Compliance Biology, Inc., "Results of Butterfly Surveys on Magic Mountain Entertainment Site, Los Angeles County, California" (August 4, 2004; 2004C)

2004 Butterfly

compliance•biology inc

August 4, 2004

Results of Butterfly Surveys on Magic Mountain Entertainment Site, Los Angeles County, California.

INTRODUCTION

At the request of Compliance Biology, Inc. (CBI), Guy P. Bruyea conducted a field survey of the above-referenced site in the Santa Clarita area of northwestern Los Angeles County, California (**Exhibit 1**). The specific goal of this survey was to assess potential suitability of the Magic Mountain Entertainment (MME) site as habitat to support the San Emigdio blue butterfly (*Plebulina emigdionis*, herein referred to as SEB), a federal species of concern. Additional searches were conducted for habitat that may support the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*, herein QCB), historically known from other areas of Los Angeles County south of the project site. In addition to surveys for habitat that may support the aforementioned butterfly taxa, a general butterfly inventory was performed during a series of six site visits in April and May 2004. This report describes the relevant vegetation, topography, and present land use throughout the MME site in an effort to assess the overall quality of the habitat as it pertains to special-status butterfly species and general butterfly diversity on the site.

Survey Location

The ± 550-acre MME site consists of two separate survey areas in the vicinity of Six Flags Magic Mountain Park (Park). Area 1 includes approximately 100 acres and is located immediately adjacent to and east of the Park north of Magic Mountain Parkway. Area 2 totals approximately 450 acres and is located immediately west and south of the Park. The entire survey area is generally located west of Interstate Highway 5 (I-5) in the vicinity of Magic Mountain Parkway south of the Santa Clara River Basin and Highway 126 (**Exhibit 2**).

SENSITIVE BUTTERFLY SPECIES BACKGROUND INFORMATION

There are approximately 135 recorded butterfly species from Los Angeles County, of which approximately 120 are considered resident. Some species have adapted well to ornamental landscapes, but many formerly common species have now become increasingly rare over the past few decades due to urban expansion and other factors. Several butterflies presently (and/or historically) found in Los Angeles County are now protected or are considered

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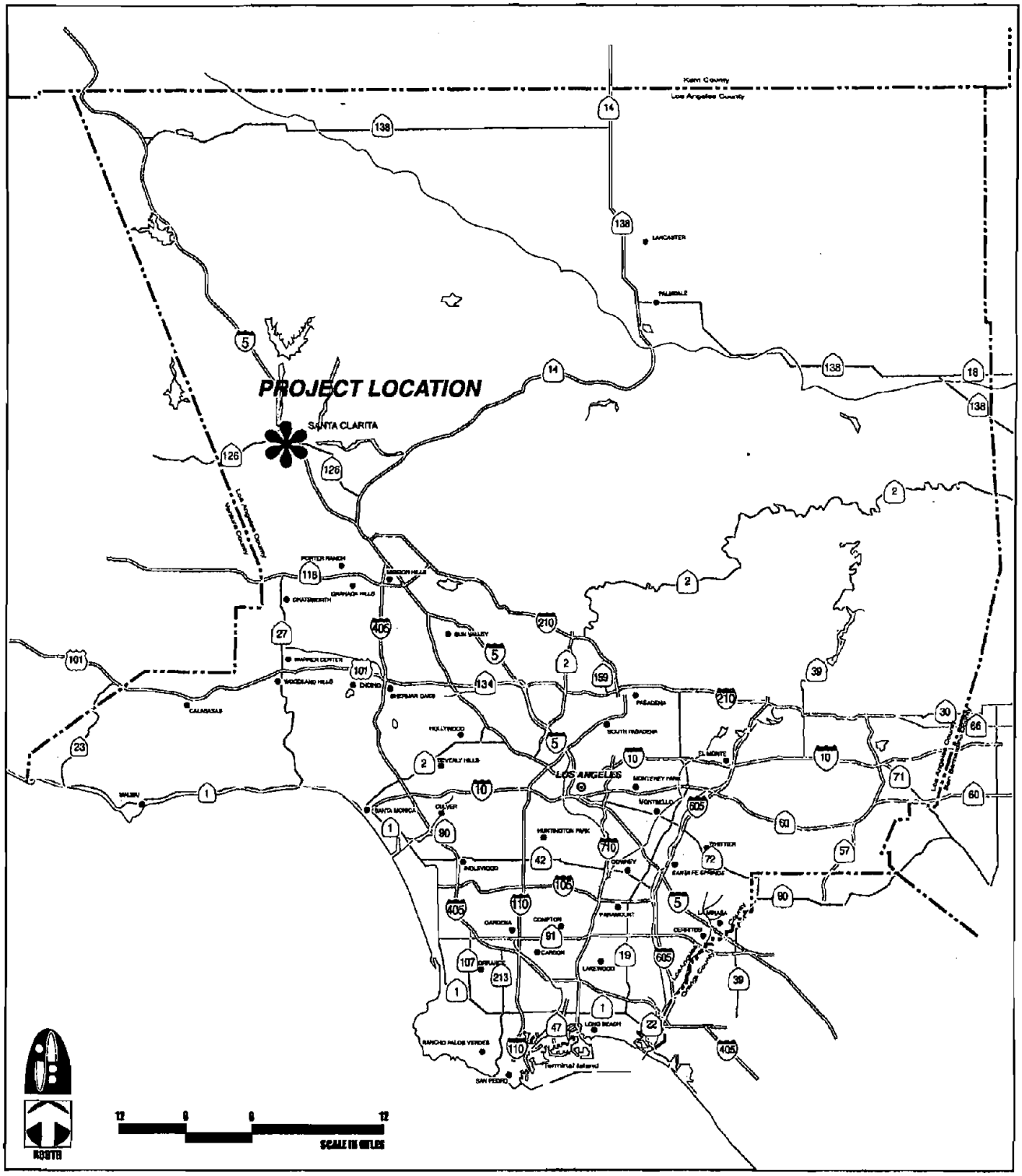
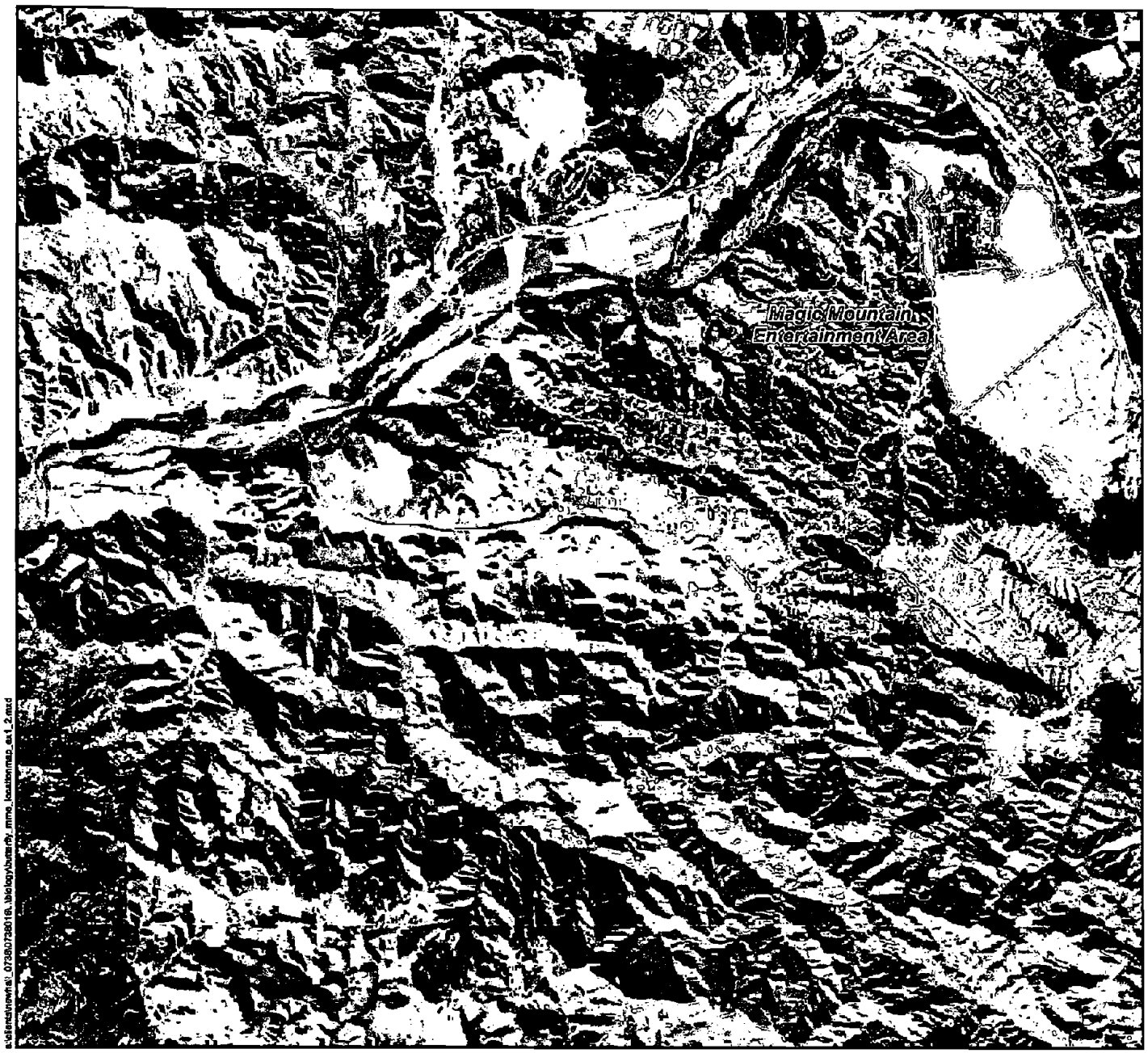


Exhibit 1

REGIONAL LOCATION



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L E G E N D

EXHIBIT 2
MAGIC MOUNTAIN
ENTERTAINMENT AREA

species of special concern by federal agencies. Several additional species are considered to be rare by professional entomologists in the region, but are afforded no protection status by any regulatory agencies. A complete list of all sensitive butterfly species is provided in **Table 1.** At least three butterfly species that once occurred in Los Angeles County are now presumably extinct. These include, 1) the unsilvered fritillary (*Speyeria adiaste atossa*), which was last observed near Mt. Pinos in 1959, 2) a very localized race of the Sonoran blue (*Philotes sonorensis*) that once occurred in the upper San Gabriel wash above Azusa (to 1968), and 3) the Palos Verdes blue (*Glaucopsyche lygdamus palosverdesensis*, herein referred to as PVB), which was last observed on the Palos Verdes peninsula in 1983.

Table 1.
Los Angeles County Sensitive Butterflies

Common Name	Scientific Name	Status	Range*
Quino Checkerspot	*Euphydryas editha quino*	FE	N
El Segundo Blue	*Euphilotes battoides allyni*	FE	N
Palos Verdes Blue	*Glaucopsyche lygdamus palosverdesensis*	FE	N
San Emigdio Blue	*Plebulina emigdionis*	[FSC]	Y
Santa Monica Mountains Hairstreak	*Satyrium auretorum fumosum*	[FSC]	N
Emmel's Elfin	*Callophrys mossii hidakupa*	[FSC]	N
Wandering Skipper	*Panoquina errans*	[FSC]	N
Alkali Skipper	*Pseudocopaeodes eunus*	[FSC]	N
Tehachapi Mountains Silverspot	*Speyeria egleis tehachapina*	[FSC]	N
Monarch Butterfly	*Danaus plexippus*	**	Y
Comstock's Blue	*Euphilotes battoides comstocki*	r	N
Bright Blue Copper	*Lycaena heteronea clara*	r	N
Veined Blue	*Icaricia neurona*	r	N
Green (=Skinner's) Blue	*Icaricia lupini chlorina*	r	N
Unsilvered Fritillary	*Speyeria adiaste atossa*	X	N
San Gabriel Mountain Sonoran Blue	*Philotes sonorensis extinctus*	X	N

*Indicates whether survey area is within known historical range of indicated taxon (Y=yes, N=no)
FE=Federally endangered, [FSC]=Federal Species of Concern, r = species considered rare by professional entomologists (no status); X=Presumed extinct (no status), ** Over-wintering (or roosting) sites should be protected, butterfly probably not at risk currently

Three butterfly species known from Los Angeles County are now on the federal list of endangered wildlife. These include the El Segundo blue (*Euphilotes battoides allyni*, herein referred to as ESB), the QCB, and the PVB.

No recent records for QCB exist from Los Angeles County. Populations of QCB are historically known from two locations in the Santa Monica Mountains, 1) Tapia Camp (1947), and 2) Point Dume (1954). Both of these colonies appear to have been extirpated, as adults have not been observed at or in the vicinity of either location since the mid-1950's. Most extant populations of QCB are known from southwestern Riverside County in the vicinity of Temecula and Murrieta, and southern San Diego County in the vicinity of Otay Mountain.

The ESB is restricted to the coastal dune systems in southwestern Los Angeles County. The ESB is presently known from only three locations: 1) the dunes west of the Los Angeles International Airport (LAX); 2) the dunes west of the Chevron Oil refinery immediately south of LAX; and, 3) Malaga Cove north of the Palos Verdes peninsula. This butterfly is strongly associated with the flower heads of its host plant, coastal or dune buckwheat (*Eriogonum parviflorum*). Adults are active in a single brood from mid-July to early September.

The PVB was restricted to the Palos Verdes peninsula where it flew in a single generation during February and March. This butterfly was strongly associated with its principal host plant, milkvetch (*Astragalus trichopodus* var. *lonchus*). The closest relative of the PVB is the southern blue (*Glaucopsyche lygdamus australis*), which occurs throughout most of the remainder of southern California. The southern blue is known to feed in the larval stage primarily on deerweed (*Lotus scoparius*), although larvae occasionally have been found on milkvetch.

The PVB was believed to have become extinct in 1983 when the last known large stand (approximately 120 plants) of milkvetch was eliminated by construction of a baseball field at Hesse Park on the peninsula. In the spring of 1994, a colony of what is considered by some researchers to be the PVB was discovered at a slightly more inland locality on Navy property in San Pedro. At this locality the butterflies are associated with both milkvetch and deerweed. Some researchers maintain that it is possible that genetic differences exist between seaward-facing peninsular populations (PVB) and the extant Navy colony.

Several other butterfly species are considered uncommon in Los Angeles County, some having federal status (i.e., species of special concern), and others that warrant careful monitoring due to declining populations or extremely limited ranges within Los Angeles County. These include the San Emigdio blue (*Plebulina emigdionis*), the Santa Monica Mountains hairstreak (*Satyrium auretorum fumosum*), the wandering skipper (*Panoquina errans*), and the Tehachapi Mountain silverspot (*Speyeria egleis tehachapina*).

Several additional butterfly species that appear to be declining (or may be extirpated) in Los Angeles County, but remain common in other areas of their respective ranges include the purplish copper (*Lycaena helloides*), giant copper (*Lycaena xanthoides*), Columella hairstreak (*Strymon columella istapa*), southern sylvan hairstreak (*Satyrium sylvinum sylvinum*), western tailed blue (*Everes amyntula*), coastal arrowhead blue (*Glaucopsyche piasus sagittigera*), California ringlet (*Cenonympha tullia californica*), and sylvan satyr (*Cercyonis sthenele sylvestris*).

Sensitive butterflies considered to have potential for occurrence on the subject property, based on known ranges, the presence of associated vegetation communities, elevations on site, host plant availability within the general vicinity, and other requirements, are discussed in more detail below.

San Emigdio Blue Butterfly (*Plebulina emigdionis*)

The SEB is a federal species of concern and is restricted to southern California in lower Sonoran and riparian habitats from the Owens Valley south to the Mojave River and west to northern Ventura and Los Angeles Counties. This butterfly can be locally abundant in

association with its primary host plant, four-wing saltbush (*Atriplex canescens*). This butterfly has also been observed in association with quail bush (*Atriplex lentiformis*) at scattered locations. The limited distribution of SEB was perplexing to early researchers based on the abundance and widespread distribution of its host plant, which occurs throughout the western United States. SEB larvae have formed a symbiotic relationship with at least one ant species, *Formica pilicornis* (Ballmer *et al*, 1991). This may account for, at least in part, SEB's limited range. These ants presumably extract droplets (containing glucose and amino acids) from the nectary glands of SEB larvae and the ants offer the larvae protection from predators. This relationship is actually quite common among other members of the butterfly family Lycaenidae, to which the SEB belongs. The male butterfly is small (approximately 20-25 millimeters in wingspan) and is blue with a wide brown border on the dorsal wing surface. The slightly larger female is primarily brown with blue at the wing bases and orange bands on the edges of the dorsal wing surface. The ventral wing surface of both sexes is mostly white with small black dots, with smaller blue dots along the hind wing edges.

SEB adults are active from late April to early September. The SEB can have up to three broods per year with the first brood in late April to May, the second brood from late June to early July, and the third brood in August to early September (Emmel & Emmel, 1973). Adults are generally observed perching on their host plant or on other plants in the immediate vicinity, and have also been observed nectaring on nearby flowers. The females deposit single echinoid eggs on the leaves of the host plant after mating. These eggs hatch in about eight to ten days and the larvae begin feeding on the leaves immediately. Diapause normally occurs in the late or last instar of larval development, presumably in the second and/or third broods depending on climatic conditions. The mature larva is variable in color from blue, green, brown, and combinations thereof, and is densely covered with fine white hairs. Retractile glands located on the eleventh larval segment can be protruded when stimulated. Researchers believe these organs are attractive to ants (Emmel & Emmel, 1973).

There are several other Lycaenid butterflies classified as 'blues' (subfamily Polyommatinae) that occur with the SEB in portions of its range. Some of these species are similarly sized and have markings that can be easily confused with SEB. Commonly observed sympatric butterfly species include the blue copper (*Lycaena heteronea*), southern blue (*Glaucopsyche lygdamus australis*), Boisduval's blue (*Icaricia icaroides*), acmon blue (*Icaricia acmon*), western tailed-blue (*Everes amyntula*), marine blue (*Leptotes marina*), pigmy blue (*Brephidium exilis*), Bernardino blue (*Euphilotes bernardino*), and square-spotted blue (*Euphilotes battoides*). SEB can be initially distinguished from many of these species by its relatively large size and its strong association with four-wing saltbush or quail bush.

Due to its extremely limited distribution in southern California and its propensity for isolated small colonies, the SEB can be easily impacted by anthropogenic disturbances. Many colonies in the Mojave Desert and Owens Valley are isolated and are probably not under any immediate threat, but other colonies found closer to growing desert communities and suburban Los Angeles cities are situated near major roads, railroad tracks and other developments, which may contribute to further decline. Some of these populations have already been extirpated; others are threatened by these impacts.

Some of the known localities for this species include the Lower Haiwee Reservoir in Inyo County, Mojave River area near Victorville, and Bouquet and Mint Canyons in Los Angeles County. It is thought that populations in the Mint Canyon area near Santa Clarita were extirpated in the late 1980's and early 1990's. However, Guy Bruyea did observe one extant SEB population in nearby Soledad Canyon as recently as August 1999.

Quino Checkerspot Butterfly (*Euphydryas editha quino*)

The United States Fish and Wildlife Service (Service) added this rare butterfly to the federal list of endangered wildlife in early 1997. The QCB is a geographic race (subspecies) of *Euphydryas editha*, whose combined ranges extend from northern Baja California to Canada along the Pacific coast, and east to Colorado (Bauer, 1975). This subspecies is presently known to exist only as several, probably isolated, colonies in southwestern Riverside County, southern San Diego County and northern Baja California, Mexico.

This butterfly is associated with sparsely vegetated or bare areas usually characterized by clay or cryptobiotic soil deposits that develop a hard crust within southern California sage scrub vegetation communities. Low-growing herbaceous annuals including the QCB's primary larval host plant, dot-seed plantain, *Plantago erecta* (Plantaginaceae), typically inhabit these areas. Other potential QCB host plants (considered secondary) may occupy these areas and include owl's clover (*Castilleja exserta*) and white snapdragon (*Antirrhinum coulterianum*), both in the plant family Schrophulariaceae.

Focused surveys for the QCB were not conducted as part of this survey as they are not expected to occur. Mr. Bruyea currently holds a valid section 10(a)(1)(A) QCB recovery permit for QCB issued under the Endangered Species Act of 1973, as amended (Permit Number TE-837439-4).

Monarch Butterfly (*Danaus plexippus*)

The widespread monarch butterfly can be observed throughout southern California in the coastal, lowland, and foothill areas, and occasionally in desert and mountain areas where it larval host plant, various milkweeds (genus *Asclepias*), occurs. Monarchs are renowned migrants, and large numbers can be observed along the California coast in the fall months as they migrate to overwintering sites along the California coast and into Mexico. A few California sites (e.g. Pacific Grove) support concentrated numbers of the overwintering adults on trees; usually the adults hibernate as scattered individuals or in small clusters (Emmel and Emmel, 1973).

Although the monarch butterfly may be declining due to land conversion and loss of larval host plant resources throughout its range, populations of this butterfly appear to be stable. However, existing and potential over-wintering sites along the southern California coast supporting large trees (primarily Eucalyptus and/or Pines) are considered important for the long-term survival of western United States populations.

METHODS

The MME site was surveyed by Guy Bruyea on April 11, 17, 30, May 7, 13 and 18, 2004. Date and times of the survey visits, weather conditions at the start and end of each survey period, and survey results are summarized in **Table 2.**

Table 2.
MME Site Butterfly Survey Information
April-May 2004

Date	Time PST	Weather	Wind	Biologist	Results
4/11	0900-1500	Sunny, 61-72 °F	0-1 F	Bruyea	No sensitive species observed
4/17	0900-1500	Partly Cloudy, 56-65 °F	0-2 F	Bruyea	No sensitive species observed
4/30	0900-1500	Sunny, 63-75 °F	0-1 F	Bruyea	No sensitive species observed
5/07	0900-1500	Sunny, 68-92 °F	0-2 F	Bruyea	No sensitive species observed
5/13	0900-1500	Sunny, 65-83 °F	0-1 F	Bruyea	No sensitive species observed
5/18	0900-1500	Sunny, 58-74 °F	0-2 F	Bruyea	No sensitive species observed

The primary focus of this survey was to determine the presence or absence of SEB, QCB and their associated host plants. Special consideration was given to areas supporting native vegetation that may include specific larval host plant habitat requirements for any of the aforementioned sensitive species. The presence or absence of invasive, non-native plant species was noted in an effort to assess the level of previous disturbance in a given area. Other habitat requirements including the presence of potential nectar resources and the overall quality of the site as it pertains to potential QCB topographical resources (i.e., hilltops) were assessed.

This field survey was conducted during daylight hours from 0900 to 1500 Pacific Daylight (Savings) Time. Temperatures recorded during the survey ranged from 58 to 92 °F (degrees Fahrenheit) and conditions varied from clear to partly cloudy with little or light winds (at or less than 1 Beaufort scale). Guy Bruyea identified all butterfly species in the field. Other wildlife species (including other invertebrates) were identified in the field or later identified using various texts.

Daily weather data were noted on field forms and/or a digital audio recorder approximately once per hour during survey visits. Weather data were recorded using a digital anemometer (Beaufort scale of wind speed measurement), thermometer, and by visual observation and estimation of cloud cover and other pertinent daily weather characteristics (rain, drizzle, marine layer, etc.). Digital recordings were later transcribed to field forms.

Not all plants and/or associated butterfly species that may have been present on site were necessarily observable (or identified) during this survey. For an exhaustive assessment of the butterfly fauna of a given area, surveys would be required throughout the year. GPB's general knowledge of the butterfly diversity for this area was utilized in an effort to locate specific habitats for some butterfly species. A California Natural Diversity Database (CNDDB) records search was conducted prior to the start of this survey to determine the probability that sensitive butterfly species may be present on the site.

Nomenclature used in this report was primarily derived from Hickman (1993) for plants; Emmel et al. (1973), Howe (1975), and Emmel (1998) for butterflies; and Arnett (2000) for other insects. Additional resources are listed at the end of this report.

Site Description

Paved roads surround much of Area 1, with various commercial developments (gas stations, hotels, and restaurants) to the west of the site along The Old Road. The Santa Clara River is situated immediately north and northeast of the site beyond Feedmill Road, which defines the northern site boundary. Six Flags Magic Mountain Park is located immediately east of this portion of the MME site, with Magic Mountain Parkway forming the southern boundary of Area 1.

Area 2 primarily supports a mixture of disturbed and relatively undisturbed coastal sage chaparral scrub and coastal sage scrub. New housing developments are present south of the site, and Six Flags Magic Mountain Park and Area 1 are present just north of the site, with various commercial developments (gas stations, hotels, and restaurants) beyond to the northeast along The Old Road and surrounding areas. Other undeveloped lands associated with the Newhall Project (Mesas East and Phase V) occur to the west of Area 2.

Topographically, the site is characterized by gently sloping hills with shallow canyons and flat mesa areas. Adjacent areas to the north and east are mostly flat in association with the Santa Clara River basin. The MME site has a combined maximum vertical relief of roughly 402 feet between its highest and lowest on-site elevation points. Elevations on the site range from approximately 1078 to 1480 feet above mean sea level.

Land use varies considerably adjacent to the survey area, and includes anthropogenic disturbances associated with Six Flags Magic Mountain Park just north and east of the site, and other human-related disturbances such as actively cultivated in-use agricultural fields, oil fields, fallow fields, industrial and commercial areas, paved and unimproved roads, transmission lines, and other developments. Other areas containing a mixture of disturbed and relatively undisturbed coastal sage scrub and other vegetation communities are present on adjacent lands to the west and southwest.

Vegetation Characteristics

Area 1 is mostly disturbed and includes actively cultivated irrigated and/or dry-farmed agricultural fields with row crops. Although mostly dense grain crops and other non-native

plant species occur within this portion of the MME site, native plants were observed at scattered locations. Non-native grasses and other weedy annuals have invaded other open areas of the site that are not currently farmed, and have also invaded patches of remaining coastal sage scrub observed at the eastern, southern, and northern edges of the site, possibly out-competing many native low-growing forbs. Valley oak (*Quercus lobata*) trees were observed at scattered locations throughout Area 1. Riparian areas and associated wetland vegetation are not present within the survey area, but do occur immediately north of the site within the Santa Clara River basin.

Area 2 is characterized by mostly non-native grassland and patches of disturbed to relatively undisturbed coastal sage-chaparral scrub and coastal sage scrub. Non-native grasses and other weedy annuals have invaded most areas of the site within these vegetation communities, possibly out-competing many native low-growing forbs. Although drainages are present on site, associated wetland indicator trees and shrubs are largely absent. Riparian areas and associated wetland vegetation do occur approximately one mile north of the site within the Santa Clara River basin. Scattered valley oak trees were observed in low numbers within and adjacent to Area 2.

Coastal Sage Scrub (Holland Element Code 32200)

Coastal sage scrub (CSS) contains mostly drought-deciduous shrubs with small leaves. CSS is primarily defined by the presence of California buckwheat (*Eriogonum fasciculatum*) and/or California sagebrush (*Artemisia californica*). Several patches of depauperate CSS occur in areas not in active cultivation on site, principally along the edges of shallow canyon areas. Relatively few associated CSS shrubs and other plants were present, but did include white sage (*Salvia apiana*), blue elderberry (*Sambucus mexicana*), wooly aster (*Lessingia filaginifolia*), chaparral yucca (*Yucca whipplei*), and deerweed (*Lotus scoparius*).

Non-native grasses occurring abundantly in these areas of the site included slender wild oats (*Avena barbata*), ripgut (*Bromus diandrus*), and foxtail chess (*Bromus madritensis* ssp. *rubens*).

A matrix of open patches can be found throughout areas inhabited with CSS on site, containing a mixture of native and non-native low-growing annuals including owl's clover (*Castilleja exserta*), clarkia (*Clarkia* sp.), lupine (*Lupinus* sp.), and whispering bells (*Emmenanthe penduliflora*). Diversity of native annuals appeared relatively low on the subject property, probably due to the presence of invasive and dense non-native vegetation. However, due to the timing of the current survey, the presence or absence of many annual plant species within these open patches could not be adequately assessed.

Coastal Sage-Chaparral Scrub (Holland Element Code 37G00)

Coastal sage-chaparral scrub (CSCS) contains a mixture of sclerophyllous low chaparral shrubs and drought-deciduous sage scrub species, and is regarded as an ecotone between the two communities. These areas include floristic elements of both coastal sage scrub and lower chaparral, including shrubs such as California buckwheat, California sagebrush, chamise (*Adenostoma fasciculatum*), purple sage (*Salvia leucophylla*), and white sage (*Salvia apiana*).

Scattered throughout this vegetation community, within less dense (and open) areas, are native species including blue elderberry, sapphire woolstar (*Eriastrum sapphirinum*), tarplant (*Hemizonia* sp.), bush mallow (*Malacothamnus fasciculatus*), wooly aster (*Lessingia filaginifolia*), wishbone bush (*Mirabilis californica*), and other herbaceous annuals.

Disturbed / Ruderal Habitat (Holland Element Code 11300)

Disturbed/ruderal (weedy) habitat includes areas dominated with non-native plant species such as ornamental and invasive exotic species. Non-native, weedy species are predominant in most open areas of the site. The most common invasive plants observed included short-pod mustard (*Hirschfeldia incana*), horehound (*Marrubium vulgare*), tocalote (*Centaurea melitensis*), cheeseweed (*Malva parviflora*), sourclover (*Melilotus indica*), Indian clover (*Lotus purshianus*), and filaree (*Erodium* sp.). Other plants including Russian thistle (*Salsola tragus*), doveweed (*Eremocarpus setigerus*), prickly lettuce (*Lactuca serriola*), jimsonweed (*Datura wrightii*), telegraph weed (*Heterotheca grandiflora*), and various non-native grasses including foxtail chess, slender wild oat, and other unidentified grass species. A few native species that are tolerant of disturbance such as fiddleneck (*Amsinckia menziesii*) and dove lupine (*Lupinus bicolor*) were locally abundant along road and trail margins, and in other open areas of the site.

RESULTS

No SEB or other sensitive butterfly species were observed during the present study. Based on the presence of other sympatric and synchronous butterfly species observed during this study, conditions appeared to be conducive to SEB seasonal flight activity. This species is strongly associated with its larval host plant where it occurs, and no suitable patches of *Atriplex* were observed on the subject property.

Although historic records exist for areas southeast of the site in Bouquet, Soledad and Mint canyons, this species is presumed extirpated from most areas east of the site due to increased human-related activities including commercial and residential developments, agricultural operations, ORV use, and other disturbances. Guy Bruyea and other CBI associate biologists observed an SEB colony in Potrero Canyon approximately five miles west of the site during 2004 special-status butterfly surveys.

The present study indicates that the property does not currently support high quality potential habitat for QCB. This conclusion is primarily based on the lack of historical QCB data from this region of Los Angeles County, and the apparent absence of its primary host plant, dot-seed plantain, which was not detected on site during this survey. Additionally, QCB was historically known from two locations in the Santa Monica Mountains approximately 25 to 30 miles south and southwest of the subject property, but has not been observed in those areas since 1954. Extant QCB populations are found much further south and southeast in Riverside and San Diego Counties. It is highly unlikely that QCB once occupied the Santa Clarita area due to a lack of records indicating its presence in the northern portion of Los Angeles County. Therefore, it can be reasonably concluded that the subject property does not support suitable QCB habitat and that QCB is not expected to occur on site.

Individual monarch butterflies may occasionally be found on the subject property. Milkweeds (*Asclepias* sp.) may be present on or near the subject property, and would be available as a potential oviposition site for passing females. However, due to the site's distance away from coastal areas, it is highly unlikely that the site would be utilized by large numbers of overwintering adults.

It is our understanding that no recent data suggest that occupied habitat exists on any portion of the MME site for the sensitive butterfly species discussed in this report and based on the survey results, none are expected to occur.

Other Lepidoptera Observations

A total of twenty-four (24) common butterfly species were observed on the property during the present survey (Table 3). In general the MME site appears to support relatively poor habitat conducive to a high diversity of butterfly fauna. However, this may be due, in part, to relatively dry conditions throughout the late winter and early spring months just prior to the survey, and/or the time limits of the present study.

Butterfly species commonly observed during the present study included painted lady (*Vanessa cardui*), checkered white (*Pontia protodice*), cabbage white (*Pieris rapae*), and pigmy blue (*Brephidium exilis*). Other butterflies observed included alfalfa sulfur (*Colias eurytheme*), acmon blue (*Icaricia acmon*), and Sara orange-tip (*Anthocharis sara*). Although the site includes some low-relief topographic features including ridgelines and small hilltops, none of these areas can be considered regionally significant as potential hilltopping sites for butterflies in the area.

Interestingly, a single California ringlet was observed on the MME site during this study. Although this species remains relatively common throughout portions of its range, populations are declining in Los Angeles County. Several additional California ringlets were observed on the Mesas East site approximately 0.5 to 1 mile west of the subject property during 2004 butterfly surveys by other CBI associate biologists.

Additional butterfly species are expected to occur on site not observed during the present study due to seasonal restrictions and other factors. A complete list of butterfly species with potential for occurrence, based on the vegetation present, the site's location, and other factors, is included as part of this report (Appendix A).

Table 3.
MME Site Lepidoptera Observations

		April			May		
Common Name / Scientific Name		11	17	30	5	7	18
Anise Swallowtail (*Papilio zelicaon*)				x			
Western Tiger Swallowtail (*Papilio rutulus*)			x	x	x		x
Checkered White (*Pontia protodice*)		x	x	x	x	x	x
Cabbage White (*Pieris rapae*)			x	x	x	x	x
Alfalfa Butterfly (*Colias eurytheme*)					x	x	
Sara Orange-tip (*Anthocharis sara*)		x	x	x	x		x
Painted Lady (*Vanessa cardui*)		x	x	x	x	x	x
Red Admiral (*Vanessa atalanta*)		x		x			
West Coast Lady (*Vanessa annabella*)					x	x	x
Chalcedon Checkerspot (*Euphydryas chalcedona*)					x	x	
Buckeye (*Junonia coenia*)			x	x			x
Monarch (*Danaus plexippus*)		x	x	x		x	
California Ringlet (*Cenonympha tullia californica*)						x	
Funereal Duskywing (*Erynnis funeralis*)		x	x	x	x	x	x
Western Checkered Skipper (*Pyrgus communis albescens*)			x	x	x	x	x
Large White Skipper (*Heliopetes ericetorum*)					x	x	x
Rural Skipper (*Ochlodes agricola*)						x	x
Behr's Metalmark (*Apodemia mormo virgulti*)			x		x	x	x
Southern Blue (*Glaucopsyche lygdamus australis*)		x	x	x	x		
Acmon Blue (*Icaricia acmon*)		x	x	x	x	x	
Reakirt's Blue (*Hemiargus isola alce*)					x		
Bernardino Blue (*Euphilotes bernardino*)							x
Pigmy Blue (*Brephidium exilis*)							
Common Hairstreak (*Strymon melinus*)				x		x	
24 Species Total	**Total Daily Observations**	8	12	14	15	15	13

x = species detected on site during specific survey date

CONCLUSIONS

During the six-day survey effort, the entire MME site was specifically surveyed for the sensitive butterfly species described above. Additionally, a general butterfly inventory (both observed and expected to occur) was performed. Based on seasonal precipitation patterns in the late winter and spring months of 2004, butterfly activity was considered relatively 'productive' for most species based on the results of this study.

Based on the absence of SEB larval host plant patches and the absence of SEB adult observations during the present study, and other information presented in the above report, it can be reasonably concluded that SEB is not currently present on the subject property.

Due to the lack of recent QCB observations for Los Angeles County, the apparent absence of primary larval host plants (i.e. *P. erecta*) and lack of suitable high quality habitat, and the site location (not known to be within the historical range of QCB), it is highly unlikely that a QCB breeding population or the occasional dispersing individual QCB would utilize the subject property.

REFERENCES

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Certification and Signature Page

± 550-acre Magic Mountain Entertainment Site
Los Angeles County, California
June 30, 2004

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

_____ Date 8/10/04

Dave Crawford, Principal Biologist
Compliance Biology, Inc.
1936 N. Croydon Ave.
Camarillo, CA 93010

_____ Date 8-4-04

Guy P. Bruyea, Principal Biologist
Bruyea Biological Consulting
43146 Sampson Court
Hemet, CA 92544

Appendix A

Butterfly Species with potential for occurrence on the MME Site
Los Angeles County, California
June 2004

Observed butterfly species (N=24) are indicated with an asterisk. Two asterisks indicate special status and/or narrow-endemic species. Butterfly species included on this list have varying degrees of potential for occurrence on the subject property. Potential for occurrence is based on a combination of known range (historical and present), host plant presence/absence, and other factors. Not all butterfly species that may be resident on the site were necessarily observed during this survey. For an exhaustive butterfly assessment, surveys are best performed from February to September to achieve a thorough inventory.

Family / Scientific Name	Common Name
Order Lepidoptera	Butterflies and Moths
Papilionidae	**Swallowtails**
Papilio rutulus	Western Tiger Swallowtail*
Papilio eurymedon	Pale Swallowtail
Papilio zelicaon	Anise Swallowtail*
Nymphalidae	**Brush-footed Butterflies**
Danaus gilippus	Striated Queen
Danaus plexippus	Monarch*
Ceononympha tullia californica	California Ringlet*
Agraulis vanillae incarnata	Gulf Fritillary
Basilarchia lorquini	Lorquin's Admiral
Adelphia bredowii californica	California Sister
Euphydryas chalcedona	Chalcedon Checkerspot*
Junonia coenia	Buckeye*
Charidryas gabbii	Gabb's Checkerspot
Phyciodes mylitta	Mylitta Crescent
Polygonia satyrus	Satyr Anglewing
Nymphalis californica	California Tortoise-shell
Nymphalis milberti	Milbert's Tortoise-shell
Nymphalis antiopa	Mourning Cloak
Vanessa virginiensis	Virginia Lady
Vanessa atalanta	Red Admiral*
Vanessa cardui	Painted Lady *
Vanessa annabella	West Coast Lady*
Riodinidae	**Metalmarks**
Apodemia mormo	Mormon Metalmark*

Appendix A (continued)

Family / Scientific Name	Common Name
Order Lepidoptera	Butterflies and Moths
Lycaenidae	**Blue, Hairstreaks, Coppers**
Atlides halesus	Great Purple Hairstreak
Callophrys perplexa	Bramble Hairstreak
Euphilotes bernardino	Bernardino Blue*
Incisalia augustinus iroides	Western Elfin
Icaricia acmon	Acmon Blue *
Everes amyntula	Western Tailed-blue
Glaucopsyche lygdamus australis	Southern Blue*
Hemiargus ceraunus gyas	Edward's Blue
Hemiargus isola alce	Reakirt's Blue*
Leptotes marina	Marine Blue
Brephidium exilis	Pigmy Blue *
Lycaena xanthoides	Great Copper
Satyrium californica	California Hairstreak
Satyrium sylvinus sylvinus (or *sylvinus dryope*)	Sylvan Hairstreak
Strymon melinus	Common Hairstreak*
Pieridae	**Whites and Sulfurs**
Colias eurydice	California Dogface
Colias alexandra harfordii	Harford's Sulfur
Colias eurytheme	Alfalfa Sulfur *
Nathalis iole	Dwarf Yellow
Anthocharis cethura	Felder's Orange-tip
Anthocharis sara sara	Sara Orange-tip *
Eurema nicippe	Nicippe Yellow
Phoebis sennae	Cloudless Sulfur
Pontia protodice	Checkered White *
Artogeia rapae	Cabbage White *
Hesperiidae	**Skippers**
Lerodea eufala	Eufala Skipper
Paratrytone melane	Umber Skipper
Hylephila phyleus	Fiery Skipper
Atalopedes campestris	Field Skipper
Ochlodes agricola	Rural Skipper*
Polites sabuleti	Sandhill Skipper
Erynnis funeralis	Funereal Duskywing*
Erynnis tristes	Mournful Duskywing
Heliopetes ericetorum	Large White Skipper*
Pyrgus communis albescens	West. Checkered Skipper*