>Plagiobothrys collinus</i>	BORAGE FAMILY common fiddleneck cryptantha slender pectocarya popcorn flower California popcorn flower	2.1-5 2.1-3 2.1-1, 2.1-5 2.1-1, 2.1-2 2.1-1, 2.1-2, 2.1-3
BRASSICACEAE <i>Arabis</i> sp. <i>Arabis glabra</i> <i>Brassica nigra</i> * <i>Caulanthus heterophyllus</i> <i>Lepidium</i> sp. <i>Rorippa nasturtium-aquaticum</i> <i>Sisymbrium irio</i> *	MUSTARD FAMILY rock cress tower-mustard black mustard San Diego jewelflower peppergrass water-cress London rocket	2.1-1 2.1-1 2.1-1, 2.1-2, 2.1-3 2.1-3 2.1-4 2.1-3 2.1-5
CACTACEAE <i>Opuntia littoralis</i> <i>Opuntia prolifera</i>	CACTUS FAMILY coastal prickly pear coast cholla	2.1-1 2.1-1, 2.1-2, 2.1-3
CAPPARACEAE <i>Isomeris arborea</i>	CAPER FAMILY bladderpod	2.1-5
CAPRIFOLIACEAE <i>Lonicera subspicata</i> <i>Sambucus mexicana</i>	HONEYSUCKLE FAMILY southern honeysuckle Mexican elderberry	2.1-1 2.1-1, 2.1-2, 2.1-5
CHENOPodiaceae <i>Atriplex canescens</i> <i>Salsola tragus</i> *	GOOSEFOOT FAMILY four-wing saltbush Russian thistle	2.1-5 2.1-1, 2.1-2, 2.1-3
CONVOLVULACEAE <i>Calystegia macrostegia</i>	MORNING-GLORY FAMILY western bindweed	2.1-5
CRASSULACEAE <i>Dudleya</i> sp.	STONECROP FAMILY dudleya	2.1-1, 2.1-2
CUCURBITACEAE <i>Cucurbita foetidissima</i> <i>Marah macrocarpus</i>	GOURD FAMILY calabazilla wild cucumber	2.1-1 2.1-1
CUSCUTACEAE <i>Cuscuta californica</i>	DODDER FAMILY California dodder	2.1-2
ERICACEAE <i>Arctostaphylos glandulosa</i> <i>Arctostaphylos glauca</i>	HEATH FAMILY Eastwood's manzanita bigberry manzanita	2.1-1, 2.1-2, 2.1-3 2.1-1, 2.1-2, 2.1-3
<i>Comarostaphylis diversifolia</i>	summer holly	All map locations
EUPHORBIACEAE <i>Eremocarpus setigerus</i>	SPURGE FAMILY dove weed	2.1-2
FABACEAE <i>Astragalus</i> sp. <i>Lathyrus</i> sp. <i>Lotus argophyllus</i> <i>Lotus scoparius</i> <i>Lupinus</i> sp. <i>Lupinus bicolor</i> <i>Lupinus hirsutissimus</i>	LEGUME FAMILY milkvetch beauty pea silver leaf lotus deerweed lupine miniature lupine stinging lupine	2.1-1 2.1-5 2.1-1, 2.1-2, 2.1-3 2.1-1, 2.1-2, 2.1-3, 2.1-5 2.1-3 2.1-3 2.1-5

Scientific Name	Common Name	Map Location
FAGACEAE <i>Quercus agrifolia</i> <i>Quercus berberidifolia</i>	OAK FAMILY coast live oak scrub oak	2.1-1, 2.1-2, 2.1-3 2.1-1, 2.1-2, 2.1-3, 2.1-5
GERANIACEAE <i>Erodium botrys*</i> <i>Erodium cicutarium*</i>	GERANIUM FAMILY broad-lobed filaree red-stemmed filaree	2.1-5 2.1-1, 2.1-2, 2.1-3
HYDROPHYLLOACEAE <i>Eriodictyon trichocalyx</i> <i>Phacelia</i> sp. <i>Phacelia minor</i>	WATERLEAF FAMILY hairy yerba santa phacelia wild canterbury-bell	2.1-1, 2.1-3, 2.1-5 All map locations 2.1-4
LAMIACEAE <i>Marrubium vulgare*</i> <i>Salvia apiana</i> <i>Salvia columbariae</i> <i>Trichostema parishii</i>	MINT FAMILY horehound white sage chia bluecurls	2.1-5 All map locations 2.1-1, 2.1-2, 2.1-3, 2.1-5 2.1-1, 2.1-2, 2.1-3
MALVACEAE <i>Malacothamnus fasciculatus</i>	MALLOW FAMILY mesa bushmallow	2.1-1, 2.1-5
ONAGRACEAE <i>Camissonia</i> sp.	EVENING PRIMROSE FAMILY camissonia	2.1-1
PAEONIACEAE <i>Paeonia californica</i>	PEONY FAMILY California peony	2.1-1, 2.1-2, 2.1-3, 2.1-5
PAPAVERACEAE <i>Dicentra chrysanthia</i> <i>Dendromecon rigida</i> <i>Eschscholzia californica</i>	POPPY FAMILY golden ear-drops bush poppy California poppy	2.1-1 2.1-5 2.1-1
PLATANACEAE <i>Platanus racemosa</i> <i>Navarretia</i> sp.	SYCAMORE FAMILY western sycamore navarretia	2.1-5 2.1-1, 2.1-4
POLYGONACEAE <i>Eriogonum fasciculatum</i> <i>Eriogonum gracile</i>	BUCKWHEAT FAMILY California buckwheat slender woolly buckwheat	All map locations 2.1-1
RANUNCULACEAE <i>Clematis ligusticifolia</i>	BUTTERCUP FAMILY virgin's bower	2.1-1
RHAMNACEAE <i>Ceanothus</i> sp. <i>Ceanothus cuneatus</i> <i>Ceanothus spinosus</i> <i>Rhamnus crocea</i>	BUCKTHORN FAMILY ceanothus buck brush green bark ceanothus spiny redberry	2.1-3, 2.1-5 2.1-3, 2.1-4 2.1-1, 2.1-2, 2.1-5 2.1-1
ROSACEAE <i>Adenostoma fasciculatum</i> <i>Adenostoma sparsifolium</i> <i>Cercocarpus betuloides</i> <i>Prunus ilicifolia</i>	ROSE FAMILY chamise red shanks birch-leaf mountain-mahogany holly-leaved cherry	All map locations 2.1-1, 2.1-2 2.1-1, 2.1-2, 2.1-3 2.1-1, 2.1-2, 2.1-3
RUBIACEAE <i>Galium</i> sp. <i>Galium angustifolium</i>	MADDER FAMILY bedstraw narrow-leaved bedstraw	2.1-4 2.1-1, 2.1-2, 2.1-3

Scientific Name	Common Name	Map Location
SALICACEAE <i>Populus fremontii</i> ssp. <i>fremontii</i> <i>Salix</i> sp. <i>Salix lasiolepis</i>	WILLOW FAMILY Fremont's cottonwood willow arroyo willow	2.1-4 2.1-1, 2.1-3 2.1-1
SCROPHULARIACEAE <i>Castilleja</i> sp. <i>Castilleja affinis</i> <i>Cordylanthus rigidus</i> <i>KeckIELLA antirrhinoides</i> <i>Mimulus aurantiacus</i> <i>Penstemon spectabilis</i> <i>Scrophularia californica</i>	FIGWORT FAMILY paintbrush coast paintbrush bird's-beak chaparral beard-tongue orange bush monkey-flower royal penstemon California figwort	2.1-3 2.1-3 2.1-1 2.1-1, 2.1-3, 2.1-4, 2.1-5 2.1-1, 2.1-3, 2.1-4, 2.1-5 2.1-1, 2.1-2, 2.1-3 2.1-1, 2.1-2
SOLANACEAE <i>Nicotiana glauca</i> *	NIGHTSHADE FAMILY tree tobacco	2.1-5
ANGIOSPERMS (MONOCOTYLEDONS)		
LILIACEAE <i>Allium</i> sp. <i>Bloomeria crocea</i> <i>Calochortus</i> sp. <i>Dichelostemma capitatum</i> <i>Nolina cismontana</i> <i>Yucca schidigera</i> <i>Yucca whipplei</i>	LILY FAMILY onion common goldenstar mariposa lily blue dicks California beargrass Mojave yucca Our Lord's candle	2.1-3 2.1-1, 2.1-2, 2.1-3 2.1-4, 2.1-5 2.1-1 2.1-1, 2.1-2 2.1-1 2.1-1, 2.1-2, 2.1-3, 2.1-5
POACEAE <i>Achnatherum coronatum</i> <i>Bromus hordeaceus</i> * <i>Bromus madritensis</i> ssp. <i>rubens</i> * <i>Leymus condensatus</i> <i>Nassella</i> sp. <i>Nasella lepida</i> <i>Polypogon monspeliensis</i> * <i>Stipa</i> sp.	GRASS FAMILY giant needlegrass soft chess foxtail chess giant wild rye needlegrass small-flowered needlegrass annual beard grass needlegrass	2.1-1, 2.1-2 All map locations All map locations 2.1-3 2.1-1, 2.1-5 2.1-1, 2.1-5 2.1-3 2.1-3, 2.1-5
TYPHACEAE <i>Typha latifolia</i>	CATTAIL FAMILY Broad-leaved cattail	2.1-4

* = Non-native species.

APPENDIX D2

**PLANT SPECIES OBSERVED AT
TECATE FUEL BREAK**

Appendix D2
Plant Species Observed on Tecate

Scientific Name	Common Name	Map Location
VASCULAR PLANTS		
FERNS AND FERN ALLIES		
PTERIDACEAE	BRAKE FAMILY	
<i>Pellaea mucronata</i>	bird's-foot fern	3.1-1
SELAGINELLACEAE	SPIKE-MOSS FAMILY	
<i>Selaginella bigelovii</i>	Bigelow's spike-moss	3.1-1
ANGIOSPERMS (DICOTYLEDONS)		
ANACARDIACEAE	SUMAC OR CASHEW FAMILY	
<i>Malosma laurina</i>	laurel sumac	3.1-1, 3.1-2
ASTERACEAE	SUNFLOWER FAMILY	
<i>Artemisia californica</i>	California sagebrush	3.1-2
<i>Baccharis salicifolia</i>	mule fat	3.1-2
<i>Baccharis sarothroides</i>	broom baccharis	3.1-1
<i>Centaurea melitensis*</i>	tocalote	3.1-1
<i>Centaurea solstitialis*</i>	yellow star-thistle	3.1-1, 3.1-2
<i>Encelia</i> sp.	sunflower	3.1-1, 3.1-2
<i>Eriophyllum confertiflorum</i>	golden yarrow	3.1-1, 3.1-2
<i>Filago californica</i>	California fluffweed	3.1-1, 3.1-2
<i>Gnaphalium canescens</i>	felty everlasting	3.1-1, 3.1-2
<i>Gutierrezia californica</i>	California matchweed	3.1-1, 3.1-2
<i>Hazardia squarrosa</i>	saw-toothed goldenbush	3.1-1
<i>Lasthenia californica</i>	coast goldfields	3.1-1
<i>Senecio</i> sp.	butterweed	3.1-1
<i>Senecio californicus</i>	California butterweed	3.1-1
BORAGINACEAE	BORAGE FAMILY	
<i>Cryptantha</i> sp.	cryptantha	3.1-1
<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	slender pectocarya	3.1-1
<i>Plagiobothrys collinus</i>	California popcorn flower	3.1-1, 3.1-2
BRASSICACEAE	MUSTARD FAMILY	
<i>Brassica nigra</i> *	black mustard	3.1-2
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY	
<i>Lonicera subspicata</i>	southern honeysuckle	3.1-2
CRASSULACEAE	STONECROP FAMILY	
<i>Crassula connata</i>	pygmy-weed	3.1-1
<i>Dudleya</i> sp.	dudleya	3.1-1
<i>Dudleya edulis</i>	ladies-fingers	3.1-1
<i>Dudleya lanceolata</i>	lance-leaved dudleya	3.1-1
ERICACEAE	HEATH FAMILY	
<i>Arctostaphylos glandulosa</i>	Eastwood's manzanita	3.1-1
<i>Arctostaphylos glauca</i>	bigberry manzanita	3.1-1
EUPHORBIACEAE	SPURGE FAMILY	
<i>Eremocarpus setigerus</i>	dove weed	3.1-2

Scientific Name	Common Name	Map Location
FABACEAE <i>Lathyrus vestitus</i> <i>Lotus argophyllus</i> <i>Lotus purshianus</i> <i>Lotus scoparius</i> <i>Lotus strigosus</i> <i>Lupinus</i> sp. <i>Medicago polymorpha</i> * <i>Pickeringia montana</i> ssp. <i>tomentosa</i>	LEGUME FAMILY wild sweet pea silver leaf lotus Spanish clover deerweed strigose lotus lupine bur clover chapparal pea	3.1-1, 3.1-2 3.1-1, 3.1-2 3.1-1 3.1-2 3.1-1 3.1-1 3.1-2 3.1-1
FAGACEAE <i>Quercus berberidifolia</i>	OAK FAMILY scrub oak	3.1-1, 3.1-2
FRANKENIACEAE <i>Frankenia salina</i>	FRANKENIA FAMILY alkali heath	3.1-1
GERANIACEAE <i>Erodium botrys</i> * <i>Erodium cicutarium</i> *	GERANIUM FAMILY broad-lobed filaree red-stemmed filaree	3.1-1, 3.1-2 3.1-1
HYDROPHYLLOACEAE <i>Eriodictyon trichocalyx</i>	WATERLEAF FAMILY hairy yerba santa	3.1-1
LAMIACEAE <i>Marrubium vulgare</i> * <i>Salvia apiana</i> <i>Salvia columbariae</i> <i>Trichostema parishii</i>	MINT FAMILY horehound white sage chia bluecurls	3.1-2 3.1-1, 3.1-2 3.1-2 3.1-1, 3.1-2
MYRTACEAE <i>Eucalyptus</i> sp. *	MYRTLE FAMILY gum tree	3.1-2
PAPAVERACEAE <i>Eschscholzia californica</i> <i>Romneya coulteri</i>	POPPY FAMILY California poppy Coulter's matilija poppy	3.1-1 3.1-1
PLANTAGINACEAE <i>Plantago erecta</i>	PLANTAIN FAMILY western plantain	3.1-1
POLEMONIACEAE <i>Navarretia</i> sp.	PHLOX FAMILY navarretia	3.1-1
POLYGONACEAE <i>Eriogonum fasciculatum</i>	BUCKWHEAT FAMILY California buckwheat	3.1-1, 3.1-2
PRIMULACEAE <i>Dodecatheon clevelandii</i>	PRIMROSE FAMILY Padres' shooting star	3.1-1
RHAMNACEAE <i>Ceanothus spinosus</i>	BUCKTHORN FAMILY green bark ceanothus	3.1-1
ROSACEAE <i>Adenostoma fasciculatum</i> <i>Cercocarpus betuloides</i> <i>Cercocarpus minutiflorus</i> <i>Prunus ilicifolia</i>	ROSE FAMILY chamise birch-leaf mountain-mahogany smooth mountain-mahogany holly-leaf cherry	3.1-1, 3.1-2 3.1-1 3.1-1 3.1-1

Scientific Name	Common Name	Map Location
SCROPHULARIACEAE		
<i>Castilleja exserta</i>	FIGWORT FAMILY purple owl's-clover	3.1-1
<i>Cordylanthus rigidus</i>	bird's-beak	3.1-1
<i>Mimulus aurantiacus</i>	orange bush monkey-flower	3.1-1
<i>Penstemon spectabilis</i>	royal penstemon	3.1-2
<i>Scrophularia californica</i>	California figwort	3.1-1
SOLANACEAE	NIGHTSHADE FAMILY	
<i>Solanum xanti</i>	chaparral nightshade	3.1-1
TAMARICACEAE	TAMARISK FAMILY	
<i>Tamarix ramosissima*</i>	Mediterranean tamarisk	3.1-2
ANGIOSPERMS (MONOCOTYLEDONS)		
LILIACEAE	LILY FAMILY	
<i>Bloomeria crocea</i>	common goldenstar	3.1-2
<i>Calochortus sp.</i>	mariposa lily	3.1-2
<i>Dichelostemma capitatum</i>	blue dicks	3.1-1, 3.1-2
<i>Yucca whipplei</i>	Our Lord's candle	3.1-2
POACEAE	GRASS FAMILY	
<i>Achnatherum coronatum</i>	giant needlegrass	3.1-1, 3.1-2
<i>Avena barbata*</i>	slender wild oat	3.1-2
<i>Avena fatua*</i>	wild oat	3.1-1
<i>Bromus madritensis ssp. rubens*</i>	foxtail chess	3.1-1, 3.1-2
<i>Lamarckia aurea*</i>	goldentop	3.1-1
<i>Leymus condensatus</i>	giant wild rye	3.1-1

* = Non-native species.

APPENDIX D3

PLANT SPECIES OBSERVED AT OTAY MOUNTAIN FUEL BREAK

Appendix D3
Plant Species Observed on Otay Mountain

Scientific Name	Common Name	Map Location
VASCULAR PLANTS		
FERNS AND FERN ALLIES		
DENNSTAEDTIACEAE	BRACKEN FAMILY	
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	western bracken	4.1-1, 4.1-2
PTERIDACEAE	BRAKE FAMILY	
<i>Pellaea andromedifolia</i>	coffee fern	4.1-1
<i>Pellaea mucronata</i>	bird's-foot fern	4.1-1, 4.1-2, 4.1-3
SELAGINELLACEAE	SPIKE-MOSS FAMILY	
<i>Selaginella bigelovii</i>	Bigelow's spike-moss	4.1-1, 4.1-3, 4.1-4
<i>Selaginella cinerascens</i>	ashy spike-moss	4.1-4
GYMNOSPERMS		
CUPRESSACEAE	CYPRESS FAMILY	
<i>Cupressus forbesii</i>	Tecate cypress	4.1-1, 4.1-2, 4.1-3
ANGIOSPERMS (DICOTYLEDONS)		
ANACARDIACEAE	SUMAC OR CASHEW FAMILY	
<i>Malosma laurina</i>	laurel sumac	All map locations
<i>Rhus integrifolia</i>	lemonadeberry	4.1-1, 4.1-3
<i>Rhus ovata</i>	sugar bush	4.1-1, 4.1-3
<i>Toxicodendron diversilobum</i>	poison oak	4.1-3
APIACEAE	CARROT FAMILY	
<i>Daucus pusillus</i>	rattlesnake weed	4.1-1
<i>Lomatium</i> sp.	lomatium	4.1-3
<i>Sanicula</i> sp.	sanicula	4.1-1, 4.1-3
ASTERACEAE	SUNFLOWER FAMILY	
<i>Artemisia californica</i>	California sagebrush	4.1-1, 4.1-3, 4.1-4
<i>Baccharis salicifolia</i>	mule fat	4.1-3
<i>Baccharis sarothroides</i>	broom baccharis	All map locations
<i>Centaurea melitensis</i> *	tocalote	All map locations
<i>Cotula coronopifolia</i> *	brass-buttons	4.1-1
<i>Encelia californica</i>	California bush sunflower	4.1-4
<i>Eriophyllum confertiflorum</i>	golden yarrow	All map locations
<i>Filago californica</i>	California fluffweed	4.1-1, 4.1-3, 4.1-4
<i>Geraea canescens</i>	desert sunflower	4.1-1, 4.1-2
<i>Gnaphalium bicolor</i>	bicolored cudweed	4.1-1
<i>Gnaphalium californicum</i>	California everlasting	4.1-1, 4.1-2, 4.1-3
<i>Gnaphalium canescens</i>	felty everlasting	4.1-3
<i>Gutierrezia californica</i>	California matchweed	4.1-1, 4.1-3
<i>Hazardia squarrosa</i>	saw-toothed goldenbush	4.1-1, 4.1-2, 4.1-3
<i>Helianthus</i> sp.	sunflower sp.	4.1-3
<i>Hemizonia</i> sp.	hemizonia sp.	4.1-3, 4.1-4
<i>Hypochaeris glabra</i> *	smooth cat's-ear	4.1-1, 4.1-2
<i>Isocoma menziesii</i>	coastal goldenbush	4.1-4
<i>Lasthenia californica</i>	coast goldfields	4.1-4
<i>Lessingia filaginifolia</i>	cudweed aster	4.1-1
<i>Medicago indica</i> *	sourclover	All map locations
<i>Porophyllum gracile</i>	odora	4.1-4

Scientific Name	Common Name	Map Location
<i>Rafinesquia californica</i>	California chicory	4.1-1
<i>Taraxacum officinale*</i>	common dandelion	4.1-4
BORAGINACEAE	BORAGE FAMILY	
<i>Cryptantha sp.</i>	cryptantha	4.1-1
<i>Plagiobothrys collinus</i>	California popcorn flower	4.1-1, 4.1-2
BRASSICACEAE	MUSTARD FAMILY	
<i>Brassica nigra*</i>	black mustard	4.1-1, 4.1-4
<i>Lepidium sp.</i>	peppergrass sp.	
<i>Sisymbrium irio*</i>	London rocket	4.1-1, 4.1-2
CACTACEAE	CACTUS FAMILY	
<i>Opuntia littoralis</i>	coastal prickly pear	4.1-4
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY	
<i>Lonicera subspicata</i>	southern honeysuckle	4.1-3
CARYOPHYLLACEAE	PINK FAMILY	
<i>Silene gallica*</i>	common catchfly	4.1-4
CHENOPODIACEAE	GOOSEFOOT FAMILY	
<i>Salsola tragus*</i>	Russian thistle	4.1-4
CISTACEAE	ROCK-ROSE FAMILY	
<i>Helianthemum scoparium</i>	peak rush-rose	4.1-1, 4.1-3
<i>Calystegia macrostegia</i>	western bindweed	4.1-1, 4.1-3, 4.1-4
CRASSULACEAE	STONECROP FAMILY	
<i>Crassula connata</i>	pygmy-weed	4.1-1
<i>Dudleya sp.</i>	dudleya	4.1-4
<i>Dudleya edulis</i>	ladies-fingers	4.1-3
<i>Dudleya pulverulenta</i>	chalk dudleya	4.1-4
CUSCUTACEAE	DODDER FAMILY	
<i>Cuscuta californica</i>	California dodder	4.1-4
ERICACEAE	HEATH FAMILY	
<i>Arctostaphylos glandulosa</i>	Eastwood's manzanita	4.1-1, 4.1-2, 4.1-3
<i>Arctostaphylos glauca</i>	bigberry manzanita	4.1-1, 4.1-2, 4.1-3
<i>Comarostaphylis diversifolia</i>	summer holly	All map locations
EUPHORBIACEAE	SPURGE FAMILY	
<i>Eremocarpus setigerus</i>	dove weed	4.1-2, 4.1-3, 4.1-4
FABACEAE	LEGUME FAMILY	
<i>Astragalus sp.</i>	milkvetch sp.	4.1-2
<i>Astragalus didymocarpus</i>	two-seeded milkvetch	4.1-1, 4.1-2
<i>Lathyrus vestitus</i>	wild sweet pea	4.1-3
<i>Lotus agrophylloides</i>	silver leaf lotus	All map locations
<i>Lotus scoparius</i>	deerweed	All map locations
<i>Lupinus sp.</i>	lupine	4.1-3
<i>Lupinus bicolor</i>	miniature lupine	4.1-1
<i>Melilotus indica*</i>	sourclover	4.1-2, 4.1-3
<i>Melilotus officinalis*</i>	yellow sweetclover	4.1-2, 4.1-3
<i>Pickeringia montana</i> ssp. <i>tomentosa</i>	chaparral pea	4.1-3
<i>Psorothamnus sp.</i>		4.1-1, 4.1-2, 4.1-3
FAGACEAE	OAK FAMILY	
<i>Quercus berberidifolia</i>	scrub oak	4.1-3, 4.1-4

Scientific Name	Common Name	Map Location
GERANIACEAE <i>Erodium botrys*</i> <i>Erodium cicutarium*</i>	GERANIUM FAMILY broad-lobed filaree red-stemmed filaree	All map locations All map locations
HYDROPHYLLOACEAE <i>Eriodictyon trichocalyx</i> <i>Phacelia sp.</i> <i>Phacelia minor</i>	WATERLEAF FAMILY hairy yerba santa Phacella sp. wild canterbury-bell	4.1-1, 4.1-2, 4.1-3 4.1-1 4.1-1
LAMIACEAE <i>Marrubium vulgare*</i> <i>Salvia sp.</i> <i>Salvia mellifera</i> <i>Trichostema parishii</i> <i>Trichostema lanatum</i> <i>Trichostema lanceolatum</i>	MINT FAMILY horehound salvia sp. black sage bluecurls woolly bluecurls vinegar weed	4.1-1 4.1-1, 4.1-3, 4.1-4 4.1-1, 4.1-2, 4.1-4 4.1-1, 4.1-3 4.1-1, 4.1-3 4.1-3
LYTHRACEAE <i>Lythrum californicum</i>	LOOSESTRIFE FAMILY California loosestrife	4.1-3
MALVACEAE <i>Malacothamnus sp.</i> <i>Malacothamnus fasciculatus</i>	MALLOW FAMILY shrub mallow mesa bushmallow	4.1-1, 4.1-2 4.1-1, 4.1-3
MYRTACEAE <i>Eucalyptus sp. *</i>	MYRTLE FAMILY gum tree	4.1-4
NYCTAGINACEAE <i>Mirabilis californica</i>	FOUR O'CLOCK FAMILY California wishbone bush	4.1-4
PAPAVERACEAE <i>Dendromecon rigida</i> <i>Dicentra chrysanthia</i> <i>Romneya coulteri</i>	POPPY FAMILY bush poppy golden ear-drops Coulter's matilija poppy	4.1-1, 4.1-2, 4.1-3 4.1-3 4.1-1, 4.1-3
PLANTAGINACEAE <i>Plantago erecta</i>	PLANTAIN FAMILY western plantain	4.1-4
POLEMONIACEAE <i>Navarretia sp.</i>	PHLOX FAMILY navarretia sp.	4.1-1
POLYGONACEAE <i>Eriogonum fasciculatum</i> <i>Rumex crispus*</i>	BUCKWHEAT FAMILY California buckwheat curly dock	4.1-1, 4.1-3, 4.1-4 4.1-1
PRIMULACEAE <i>Anagallis arvensis*</i> <i>Dodecatheon clevelandii</i>	PRIMROSE FAMILY scarlet pimpernel Padres' shooting star	4.1-2 4.1-3
RANUNCULACEAE <i>Clematis ligusticifolia</i>	BUTTERCUP FAMILY virgin's bower	4.1-2
RHAMNACEAE <i>Ceanothus sp.</i> <i>Ceanothus crassifolius</i> <i>Ceanothus gregii</i> <i>Ceanothus otayensis</i> <i>Ceanothus tomentosus var. olivaceus</i> <i>Ceanothus spinosus</i> <i>Rhamnus crocea</i>	BUCKTHORN FAMILY ceanothus hoary leaf ceanothus deerbrush Otay ceanothus Ramona ceanothus green bark ceanothus spiny redberry	4.1-4 4.1-1, 4.1-2 4.1-1, 4.1-2 4.1-1, 4.1-2 4.1-1, 4.1-2, 4.1-4 4.1-1, 4.1-2 4.1-3, 4.1-4

Scientific Name	Common Name	Map Location
ROSACEAE <i>Adenostoma fasciculatum</i> <i>Cercocarpus betuloides</i> <i>Heteromeles arbutifolia</i>	ROSE FAMILY chamise birch-leaf mountain-mahogany toyon	All map locations 4.1-1 4.1-3
SCROPHULARIACEAE <i>Castilleja affinis</i> <i>Castilleja densiflora</i> <i>Castilleja exserta</i> <i>Cordylanthus rigidus</i> <i>Keckiella antirrhinoides</i> <i>Mimulus aurantiacus</i> <i>Mimulus cardinalis</i>	FIGWORT FAMILY coast paintbrush dense-flowered owl's clover purple owl's-clover bird's-beak chaparral beard-tongue orange bush monkey-flower scarlet monkey-flower	4.1-4 All map locations All map locations All map locations All map locations 4.1-4 All map locations 4.1-1, 4.1-3
SOLANACEAE <i>Solanum xanti</i>	NIGHTSHADE FAMILY chaparral nightshade	4.1-3, 4.1-4
ANGIOSPERMS (MONOCOTYLEDONS)		
IRIDACEAE <i>Sisyrinchium bellum</i>	IRIS FAMILY blue-eyed-grass	4.1-4
LILIACEAE <i>Calochortus</i> sp. <i>Chlorogalum pomeridianum</i> <i>Dichelostemma capitatum</i> <i>Nolina cismontana</i> <i>Yucca whipplei</i> <i>Zigadenus fremontii</i>	LILY FAMILY mariposa lily soap plant blue dicks California beargrass Our Lord's candle Fremont's star-lily	All map locations 4.1-2, 4.1-3 4.1-1, 4.1-2, 4.1-3 4.1-2, 4.1-3 All map locations 4.1-1, 4.1-2, 4.1-3
POACEAE <i>Achnatherum coronatum</i> <i>Avena barbata</i> * <i>Avena fatua</i> * <i>Bromus diandrus</i> * <i>Bromus hordeaceus</i> * <i>Bromus madritensis</i> ssp. <i>rubens</i> * <i>Lamarckia aurea</i> * <i>Melica imperfecta</i> <i>Nassella pulchra</i> <i>Polypogon monspeliensis</i> * <i>Vulpia myuros</i> *	GRASS FAMILY giant needlegrass slender wild oat wild oat ripgut grass soft chess foxtail chess goldentop coast range melic purple needlegrass annual beard grass fescue	4.1-1, 4.1-2, 4.1-3 4.1-4 4.1-4 4.1-1 4.1-1, 4.1-3 All map locations 4.1-1 4.1-2, 4.1-3 All map locations 4.1-1 4.1-1, 4.1-3, 4.1-4
TYPHACEAE <i>Typha latifolia</i>	CATTAIL FAMILY broad-leaved cattail	4.1-1

* = Non-native species.

APPENDIX E

WILDLIFE SPECIES OBSERVED AT THE INTERNATIONAL FUEL BREAK

Appendix E
Wildlife Species Observed at the International Fuel Break Site

Scientific Name	Common Name	Sign*
CLASS INSECTA		
PAPILIONIDAE	PARNASSIANS, SWALLOWTAILS	
<i>Papilio eurymedon</i>	pale swallowtail	○
<i>Papilio zelicaon</i>	anise swallowtail	○
<i>Papilio rutulus</i>	western tiger swallowtail	○
PIERIDAE	WHITES & SULPHURS	
<i>Anthocharis sara</i>	Sara orangetip	○
<i>Artogeia rapae</i>	cabbage white	○
<i>Pontia protodice</i>	common white	○
<i>Colias eurytheme</i>	alfalfa butterfly	○
<i>Pontia beckerii</i>	Becker's white	○
SATYRIDAE	SATYRS OR BROWNS	
<i>Coenonympha californica</i>	California ringlet	○
NYMPHALIDAE	BRUSH-FOOTED BUTTERFLIES	
<i>Euphydryas chalcedona chalcedona</i>	Chalcedon checkerspot	○
<i>Euphydryas editha quino</i>	Quino checkerspot	○
<i>Vanessa cardui</i>	painted lady	○
<i>Vanessa virginiensis</i>	Virginia lady	○
<i>Nymphalis antiopa</i>	mourning cloak	○
<i>Speyeria callippe</i>	Comstocke's fritillary	○
LYCAENIDAE	GOSSAMER WINGS	
<i>Everes amyntula</i>	western tailed blue	○
<i>Glaucopsyche lygdamus australis</i>	southern blue	○
<i>Celastrina ladon echo</i>	echo blue	○
<i>Philotes sonorensis</i>	sonoran blue	○
<i>Icaricia acmon</i>	acmon blue	○
<i>Strymon melinus</i>	gray hairstreak	○
<i>Incisalia augustinus</i>	brown elfin	○
<i>Callophrys thornei</i>	Thorne's hairstreak	○
<i>Callophrys perplexa</i>	perplexing hairstreak	○
RIODINIDAE	METALMARKS	
<i>Apodemia mormo virgulti</i>	Behr's metalmark	○
HESPERIIDAE	TRUE SKIPPERS	
<i>Erynnis brizo lacustra</i>	lacustra duskywing	○
<i>Erynnis funeralis</i>	funereal duskywing	○
<i>Erynnis tristis</i>	mournful duskywing	○
<i>Pyrgus communis</i>	common checkered skipper	○
CLASS REPTILIA	REPTILES	
IGUANIDAE	IGUANID LIZARDS	
<i>Phrynosoma coronatum blainvillei</i>	San Diego horned lizard	○
<i>Sceloporus occidentalis</i>	western fence lizard	○
<i>Uta stansburiana</i>	side-blotched lizard	○
COLUBRIDAE	COLUBRID SNAKES	
<i>Coluber constrictor</i>	racer	○

Scientific Name	Common Name	Sign*
VIPERIDAE <i>Crotalus mitchellii</i> <i>Crotalus viridis</i>	VIPERS speckled rattlesnake western rattlesnake	O O
CLASS AVES	BIRDS	
CATHARTIDAE <i>Cathartes aura</i>	NEW WORLD VULTURES turkey vulture	O
ACCIPITRIDAE <i>Buteo jamaicensis</i> <i>Circus cyaneus</i>	HAWKS, KITES, EAGLES red-tailed hawk northern harrier	O O
ODONTOPHORIDAE <i>Callipepla californica</i>	NEW WORLD QUAIL California quail	O
COLUMBIDAE <i>Zenaida macroura</i>	PIGEONS & DOVES mourning dove	O
TROCHILIDAE <i>Calypte anna</i> <i>Selasphorus rufus</i>	HUMMINGBIRDS Anna's hummingbird rufous hummingbird	V O
PICIDAE <i>Colaptes auratus</i>	WOODPECKERS northern flicker	O
TYRANNIDAE <i>Myiarchus cinerascens</i>	TYRANT FLYCATCHERS ash-throated flycatcher	O
ALAUDIDAE <i>Eremophila alpestris</i>	LARKS horned lark	O
CORVIDAE <i>Aphelocoma californica</i> <i>Corvus corax</i>	JAYS & CROWS western scrub-jay common raven	O O,V
AEGITHALIDAE <i>Psaltriparus minimus</i>	BUSHTITS bushtit	O,V
TROGLODYTIDAE <i>Salpinctes obsoletus</i> <i>Troglodytes aedon</i>	WRENS rock wren house wren	O, V O
TIMALIIDAE <i>Chamaea fasciata</i>	BABBLERS wrentit	V
TURDIDAE <i>Catharus guttatus</i>	THRUSHES hermit thrush	O
LANIIDAE <i>Lanius ludovicianus</i>	SHRIKES loggerhead shrike	O
ICTERIDAE <i>Sturnella neglecta</i>	BLACKBIRDS western meadowlark	V
EMBERIZIDAE <i>Aimophila ruficeps canescens</i> <i>Amphispiza belli belli</i> <i>Chondestes grammacus</i> <i>Pipilo crissalis</i> <i>Pipilo maculatus</i> <i>Zonotrichia leucophrys</i>	EMBERIZIDS southern California rufous-crowned sparrow Bell's sage sparrow lark sparrow California towhee spotted towhee white-crowned sparrow	V O O,V O,V O,V O
CARDINALIDAE <i>Pheucticus melanocephalus</i> <i>Passerina amoena</i>	CARDINALS black-headed grosbeak lazuli bunting	O O

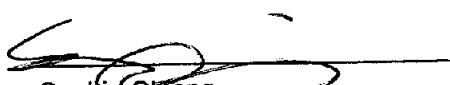
Scientific Name	Common Name	Sign*
FRINGILLIDAE <i>Carduelis psaltria</i>	FINCHES lesser goldfinch	V
LEPORIDAE <i>Lepus californicus bennettii</i> <i>Sylvilagus audubonii</i> <i>Spermophilus beecheyi</i>	HARES & RABBITS San Diego black-tailed jackrabbit desert cottontail California ground squirrel	O O O,B
CANIDAE <i>Canis familiaris</i> <i>Canis latrans</i>	WOLVES & FOXES domestic dog coyote	O O,T
CERVIDAE <i>Odocoileus hemionus</i>	DEER mule deer	O,T

*O=Observation V=Vocalization T=Tracks B=Burrow

APPENDIX F

SIGNATURE PAGE

FIELD PERSONNEL SIGNATURE PAGE
BLM - INTERNATIONAL FUEL BREAK



Sophie Chiang
TE-781217-6

6-14-02

Date

~~Lisa Allen for Christine Mukai'~~

Christine Mukai
TE-781217-6

6-14-02

Date



Stacie Tennant
TE-834489-1

6-13-02

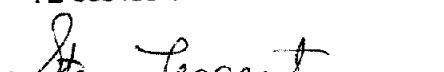
Date



Lisa Allen
TE-050450-1

6-14-02

Date



for Michelle Dohrn
TE-838742-3

6-13-02

Date

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