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LEVINSON PARCEL, SAN BRUNO MOUNTAIN BIOLOGICAL RESOURCES REPORT

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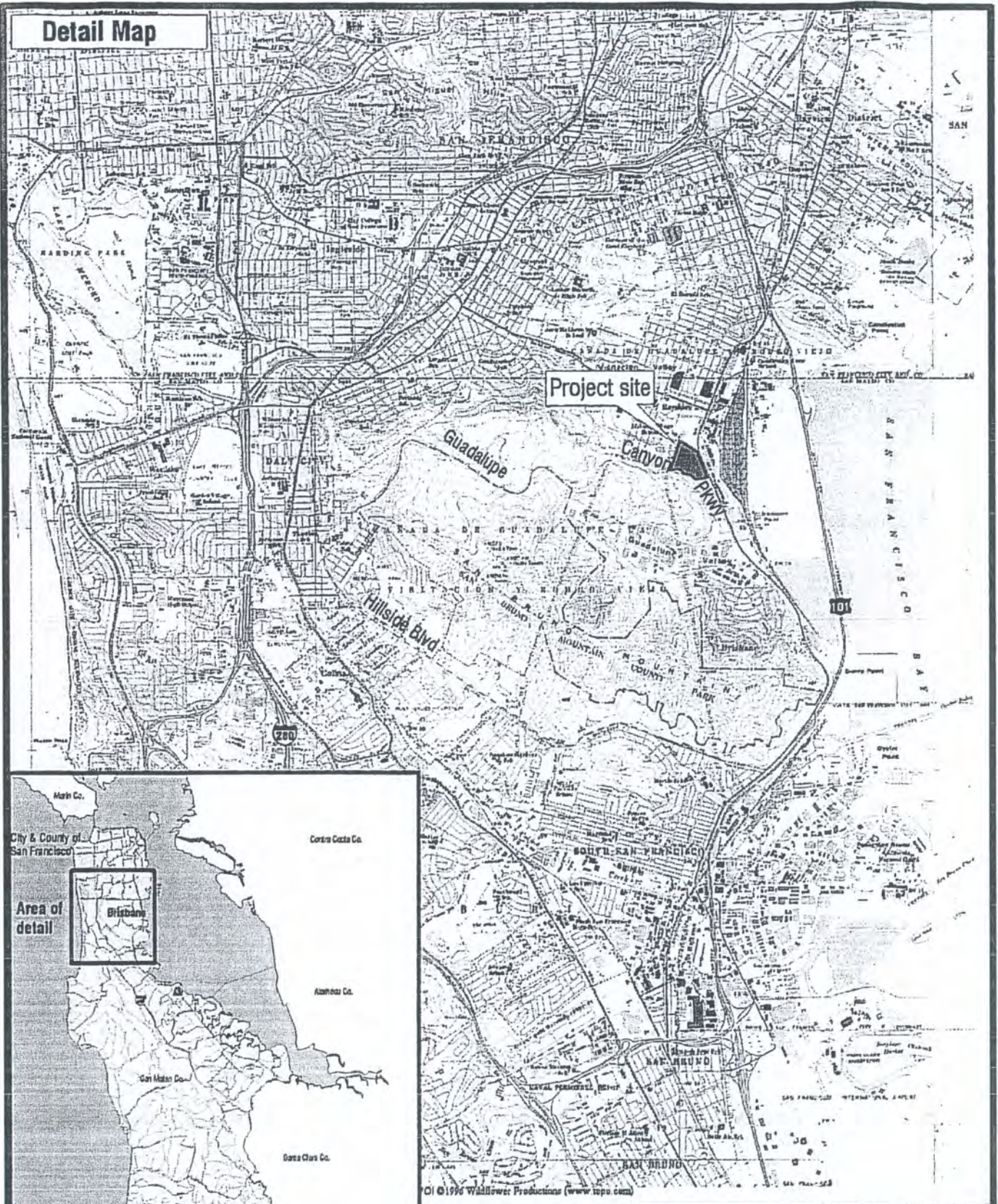
Project No. 416-02

1.0 INTRODUCTION

The technical report that follows describes the biotic resources of the Levinson Parcel (hereafter referred to as the study area) in San Mateo County, California, and evaluates possible constraints such resources may pose for eventual site development. The study area is located off of Main Street via Old Bayshore Highway (Figures 1 and 2) within the City of Brisbane on the northern San Francisco peninsula. The site is bounded to the east by Old Bayshore Highway and industrial development; to the south by Guadalupe Canyon Parkway and Crocker Industrial Park; to the west by the Rio Verde Heights residential development; and to the north by Main Street. Open space lands of the San Bruno Mountain County and State Parks occur approximately one-half mile to the southwest and northwest respectively, while San Francisco Bay is located approximately one-half mile to the east. The study area can be found on the San Francisco South U.S.G.S. 7.5' quadrangle map.

There is no specific development plan at this time, instead this biotic analysis will be used to determine the best placement of development on the site so as to avoid potential impacts to sensitive biotic habitats and species.

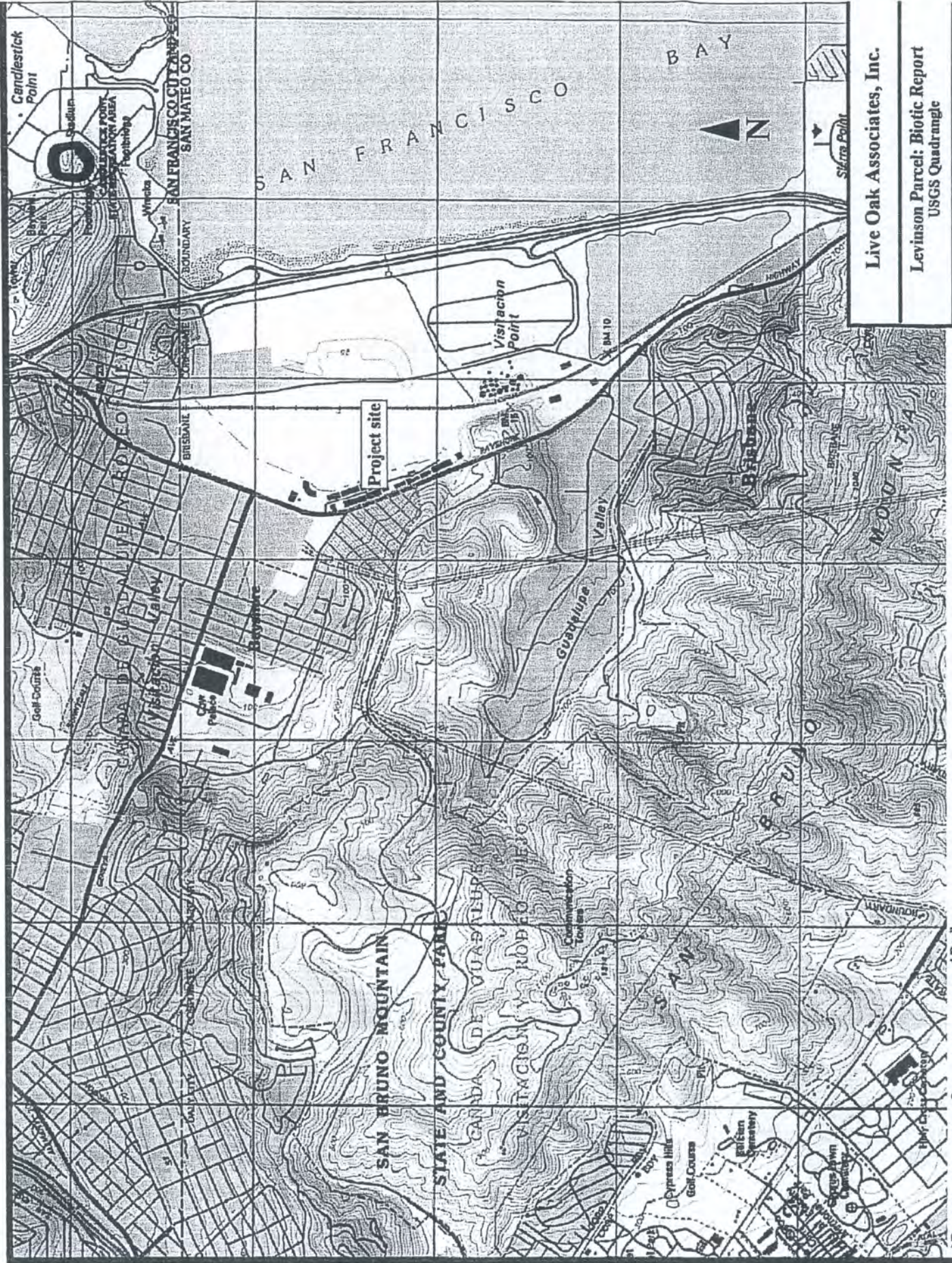
Detail Map



Vicinity Map

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Levinson Parcel: Biotic Report Site / Vicinity Map		
Date	Project #	Figure #
7/25/02	416-02	1



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Levinson Parcel: Biotic Report
USGS Quadrangle

Date	7/25/02	Project #	416-02	Figure #	2
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Development that occurs on or adjacent to previously undeveloped parcels can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), covered by policies of the County General Plan, or some combination of the three. The Levinson Parcel development must also be consistent with the provisions of the San Bruno Mountain Habitat Conservation Plan (San Bruno Mountain Habitat Conservation Plan Steering Committee 1982). This report addresses issues related to sensitive biotic resources occurring on the study area, the federal, state, and local laws related to such resources, and mitigation measures which could be required to reduce the magnitude of anticipated impacts.

The analysis of opportunities and constraints related to the proposed project, as discussed in Section 3.0 of this report, was based on the known and potential biotic resources of the study area (discussed in Section 2.0). Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFG 2002); (2) the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001); (3) San Bruno Mountain Area Habitat Conservation Plan (San Bruno Mountain Habitat Conservation Plan Steering Committee 1982). Pamela Peterson (botanist and wetland ecologist), Raymond White (entomologist) and Rick Hopkins (wildlife biologist) conducted reconnaissance level field surveys within the study area in May and June, 2002, at which time the principal biotic habitats of the site were identified and mapped and the constituent plants and animals of each were noted. Data collected during these surveys provided the basis for the assessment of potential project impact to sensitive biotic resources, including special status species, wetlands and other unique habitats regulated by local ordinance or state and federal law. Suitable and feasible mitigations have been proposed for potentially significant project impacts.

Dr. White conducted surveys on June 3 and June 4, 2002, to assess existing site conditions for four special status butterfly species known to occur on San Bruno Mountain. These four species are the Mission blue butterfly (*Plebejus icarioides missionensis* = *Icaricia icarioides missionensis*), the San Bruno elfin butterfly (*Callophrys mossii bayensis* = *Incisalia mossii bayensis*), the Callippe silverspot butterfly (*Speyeria callippe callippe*), and the Bay checkerspot butterfly (*Euphydryas editha bayensis*). Dr. White's surveys consisted of walking transects across the site to observe butterflies as well as determining the distribution of host plants within the study area that are necessary for the growth of the larval stages of each species. Host plants include *Lupinus albifrons*, *L. formosus*, and *L. variicolor* for the Mission blue butterfly; *Sedum spathulifolium* for the San Bruno elfin; *Viola pedunculata* for the Callippe silverspot butterfly; and *Plantago erecta* for the Bay checkerspot butterfly.

2.0 EXISTING CONDITIONS

The study area is located on the northeastern slope of San Bruno Mountain in northern San Mateo County. San Bruno Mountain consists of a main ridge and a series of spur ridges running from Daly City on the northwest to San Francisco Bay on the southeast, a distance of approximately 4 miles.

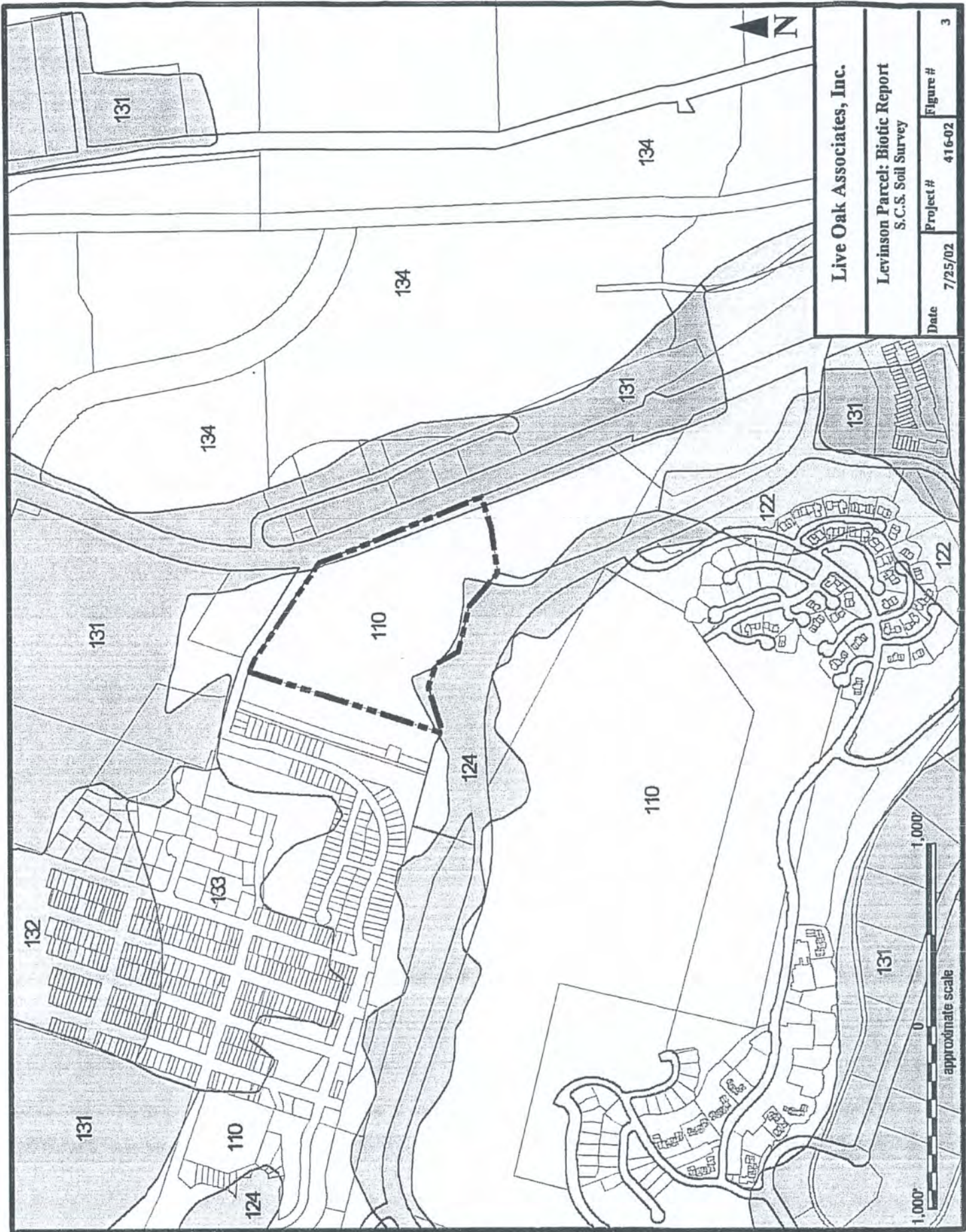
The physical topography of the site varies from almost completely level to steeply sloping. The northern portion of the site along Main Street is fairly level to gently sloping with elevations ranging from approximately 25 to 50 feet NGVD (National Geodetic Vertical Datum) while the southwestern portion of the parcel occurs on a steep (30-35%) northeast-facing slope ranging from 50 to approximately 300 feet NGVD.

Annual precipitation in the general vicinity of the study area is between 20 to 30 inches, most of which falls between the months of October and March (Soil Survey of San Mateo Co, 1991). Virtually all of this precipitation falls in the form of rain. Storm water runoff readily infiltrates the well drained soils of the site, but when field capacity has been reached, gravitational water collects in a seasonal drainage originating at the top of the slope in the southwestern portion of the parcel and flows into a low depressional area and roadside drainage area in the northeastern portion of the parcel.

Two soils were identified on the study area and these are summarized in Table 1 and a soil map is provided in Figure 3 (Soil Survey of San Mateo Co, 1991). Neither of the soils occurring on the site are considered to be hydric soils. All of the soils of San Bruno Mountain have developed from Franciscan greywacke.

Table 1. Soils of the Study Area.

Map Unit	Soil Type	Description
110	Candlestick-Kron-Buriburi complex, 30 to 75% slopes.	Dominant soil of the study area, consisting of 40% Candlestick fine sandy loam, 25% Kron sandy loam, and 20% Buriburi gravelly loam. Well-drained.
124	Orthents, cut and fill-Urban land complex, 5 to 75% slopes.	Occurs along the ridgeline, consisting of 50% Orthents, cut and fill, and 35% Urban land.



Current development of the site includes the remains of a large building foundation in the northern corner of the parcel, a gravel road and a large water tank. The road runs in a southwesterly direction from the entrance to the parcel along Main for approximately 250 feet and then turns approximately 90 degrees to head southeast along the middle part of the ridge, exiting the parcel to the south where it eventually comes to a dead end. A secondary dirt road branches off of this main road to the east (downslope) to provide access to the water tank structure located in the southern portion of the site.

Two easements occur on the study area. These include a PG&E power line easement along the top of the ridge and a San Francisco Water District pipeline easement to the water tank structure from Old Bayshore Highway.

2.1 BIOTIC HABITATS

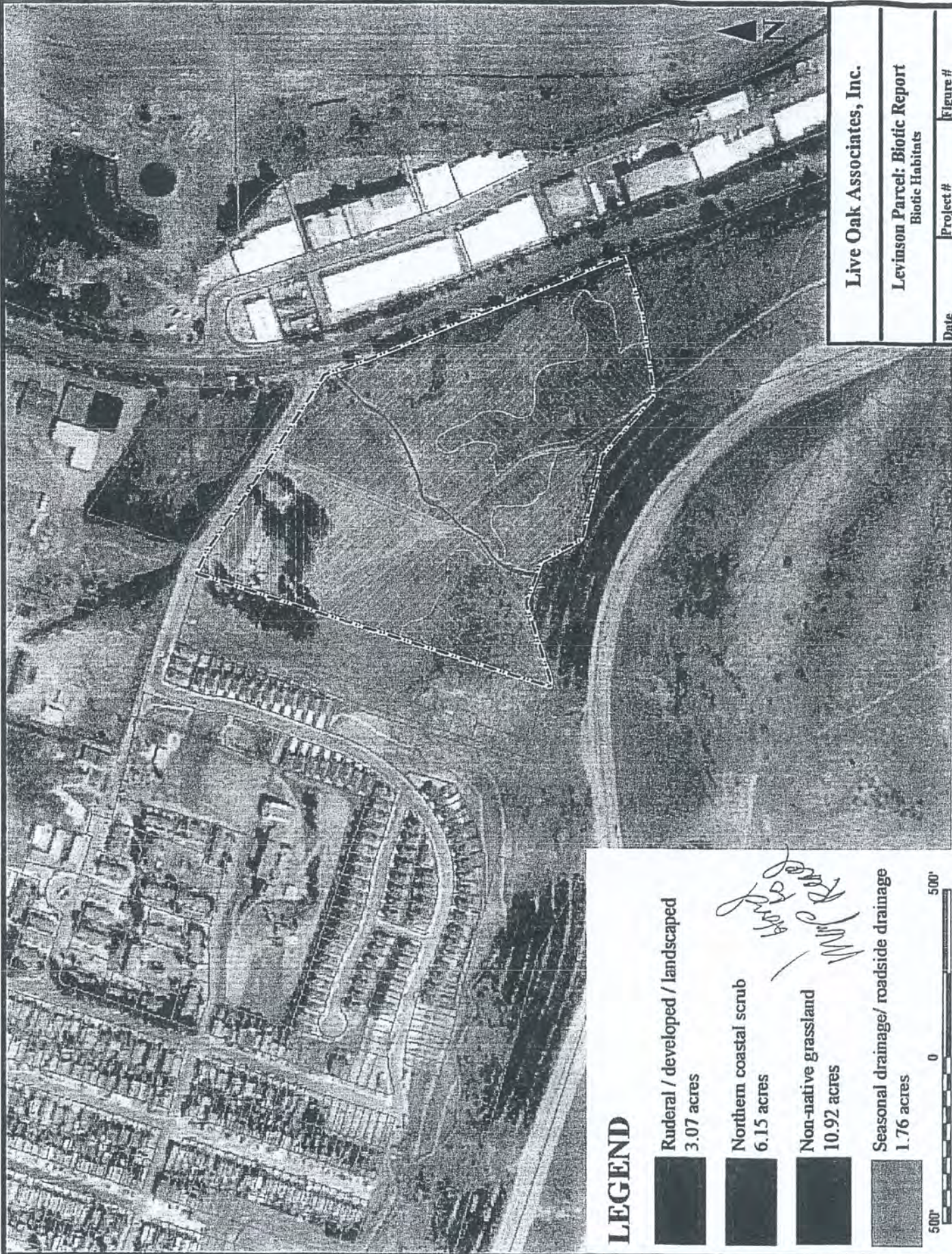
Four biotic habitats have been identified on the study area (Figure 4 and Table 2). For the purposes of this report, these habitats have been defined as northern (Franciscan) coastal scrub, non-native grassland, seasonal wetland/drainage, and developed/landscaped. A list of the vascular plants observed in the study area has been provided in Appendix A. A list of terrestrial vertebrates using, or potentially using, the site has been provided in Appendix B.

Table 2. Acreage summary of habitats found on the Levinson Parcel project site, City of Brisbane, San Mateo County, California.

Habitat Type	Acres	Percent of Total
Northern Coastal Scrub	6.15	28
Non-Native Grassland	10.92	50
Seasonal Wetland/Drainage ¹	1.76	8
Developed/Landscaped	3.07	14
TOTAL=	21.9	100

2.1.1 Northern (Franciscan) Coastal Scrub

Northern coastal scrub habitat comprises approximately 6 acres or 28% of the study area. This dense natural shrub community is mainly confined to the undisturbed area in the southern, more steeply sloped portion of the site. The dominant shrubs of this habitat were native and consisted of coyote brush







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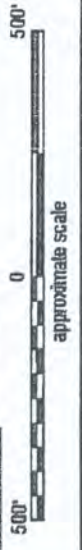
Levinson Parcel: Biotic Report
Biotic Habitats

Date	7/25/02	Project #	416-02	Figure #	4
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LEGEND

-  Ruderal / developed / landscaped
3.07 acres
-  Northern coastal scrub
6.15 acres
-  Non-native grassland
10.92 acres
-  Seasonal drainage/ roadside drainage
1.76 acres

Handwritten signature: M. J. Powell



(*Baccharis pilularis*), toyon (*Arbutus menziesii*), poison oak (*Toxicodendron diversilobum*), California coffeeberry (*Rhamnus californica*), and sticky monkey flower (*Mimulus aurantiacus*). Non-native invasive species occasionally encountered within the habitat included cortaderia (*Jubata cortaderia*) and French broom (*Genista monspessulana*). An herbaceous understory was generally absent due to the density of the shrub canopy, but where the shrub canopy was more open, annual and perennial grasses and forbs encountered included ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), red brome (*Bromus madritensis*), wild oats (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*), common checkerbloom (*Sidalcea malvaeflora*), black mustard (*Brassica nigra*) and yarrow (*Achillea millefolium*).

In the western portion of the habitat, large rock outcroppings occur. Plants associated with these outcroppings include beeplant (*Scrophularia californica*), goldback fern (*Pentagramma triangularis*), onion (*Allium* sp.), lomatium (*Lomatium* sp.) and Ithuriel's-spear (*Triteleia laxa*).

This scrub habitat is one of the more dominant habitat types on San Bruno Mountain and normally would support a diverse assemblage of wildlife that occurs on the Mountain. The fact that this habitat within the study area is separated from larger areas of contiguous habitat on the Mountain by residential and commercial development and by major roads such as Bayshore Highway and Guadalupe Canyon Parkway may limit its useage by some wildlife species. A number of reptiles may be expected to occur in this habitat including the western fence lizard (*Scleroperous occidentalis*), western skink (*Eumeces skiltonianus*), and southern alligator lizard (*Elgaria multicarinata*). The Pacific gopher snake (*Pituophis melanoleucus catenifier*) and the Northern Pacific rattlesnake (*Crotalus viridus oregonus*) are also expected to hunt in or near brushy areas, mammal burrows, and around and under surface objects.

Various birds seek cover in this scrub habitat. Birds typically found in this habitat include the Scrub Jay (*Aphelocoma coerulescens*), loggerhead shrike (*Lanius ludovicianus*; California species of special concern), lark sparrow (*Chondestes grammacus*), and wrentit (*Chamaea fasciata*). The common poorwill (*Phalaenoptilus nuttallii*) and white-throated swift (*Aeronautes saxatalis*) both feed exclusively on insects captured in the air during foraging flights above this habitat.

Northern coastal scrub of the study area provides important habitat for a variety of mammals. Some species, such as the deer mouse (*Peromyscus maniculatus*), and California pocket mouse (*Perognathus californicus*), forage within the protection of the dense brush. The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*; California species of special concern), is expected to occur in this habitat, feeding on woody plants, and building nests constructed from sticks and leaves at the base of a trees,

shrubs, or hills. Other mammals that use this habitat include the black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), and bobcat (*Lynx rufus*). Black-tailed deer (*Odocoileus hemionus columbianus*) will also feed on the new growth of shrubs, such as ceanothus, toyon and coyote brush, as well as forbs and grasses.

The federally endangered butterfly, the San Bruno elfin (*Callophrys = Incisalia mossii bayensis*) is also known to occur within this habitat type. The regional distribution of the San Bruno elfin is primarily on the northern slopes of San Bruno Mountain. However, bare areas and rock outcrops were specifically searched for the larval host plant of this species, stonecrop (*Sedum spathulifolium*), which would have been identifiable during the June surveys had it been present and it was not found on the study area. Therefore, this butterfly species does not occur on the study area. The distribution and abundance of the butterfly on San Bruno Mountain have been relatively stable during the last 10-15 years, possibly the result of the San Bruno Mountain Habitat Conservation Plan, which had the objective of preventing take of this species.

Northern coastal scrub also is known to provide habitat for the federally endangered Callippe silverspot butterfly which was listed on 5 December 1997. The Callippe silverspot butterfly has an annual life cycle, with one generation per year. Females oviposit during their flight season on the dried remains of *Viola pedunculata* plants only. Larvae hatch out of their eggs in about a week and eat their eggshells. The larvae move short distances and spin small pads of silk on which to spend their summer and fall diapause. Between late winter and early spring, the first instar larvae emerge from diapause and begin to feed on their Violets. By May the larvae have usually grown large enough to pupate. Callippe silverspot butterflies eclose from their pupae in about two weeks and fly as adults. The flight season varies from year to year, starting as early as mid-May in some years and ending as late as late July in others. Adults may live for about three weeks.

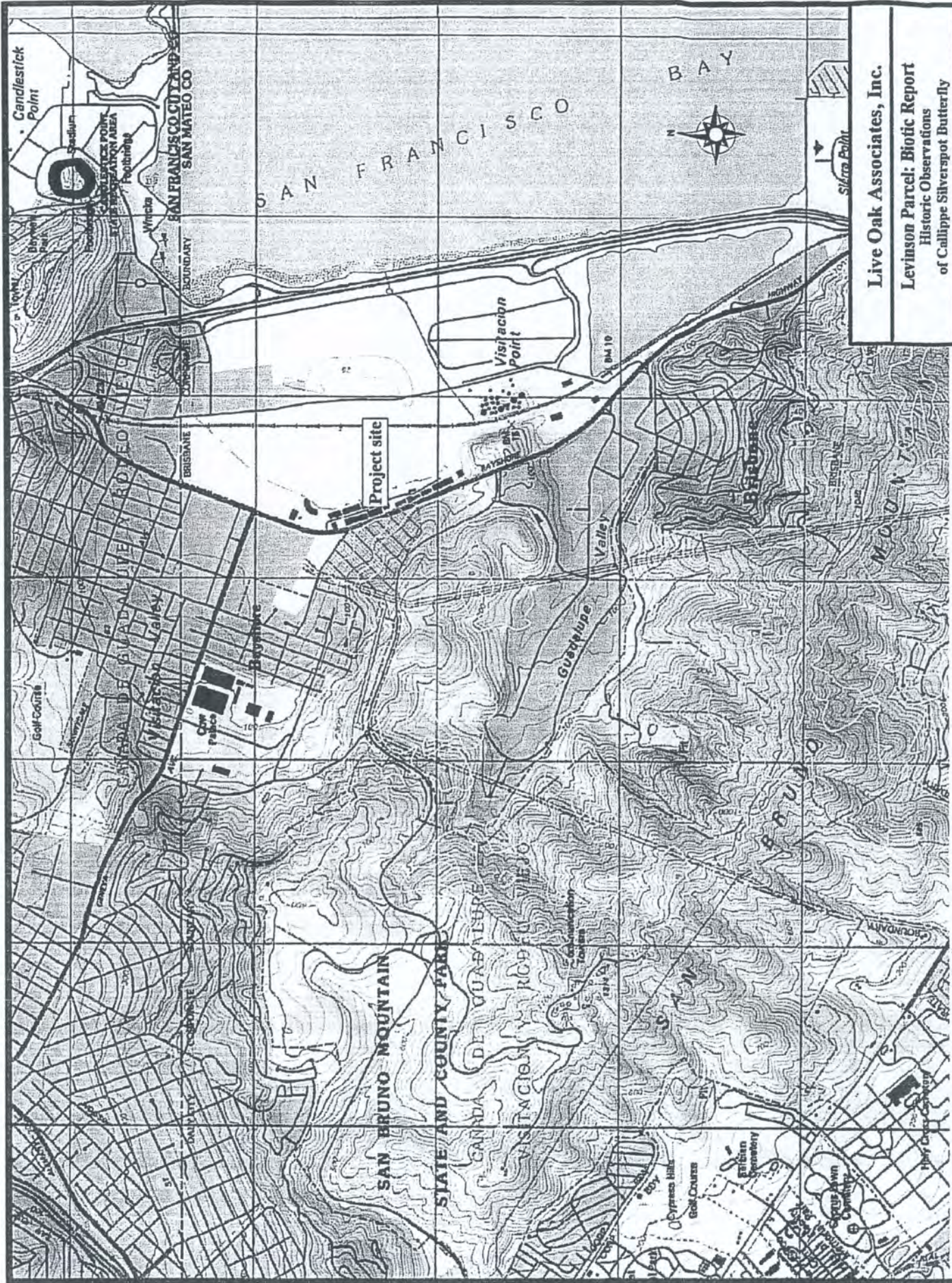
The Callippe silverspot butterfly was once known from fourteen sites in the San Francisco Bay Area., five of which have been developed and, thus, are no longer occupied by this species. The original range included Sonoma and Solano Counties, northwest Contra Costa County, south to the Castro Valley area of Alameda County (USGS Hayward quad map) and from Twin Peaks in San Francisco south to La Honda in San Mateo County. Two known populations remain, a small one in a city park in Alameda County and the San Bruno Mountain population. There are several populations of *Speyeria* between Pleasanton (Alameda County) and American Canyon-Lake Herman-Sky Valley (Solano County) that could be assigned to the special-status subspecies, should U.S. Fish and Wildlife Service so choose

(Richard A. Arnold, pers. comm., 1 February 1999). For present purposes, however, the single viable population of this butterfly occurs on San Bruno Mountain. The study area is within the known distribution of the Callippe silverspot (Figure 5).

During the June surveys, Dr. White observed 22 individual adult Callippe silverspot butterflies within the coastal scrub habitat on the slope in the southwest corner of the parcel as well as 28 individuals immediately adjacent to the parcel within the power line right-of-way at the top of the ridge. He noted that observations of the butterfly quickly dropped off as the slope was descended, with no individuals seen below the access road. The presence of the adult butterflies assured that surveys were performed within the flight season of this species. The flowering season for the larval host plant, *Viola pedunculata*, was well past at the time the surveys were conducted. As such, *Viola* was difficult to observe due to its advanced state of senescence. A few *Viola* were identified in the scrub habitat in the southwest corner of the parcel where butterflies were observed and two small patches were observed within rock outcrops located just above the fork in the access road (Figure 6). No butterflies were observed associated with the *Viola* growing within the outcrops, however. No *Viola* was observed either by Dr. White or by botanist Pam Peterson at the lower elevations of the site below 100 ft. in elevation or below the access road and no recent historical observation of *Viola* has occurred there (Robert Langston, pers. comm., 18 September 2002). The presence of tall, ruderal forbs and grasses in the area below the access road probably exclude the possibility of the low-growing *Viola*.

2.1.2 Non-Native Grassland

Non-native grassland is the most prevalent habitat of the study area, comprising approximately 11 acres or 50% of the total area. Annual grasses and forbs of European origin are the dominant component, although discrete patches of coyote brush and toyon shrubs are also present, widely dispersed throughout the habitat. Grass species commonly encountered in this habitat during the June surveys included quaking grass (*Briza maxima*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), red brome (*Bromus madritensis*), wild oats (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*), silver European hair grass (*Aira caryophyllea*), orchard grass (*Dactylis glomerata*) and purple needlegrass (*Nassella pulchra*). Common forbs encountered within this habitat included wild radish (*Raphanus sativus*), English plantain (*Plantago lanceolata*), bindweed (*Convolvulus arvensis*), broad leaf filaree (*Erodium botrys*), red-stem filaree (*Erodium cicutarium*), English plantain (*Plantago lanceolata*), California poppy (*Eschscholzia californica*), and wild geranium (*Geranium molle*). Other species

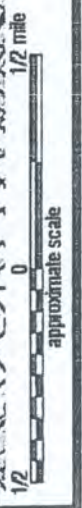


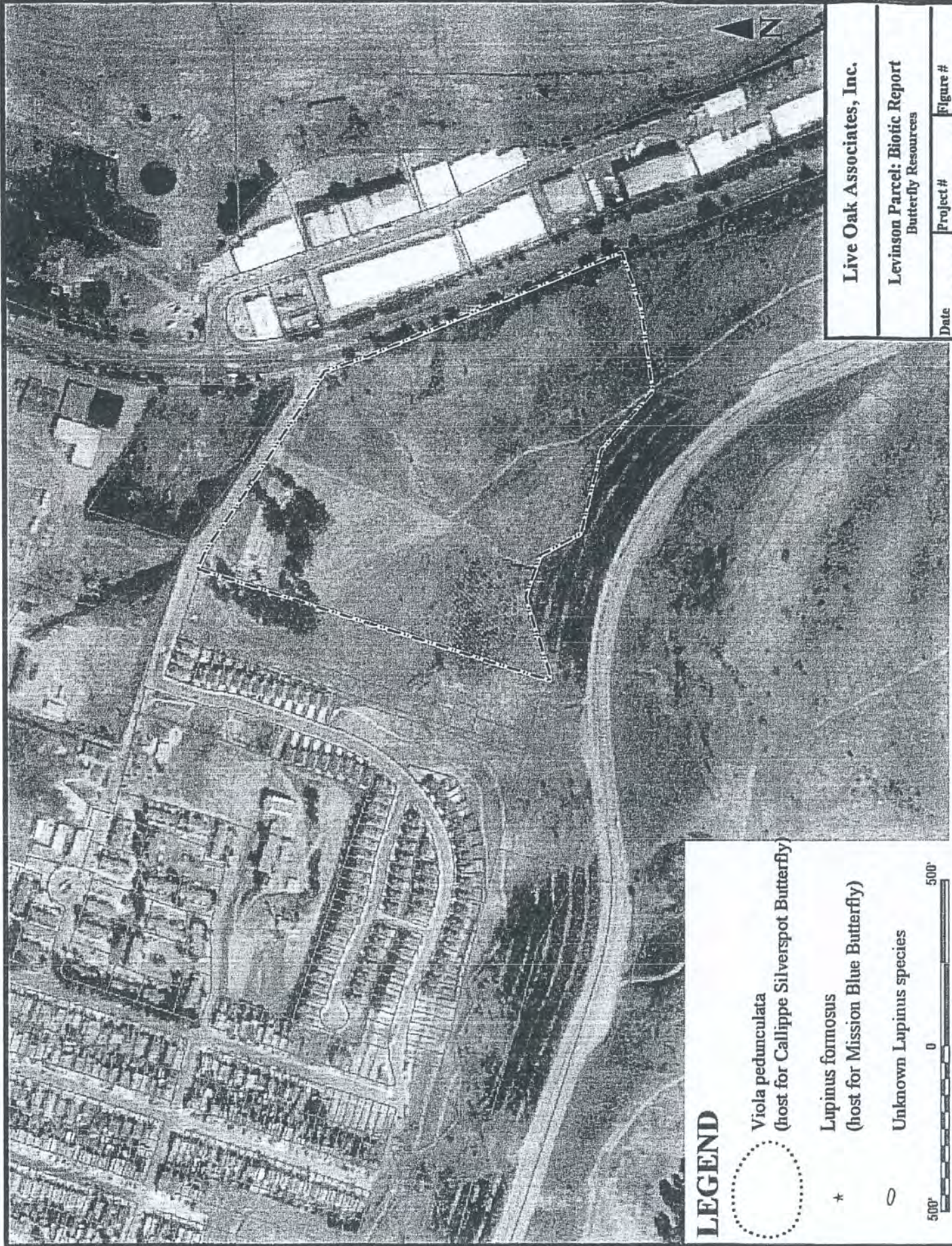
Live Oak Associates, Inc.
 Levinson Parcel: Biotic Report
 Historic Observations
 of Callippe Silverspot Butterfly

Date	7/25/02	Project #	416-02	Figure #	5
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Source:
 Thomas Reid Associates

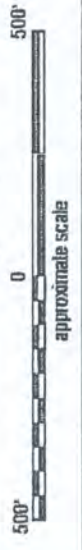
Observations of Callippe Silverspot 1981-1999





LEGEND

-  *Viola pedunculata*
(host for Callippe Silverspot Butterfly)
- * *Lupinus formosus*
(host for Mission Blue Butterfly)
-  Unknown *Lupinus* species



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Levinson Parcel: Biotic Report
Butterfly Resources

Date	7/25/02	Project #	416-02	Figure #	6
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observed in this habitat included fennel (*Foeniculum vulgare*), bristly ox-tongue (*Picris echioides*), smooth cat's-ear (*Hypochaeris glabra*), shepherd's purse (*Capsella bursa-pastoris*), white sweetclover (*Melilotus alba*), hairy vetch (*Vicia villosa*), prickly lettuce (*Lactuca serriola*) and gorse (*Ulex europaea*). A considerable number of native spring-flowering forbs are expected to occur on the following winters of average to above average rainfall. Although the site reconnaissance was conducted during the early summer, common fiddleneck (*Amsinckia menziesii* var. *intermedia*), red maids (*Calandrinia ciliata*), lupine (*Lupinus* sp.), blue-eyed grass (*Sisyrinchium bellum*), bellardia (*Bellardia trixago*), yarrow and lomatium were observed.

Grassland habitats have been declining on the Mountain since 1932 (HCP 1982). Remaining grasslands are productive habitats for wildlife, particularly when they are contiguous with other habitats, including northern coastal scrub and oak woodland. Although the grasslands of the study area are contiguous with coastal scrub habitat, again, the insular nature of both habitats and surrounding development may reduce the value of the site's grassland habitats for many species. Reptile species tend to be more conspicuous during warmer months of the year, especially near rocks, shrubs and debris found in this habitat. Species expected to occur in these non-native grasslands include the western fence lizard, western skink and gopher snake.

Several species of birds use these grassland habitats throughout the year. Savannah sparrows (*Passerculus sandwichensis*) and western meadowlarks (*Sturnella neglecta*) may build their nests directly on the ground. Seeds produced by annual and perennial grasses also provide food for migrating and wintering songbirds, such as lesser goldfinches (*Carduelis psaltria*) and white-crowned sparrows (*Zonotrichia leucophrys*).

California ground squirrel (*Spermophilus beechyi*) and Botta's pocket gopher (*Thomomys bottae*) will be more prevalent in this habitat and, in fact, several California ground squirrels were observed in this habitat during the June surveys. In addition, California voles (*Microtus californicus*) and other small rodents use grass seeds and stalks as food sources. These species create runways through the grasses as a result of clipping grasses and herbs at their bases for forage. Black-tailed hares also forage in this habitat and black-tailed deer feed on various forbs found in this habitat during the spring and early summer.

Predators such as coyotes, red foxes (*Vulpes vulpes*) and bobcats will hunt for the various small mammals that inhabit this habitat. Raptors that nest and roost in the oak woodland or Eucalyptus groves of the Mountain, hunt in these non-native grasslands. During the surveys, red-tailed hawks were

observed foraging over the grasslands and other raptors which area expected to forage on the site include white-tailed kites (*Elanus caeruleus*), golden eagles (*Aquila chrysaetos*), and American kestrels (*Falco sparverius*). Nocturnal species, such as common barn owls (*Tyto alba*) and great horned owls (*Bubo virginianus*), are expected to forage here as well.

The grasslands of the site provide some suitable resources for the federally endangered Mission blue butterfly (*Plebejus icaroides missionensis*, also known as *Icarcia icaroides missionensis*). The Mission blue butterfly was listed on 1 June 1976.

The Mission blue butterfly has a life cycle that is partly controlled by presence or absence of fog. Butterflies in general are heliotherms, requiring sunlight to gain enough warmth to fly, and this species is no exception. When fog blocks sunlight, there is no flight. The Mission blue butterfly oviposits on three species of lupines: *Lupinus albifrons*, *Lupinus formosus*, and *Lupinus variicolor*, from April to June (Xerces Society Educational Leaflet No. 8; Biosystems Books 1994). The butterflies use the lupines for their primary nectar sources, other flowering plants being used more or less opportunistically. Nectar from plants other than the lupines is thought to be of minor importance. Larvae hatch from the eggs and feed briefly before leaving the plants to enter a summer-fall diapause (dormant resting) period. Probably dependent on the plants producing new foliage after fall and winter rains, larvae emerge from diapause, move on to the lupines, and resume feeding. This post-diapause feeding period may begin as early as January, depending on micro-climate of the specific site. Actual feeding is thought to occur primarily at night (R. L. Langston, *pers. comm.*).

Native ants tend post-diapause larvae (Scott 1986). These ants are often of the same type that tend aphids. The ants obtain "honeydew" that the larvae secrete when tapped or stroked by the ants. The larvae may gain protection from predators and parasitoids in exchange for their "honeydew". The relationship between the ants and the butterfly larvae has not been investigated (A. Launer, R. L. Langston, R. A. Arnold, H. Cushman, *pers.comm.*). Approximately 50% of lycaenid butterflies have some association with ant species (H. Cushman, *pers. comm.*). The relationship in this case may be negative for the butterflies, unimportant to the butterflies, positive for the butterflies, or even essential for completion of the butterfly life cycle. Once full grown, the larvae pupate and then emerge as butterflies, flying from late March to mid-June. The cycle repeats, with one generation each year.

The habitat of the Mission blue butterfly is in the fogbelt, where its three lupine food plants grow. The lupines usually grow one to two feet tall, so that other vegetation, if dense, and over two feet tall, tends to

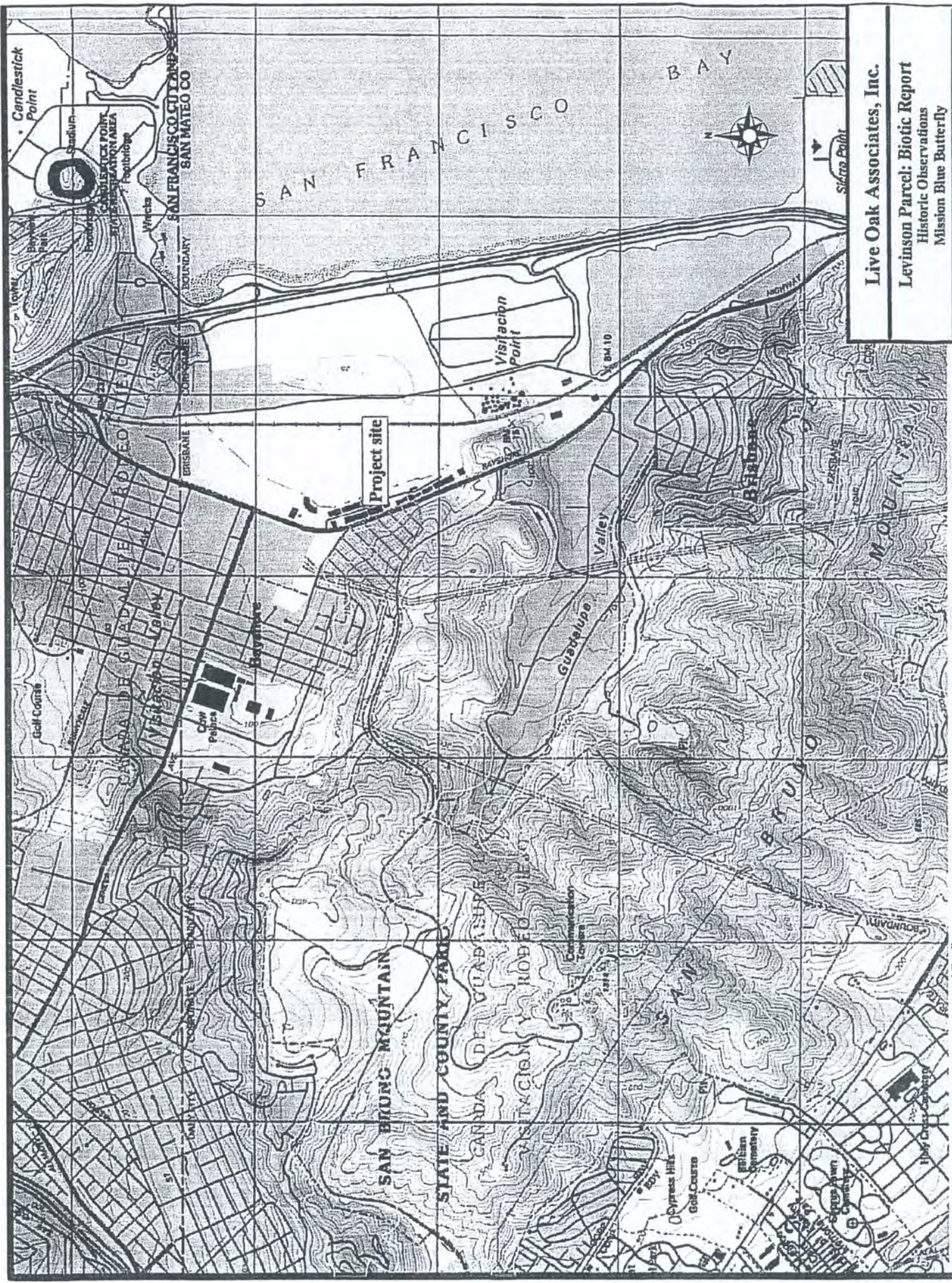
shade out the lupines. Road cuts and other disturbed areas that are not successfully colonized by other invasive weeds provide excellent new habitat for the lupines, and thus for the Mission blue butterfly.

The Mission blue butterfly occupies suitable habitat from Pacifica and Milagra Ridge in the south of its range, to the Marin Headlands at the north end of its range. The *San Bruno Mountain Area Habitat Conservation Plan* (1982) indicates that the study area is within the known distribution range for the species (Figure 7). Present numbers are uncertain, but the population on San Bruno Mountain is thought to have been roughly similar in 1994 to numbers in the early 1980's, or approximately 18,000 individuals.

Mission blue butterflies were observed at the higher elevations of the site above the access road during the June surveys conducted by Dr. White. One of the larval host lupines was identified during the June surveys, *Lupinus formosus*. Less than a few dozen individuals of this species were observed, widely scattered in the disturbed soils along the edge of the access road (see Figure 6). No perennial lupines were observed growing more than a few feet below the road (approximately 100 ft. in elevation). Another distribution of a different lupine species was observed within the grassland approximately 150 feet to the northwest of where the access road makes its 90 degree turn to head southeast. The population was represented by a single patch measuring approximately 50 ft. by 50 ft. and numbering fewer than 100 individuals. These lupines were in an advanced state of senescence during the June surveys and, therefore, appeared to be an annual lupine species as opposed to one of the perennial species used as a larval host for the butterfly. Because of the condition of the plants, however, a positive identification to species cannot be made until next spring's blooming season.

Grasslands are also known to provide habitat for the federally threatened Bay checkerspot butterfly which was listed in September of 1987. The Bay checkerspot butterfly (*Euphydryas editha bayensis*) is univoltine, meaning that it has one generation per year. The adults fly and lay eggs from March through April, the eggs hatch and larvae go through three molts as they feed on the larval host, *Plantago erecta*. They enter an obligatory summer and fall diapause, from which they emerge when winter rains have allowed the annual *Plantago* to sprout again. They feed from late December to early March, pupate for about 18 days, and emerge as adults to complete the life cycle.

The current known occurrences of the Bay checkerspot butterfly are all within serpentine grasslands, but populations were known from the East Bay (Morgan Territory Road) that were not on serpentine, Twin



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Levinson Parcel: Biotic Report
 Historic Observations
 Mission Blue Butterfly

Date	7/25/02	Project #	416-02	Figure #	7
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Source:
 Thomas Reid Associates

Observations of Mission Blue 1981-1999



Peaks and Mount Davidson (both chert) in the 1950's, and San Bruno Mountain from 1960 to the mid-1980's. Among its critical requirements, this butterfly needs dense patches of *Plantago erecta*. Apparently invasive weeds, particularly *Erodium*, replaced *Plantago erecta* to such an extent that the San Bruno Mountain population went extinct.

Once present on many serpentine grassland sites in the Bay Area and some non-serpentine sites, the Bay checkerspot butterfly has now lost its East Bay populations and all but one of its Peninsula populations. Current populations include a remnant in Edgewood Park of San Mateo County and several substantial populations south of San Jose. While the Bay checkerspot butterfly is no longer expected on any part of San Bruno Mountain, any potential habitat for the animal that exists should be identified to USFWS.

Soils of the study area are not serpentine and, although surveys were conducted past the blooming season of the host plant *Plantago*, the plant would have still been identifiable if present in any abundance within the grasslands of the site. No *Plantago* was observed on the study area either by Dr. White or by botanist Pam Peterson during their surveys. Based on the above and the current known distribution of the butterfly, it is presumed absent from the study area.

2.1.3 Seasonal Wetland/Drainage

Seasonal wetlands and drainages comprise approximately 1.8 acres of the study area or 8% of its total area. A significant feature of the site is a deeply incised, highly eroded seasonal drainage which originates at the top of the slope at the southwestern edge of the parcel and flows northeast into a low depressional area and into a roadside drainage ditch along Old Bayshore Highway. Most of the runoff from this drainage appears to percolate into the soils of the site at the lower elevations, however, once soil field capacities of the site are exceeded, excess runoff will exit the site to the east via a small culvert which runs under Bayshore. The seasonal drainage, which had an average width of approximately 8 feet, was completely dry during the June surveys but did support some hydrophytic (wetland) vegetation. The presence of hydrophytic plants within the drainage indicates that soil saturation and/or inundation occurs in portions of the channel in years with average to heavy rainfall. Hydrophytic species encountered within the drainage channel along with their U.S.F.W.S. Wetland Indicator Status included arroyo willow (*Salix lasiolepis*)(FACW), hairy willow-herb (*Epilobium ciliatum*)(FACW), annual beard grass (*Polypogon monspeliensis*)(FACW+), California blackberry (*Rubus ursinus*)(FACW). Seasonal wetlands were associated with this drainage at the lower, more level areas in the northeastern portion of the site where the channel becomes less incised and the runoff is allowed to spread out, creating several

secondary shallow channels and swales to the south of the main channel. Hydrophytic plant species observed within these areas included umbrella sedge (*Cyperus eragrostis*)(FACW), sedge (*Carex* sp.)(FACW-OBL), harding grass (*Phalaris aquatica*)(FAC+), and rushes (*Juncus* sp.)(FACW-OBL). The drainage ditch located along Old Bayshore also supported hydrophytic vegetation including mature arroyo willows.

The seasonal drainage channel within the northern coastal scrub habitat would be expected to support a wildlife assemblage similar to that of the surrounding scrub habitat.

The California red-legged frog (*Rana aurora draytonii*) and San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) are not expected to occur within this habitat as continuous surveys for these species on the Mountain have failed to detect them. The drainage does not support suitable breeding habitat (e.g., deep pools) and nor does any suitable habitat for these species occur on site. The closest reported sighting of a red-legged frog population is the San Francisco Airport population some 6 km to the south (Larsen 1994). This population is separated from the site by urbanization and an extensive road and freeway network. San Francisco garter snakes are even more unlikely. At the time the HCP was written, the description of this parcel indicated that wetlands of the site may provide habitat for the San Francisco garter snake. According to Barry (1978), a population of San Francisco garter snake was purported to occur in the early 1970's on San Bruno Mountain on the "slope north of the junction of Guadalupe Canyon Parkway and Radio Road, in mixed scrub and grassland at the head of Coma Creek". A single large female was captured in this area twice during September 1972. However, numerous visits to this site since have confirmed that snakes no longer occur there (Barry 1994). Barry (1994) has suggested that this "population" may have resulted from snakes being illegally transplanted from the Skyline ponds (i.e., a series of sag ponds which were once present along Skyline Boulevard) as the latter was destroyed by urban development during the mid-1960's. According to Barry (1978, 1993), San Francisco garter snakes cannot survive at any site that lacks some kind of ranid frog (either the native California red-legged frog or the introduced bullfrog (*Rana catesbeiana*)). Therefore, the red-legged frog and San Francisco garter snake are not expected to occur in this habitat on site.

Species such as great blue herons (*Ardea herodias*), great egrets (*Casmerodius albus*), snowy egrets (*Egretta thule*), and raccoons (*Procyon lotor*) may forage along or within this habitat. Small songbirds, such as bushtits (*Psaltiriparus minimus*), warbling vireos (*Vireo gilvus*), and Wilson's warblers (*Wilsonia pusilla*) may build their nests within the willows along this channel. Other species, such as the scrub jay,

northern oriole (*Icterus galbula*), and Bewick's wren (*Thryomanes bewickii*) are also commonly found in areas like this.

A variety of mammals may occur in the dense vegetation adjacent to the roadside drainage including the ornate shrew (*Sorex ornatus*), California vole, and Audubon's cottontail (*Sylvilagus audubonii*). Predators that may hunt in this area include the long-tailed weasel (*Mustela frenata*), gray fox (*Urocyon cinereoargenteus*), coyote, bobcat and domestic house cat.

2.1.4 Ruderal/Developed/Landscaped

Ruderal and developed areas comprise approximately 3 acres or 14% of the study area. This area occurs in the northern corner of the parcel, west of and adjacent to the entrance road from Main, and consists of the remains of a large building foundation and the highly disturbed barren and ruderal habitat surrounding it. The term "ruderal" refers to areas which are periodically disturbed by anthropogenic influences and where native vegetation is characteristically sparse. The main vegetation constituents of this habitat consists of a grove of blue gum (*Eucalyptus globulus*) and Monterey cypress (*Cupressus macrocarpa*), landscape exotics such as red valerian (*Centranthus ruber*), agave (*Agave* sp.) and English ivy (*Hedera helix*), non-native forbs such as wild radish, hirschfeldia (*Hirschfeldia incana*), horsetweed (*Conyza canadensis*), Italian thistle (*Carduus pycnocephalus*), and the same non-native grasses that occur in the adjacent grassland habitat.

Ruderal/developed habitat of the study area can support many of the same wildlife species as are found in the adjacent grassland and scrub habitats, but the density of individuals may be considerably less than is typical in native habitats. Amphibian and reptile species expected to occur in this habitat would include the gopher snake (*Pituophis melanoleucus*) and western fence lizard.

Possible avian species that could visit the developed/ruderal habitat of the study area would include white-crowned sparrows (*Zonotrichia leucophrys*), black phoebes (*Sayornis nigricans*), dark-eyed juncos (*Junco hyemalis*), purple finches (*Carpodacus purpureus*), American robins (*Turdus migratorius*) and house finches (*Carpodacus mexicanus*). Additionally, the large eucalyptus and Monterey cypress trees located in this area of the site may provide suitable nesting habitat for two raptor species, the white-tailed kite and Cooper's hawk.

2.2 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2 state and federal laws have provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFG. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2000). Collectively, these plants and animals are referred to as "special status species".

A number of special status plants and animals occur in the vicinity of the study area (Table 3). These species, and their potential to occur in the study area, are listed in Table One on the following pages. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFG 2002), *Endangered and Threatened Wildlife and Plants* (USFWS 2002), *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFG 2002), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2000).

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CNDDB 2000 and USFWS 1999)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence in the Study Area
San Bruno Elfin Butterfly (<i>Incisalia mossii bayensis</i>)	FE	Grasslands of San Bruno Mountain. Host plant for the butterfly is <i>Sedum spathulifolium</i>	Absent. The larval food plant for this species is not present on the study area.
Mission Blue Butterfly (<i>Icaricia icarioides missionensis</i>)	FE	Grasslands of San Bruno Mountain. Host plants are <i>Lupinus albyfrons</i> , <i>L. formosus</i> , and <i>L. variicolor</i> .	Present. The larval food plant for this species is present and the species was observed on the study area during surveys.
Callippe Silverspot Butterfly (<i>Speyeria callippe callippe</i>)	FE	Grasslands of San Bruno Mountain. Host plant is <i>Viola pedunculata</i> .	Present. The larval food plant for this species is present in the coastal scrub habitats of the study area and was observed during the surveys.
Bay Checkerspot Butterfly (<i>Euphydryas editha bayensis</i>)	FT	Native grasslands on serpentine soils. Host plant is <i>Plantago erecta</i> .	Absent. No serpentine soils occur on the study area.
California Red-legged Frog (<i>Rana aurora draytonii</i>)	FT,CSC	Rivers, creeks and stock ponds of the Sierra foothills, preferring pools with overhanging vegetation.	Absent. No suitable habitat occurs on the study area and this species has never been detected on San Bruno Mountain. Closest known population is the San Francisco Airport population 6 km to the south.
San Francisco Garter Snake (<i>Thamnophis sirtalis tetrataenia</i>)	FE, ST	Ponds, reservoirs and creeks of San Mateo County.	Absent. Appropriate habitat does not occur within the project site. Extensive surveys over the years have failed to detect it on San Bruno Mountain.
Peregrine Falcon (<i>Falco peregrinus</i>)	FE,CE	Individuals breed on cliffs in the Sierra or in coastal habitats; occurs in many habitats of the state during migration and winter.	Possible. The site provides potential foraging habitat for transients and migrating birds.
Willow Flycatcher (<i>Empidonax traillii</i>)	FE (extimus) FT (brewsteri)	Breeds locally in central valley and mountains.	Unlikely. Uncommon migrant; those birds that may occur on site are probably not of the listed races.

State and Federal Species of Special Concern

California Tiger Salamander (<i>Ambystoma californiense</i>)	FC	Vernal pools and stock ponds of central California.	Absent. No suitable habitat occurs on the study area.
Western Pond Turtle (<i>Clemmy marmorata</i>)	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	Absent. No suitable habitat occurs on the study area.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY (CONT.)

Species	Status	Habitat	*Occurrence in the Study Area
Osprey (<i>Pandion haliaetus</i>)	CSC	Occurs along the California coast and inland along rivers and lakes with fish.	Unlikely. Ospreys occasionally fly over San Bruno Mountain but no suitable foraging or roosting habitat exists on site.
White-tailed Kite (<i>Elanus caeruleus</i>)	CSC	Open grasslands and agricultural areas throughout central California.	Possible. This species is expected to forage within the grasslands on San Bruno Mountain and may nest in the taller trees of the study area.
Northern Harrier (<i>Circus cyaneus</i>)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Possible. Foraging habitat exists within the grasslands of the study area.
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	CSC	Breeds in the mixed conifer forests of the northern Sierra Nevada. This species winters in a variety of habitats of the state.	Possible. Habitats of the study area provide appropriate foraging habitat but no suitable breeding habitat occurs on the study area.
Cooper's Hawk (<i>Accipiter cooperif</i>)	CSC	Breeds in oak woodlands, riparian forests and mixed conifer forest of the Sierra Nevada, but winters in a variety of lowland habitats.	Likely. This species may both forage and breed in the eucalyptus within the study area.
Golden Eagle (<i>Aquila chrysaetos</i>)	CSC	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Likely. May forage in the grassland habitats of the site although they are not expected to nest on site.
Merlin (<i>Falco columbarius</i>)	CSC	This falcon, which breeds in Canada, winters in a variety of California habitats, including grasslands, savannahs, wetlands, etc.	Possible. Winter migrants may pass through the site from time to time.
Prairie Falcon (<i>Falco mexicanus</i>)	CSC	Distributed from annual grasslands to alpine meadows; requires cliffs or rock outcroppings for nesting.	Possible. The site and surrounding lands provide foraging habitat, but no nesting habitat.
Burrowing Owl (<i>Athene cunicularia</i>)	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Unlikely. Suitable grassland habitat was present on the study area but very few ground squirrels were observed and this species does not usually breed in this portion of San Mateo County.
Black Swift (<i>Cypseloides niger</i>)	CSC	Migrants and transients found throughout many habitats of state.	Possible. Migrants and transients may forage on the site during migration. Breeding habitat is absent.
Vaux's Swift (<i>Chaetura vauxi</i>)	CSC	Migrants and transients move through the foothills of the western Sierra in spring and late summer. Some individuals breed in region.	Possible. Migrants and transients may forage on the site during migration. Breeding habitat is absent.
California Horned Lark (<i>Erenophila alpestris actia</i>)	CSC	Short-grass prairies, annual grasslands, coastal plains, open fields.	Likely. Suitable breeding and foraging habitat exists within the grasslands of the study area.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY (CONT.)

Species	Status	Habitat	*Occurrence in the Study Area
Loggerhead Shrike (<i>Lantus ludovicianus</i>)	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Likely. Suitable breeding habitat occurs on site in the coastal scrub, grassland and ruderal habitats of the study area.
California Yellow Warbler (<i>Dendroica petechia brewsteri</i>)	CSC	Migrants move through many habitats of Sierra and its foothills. This species breeds in riparian thickets of alder, willow and cottonwoods.	Possible. Migrants probably pass through the site during the spring and fall.
Tricolored Blackbird (<i>Agelaius tricolor</i>)	CSC	Breeds near fresh water in dense emergent vegetation.	Absent. No suitable habitat exists on the study area.
Townsend Big-eared Bat (<i>Plecotus townsendii townsendii</i>)	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats of the state.	Possible. The study area does not provide suitable roosting habitat, but species may forage over the site.
California Mastiff Bat (<i>Eumops perotis californicus</i>)	CSC	Forages over many habitats, requires tall cliffs or buildings for roosting.	Possible. Potential forager, but no roosting habitat on site.
Pallid Bat (<i>Antrozous pallidus</i>)	CSC	Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas providing roosting opportunities.	Possible. The rock outcrops within the coastal scrub habitat provides limited suitable roosting habitat and the species probably forages over the undisturbed portions of the site.
San Francisco Dusky-footed Woodrat (<i>Neotoma fuscipes annectens</i>)	CSC	Found in hardwood forests, oak riparian and shrub habitats.	Possible. The coastal scrub habitats and willows along the roadside drainage may provide some suitable habitat.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY (CONT.)

PLANTS

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence in the Study Area
Presidio Manzanita (<i>Arctostaphylos hookeri</i> ssp. <i>ravenii</i>)	FE, CE CNPS 1B	Occurs in chaparral, coastal prairie and coastal scrub habitats in serpentine soils.	Absent. Serpentine soils do not occur within the project boundaries.
San Bruno Mountain Manzanita (<i>Arctostaphylos imbricata</i>)	CE CNPS 1B	Occurs in chaparral habitats.	Possible. Suitable habitat occurs within the coastal scrub habitat of the study area. The closest known population occurs just east of Powerline Ridge.
White-rayed Pentachaeta (<i>Pentachaeta bellidiflora</i>)	CE CNPS 1B	Occurs in valley and foothill grasslands often in serpentine soils.	Absent. Serpentine soils do not occur within the study area. This species has never been documented on San Bruno Mountain.
San Francisco Lessingia (<i>Lessingia germanorum</i>)	CE CNPS 1B	Occurs in remnant dunes of coastal scrub habitats.	Absent. Suitable habitat does not occur on the study area.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY (CONT.)

Other special status plants listed by CNPS

Species	Status	Habitat	*Occurrence in the Study Area
San Francisco Gumplant (<i>Grindelia hirsutula</i> var. <i>maritima</i>)	CNPS 1B	Occurs in coastal scrub and valley and foothill grassland habitats in sandy and serpentine soils.	Absent. No sandy or serpentine soils occur on the study area.
Diablo Helianthella (<i>Helianthella castanea</i>)	CNPS 1B	Occurs in broad-leaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland habitats.	Possible. Suitable habitat exists within the coastal scrub habitat of the study area. The closest documented population occurs on the slope above Harold Road in Brisbane.
Robust Spineflower (<i>Chorizanthe robusta</i> var. <i>robusta</i>)	CNPS 1B	Occurs in openings of cismontane woodlands, coastal dunes and coastal scrub.	Unlikely. Suitable habitat exists within the coastal scrub habitat of the study area, however this species is thought to be extirpated from San Mateo County.
San Francisco Champion (<i>Silene verecunda</i> ssp. <i>verecunda</i>)	CNPS 1B	Occurs in coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland habitats.	Possible. Suitable habitat exists within the coastal scrub habitat of the study area.
San Francisco Owl's-clover (<i>Triphysaria floribunda</i>)	CNPS 1B	Occurs in coastal prairie and valley and foothill grassland habitats in serpentine soils.	Absent. Serpentine soils do not occur within the study area.
Montara Manzanita (<i>Arctostaphylos montaraensis</i>)	CNPS 1B	Occurs in maritime chaparral and coastal scrub habitats.	Possible. Suitable habitat exists within the coastal scrub habitat of the study area.
Franciscan Manzanita (<i>Arctostaphylos hookeri</i> ssp. <i>franciscana</i>)	CNPS 1A	Occurs in coastal scrub habitats in serpentine soils.	Absent. Serpentine soils do not occur within the project boundaries.
Choris's Popcorn-flower (<i>Plagiobothrys chorisianus</i>)	CNPS 3	Occurs in chaparral, coastal prairie, and coastal scrub habitats in mesic areas.	Possible. Suitable habitat exists within the coastal scrub habitat of the study area. The nearest population occurs southwest of the study area on the Ridge Trail at West Powerline.
San Francisco Wallflower (<i>Erysimum franciscanum</i>)	CNPS 4	Occurs in coastal dune, coastal scrub, and valley and foothill grassland habitats often in serpentine or granitic soils.	Absent. Suitable soils for this species do not occur within the study area.
Coast Rock Cress (<i>Arabis blepharophylla</i>)	CNPS 4	Occurs in broad-leaved upland forest, coastal prairie, and coastal scrub habitats.	Possible. Suitable habitat exists in the coastal scrub habitat of the study area and this species is fairly common on San Bruno Mountain.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY (CONT.)

*Present: Species observed on the site at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the site, but it could occur there from time to time.

Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient

Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CSC	California Species of Special Concern
FSC	Federal Species of Concern	CNPS	California Native Plant Society Listing

3.0 CONSTRAINTS ANALYSIS

3.1 RELEVANT GOALS, POLICIES, AND LAWS

3.1.1 California Environmental Quality Act

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. According to *Guide to the California Environmental Quality Act* (Remy et al. 1996), "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- ❑ have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- ❑ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- ❑ have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- ❑ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Gorsen 1998).
- ❑ reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community.
- ❑ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitats conservation plan.

3.1.2 San Bruno Mountain Area Habitat Conservation Plan

In 1982, a Habitat Conservation Plan (HCP) was adopted for San Bruno Mountain. The purpose of the HCP is to provide for the indefinite perpetuation of the Mission Blue and the Callippe Silverspot butterflies on San Bruno Mountain, as well as to conserve and enhance the value of the Mountain as a whole as a remnant ecosystem or biological refuge which contains other rare or unusual species in addition to the two butterflies. A limited portion of the Mountain is allowed to be developed under the HCP guidelines but as a requirement for development, the developer must contribute to a fund set up strictly to help conserve and maintain remaining Mission blue and Callippe silverspot habitat and to protect the overall ecology of the planning area by donating specified parcels of land. The HCP specifically addresses planning efforts to prevent butterfly extinction caused by natural forces as well as urban development, the establishment of invasive exotics, off-road vehicles, etc. Private developers are also required, in compliance with the HCP, to redesign projects to reflect habitat consideration. The HCP provides for ongoing planning assistance, including: design review, phasing, reclamation of land disturbed during development, and the creation of buffer zones.” General guidelines for the HCP are as follows:

1. The HCP and studies should include the ecological whole of San Bruno Mountain. The HCP focused in this case on the mountain-wide impacts of the development proposals as allowed by the 1976 San Bruno Mountain General Plan Amendment, and other General Plans, because these proposals represented the greatest threat to the species of concern.
2. The HCP should set aside conserved habitat for the species through the transfer of ownership to the public. These ownership interests should be restricted so that the conserved habitat is protected permanently.
3. The HCP should provide a permanent funding source for conservation activity.
4. The HCP should be based upon a biological study performed by an independent expert under contract to a public entity.
5. The HCP should rely on preservation rather than manipulation, unless manipulation is of proven effectiveness.
6. The HCP should comprehensively address all threats to the endangered species, including biological threats as well as threats from human activity.

7. The HCP should designate those areas in which development may occur and in which endangered individuals may be taken and habitat destroyed.
8. The HCP should simultaneously provide private landowners with a permanent resolution of endangered species and habitat issues, and provide the conserved habitat with protection against additional development proposals encroaching upon it.
9. The overall effect of the HCP should be sufficient to provide for the long-term, indefinite perpetuation of the species.

One of the main goals of the HCP is to preserve existing habitat types or return disturbed habitat to natural conditions. The grassland habitat of San Bruno Mountain, which is thought to be the ancestral native habitat of the mountain, is important in the conservation of the Mission Blue and Callippe Silverspot butterflies. Grassland supports a large number of native forbs that serve as host plants for the butterflies. It also serves as habitat for a number of sensitive plant species. The coastal scrub habitat is slowly thought to be taking over grassland habitat, although it serves as important habitat since it contains three sensitive species of manzanita as well as provides habitat for the San Bruno elfin butterfly. There are several management practices proposed to maintain these habitats including exotic species and brush management, re-introduction of grazing, vandalism/fire control, burning to eliminate dense grass or brush, seeding/propagation in order to enhance habitat with host plants for native butterflies, chaining and scraping/raking to rid areas of dense grass or brush, and soil modification to create rock outcrops which serve as butterfly habitat.

An important function of the HCP is to provide planning assistance to private developers for their individual projects prior to agency review. Design guides for habitats of San Bruno Mountain have been established that address issues such as:

- Maintaining large conserved habitat areas
- Maintaining habitat diversity
- Maintaining contiguity
- Creating corridors that connect large conserved habitat areas

Furthermore, as part of the requirements of the HCP, nearly all projects on San Bruno Mountain must leave some portion of their property as a natural open space in perpetuity and protected from further development. These lands must be put under public control through mechanisms indicated in the HCP. If a project is at a fairly large scale, the project should be done in phases in order to reduce impact on

the species of concern. If there are areas of the project site that are to be reclaimed, then the landowner is required to provide a:

- Precise delineation of all disturbance
- Continuous fencing at the graded perimeter
- Erosion controls
- Revegetation with appropriate species
- Detailed schedule

The developer is required to establish buffer zones between the development and the area to be designated as conserved habitat. These buffers should provide approximately 30 feet of firebreak that will serve to protect developed areas if a prescribed burning program is implemented at some point in the future. Fire-breaks will serve a secondary purpose in that they will protect open space areas from storm water runoff and from irrigation.

Any use of pesticides on a large-scale basis (in excess of 0.5 acres upon a single application) would require a special governmental agency permit and approval by the HCP Operator.

3.1.3 Threatened and Endangered Species

State and federal “endangered species” legislation has provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as “species of special status”. Permits may be required from both the CDFG and USFWS if activities associated with a proposed project will result in the “take” of a listed species. “Take” is defined by the state of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFG and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation. The Ecological Services division of the U.S. Fish and Wildlife Service can be contacted for further information regarding compliance with the Endangered Species Act.

3.1.4 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.1.5 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, 1992), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG.

3.1.6 Wetlands and Other "Jurisdictional Waters"

Natural drainage channels and wetlands are considered "Waters of the United States" (hereafter referred to as "jurisdictional waters"). The filling or grading of such waters is regulated by the U.S. Army Corps of Engineers (USACE) by authority of Section 404 of the Clean Water Act (Wetland Training Institute, Inc. 1991). The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils which are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit.

The USACE and the RWQCB can be contacted for additional information regarding Clean Water Act permits and water quality certification.

The California Department of Fish and Game has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1603 of the California Fish and Game Code (California Department of Fish and Game 1995). Activities that would disturb these drainages are regulated by the CDFG via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protects the habitat values of the drainage in question. The CDFG can be contacted for additional information regarding Streambed Alteration Agreements.

3.1.7 City of Brisbane Tree Ordinance

The City of Brisbane has a tree ordinance governing the removal of native and non-native ordinance-sized trees. Certain native trees including bay laurel (*Umbellularia californica*), coast live oak (*Quercus agrifolia*) and buckeye (*Aesculus californicus*) with a trunk circumference of 24 inches or greater at 24 inches above the natural grade are protected, and all other native and non-native trees with a circumference of 30 inches or greater at 24 inches above the natural grade are also protected. Notice of the intent to remove ordinance-sized trees must be provided to the City and a permit obtained.

3.2 PROJECT OPPORTUNITIES

The study area is within the HCP area of San Bruno Mountain. The Levinson Parcel is designated as Unplanned Parcel 1-04 in the HCP. The HCP speculated that the "wetland" on the site might support the San Francisco garter snake, but offer no empirical evidence that the species occurred. Subsequently, that area of the site had been transferred to PG&E and is now separated from the site (as reviewed for this report) by Main Street. Thus, speculation regarding the San Francisco garter snake no longer has any relevance for the parcel currently under review. The HCP noted that the site supported marginal habitat for the Mission blue and Callippe silverspot, both species which were detected during surveys conducted for this current evaluation. These two species (and their host plants) were detected at the upper elevations of the site.

The general purpose of an HCP is to allow for long-term planning of a region that permits some development within sensitive areas while protecting and managing suitable areas for the target species within the Plan area.

"The purpose of the Habitat Conservation Plan is to provide for the indefinite perpetuation of the Mission Blue and Callippe Silverspot butterflies on San Bruno Mountain, as well as to conserve and

enhance the value of the Mountain as a whole as a remnant ecosystem or biological refuge which contains other rare or unusual species in addition to the two butterflies."

As part of this long-term planning, the HCP provides for Landowner Commitments:

- "1. Demonstrate compliance with the Agreement and the Section 10(a) Permit as described in paragraph A above.
2. Participate in the Funding program as set forth in the Agreement.
3. Satisfy the conditions of Chapter VII as to each parcel for which the landowner proposes development.
4. Dedicate conserved habitat as set forth in Chapter VII of the HCP.
5. Prepare and comply with reclamation plans as described in Chapter VII for areas designated to be reclaimed.
6. Comply with applicable provisions of the Agreement and the conditions of the Section 10(a) Permit.
7. Comply with the requirements for grading permits set forth in the Agreement.
8. Stop grading work immediately upon the issuance of a stop work order duly and properly issued by the local government having land use jurisdiction."

The HCP further elaborates on the obligations of the landowner which are:

- "1. Participate in the regulatory provisions (and funding program, if development takes place) of the HCP.
2. Obtain approvals of any proposed development plans or other uses which would alter the current state of the parcel as required by Chapter Five (F) (4).
3. Allow the Habitat Manager and any Resource Agency personnel access to the seep area contained in this parcel in order to search for the San Francisco garter snake."

Therefore, this project has the opportunity of improving conditions on the better quality habitats of the site by not directly impacting habitat that supports any of the listed butterflies and my providing the opportunities to enhance those open space areas that are to remain after any proposed development (assuming development occurs at the lower elevations of the site). That being the case, there is opportunity to propose a project that is consistent with the goals and objectives of the HCP.

Therefore, any proposed project should provide opportunities to improve the existing conditions of the areas that will be retained as open space:

1. Removing Eucalyptus and other exotic species from the areas to be retained as open space (e.g., the upper elevations).

2. Dedicate the open space areas to be retained to the County to be managed in a way that is appropriate for the listed species of butterfly.
3. Provide for additional funding to manage the resources of the Mountain as the project would be assessed annually (on a fee/unit basis).

3.3 CONSTRAINTS SPECIFIC TO THE PROJECT SITE

3.3.1 Loss of Habitat for Special Status Plants

Potential Impact. The coastal scrub of the site provides suitable habitat for seven special status plant species (see Table 3). No potential habitat exists for special status plant species within the grassland, seasonal drainage or developed/ruderal portions of the site.

Mitigation. If the project is restricted to development within the grassland or developed/ruderal habitats of the site, there will be no impact to special status plant species as these areas do not provide potential habitat for any of the special status species that occur in the vicinity of the study area and, therefore, no mitigation would be required. If development will occur within the coastal scrub habitats of the study area however, protocol-level surveys for special status plant species will need to be conducted within this habitat in areas of proposed development to confirm the presence or absence of these species. These surveys would need to be conducted during the appropriate blooming season for each species having the potential to occur on the site.

If any special status plant species is found to occur in the proposed development area, then an impact assessment would need to be conducted which would determine the precise extent of the impact. Once the impact has been quantified, then a Rare Plant Mitigation and Monitoring Plan would need to be developed that provides for protection of those individuals that may be avoided and provides for restoration (replanting or reseeded) in those circumstances where impacts cannot be avoided. The Plan should describe the mitigation site location, its size, the methods of restoration to be used (translocation, reseeded, etc.), the success criteria and the means by which the mitigation will be monitored.

3.3.2 Loss of Habitat for Special Status Animals

Potential Impact. No suitable habitat exists for, and/or the project site is outside the known distribution of several of the animal species listed in Table 2. These include the San Bruno elfin butterfly, Bay checkerspot butterfly, California red-legged frog, California tiger salamander, western pond turtle, San Francisco garter snake, and Tricolored Blackbird.

Some special-status terrestrial vertebrates may only be occasional visitors, migrants, or transients. These vertebrates include the osprey, northern harrier, sharp-shinned hawk, Cooper's hawk, golden eagle, merlin, prairie falcon, American peregrine falcon, black swift, Vaux's swift, California yellow warbler, California horned lark, willow flycatcher, Townsend's big-eared bat, California mastiff bat, and pallid bat. Development within the coastal scrub and grassland habitats may result in the loss of some foraging habitat for these species but would not result in a loss of any breeding habitat.

Several special status species may breed on or adjacent to the site. The loggerhead shrike, white-tailed kite and Cooper's hawk may breed on or adjacent to the site. These species are fairly common breeders with stable populations in central California. Development within the ruderal, coastal scrub and grassland habitats may result in loss of some foraging and breeding habitat for these three species. Because the project site would represent a small fraction of the available breeding habitat for these species in the region, impacts on these species from development are expected to be less than significant even if these potential breeding sites are removed by development (but see 3.3.8 *Disturbance to Active Raptor nests from Construction Activities during Project Implementation*, below).

San Francisco dusky-footed woodrats may occur in the coastal scrub habitat on the site. Although this subspecies is a California species of special concern, healthy populations occur throughout foothills of the nearby Santa Cruz Mountains and throughout foothills of the Mt. Hamilton Range. Any development within the scrub habitat of the site might result in removal of a small amount of habitat available to this species regionally, and, therefore, this project is expected to result in a less-than-significant impact to this species.

The northern coastal scrub and non-native grassland habitats on and in the vicinity of the study area support suitable habitat and populations of the Mission blue butterfly and Callippe silverspot butterfly (see Figures 5-7). Potential impacts to these species are addressed below in Section 3.3.3.

Mitigation. The project will have no direct impact on most of the animal species listed in Table 3. It may have a limited impact on some relatively common species in the region (e.g., loggerhead shrike, San Francisco dusky footed woodrat), but this small impact will be less-than-significant.

Any proposed development occurring within the coastal scrub habitat or within the grassland habitats above and adjacent to the upper portion of the access road may have an impact on habitat for the Mission blue butterfly and the Callippe silverspot butterfly.

3.3.3 Potential Impacts to Endangered Butterfly Species

Potential Impact. Both Mission blue butterflies and Callippe silverspot butterflies are known to occur on the study area (see Figure 4 and 5) and were observed in the upper elevations of the site during the June 2002 surveys conducted for this report. Larval host plants for the Callippe silverspot were only found in the coastal scrub habitat above the access road. Larval host plants for the Mission blue were confirmed to exist along the edge of the access road only in the southern portion of the site. While a specific development proposal was not evaluated for this report, the following guidelines and potential mitigation options have been proposed to ensure that any adverse affects to these species can be adequately mitigated.

Mitigation. To reduce project impacts on listed butterflies to a less-than-significant level, the project should avoid development within the coastal scrub habitat located southwest of the access road on the northeast facing slope of the study area. Avoidance of a sensitive resource is the preferred approach and therefore, concentrating development below the areas that support the host plant for these two butterfly species would reduce impacts to indirect affects. The development should establish a suitable buffer between the edge of development and the nearest group of host plants (e.g., 50 ft. minimum). The open space areas should be fenced and appropriate signage should be prominently placed designating the area a preserve. Additionally, spring surveys should be conducted to determine the identification of the lupine species occurring in the grassland northwest of the access road. If this species is identified as a larval host species for the Mission blue, fencing should be brought further downslope to include protection of this lupine population.

The project should develop a detailed Butterfly Protection and Restoration Plan. This plan should at a minimum identify opportunities to enhance the open space areas for the listed butterflies, measures that would be necessary to protect the species from unintended "take" by limiting access to the open space areas, by removal of exotic plant species, by constructing the project in such a way as to minimize the amount of dust that is produced during the flight season, etc.

3.3.4 Introduction of Invasive Exotics

Potential Impact. Habitats of the study area are already significantly impacted by invasive exotics and developed areas adjacent to the site also provide a constant source of invasives. In general, landscaping associated with development often introduces exotic plants to a project site that may be capable of naturalizing into native habitats. The proposed project can have a beneficial impact on this situation if the landscape plan incorporates the use of vegetation consistent with that of the natural vegetation of the

Mountain. Nonetheless, some invasive exotics may be inadvertently planted over time, particularly if the project involves construction of single family residential units.

Mitigation. The Landscape Architect will consult the HCP and associated documents and lists produced by the California Exotic Pest Plant Council (CalEPPC) to develop a landscape plan that limits the potential to introduce invasive exotics to the site. In addition, the applicant will introduce a number of safeguards into the development and long-term maintenance of the project to reduce the possibility that invasive exotics will establish within the development. Safeguards will include landscaping only with those species approved for the site while long-term maintenance will include the annual inspection and weeding of project landscape to remove any invasives which have become established. If the project will include residential development, planting of invasives will be minimized through the use of CC&Rs which will restrict the planting of exotic invasives. Therefore, the project has the potential of actually decreasing the exotic seed bank associated with the site and thereby reducing the spread of invasive exotics that presently occur on the site. The project is expected to reduce the ability of invasive exotics escaping into the natural areas of the Mountain over the current existing conditions. Therefore, this mitigation will reduce the impact of invasive exotics to a less-than-significant impact.

3.3.5 Disturbance to Jurisdictional Waters

Potential Impact. Potential jurisdictional waters exist on the study area in the form of the large seasonal drainage, its associated swales, and the roadside drainage along Bayshore. It is unknown at this time whether the project would have any impact on these areas.

Mitigation. To be in compliance with Section 404 of the Clean Water Act, the applicant must identify wetlands within the footprint of the proposed project according to methodologies acceptable to the USACE, calculate the area of jurisdictional wetlands to be affected and submit to the USACE an application for a Clean Water Act permit. The applicant must also have on file a Section 401 Water Quality Certification, or waiver, to be obtained from the RWQCB. Therefore, well before the onset of project construction, the applicant should complete the following:

- **Wetland Delineation.** All areas of the project site that meet the technical criteria of jurisdictional wetlands must be delineated on a map of suitable scale. All fieldwork must be in conformance with methodologies found in Section D (Routine Determinations) of the 1987 Corps of Engineers Wetlands Delineation Manual. A recent color aerial photograph of the site at a scale of 1" = 100' (optimal) or 1" = 200' (acceptable) would also be necessary. The delineation of jurisdictional

wetlands is time-consuming and, therefore, potentially expensive. Therefore, it is important to clearly define the project area and confine the wetland delineation to that area. For example, there may be portions of the 22-acre study area that would never be developed. Those areas could be omitted from the wetland delineation. In some cases, however, it is advisable to delineate wetlands on an entire parcel in order to identify those areas where the proposed project could be built such that the smallest area of wetland habitat would be affected.

- **Site Planning.** Once the delineation has been verified, the project planners can then develop a site plan that minimizes impacts to wetlands. The most significant planning issue related to jurisdictional wetlands appears to be the ditch and artificial wetland located at the north end of the study area. Once the jurisdictional status of these two areas has been determined, an alignment for the one-way access road can be finalized that minimizes wetland impacts, and therefore, permit requirements associated with the Clean Water Act permit and/or state water quality certification.
- **Clean Water Act Permit or State Water Quality Certification.** The applicant must comply with requirements of the Clean Water Act, should there be any project impact to jurisdictional waters. The required permits could not be known at the time this report was prepared, because the extent of jurisdictional waters on site had not yet been determined and elements of the project itself (i.e. the emergency vehicle access road) had not be finalized. Furthermore, Clean Water Act permits are subject to change, and the most likely permit(s) now in place for small impacts to jurisdictional wetlands may not be the same permit(s) in place when the project is actually constructed.
- **Enter into Streambed Alteration Agreement with CDFG per Section 1603 of the Fish and Game Code.** The wetland delineation showing all drainages within the footprint of the proposed project should be provided the CDFG, in order to determine the extent of CDFG jurisdiction. If the CDFG claims jurisdiction over any drainages to be affected by the project, then the applicant must enter into an agreement with the CDFG that itemizes any mitigation measures designed to protect the biotic values associated with those drainages.

3.3.6 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters during Construction

Potential Impact. Eventual site development could require considerable cut-and-fill grading which would leave the soil of construction zones barren of vegetation. Eroded soils are generally carried as sediment in surface runoff to be deposited in creek beds and adjacent wetlands. It is difficult to predict the magnitude of erosion resulting from future site development. It is clear, however, that there is

potential for significant erosion to occur. The resulting sediment loads in the seasonal drainage on site, and in other creeks to which they are tributary, constitute a potentially significant adverse environmental impact on downstream water quality and, in turn, the aquatic organism's common to seasonal creeks and wetlands.

Furthermore, stormwater runoff from roads, subdivisions, parking facilities, athletic fields, and will potentially contain grease, heavy metals, pesticide and herbicide residues, nitrogen and phosphorus, etc. Pollutants entering natural drainages downslope of the project site constitute a potentially significant environmental impact on water quality and the aquatic organisms common to seasonal creeks and wetlands.

Mitigation. The applicant will be required to obtain a grading permit from the City of Brisbane and a General Construction Permit from the RWQCB. The General Construction Permit is required when grading directly disturbs 5 or more acres of the property (at the time this report was prepared, the 5-acre threshold of the general construction permit was being reviewed by the RWQCB, with a 1-acre threshold under consideration). The applicant must be in compliance with the terms of these permits. The applicant must also meet water quality standards for the State of California. Therefore, the applicant must be in compliance with any standards established by RWQCB for non-point sources of pollution.

Compliance with the various permits and standards described above will require the development of a formal plan for the protection of surface water quality. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum this plan would provide for:

- 1) Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.
- 2) Protection of natural drainage channels from sedimentation. Hay bale check dams should be installed below graded areas so that any sediment carried by surface runoff is intercepted and retained behind the check dams before it can enter the creek.
- 3) Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures in 1 and 2 above, but they may include any number of additional measures appropriate for this particular site and this particular project, including grease traps in parking lots, landscape management practices to reduce the use of pesticides and herbicides, the discharge of stormwater runoff from "hardscapes" into grassy swales, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc. .

Implementation of the above measures will reduce impacts to water quality in seasonal creeks, reservoirs and downstream drainages to a less than significant level.

3.3.7 Disturbance to Active Raptor Nests from Construction Activities During Project Implementation

Potential Impact. Several species of raptors (i.e. eagles, hawks, and owls) breed regionally. Species that may breed on or adjacent to the site include (but are not limited to) one or more of the following: Red-tailed Hawks, Cooper's Hawks, American Kestrels, Barn Owls, and Great Horned Owls. Construction activities could result in the abandonment of active nests or direct mortality to these birds. Federal and state laws protect raptors (see discussion in Section 3.2.5). Construction activities that adversely affect nesting, or result in mortality of individual birds, would be a violation of state and federal law, and would be considered a significant adverse impact per the guidelines of CEQA.

Mitigation. The applicant will implement the following measures to reduce impact to nesting raptors.

- **Preconstruction Surveys.** During the raptor nesting season the applicant will have a qualified biologist survey construction areas and their immediate vicinity for active raptor nests within 30 days of the onset of project construction. Surveys will be conducted according to a protocol developed in consultation with the California Department of Fish and Game.
- **Avoidance.** Any active nests discovered during the pre-construction survey will be marked on a map. A construction-free setback or buffer will be established around each active nest by means of fencing or stakes with conspicuous flagging. No construction activities will be permitted within the buffer area until the conclusion of the nesting season.

Implementation of the above measures will reduce impacts to nesting raptors to a less than significant level.

3.3.8 Loss of Habitat for Native Wildlife

Potential Impact. The project could result in the loss of areas that support native wildlife such as in the northern coastal scrub and non-native grassland habitats. Development within the ruderal/developed areas of the site, however, would not be expected to result in a significant loss of native wildlife habitat.

Mitigation. Project impact on habitat for native wildlife will be less than significant. No mitigation is required.

3.3.9 Interference with Movement of Native Wildlife

Potential Impact. CEQA Guidelines interprets a "substantial interruption of wildlife movements" as a significant environmental affect. This rather broad language sometimes causes confusion because in fact animals make three different types of movements on a regular basis. Typically, substantial interruption is interpreted as the disruption of a wildlife movement corridor. The term "corridor" implies a linkage between or among larger habitat patches. In order to assess the importance of an area as a "movement corridor" it is important to understand the basic concepts underlying animal movement patterns. Animal movements can generally be subdivided into 3 major behavioral categories: 1) movements within a home range or territory; 2) movements during migration; and 3) movements during dispersal.

While the study area is located in close proximity to other areas of the Mountain providing habitat for native wildlife and through which native wildlife may move, including other habitats of the Mountain and the San Francisco Bay, generally the study area is already isolated from these other areas due to surrounding development including roads, commercial, industrial and residential development. This surrounding development already probably limits use of the study area as a wildlife corridor. Therefore, development of the site would be expected to have a less-than-significant impact on the movement of native wildlife in the area.

Mitigation. Project impact on the movement of native wildlife will be less than significant. No mitigation is required.

3.3.11 Loss of Ordinance-sized Trees

Potential Impact. Several ordinance-sized trees occur within the study area. These mainly consist of mature blue gum eucalyptus and Monterey cypress trees having a trunk circumference of greater than 30 inches which occur in the ruderal/developed and roadside drainage habitats.

Mitigation. Any ordinance-sized trees to be removed shall be replaced on-site in accordance with City of Brisbane's tree replacement requirements. Tree replacement would be implemented through the landscaping program for the project. The requirements should also stipulate that replacement trees be irrigated and maintained for a period of three years. Any native trees to be removed will be replaced by the same species.

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APPENDIX A

VASCULAR PLANTS OF THE STUDY AREA

**APPENDIX A
VASCULAR PLANTS OF THE STUDY AREA**

The plants species listed below have been observed on the study area during surveys conducted by Live Oak Associates during June 2002. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
 FACW - Facultative Wetland
 FAC - Facultative
 FACU - Facultative Upland
 UPL - Upland
 +/- - Higher/lower end of category
 NR - No review
 NA - No agreement
 NI - No investigation

ANACARDIACEAE – Sumac Family

<i>Toxicodendron diversilobum</i>	Poison Oak	UPL
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APIACEAE – Carrot Family

<i>Angelica hendersonii</i>	Coast Angelica	UPL
<i>Berula erecta</i>	Cutleaf Water-Parsnip	OBL
<i>Conium maculatum</i>	Poison Hemlock	FACW
<i>Foeniculum vulgare</i>	Fennel	FACU
<i>Lomatium sp.</i>	Lomatium	UPL

APOCYNACEAE – Dogbane Family

<i>Vinca major</i>	Periwinkle	UPL
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ARALIACEAE – Ginseng Family

<i>Hedera helix</i>	English Ivy	UPL
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ASTERACEAE - Sunflower Family

<i>Achillea millefolium</i>	Common Yarrow	FACU
<i>Agoseris grandifolia</i>	Large-flowered Agoseris	UPL
<i>Artemisia californica</i>	California Sagebrush	UPL
<i>Baccharis douglasii</i>	Mulefat	OBL
<i>Baccharis pilularis</i>	Coyote Brush	UPL
<i>Carduus pycnocephalus</i>	Italian Thistle	UPL
<i>Centaurea solstitialis</i>	Yellow Star Thistle	UPL
<i>Chamomilla suaveolens</i>	Pineapple Weed	FAC
<i>Cirsium vulgare</i>	Bull Thistle	UPL
<i>Conyza canadensis</i>	Canada Horsetail	UPL
<i>Eriophyllum confertiflorum</i>	Lizard Tail	UPL
<i>Gnaphalium sp.</i>	Cudweed	UPL
<i>Hypochaeris glabra</i>	Smooth Cat's-ear	UPL
<i>Hypochaeris radicata</i>	Rough Cat's-ear	UPL
<i>Lactuca serriola</i>	Prickly Lettuce	FAC
<i>Mitropus californicus var. californicus</i>	Slender Cottonweed	UPL
<i>Picris echioides</i>	Bristly Ox-tongue	FAC
<i>Silybum marinum</i>	Milk Thistle	NI

<i>Sonchus asper</i>	Prickly Sow Thistle	FAC
<i>Sonchus oleraceus</i>	Common Sow Thistle	NI
<i>Xanthium strumarium</i>	Cocklebur	FAC+
BORAGINACEAE - Borage Family		
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Common Fiddleneck	UPL
BRASSICACEAE - Mustard Family		
<i>Brassica nigra</i>	Mustard	UPL
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	FAC
<i>Cardamine californica</i>	Milk Maids	UPL
<i>Lepidium nitidum</i>	Peppergrass	UPL
<i>Raphanus sativus</i>	Wild Radish	UPL
<i>Sisymbrium officinale</i>	Hedge Mustard	UPL
CARYOPHYLLACEAE - Pink Family		
<i>Anagallis arvensis</i>	Scarlet Pimpernel	FAC
<i>Stellaria media</i>	Common Chickweed	FACU
CAPRIFOLIACEAE - Honeysuckle Family		
<i>Symphoricarpos albus</i>	snowberry	FACU
CONVOLVULACEAE - Morning Glory Family		
<i>Convolvulus arvensis</i>	Bindweed	UPL
CUPRESSACEAE - Cypress Family		
<i>Cupressus macrocarpa</i>	Monterey Cypress	UPL
CYPERACEAE - Sedge Family		
<i>Carex</i> sp.	Sedge	FACW
<i>Cyperus eragrostis</i>	Umbrella Sedge	FACW
EQUISETACEAE - Horsetail Family		
<i>Equisetum</i> sp.	Horsetail	FACW
FABACEAE - Pea Family		
<i>Acacia melanoxylon</i>	Blackwood Acacia	UPL
<i>Cytisus striatus</i>	Broom	UPL
<i>Ulex europaeus</i>	Gorse	UPL
<i>Lathyrus vestitus</i>	Pacific Pea	UPL
<i>Lotus corniculatus</i>	Bird's Foot Trefoil	FAC
<i>Lupinus</i> sp.	Lupine	UPL
<i>Lupinus formosus</i> ssp. <i>formosus</i>	Lupine	UPL
<i>Genista monspessulana</i>	French Broom	UPL
<i>Medicago polymorpha</i>	California Burclover	NI
<i>Melilotus alba</i>	White Sweetclover	FACU+
<i>Spartium junceum</i>	Spanish Broom	UPL
<i>Vicia villosa</i>	Hairy Vetch	UPL
GARRYACEAE - Silk Tassle Family		
<i>Garrya elliptica</i>	Coast Silk Tassle	UPL
GERANIACEAE - Geranium Family		
<i>Erodium cicutarium</i>	Red-stemmed Filaree	UPL
<i>Erodium botrys</i>	Storksbill	UPL
<i>Geranium dissectum</i>	Cranesbill	UPL

<i>Geranium molle</i>	Wild Geranium	UPL
IRIDACEAE – Iris Family		
<i>Iris</i> sp.	Iris	UPL
<i>Sisyrinchium bellum</i>	Blue-eyed Grass	UPL
JUNCACEAE - Rush Family		
<i>Juncus bufonius</i> ssp. <i>bufonius</i>	Toad Rush	OBL
<i>Juncus effusus</i>	Soft Rush	OBL
<i>Juncus</i> sp.	Rush	OBL
LAMIACEAE – Mint Family		
<i>Marrubium vulgare</i>	Horehound	FAC
<i>Salvia mellifera</i>	Black Sage	UPL
LILIACEAE – Lily Family		
<i>Agave</i> sp.	Agave	UPL
<i>Chlorogalum pomeridianum</i>	Soap Plant	UPL
<i>Triteleia laxa</i>	Ithuriel's-spear	UPL
MALVACEAE – Mallow Family		
<i>Malva parviflora</i>	Cheeseweed	UPL
<i>Sidalcea malvaeflora</i>	Checker Mallow	UPL
MYRICACEAE – Wax Myrtle Family		
<i>Myrica californica</i>	California Wax Myrtle	UPL
MYRTACEAE – Myrtle Family		
<i>Eucalyptus globulus</i>	Blue Gum	UPL
ONAGRACEAE – Evening Primrose Family		
<i>Epilobium brachycarpum</i>	Willow Herb	UPL
<i>Epilobium ciliatum</i>	Willow Herb	FACW
OXALIDACEAE – Oxalis Family		
<i>Oxalis pes-caprae</i>	Bermuda Buttercup	UPL
PAPAVERACEAE – Poppy Family		
<i>Eschscholzia californica</i>	California Poppy	UPL
PLANTAGINACEAE – Plantain Family		
<i>Plantago lanceolata</i>	English Plantain	FAC-
POACEAE - Grass Family		
<i>Aira caryophyllea</i>	Silver Hair Grass	UPL
<i>Avena barbata</i>	Slender Wild Oats	UPL
<i>Avena fatua</i>	Wild Oats	UPL
<i>Briza maxima</i>	Quaking Grass	FAC
<i>Briza minor</i>	Little Quaking Grass	FACW-
<i>Bromus diandrus</i>	Ripgut	UPL
<i>Bromus carinatus</i>	California Brome	UPL
<i>Bromus hordeaceus</i>	Soft Chess Brome	FACU
<i>Cortaderia jubata</i>	Cortaderia	UPL
<i>Cynodon dactylon</i>	Bermuda Grass	FAC
<i>Cynosurus cristatus</i>	Crested Dog-tail Grass	FACW
<i>Dactylis glomerata</i>	Orchard Grass	FACU

<i>Elymus glaucus</i>	Blue Wildrye	FACU
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean Barley	FAC
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Barnyard Barley	NI
<i>Leymus triticoides</i>	Creeping Wildrye	FAC+
<i>Lolium multiflorum</i>	Italian Ryegrass	FAC
<i>Nassella pulchra</i>	Purple Needlegrass	UPL
<i>Phalaris aquatica</i>	Harding Grass	FAC+
<i>Poa annua</i>	Annual Bluegrass	FACW
<i>Polypogon monspeliensis</i>	Annual Beard Grass	FACW
<i>Sorghum halepense</i>	Johnson Grass	FACU
<i>Vulpia myuros</i>	Rattail Fescue	FACU
POLYGONACEAE – Buckwheat Family		
<i>Eriogonum</i> sp.	Buckwheat	UPL
<i>Polygonum arenastrum</i>	Common Knotweed	UPL
<i>Rumex acetosella</i>	Sheep Sorrel	FAC-
<i>Rumex crispus</i>	Curly Dock	FACW-
PTERIDACEAE – Brake Family		
<i>Pentagramma triangularis</i>	Goldback Fern	UPL
RHAMNACEAE – Buckthorn Family		
<i>Ceanothus thyrsiflorus</i>	Blue Blossom	UPL
<i>Rhamnus californica</i>	California Coffeeberry	UPL
ROSACEAE – Rose Family		
<i>Heteromeles arbutifolia</i>	Toyon	UPL
<i>Rubus discolor</i>	Himalayan Blackberry	FACW
<i>Rubus ursinus</i>	California Blackberry	FACW
SALICACEAE - Willow Family		
<i>Salix lasiolepis</i>	Arroyo Willow	OBL

SCROPHULARIACEAE – Figwort Family

Bellardia trixago

Bellardia

UPL

Castilleja affinis

Indian Paintbrush

UPL

Mimulus aurantiacus

Sticky Monkey Flower

UPL

Scrophularia californica

Beeplant

UPL

SOLANACEAE – Nightshade Family

Solanum nigra

Nightshade

UPL

VALERIANACEAE – Valerian Family

Centranthus ruber

Red Valerian

UPL

VIOLACEAE – Violet Family

Viola pedunculata

Johnny Jump-Up

UPL

APPENDIX B

**TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR
ON THE STUDY AREA**

APPENDIX B
TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR
IN THE STUDY AREA

The species listed below are those that may reasonably be expected to use the habitats of the study area. The list was not intended to include birds that are vagrants or occasional transients. Its purpose was rather to include those species that may be expected to routinely, and predictably, use the study area and adjacent canal and riparian habitats during some or all of the year.

CLASS: AMPHIBIA

- ORDER: CAUDATA (Salamanders)**
FAMILY: PLETHODONTIDAE
Ensatina (Ensatina eschscholtzi)
California Slender Salamander (Batrachoseps attenuatus)
ORDER: SALIENTIA (Toads and Frogs)
FAMILY: BUFONIDAE (True Toads)
Western Toad (Bufo boreas)
FAMILY: HYLIDAE (Treefrogs and Relatives)
Pacific Treefrog (Pseudacris regilla)

CLASS: REPTILIA

- ORDER: SQUAMATA (Lizards and Snakes)**
SUBORDER: SAURIA (Lizards)
FAMILY: IGUANIDAE (Iguanids)
Western Fence Lizard (Sceloporus occidentalis)
FAMILY: SCINCIDAE (Skinks)
Western Skink (Eumeces skiltonianus)
FAMILY: ANGUIDAE (Alligator Lizards and relatives)
Southern Alligator Lizard (Gerrhonotus multicarinatus)
FAMILY: COLUBRIDAE (Colubrids)
Ring-necked Snake (Diadophis punctatus)
Sharp-tailed Snake (Contia tenuis)
Gopher Snake (Pituophis melanoleucus)
Common Kingsnake (Lampropeltis getulus)
Western Terrestrial Garter Snake (Thamnophis elegans)
Night Snake (Hypsiglena torquata)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (Crotalus viridis)

CLASS: AVES

- ORDER: CICONIIFORMES (Hérons, Storks, Ibises, and Relatives)**
FAMILY: ARDEIDAE (Hérons and Bltterns)
Great Blue Heron (Ardea herodias)
Great Egret (Ardea alba)
Snowy Egret (Egretta thula)
ORDER: ANSERIFORMES (Screamers, Ducks, and Relatives)
FAMILY: ANATIDAE (Swans, Geese, and Ducks)
Mallard (Anas platyrhynchos)
Common Merganser (Mergus merganser)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (Cathartes aura)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
White-tailed Kite (Elanus leucurus)
Northern Harrier (Circus cyaneus)
Sharp-shinned Hawk (Accipiter striatus)
Cooper's Hawk (Accipiter cooperi)
Red-shouldered Hawk (Buteo lineatus)
Red-tailed Hawk (Buteo calurus)
Golden Eagle (Aquila chrysaetos)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (Falco sparverius)
Merlin (Falco columbarius)
ORDER: GALLIFORMES (Megapodes, Curassows, Pheasants,

- and relatives)**
FAMILY: PHASIANIDAE (Quails, Pheasants, and Relatives)
California Quail (Callipepla californica)
ORDER: GRUIFORMES (Cranes, Rails, and Relatives)
FAMILY: RALLIDAE (Rails, Gallinules and Coots)
American Coot (Fulica americana)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and Relatives)
FAMILY: CHARADRIIDAE (Plovers and Relatives)
Killdeer (Charadrius vociferus)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
Rock Dove (Columba livia)
Band-tailed Pigeon (Columba fasciata)
Mourning Dove (Zenaida macroura)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
Barn Owl (Tyto alba)
FAMILY: STRIGIDAE (Typical Owls)
Western Screech Owl (Otus kennicottii)
Great Horned Owl (Bubo virginianus)
ORDER: CAPRIMULGIFORMES (Goatsuckers and relatives)
FAMILY: CAPRIMULGIDAE
Common Poorwill (Phalaenoptilus nuttallii)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: APODIDAE (Swifts)
Vaux's Swift (Chaetura vauxi)
White-throated Swift (Aeronautes saxatalis)
FAMILY: TROCHILIDAE (Hummingbirds)
Anna's Hummingbird (Calypte anna)
Rufous Hummingbird (Selasphorus rufus)
Allen's Hummingbird (Selasphorus sasin)
ORDER: PICIFORMES (Woodpeckers and Relatives)
FAMILY: PICIDAE (Woodpeckers and Wrynecks)
Acorn Woodpecker (melanerpes formicivorus)
Red-breasted Sapsucker (Sphyrapicus ruber)
Nuttall's Woodpecker (Picoides nuttallii)
Downy Woodpecker (Picoides pubescens)
Hairy Woodpecker (Picoides villosus)
Northern Flicker (Colaptes auratus)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
Olive-sided Flycatcher (Contopus borealis)
Western Wood-Pewee (Contopus sordidulus)
Pacific-slope Flycatcher (Empidonax difficilis)
Black Phoebe (Sayornis nigricans)
Say's Phoebe (Sayornis saya)
Ash-throated Flycatcher (Myiarchus cinerascens)
Western Kingbird (Tyrannus verticalis)
FAMILY: LANIIDAE (Shrikes)
Loggerhead Shrike (Lanius ludovicianus)
FAMILY: VIREONIDAE (Typical Vireos)
Hutton's Vireo (Vireo huttonii)
Warbling Vireo (Vireo gilvus)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
Western Scrub Jay (Aphelocoma californica)
American Crow (Corvus brachyrhynchos)

Common Raven (*Corvus corax*)
FAMILY: MONARCHIIDAE (Monarch Flycatchers)
 Western Bluebird (*Sialia mexicana*)
 Swainson's Thrush (*Catharus ustulatus*)
 Hermit Thrush (*Catharus guttatus*)
 American Robin (*Turdus migratorius*)
 Varied Thrush (*Ixoreus naevius*)
FAMILY: ALAUDIDAE (Larks)
 California Horned Lark (*Eremophila alpestris actia*)
FAMILY: HIRUNDINIDAE (Swallows)
 Tree Swallow (*Tachycineta bicolor*)
 Violet-green Swallow (*Tachycineta thalassina*)
 Northern Rough-winged Swallow (*Sialgidopteryx serripennis*)
 Cliff Swallow (*Petrochelidon pyrrhonota*)
 Barn Swallow (*Hirundo rustica*)
FAMILY: PARIDAE (Titmice)
 Chestnut-backed Chickadee (*Parus rufescens*)
 Oak Titmouse (*Baeolophus inornatus*)
FAMILY: AEGITHALIDAE (Bushtit)
 Bushtit (*Psaltriparus minimus*)
FAMILY: SITTIDAE (Nuthatches)
 White-breasted Nuthatch (*Sitta carolinensis*)
FAMILY: CERCITHIDAE (Creepers)
 Brown Creeper (*Certhia americana*)
FAMILY: TROGLODYTIDAE (Wrens)
 Bewick's Wren (*Tyrannus bewickii*)
 House Wren (*Troglodytes aedon*)
 Winter Wren (*Troglodytes troglodytes*)
FAMILY: REGULIDAE (Kinglets)
 Golden-crowned Kinglet (*Regulus satrapa*)
 Ruby-crowned Kinglet (*Regulus calendula*)
FAMILY: SYLVIIDAE (Old World Warblers and Gnatcatchers)
 Blue-gray Gnatcatcher (*Poliophtila caerulea*)
FAMILY: TIMALIIDAE (Babblers)
 Wren-tit (*Chamaea fasciata*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
 Northern Mockingbird (*Mimus polyglottos*)
 California Thrasher (*Taxostoma redivivum*)
FAMILY: STURNIDAE (Starlings)
 European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
 American Pipit (*Anthus rubescens*)
FAMILY: BOMBYCILLIDAE (Waxwings)
 Cedar Waxwing (*Bombycilla cedrorum*)
FAMILY: PARULIDAE (Wood Warblers)
 Yellow Warbler (*Dendroica petechia*)
 Orange-crowned Warbler (*Vermivora celata*)
 Yellow-rumped Warbler (*Dendroica coronata*)
 Townsend's Warbler (*Dendroica occidentalis*)
 Common Yellowthroat (*Geothlypis trichas*)
 Wilson's Warbler (*Wilsonia pusilla*)
FAMILY: EMBERIZIDAE (Emberzines)
 Spotted Towhee (*Pipilo maculatus*)
 California Towhee (*Pipilo cristatus*)
 Savannah Sparrow (*Passerculus sandwichensis*)
 Fox Sparrow (*Passerella iliaca*)
 Song Sparrow (*Melospiza melodia*)
 Lincoln's Sparrow (*Melospiza lincolni*)
 Golden-crowned Sparrow (*Zonotrichia atricapilla*)
 White-crowned Sparrow (*Zonotrichia leucophrys*)
 Dark-eyed Junco (*Junco hyemalis*)
FAMILY: ICTERIDAE (Icterines)
 Red-winged Blackbird (*Agelaius phoeniceus*)
 Western Meadowlark (*Sturnella neglecta*)
 Brewer's Blackbird (*Euphagus cyanocephalus*)
 Brown-headed Cowbird (*Molothrus ater*)
 Bullock's Oriole (*Icterus bullockii*)
FAMILY: FRINGILLIDAE (Finches)
 Purple Finch (*Carpodacus purpureus*)

House Finch (*Carpodacus mexicanus*)
 Pine Siskin (*Caruelis pinus*)
 Lesser Goldfinch (*Carduelis psaltria*)
 American Goldfinch (*Carduelis tristis*)
FAMILY: PASSERIDAE (Weaver Finches)
 House Sparrow, (*Passer domesticus*)

CLASS: MAMMALIA

ORDER: MARSUPIALIA (Opossums, Kangaroos, and Relatives)
FAMILY: DIDELPHIDAE (Opossums)
 Virginia Opossum (*Didelphis virginiana*)
ORDER: INSECTIVORA (Shrews and Moles)
FAMILY: SORICIDAE (Shrews)
 Omate Shrew (*Sorex ornatus*)
FAMILY: TALPIDAE (Moles)
 Broad-footed Mole (*Scapanus latimanus*)
ORDER: CHIROPTERA (Bats)
 Little Myotis (*Myotis lucifugus*)
 Yuma Myotis (*Myotis yumanensis*)
 California Myotis (*Myotis californicus*)
 Western Pipistrelle (*Pipistrellus hesperus*)
 Big Brown Bat (*Eptesicus fuscus*)
 Western Red Bat (*Lasiurus blossevillei*)
 Townsend's Big-eared Bat (*Plecotus townsendii*)
FAMILY: ANTROZOIDAE (Pallid Bat)
 Pallid Bat (*Antrozous pallidus*)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
 Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
 Brush Rabbit (*Sylvilagus bachmani*)
 Desert Cottontail (*Sylvilagus auduboni*)
 Black-tailed (Hare) Jackrabbit (*Lepus californicus*)
ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)
FAMILY: SCIURIDAE (squirrels, Chipmunks, and Marmots)
 Botia's Pocket Gopher (*Thomomys bottae*)
FAMILY: GEOMYIDAE (Pocket Gophers)
 Botia's Pocket Gopher (*Thomomys bottae*)
FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)
 Western Harvest Mouse (*Reithrodontomys megalotis*)
 California Mouse (*Peromyscus californicus*)
 Deer Mouse (*Peromyscus maniculatus*)
 Dusky-footed Woodrat (*Neotoma fuscipes*)
 California Vole (*Microtus californicus*)
FAMILY: MURIDAE (Old World Rats and Mice)
 Black Rat (*Rattus rattus*)
 Norway Rat (*Rattus norvegicus*)
 House Mouse (*Mus musculus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and Relatives)
 Coyote (*Canis latrans*)
 Red Fox (*Vulpes vulpes*)
 Gray Fox (*Urocyon cinereoargenteus*)
FAMILY: PROCYON (Raccoon and Relatives)
 Ringtail (*Bassariscus astutus*)
 Raccoon (*Procyon lotor*)
FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)
 Long-tailed Weasel (*Mustela frenata*)
 Badger (*Taxidea taxus*)
 Striped Skunk (*Mephitis mephitis*)
FAMILY: FELIDAE (Cats)
 Bobcat (*Lynx rufus*)
 Domestic Cat (*Felis catus*)
ORDER: ARTIODACTYLA
FAMILY: CERVIDAE (Deer, Elk and Relatives)
 Black-tailed Deer (*Odocoileus hemionus columbianus*)