

**PHASE I STUDY FOR THE  
TONNER CANYON/CHINO HILLS  
SIGNIFICANT ECOLOGICAL AREA NO. 15**

**Prepared for:**

**County of Los Angeles  
Department of Regional Planning  
320 West Temple Street, Room 1354  
Los Angeles, California 90012**

**Contact: Frank Meneses**

**Prepared by:**

**Michael Brandman Associates  
606 South Olive Street, Suite 600  
Los Angeles, California 90014  
(213) 622-4443**

**Contact: Marie C. Campbell, Manager of Environmental Protection Services**

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**TABLE OF CONTENTS**

<b><u>Section</u></b>		<b><u>Page</u></b>
<b>I</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>II</b>	<b>METHODS .....</b>	<b>3</b>
<b>III</b>	<b>OWNERSHIP PATTERNS AND CURRENT USES .....</b>	<b>3</b>
<b>IV</b>	<b>EXISTING BIOLOGICAL RESOURCES .....</b>	<b>4</b>
	Plant Communities .....	5
	Wildlife .....	9
	Sensitive Species .....	11
	Wildlife Movement .....	17
<b>V</b>	<b>DEVELOPMENT PRESSURE ANALYSIS .....</b>	<b>18</b>
<b>VI</b>	<b>RECOMMENDATIONS FOR THE FUTURE MANAGEMENT OF THE TONNER CANYON/CHINO HILLS SEA NO. 15 .....</b>	<b>19</b>
	Original Intent of SEA Designation and Current Uses .....	19
	Suggestions for Boundary Adjustments .....	20
	Compatible Management Measures .....	20
<b>VII</b>	<b>BIBLIOGRAPHY .....</b>	<b>29</b>
 <b><u>Appendices</u></b>		
<b>A</b>	<b>List of Parcel Owners Within the Tonner Canyon/Chino Hills SEA No. 15</b>	
<b>B</b>	<b>Floral and Faunal Compendia for the Tonner Canyon/Chino Hills SEA No. 15</b>	

**PHASE I REPORT FOR  
TONNER CANYON/CHINO HILLS  
SIGNIFICANT ECOLOGICAL AREA  
(SEA No. 15)**

The purpose of the SEA study is to provide the County of Los Angeles regional Planning Department with the necessary baseline information to evaluate the potential effects of proposed projects on county-designated SEAs. In addition, the report provides conceptual management measures that can provide guidance for long-term preservation of the SEA, as well as project-specific measures to be implemented to protect the integrity of the designated resources. This report describes the current biological condition of the Tonner Canyon/Chino Hills SEA No. 15. It includes descriptions of plant and wildlife communities, based on field surveys and the review of reports concerning the region. This report also includes information on ownership patterns within the SEA and an evaluation of the original intent of the SEA and current uses. Finally, a number of management measures and boundary changes for the SEA are suggested.

**I. INTRODUCTION**

The Tonner Canyon/Chino Hills Significant Ecological Area (SEA) No. 15 is located in the farthest southeast corner of Los Angeles County (see Exhibit 1, Regional Location, and Exhibit 2, SEA Boundaries). It is bordered on the east by San Bernardino County and on the south by Orange County. The SEA is in the Sphere of Influence of the City of Diamond Bar and lies directly north of the City of Brea. State Route 57 (SR-57, the Orange Freeway) divides the SEA nearly in half, with the majority of the area on the east side of the freeway. The SEA is relatively intact due to ownership of much of the area by the Boy Scouts of America for their Firestone Scout Reservation, and Shell Oil that has undertaken limited oil production outside of the SEA boundaries. The SEA is located on the La Habra and Yorba Linda 7.5-minute series USGS topographic maps. Aerial photographs and USGS topographic maps of SEA No. 15 at 1-inch equals 1,000 feet scale are available at the Los Angeles County Regional Planning Department.

Tonner Canyon is a northeast to southwest trending drainage located in the Chino Hills. The Chino Hills continue eastward into San Bernardino County. Tonner Canyon is part of a complex of drainages that includes Carbon Canyon and the Chino Hills Natural Area to the east. The terrain to the west is known collectively as the Puente Hills, and to the north lie the San Jose Hills. All of these topographic areas share similar vegetative and geologic features and are

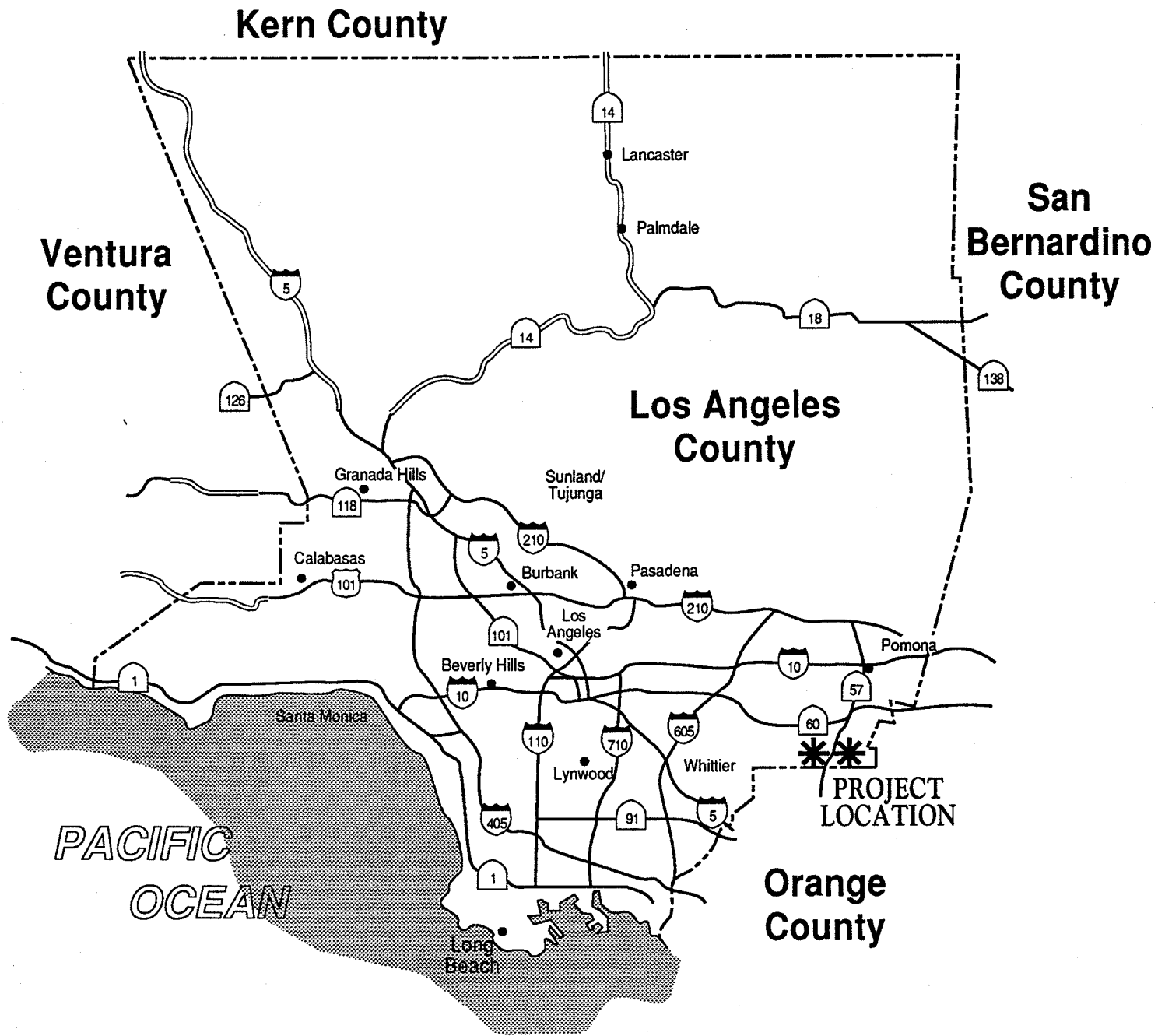
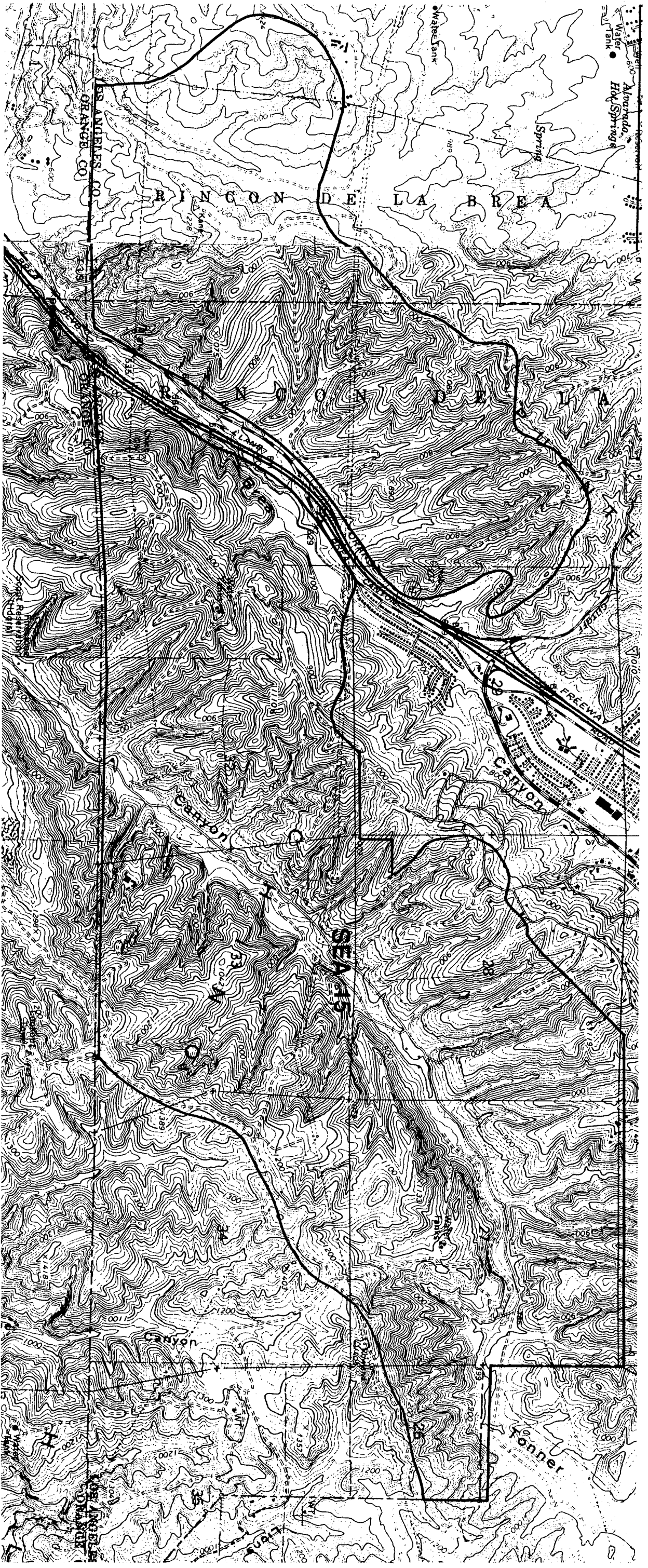


Exhibit **1**

**Tonner Canyon SEA No. 15  
Regional Vicinity Map**





LEGEND

 Significant Ecological Area

Exhibit **2**  
**Tonner Canyon SEA No. 15**





isolated by urbanized areas from the Los Angeles Basin, northern Orange County, and the Pomona and Chino Valleys. Brea Canyon, that contains SR-57, lies west of and parallel to Tonner Canyon. East of Tonner Canyon is Carbon Canyon and the Chino Hills State Park. The elevations in the SEA run from approximately 500 feet above sea level in the canyon bottom up to approximately 1,000 feet above sea level on the higher ridges.

The original intent of establishing an SEA in Tonner Canyon was to preserve one of three hilly areas in eastern Los Angeles County that still supported a relatively undisturbed stand of a southern oak woodland/chaparral/coastal sage scrub/riparian woodland complex that was once common in this part of the county (England and Nelson 1976). Most of this complex type in the county, and the state, had been converted to urban uses and agriculture by the time of England and Nelson's 1976 report. Tonner Canyon, along with Buzzard Peak/San Jose Hills SEA No. 16 and Powder Canyon/Puente Hills SEA No. 17, were designated as SEAs to preserve this disappearing combination of habitats.

At the time of the 1976 report, the vegetation in Tonner Canyon was in good condition and supported heavily forested areas of California walnut (Juglans californica). This species has always been uncommon outside of Los Angeles County, but is now limited to stands in the Santa Clara River drainage, the Simi Hills, Santa Susana Mountains, the north slope of the Santa Monica Mountains, the San Jose Hills, Puente Hills, and Chino Hills (Quinn 1989). England and Nelson stated that one of the last major populations of California walnut was found in this portion of Los Angeles County. Part of the value of the Tonner Canyon SEA was in its size that was considered large enough to support a healthy animal community, and its proximity to riparian habitat and seasonal water flows in the canyon bottom.

England and Nelson (1976) indicated that no buffer zone would be required for the SEA within the county, but efforts to prevent upstream disruption should be coordinated with San Bernardino County. Compatible uses in the SEA were determined to be medium-intensity recreation, such as the Boy Scout Reservation. The recently chartered City of Diamond Bar established an SEA Technical Advisory Committee to evaluate the effect of proposed projects in and adjacent to the portion of the Tonner Canyon/Chino Hills SEA annexed to the City of Diamond Bar city limits and included in the sphere of influence for potential effects on the SEA resources.

## II. METHODS

The existing biological resources at the Tonner Canyon/Chino Hills SEA No. 15 are described below based on results of field surveys supplemented by review of other documentation and regional plant and wildlife distribution data. Field surveys were conducted on foot and by vehicle where access was permissible. Where access was not obtained, the SEA was surveyed with binoculars and review of aerial photographs. The literature review consisted of compilation of relevant biological assessments and biota reports prepared for SEA No. 15 by Planning and Design Solutions (1990), MBA (1989), and references describing the regional flora and fauna.

Plant community designations are derived from Holland (1986); the corresponding California Natura Diversity Data Base (CNDDDB) codes are indicated after the community name. Plant species names, where not available from Munz (1974), are taken from Raven et al. (1986), Abrams (1923, 1944), and Abrams and Ferris (1951, 1960). References used for wildlife taxonomy include Emmel and Emmel (1973) and Mattoni (1990) for butterflies, Jennings (1983) for amphibians and reptiles, the American Ornithologists' Union (1983 and supplements) for birds, and Jones et al. (1982) for mammals. General wildlife distributions were determined from the California Wildlife/Habitat Relationships System (CWHRS 1991), Bell (1978), Jennings (1983), Stebbins (1985), Garrett and Dunn (1981), Hall and Kelson (1981), Burt and Grossenheider (1976), Jones et al. (1982), and Ingles (1965).

## III. OWNERSHIP PATTERNS AND CURRENT USES

Land ownership patterns were derived from the County Tax Assessor's Roll. Parcel numbers compiled from the Tax Assessor's Roll were forwarded to Quality Mapping Services for compilation of lot lines. The lot line data were mapped at a scale of 1-inch equals 1,000 feet. Analysis of the land ownership data for Tonner Canyon/Chino Hills SEA No. 15 indicates that there are currently a total of 9 land holders and a total of 31 parcels. Boy Scouts of America (8 parcels), Shell Oil Company (13 parcels), and St. Joseph's Hill of Hope (4 parcels) ownerships comprise the majority of the land within the SEA. The names of the current landowners are given in the list of parcel holders (Appendix A). The locations of their holdings are shown on the ownership maps that are on file with the Los Angeles County Planning Department.

The SEA has not been heavily disturbed by development and much of the original intent of the SEA designation appears to be intact. Cattle grazing, especially east of SR-57, has affected some parts of the SEA, but the major plant communities identified in England and Nelson (1976) are intact. Grazing of understory resources associated with the designated communities has adversely impacted the SEA. Remedial measures are needed to restore the quality of the understory resources that are an important component of these woodland communities. A limited amount of development has occurred within the City of Diamond Bar adjacent to the SEA on the northwest edge. This development has not intruded on the SEA, but brush clearance for fire management has removed some of the scrub habitat and woodland understory adjacent to this development.

Shell Oil production activities have been limited to areas outside of the SEA, west of SR-57. The ongoing Boy Scout camp facilities have not adversely affected the habitat as their activities are limited to short overnight visits and do not require extensive structural improvements. There are a few small buildings in the Boy Scout Reservation, but their impact on the SEA has been negligible.

Two areas indicated on the ownership maps have been densely subdivided and were not identified individually to maintain clarity. There are approximately 1,000 subdivisions in these two areas that have not been developed. Proposals for these areas are not known, but it is likely that single-family units will be constructed.

#### **IV. EXISTING BIOLOGICAL RESOURCES**

The descriptions of the plant and wildlife communities below are intended to present a general overview of the species encountered during the current and past surveys of the Tonner Canyon SEA No. 15 and those species that can reasonably be expected to occur in the SEA. This section will also provide necessary natural history information for assessment of the biological resources in the area. A complete list of observed plant species and observed and expected wildlife species is provided in the Floral/Faunal Compendia (Appendix B).



## **PLANT COMMUNITIES**

### **Non-Native Grassland (42200)**

Non-native or annual grasslands are found throughout the site but are especially well-established in the areas where grazing pressure has prevented recolonization by native plants. This plant community is typically found on deeper soils in contrast to shrub communities that often occur on thin, rocky soils. As the name implies, many of the plant species in the community are non-native grasses and weeds, but there are some native plants mixed with the introduced species. The ratio of native to non-native species is dependent upon several factors, including time of year, types of disturbance, time since last disturbance, soil type, and slope exposure.

Plants typical of this community within the Tonner Canyon/Chino Hills SEA include annual grasses such as wild oat (*Avena* spp.), soft chess (*Bromus hordaceus*), red brome (*Bromus rubens*), and riggut grass (*Bromus diandrus*). Some remnants of native grass species may be found scattered thorough the non-native grassland, including purple needlegrass (*Stipa pulchra*), small-flowered needlegrass (*Stipa lepida*), blue-eyed grass (*Sisyrinchium bellum*), and giant wild rye (*Elymus condensatus*). The heavy grazing pressure on the western portion of the SEA has also promoted the growth of non-native weedy plants, including dove weed (*Eremocarpus setigerus*), short-podded mustard (*Brassica geniculata*), red-stemmed filaree (*Erodium cicutarium*), western jimsonweed (*Datura innoxia*), tocalote (*Centaurea melitensis*), and horehound (*Marrubium vulgare*).

### **California Walnut Woodland (71210)**

California walnut woodland is found on most of the upper slopes of the Tonner Canyon/Chino Hills SEA. It is more abundant on north and east-facing slopes and adjacent to drainages where soil moisture tends to be higher. The canopy of this habitat is relatively open (although some stands are quite dense) that allows the development of a savannah-type understory composed of non-native grassland plant species. In areas where the canopy is closed, the understory is a shrub-type community. The annual plants in the savannah understory are usually winter-active and complete their life cycles prior to when the walnuts leaf out in spring. California walnut woodland is a CDFG sensitive habitat due to loss of this habitat to development and its already limited distribution in the state (restricted to areas surrounding the Los Angeles Basin).

There is a different character to the woodlands on either side of SR-57. The walnut woodlands on the west side generally intergrade with oak-dominated woodland (discussed below). The ratio of oaks to walnuts varies from nearly pure stands of oaks to nearly pure stands of walnuts. Areas dominated by oaks are described below as oak woodlands. On the east side of SR-57, the mix of oak to walnuts is generally 50/50 and is considered walnut woodland. In both areas, cattle grazing has converted much of the natural understory to annual grassland and has prevented the regeneration of walnuts and oaks.

The most common plant species in walnut woodland is California walnut (Juglans californica). The walnuts are accompanied throughout by coast live oaks (Quercus agrifolia). The understory plants are primarily those described for non-native grassland, including wild oat, Bromus spp., short-podded mustard, red-stemmed filaree, and dove weed. In areas inaccessible to grazing animals, natural understory plants are established. These include coastal sagebrush (Artemisia californica), black sage (Salvia mellifera), toyon (Heteromeles arbutifolia), laurel sumac (Malosma laurina), and fuschia-flowered gooseberry (Ribes speciosum).

#### Coast Live Oak Woodland (71160)

Coast live oak woodland intergrades highly with the California walnut woodland in the Tonner Canyon/Chino Hills SEA. Other reports on the SEA have lumped these two plant communities into walnut-oak woodland (Planning and Design Solutions 1990; MBA 1989), but they are separated here because some of the stands tend to be dominated by one tree species or the other. Also, Holland (1986) indicates that coast live oak is often a part of walnut woodland, but California walnut is not usually included in descriptions of coast live oak woodlands.

The coast live oak woodlands at Tonner Canyon most often occur on south and west-facing slopes and in the smaller drainages that flow into Tonner Creek. The distribution of oaks on the site may be a reflection of the tolerance of coast live oaks for a wide range of conditions, from rather dry to moist -- whereas California walnuts may be restricted to a narrower range of soil conditions. Generally, oaks may occur in large numbers in areas where walnuts dominate, but there will be fewer walnuts in areas that are dominated by oaks.

The dominant plant species in coast live oak woodlands at Tonner Canyon is coast live oak. Like the walnut woodlands, understory species range from those typical of non-native grasslands to

those associated with chaparral and coastal sage scrub. Annual grassland species in the oak woodland include red-stemmed filaree, Bromus spp., wild oat, short-podded mustard, tocalote, tree tobacco (Nicotiana glauca), and dove weed. Understory shrubs may include toyon, scrub oak (Quercus dumosa), Mexican elderberry (Sambucus mexicana), black sage, coastal sagebrush, and California buckwheat (Eriogonum fasciculatum).

#### **Diegan Coastal Sage Scrub (32500)**

Coastal sage scrub is found in the Tonner Canyon/Chino Hills SEA No. 15 at the edges of woodland and chaparral communities. It is found on the steeper parts of the site where clayey soils occur. Also, coastal sage scrub may be an intermediate successional stage after disturbance of chaparral, to be eventually replaced by the taller, woodier chaparral plants. Generally, the coastal sage scrub occurs on the drier south and west-facing slopes, replaced by chaparral on the more mesic north and east-facing slopes.

Coastal sage scrub is typified by soft, low-growing shrubs. The dominant shrub in all types of coastal sage scrub is California sagebrush. Other shrub species associated with this habitat include black sage, white sage (Salvia apiana), lemonadeberry (Rhus integrifolia), and California buckwheat. Unlike chaparral, coastal sage scrub often supports a diverse understory. In Tonner Canyon, these understory species may include coastal goldenbush (Isocoma venetus), California croton (Croton californica), western bindweed (Calystegia macrostegia), horehound, sticky monkey-flower (Diplacus longiflorus), and wild cucumber (Marah macrocarpus).

#### **Mixed Chaparral (37100)**

Mixed chaparral is the dominant scrub habitat in the Tonner Canyon/Chino Hills SEA, particularly in the eastern portion. It is found on the lower slopes adjacent to and intergrading with woodland and coastal sage scrub habitats. Although it occurs on slopes of any aspect, it is denser and taller on north-facing slopes. It is likely that mixed chaparral is the climax shrub community on the site, replacing coastal sage scrub over time.

Mixed chaparral is typified by tall, woody shrubs that form a nearly closed canopy. The closed canopy and allelopathic effects of decaying leaves inhibit the germination of other plants beneath chaparral shrubs. Consequently, there will be little herbaceous understory. This habitat is fire-

adapted, meaning that the woody shrubs can resprout from underground roots. Fire also volatilizes the allelopathic compounds in the soil and allows dormant seeds to germinate.

Common plant species in the chaparral includes chamise (Adenostoma fasciculatum), hollyleaf redberry (Rhamnus ilicifolia), toyon, laurel sumac, scrub oak, California buckwheat, and lemonadeberry. Other species occurring in the habitat may include poison oak (Toxicodendron diversilobum) and California dodder (Cuscuta californica).

#### **Southern Willow Scrub (63320) and Mulefat Scrub (63310)**

Southern willow scrub and mulefat scrub are lumped together because both represent wetland habitats found in areas with less than permanent water sources. Southern willow scrub is found along the main drainage along Tonner Creek and in a large, unnamed drainage on the west side of SR-57. Mulefat scrub occurs in areas along Tonner Creek but it is more prevalent in several of the small drainages that feed Tonner Creek and other wet areas in the SEA.

Southern willow scrub is dependent upon semi-permanent water flows on sandy or fine-gravelly soils. Mulefat scrub can survive on soils with only seasonal water flows, and occurs on more rocky substrates. The structure of the willow scrub tends to be more complex, with a dense canopy and tall trees. Mulefat scrub is sparse and seldom exceeds 10 feet in height. Both of these communities represent early successional stages and would be replaced by larger, more complex riparian woodlands (such as cottonwood-sycamore riparian forest) if not repeatedly scoured by periodic flooding. Mulefat often arises in response to cattle grazing as well as flooding.

Southern willow scrub in the Tonner Canyon/Chino Hills SEA is dominated by arroyo, black, and red willow (Salix lasiolepis, S. goodingii, and S. laevigata). Mulefat scrub consists mostly of mulefat (Baccharis salicifolia), but it may support scrubby willow species. Understory plants for both habitat types include California blackberry (Rubus ursinus), mugwort (Artemisia douglasiana), giant creek nettle (Urtica dioica), and California wild rose (Rosa californica).

### **Southern Cottonwood-Willow Riparian Forest (61330)**

The main channel of Tonner Creek supports southern cottonwood-willow riparian forest. This is a tall, broadleaf, winter-deciduous plant community. It is found where there is nearly permanent water flows, or at least substantial underground water, and where periodic scouring during heavy rain is controlled by adjacent vegetation. This woodland is complex in structure, occupying a wide range of vegetation heights and densities. The canopy is normally somewhat open, but there can be considerable understory vegetation.

In Tonner Canyon, the southern cottonwood-willow riparian forest contains California sycamore (Platanus racemosa) and Fremont cottonwood (Populus fremontii). There are equal numbers of willow (Salix spp.) in the understory and in places southern willow scrub replaces the southern cottonwood-willow riparian forest. Other understory plants include mulefat, poison oak, Mexican elderberry, giant creek nettle, wild rose, California blackberry, mugwort, duckweed (Lemna spp.), and milk thistle (Silybium marianum).

### **WILDLIFE**

Many wildlife species are not restricted to one plant community and may occur in several communities, especially those with similar plant species and structure such as coastal sage scrub and chaparral. Many birds and mammals are far-ranging in their foraging and may be found in several different habitats. Most wildlife species observed at the Tonner Canyon/Chino Hills SEA No. 15 during the current surveys and reported in other recent reports (Planning and Design Solutions 1990; MBA 1989) are common, widespread, or highly adaptable species. Birds are the most conspicuous wildlife species, although some mammals are frequently encountered. Comparing habitats at the SEA, riparian communities typically support a more diverse and abundant wildlife community than the drier shrub habitats. The xeric woodlands (oak and walnut) fall in between in their ability to support wildlife species. A complete listing of all wildlife species observed and expected to occur in the SEA is included in the Faunal Compendium (Appendix B).

### **Amphibians and Reptiles**

Much of the site offers little habitat for amphibians due to the dry nature of the plant communities. Several species may occur in the leaf litter in the oak and walnut woodlands, and

the riparian habitats are expected to support a number of amphibians that would not normally occur at the site if these habitats were not present. The drier habitats should support black-bellied salamander (Batrachospes nigriventris), Pacific slender salamander (Batrachoseps pacificus), and western toad (Bufo boreas). The leaf litter and oak/walnut woodlands may support the arboreal salamander (Aneides lugubris) and ensatina (Ensatina eschscholtzi). The added moisture within the riparian habitats may support the California newt (Taricha torosa), Pacific treefrog (Hyla regilla), southwestern toad (Bufo microscaphus), and the non-native bullfrog (Rana catesbeiana).

Reptile species will be more numerous and diverse than the amphibian species because this group is more fully adapted to the dry conditions that prevail. Species observed include western fence lizard (Sceloporus occidentalis), side-blotched lizard (Uta stansburiana), and gopher snake (Pituophis melanoleucus). Other species expected to occur in the dry areas of the SEA include western skink (Cnemidophorus tigris), southern alligator lizard (Gerrhonotus multicarinatus), striped racer (Masticophis lateralis), and western rattlesnake (Crotalus viridis). The riparian habitats may support the western aquatic garter snake (Thamnophis couchi).

### **Birds**

Although birds can be found in a variety of habitats, they have definite affinities for certain vegetation types. Resident birds in the coastal sage scrub and chaparral at Tonner Canyon include California quail (Callipepla californica), greater roadrunner (Geococcyx occidentalis), Anna's hummingbird (Calypte anna), scrub jay (Aphelocoma coerulescens), bushtit (Psaltriparus minimus), Bewick's wren (Thryomanes bewickii), wrentit (Chamaea fasciata), California thrasher (Toxostoma redivivum), lark sparrow (Chondestes grammacus), and rufous-sided and California towhees (Pipilo erythrophthalmus and P. crissalis). The oak/walnut woodland communities provide suitable nesting habitat for red-tailed hawk (Buteo jamaicensis), American kestrel (Falco sparverius), great horned owl (Bubo virginianus), northern flicker (Colaptes auratus), acorn woodpecker (Melanerpes formicivorus), plain titmouse (Parus inornatus), northern mockingbird (Mimus polyglottos), loggerhead shrike (Lanius ludovicianus), and house finch (Carpodacus mexicanus).

Many other species will occur in the Tonner Canyon/Chino Hills SEA as transients in migration or as summer residents. This is especially true of the riparian habitats. Summer residents and transients may include black-chinned hummingbird (Archilocus alexandri), ash-throated flycatcher (Myiarchus cinerascens), western flycatcher (Empidonax difficilis), western kingbird (Tyrannus

verticalis), phainopepla (Phainopepla nitens), cliff swallow (Hirundo pyrrhonota), warbling vireo (Vireo gilvus), Townsend's warbler (Dendroica townsendi), Wilson's warbler (Wilsonia pusilla), blue grosbeak (Guiraca caerulea), black-headed grosbeak (Pheucticus melanocephalus), lazuli bunting (Passerina amoena), and hooded and northern orioles (Icterus cucullatus and I. galbula). There are likely to be many more species occurring in the SEA and these are listed in the Faunal Compendium (Appendix B).

### **Mammals**

Mammal species will show definite affinities for certain habitats much as described for birds. Generally, small mammals will be more abundant where there is adequate cover and food, like that provided by coastal sage scrub and chaparral. Species typical of these habitats include desert cottontail (Sylvilagus audubonii), Pacific kangaroo rat (Dipodomys agilis), California pocket mouse (Perognathus californicus), dusky-footed woodrat (Neotoma fuscipes), long-tailed weasel (Mustela frenata), California mouse (Peromyscus californicus), and deer mouse (Peromyscus maniculatus). Mammals associated with woodlands include broad-footed mole (Scapanus latimanus), western gray squirrel (Sciurus griseus), Botta's pocket gopher (Thomomys bottae), raccoon (Procyon lotor), and spotted skunk (Mephitis mephitis).

Other mammals will occur in most of the habitats in Tonner Canyon throughout the year. These tend to be large mammals or those with a wider range of habitat tolerances, including adaptation to human intrusion. These species include Virginia opossum (Didelphis virginiana), California ground squirrel (Spermophilus beecheyi), western harvest mouse (Rheithrontomys megalotis), coyote (Canis latrans), bobcat (Felis rufus), and mule deer (Odocoileus hemionus). Several non-native mammals will increase in the SEA as development encroaches, including the house mouse (Mus musculus) and Norway rat (Rattus norvegicus). In addition, domestic cats and dogs may stray into natural habitat areas and prey on native wildlife species.

### **SENSITIVE SPECIES**

This section describes the plant and wildlife species present or potentially occurring in the Tonner Canyon/Chino Hills SEA No. 15 that have been afforded special recognition by federal, state, and local resources conservation agencies due to declining or limited population sizes. The potential for sensitive plant and animal species occurring in the SEA was first determined through review

of the CNDDDB data for the La Habra and Yorba Linda USGS quadrangles. This was supplemented by review of the following sources:

- **Plants.** USFWS (1990), CDFG (1990), CNDDDB (1991), CNPS (1988).
- **Wildlife.** California Wildlife/Habitat Relationships System (1991), USFWS (1990), CDFG (1990), CNDDDB (1991), Williams (1986), Remsen (1978).

While not all of these species have been observed in Tonner Canyon, there is the potential for them to occur due to recent regional sightings and suitable habitat within the Tonner Canyon/Chino Hills SEA. The potential for their occurrence in the SEA is estimated based on field surveys and review of other documentation for the SEA.

### **Sensitive Plant Species**

The **many-stemmed dudleya** (*Dudleya multicaulis*) is a low-growing perennial that blooms from May through June. This plant is a U.S. Fish and Wildlife Service (USFWS) Category 2 candidate species for listing as threatened or endangered. Category 2 candidates include taxa that are under consideration for listing as threatened or endangered, but for that conclusive data to support listing are not currently in the possession of the USFWS. The California Native Plant Society (CNPS) places this species on its List 1B, indicating that the species is considered rare, threatened, or endangered by CDFG standards (Section 1901 of the Fish and Game Code). The historic range of the many-stemmed dudleya included the Santa Monica Mountains and the San Fernando Valley, south to northern San Diego County, and east into western San Bernardino and Riverside counties. The species is restricted to a limited range of substrates such as clay or thin, rocky soils with low fertility where competition from more aggressive species is low.

There is limited suitable habitat for the many-stemmed dudleya throughout the Tonner Canyon/Chino Hills SEA No. 15. It has not been recorded in the SEA, but the SEA is within the known range of the species. It is possible that the species may occur on a number of exposed ridges where the soils are too thin to support other plants. Future proposed projects in and adjacent to coastal sage scrub should include directed surveys for the many-stemmed dudleya in the appropriate season (May-June) to assess potential impacts to this sensitive species.



**Braunton's milk-vetch (*Astragalus brauntonii*)** is also a federal Category 2 candidate. It is found on limestone soils, especially in disturbed or recently burned areas. It is a perennial plant that occurs in chaparral, coastal sage scrub, and grassland communities. Most records for this species are from the Santa Monica Mountains and Hollywood Hills (CNDDDB 1991), but the Tonner Canyon SEA may be at the periphery of the species' range. The potential for it to occur in the SEA is believed to be low due to the lack of regional records and no records for the species in the SEA. However, future proposed projects in and adjacent to areas mapped as coastal sage scrub should include directed surveys for this species during its flowering period (February to April).

### **Sensitive Wildlife Species**

The **San Diego horned lizard (*Phrynosoma coronatum blainvillei*)** is a USFWS Category 2 Candidate and a CDFG Species of Special Concern. It was formerly common throughout Southern California west of the deserts, but has declined dramatically as suitable habitat has been destroyed by development and as a result of over-collecting for the pet trade (McGurty 1980). The horned lizard is found in open, sandy areas and washes within chaparral and coastal sage scrub habitat. It is associated with areas where its preferred prey, harvester ants of the genus *Pogonomyrmex*, can be obtained, and is often located by first identifying harvester ant colonies.

Observations of San Diego horned lizards are scattered throughout the region (CNDDDB 1991). Suitable habitat for the San Diego horned lizard is found throughout the SEA, including harvester ant mounds and suitable soils, although past surveys of the SEA have not identified the horned lizard. Future proposed projects within open sandy areas and washes within chaparral and coastal sage scrub habitat should complete directed spring surveys for the horned lizard to assess potential impacts to this species.

The **western spadefoot toad (*Scaphiopus hammondi*)**, a CDFG Species of Special Concern, historically occurred in vernal pools throughout lowland Southern California. Today, nearly all of the recorded western spadefoot toad population locations in the region have been converted to agricultural, residential, or commercial developments (per records review at the Los Angeles County Museum, 1990). Only a few populations are known to persist in isolated, widely scattered areas. Other populations of this species occur in the relatively undeveloped northern half of California.

The western spadefoot toad may use the riparian areas upstream of the SEA as breeding habitat, and may be present in the SEA in coastal sage scrub. Biological constraints analyses for future development proposals should complete focused spring surveys between January and May to determine if the western spadefoot toad is present on the site and to assess potential impacts to this species.

The Cooper's hawk (Accipiter cooperi) is a CDFG Species of Special Concern. This hawk was once fairly common in Southern California, but numbers have declined dramatically in recent years. It now breeds in only a few areas in the mountains and a few desert oases, and is seen elsewhere as a transient in migration. This decline is a result of the loss of suitable nesting habitat to development. The Cooper's hawk nests in riparian woodlands and it feeds on small birds, reptiles, and mammals.

The Cooper's hawk is expected to occur in the Tonner Canyon/Chino Hills SEA No. 15 during the winter and while in migration. There is some suitable nesting habitat for the Cooper's hawk in the SEA in the southern cottonwood-willow riparian forest, although there are no nesting records from Tonner Canyon (CNDDDB 1991). Biological constraints analyses for future development proposals within southern cottonwood-willow riparian forest areas should complete focused surveys for this species during spring to determine if the Cooper's hawk nests in Tonner Canyon (March to May).

The black-shouldered kite (Elanus caeruleus) is a Fully Protected species in California, a designation given prior to enactment of the state endangered species act. Populations had declined to very low levels early in the century but had risen between 1960-1975 (Remsen 1978). Numbers have leveled off recently and there have been several fluctuations in populations since the mid-70's, along with a possible geographic range expansion to the north and east. The variability in population sizes indicates that the kite numbers have not returned to normal since the decline last century.

The black-shouldered kite is a raptor that feeds on rodents and large insects that it hunts by hovering over suitable habitat. It forages over open grassland and may be seen hunting over freeway dividers. It nests in trees in a variety of habitats, but winter roosts (of up to 100 birds) usually occur in trees rooted in marshlands.

There are several nesting records for the black-shouldered kite from the San Jose Hills 5 miles to the north (pers. obs., R. Farris), and it is fairly common in the region during winter. There is substantial suitable nesting habitat within the SEA (oak/walnut woodland and southern cottonwood-willow riparian forest), for the kite and it may forage over the open fields during winter. It is likely that the kite occurs in the SEA during most seasons and could nest within the area.

The willow flycatcher (Empidonax traillii) is a state-listed endangered species. It was once common throughout California, but has undergone a drastic decline in population in recent years. As with many riparian species, the loss of habitat has been a contributing factor to the species' decline. However, there is also evidence that nest parasitism by brown-headed cowbirds is a major factor. The willow flycatcher nests in willow riparian habitat, often in canyons or floodplains. Nesting areas are currently restricted to the foothills of the Sierra Nevadas, the Cascades, and a few isolated riparian areas in Southern California.

Although suitable habitat occurs in the Tonner Canyon/Chino Hills SEA No. 15, it has not been recorded and the species' occurrence is unlikely except as a migrant. Loss of habitat (including grazing of willows) and cowbird parasitism has drastically reduced populations of this species. Its decline is among the most serious of any bird in the region. Directed surveys for this species in Tonner Canyon are not warranted.

The least Bell's vireo (Vireo bellii pusillus) is a federal and state-listed endangered species. It was once common in riparian drainages from the Central Valley south, but is now extirpated north of the Transverse Ranges. The vireo is limited to a few riparian areas from Los Angeles to San Diego County. The decline is attributable to loss of riparian habitat to development and the effects of cowbird nest parasitism. Recovery efforts are concentrating on eradication of the cowbird. The least Bell's vireo nests in broad willow riparian habitat with a dense understory of young willows, wild rose, or other plants. It is usually found where riparian areas are bordered by another native plant community, such as coastal sage scrub. They nest low in the willows. The conspicuous nature of their nests makes them especially susceptible to nest parasitism and predation.

There are no reports of the least Bell's vireo from the Tonner Canyon/Chino Hills SEA No. 15. There is no suitable nesting habitat for the least Bell's vireo in the SEA, but the species may occur

as a transient during migration. Its presence in the SEA is unlikely. Directed surveys for this species are not warranted.

The **yellow warbler** (*Dendroica petechia*) is a CDFG Species of Special Concern. It was once a common to locally abundant summer resident throughout California. Current populations are much reduced due to habitat destruction and cowbird nest parasitism. It is still found in the foothills of the Transverse Ranges of Ventura County, but most birds are spring transients. The yellow warbler nests in willow, cottonwood, and alder riparian areas and forages for insects found on the foliage.

There is no suitable nesting habitat for the yellow warbler in the Tonner Canyon/Chino Hills SEA No. 15. The bird will likely occur as a transient as it moves to other riparian areas elsewhere in the region or to the north. Directed surveys for this species are not warranted.

The **yellow-breasted chat** (*Icteria virens*) is a CDFG Species of Special Concern. It was formerly a common nester in much of the riparian habitat throughout California, but numbers have declined as a result of habitat destruction and cowbird nest parasitism, especially in Southern California. It is now a rare and local breeder, absent from much of its former range. The chat is the largest North American warbler. It nests in dense riparian thickets and brushy areas in the vicinity of lowland watercourses where it feeds on insects. It is rather inconspicuous except when it is vocalizing.

There are no recent sightings in the Tonner Canyon/Chino Hills SEA No. 15. There is suitable nesting habitat for the chat in the SEA, especially in the southern willow scrub and southern sycamore-alder riparian woodlands in the main drainage of Tonner Creek. It may also occur in the SEA as a transient during spring and fall migration. Directed biological constraints analyses and focused surveys for future development proposals in and adjacent to southern willow scrub and southern sycamore-alder riparian woodland should be completed for this species between April and June.

The **greater mastiff bat** (*Eumops perotis californicus*) is a federal Category 2 Candidate and a CDFG Species of Special Concern. Its range extends from Butte County south through the Southern California coastal mountains and portions of the southeastern desert region. The mastiff bat favors rugged, rocky areas at low elevations in the coastal basins where there are suitable

crevices for roosting. The mastiff bat has very specific roosting structure needs, such as crevices that open downward and are at least 5 cm wide and 30 cm deep (Burt and Grossenheider 1976). The roosts must be high as well, as the bat needs two to three meters of drop space to launch itself into flight.

The Tonner Canyon/Chino Hills SEA No. 15 lies within the historic range of this species. There are no suitable roost sites within the SEA, so any greater mastiff bats found will most likely be foraging from other areas nearby. Directed surveys and biological constraints analyses for future development proposals in and adjacent to southern willow scrub and southern sycamore, alder riparian woodland should be completed to assess foraging habitat for this species.

**Townsend's big-eared bat (*Plecotus townsendii*)** is a CDFG Species of Special Concern. One subspecies (*P. t. townsendii*) is also a USFWS Category 2 Candidate. This species is found throughout California, but the subspecies *P. t. townsendii* is found in the humid north and central portions of the state and is not likely to occur in Tonner Canyon. The subspecies *P. t. pallescens* is likely to be found in the area. It is found in a number of habitats from deserts and grasslands up to conifer woodlands. Roosting sites include limestone caves, mine tunnels, buildings, and other man-made structures.

Unfortunately, the Townsend's big-eared bat is particularly susceptible to encroachment and may abandon a site after a single visit by humans. Recent surveys for *P. t. pallescens* reveal that the bat has abandoned many former roost sites and that its status is uncertain. The high level of human activity (Boy Scouts, in particular) in the SEA may have extirpated the species from the area. Directed surveys by a qualified chiropterist should be performed to determine the species' status in the SEA.

## **WILDLIFE MOVEMENT**

The continuation of wildlife diversity in Southern California is increasingly dependent on habitat linkages as ongoing development fragments remaining areas into smaller and smaller patches. When these patches become isolated, biological diversity decreases. Animals with large habitat needs and low fecundity are quickly extirpated, and there is less likelihood that animals and plants can recolonize after a catastrophic disturbance such as fire. Inbreeding lowers the ability of animals to resist disease and maintain a diverse genetic pool necessary for a healthy population.

The Tonner Canyon/Chino Hills SEA No. 15 is located in the transition zone between the Chino Hills and the Puente Hills to the west. Although there is no documentation on wildlife movement through Tonner Canyon, review of the aerial photograph and topographic maps indicate that Tonner Canyon is one of the last and largest connections between open space in the Puente Hills and the preserved areas in the Chino Hills State Park. The diversity of wildlife in Tonner Canyon and the open space it connects may be dependent upon maintenance of this SEA as open space. This includes preservation of a wide range of habitat types and topographic features (ridges, drainages, hillsides), especially the riparian woodland and water source in Tonner Creek.

#### V. DEVELOPMENT PRESSURE ANALYSIS

The Tonner Canyon/Chino Hills SEA No. 15 is one of the last large areas of open space left in southeastern Los Angeles County. The lack of development within the SEA is most likely due to the ownership patterns that reveal that much of the SEA is being held by a few owners. One of these owners, the Boy Scouts of America, has proposed to lease 595 acres of its holdings for the development of the Member's Club at Firestone Golf Course. This golf course would affect 186 acres of the northeastern section of the SEA (the rest of the course is outside of the SEA boundaries). An access road across the SEA from Brea Canyon Road is also proposed. It is believed that construction of the golf course would affect at least 61 acres of the oak/walnut woodland within the SEA (Planning and Design Solutions 1990) and lesser amounts of other plant communities.

Shell Oil has proposed to parcelize part of its holdings in the northern section of the SEA on both sides of SR-57 into three separate parcels (MBA 1990). Two of these parcels are to be transferred to A and S Partnership who plan to develop the resulting parcel in the middle of the western half of the SEA in the near future. Plans for the rest of Shell's property were not available, but it is assumed that current uses will continue until drawdown to a minimal level of existing petroleum resources occurs. Upon drawdown at other similar facilities, there have been proposals for development, including residential, commercial, and industrial structures. A similar nearby project is the proposed East Coyote Hills development project in the City of Fullerton.

A road has been proposed for the main drainage of Tonner Canyon. This road would follow the main part of the SEA along the bottom of Tonner Canyon, extending from the junction of Tonner Creek and SR-57 northeast into San Bernardino County.

The fate of other smaller holdings is not clear at this time. The City of Diamond Bar has requested an expansion of its sphere of influence into the northwestern section the SEA east of SR-57. Residential developments approved to date have not encroached into the SEA. However, fuel management measures to minimize fire threats have resulted in the discing of the understory of oak/walnut woodlands near "The Country" and other residential communities in the City of Diamond Bar. The City of Diamond Bar is currently reviewing several proposed projects adjacent to the SEA, including:

- **Tentative Tract No. 47850.** A residential subdivision with 57 lots on 72.83 acres.
- **Tentative Tract No. 47851.** A residential subdivision with 48 lots on 67.42 acres.
- **Tentative Tract No. 47487.** A residential subdivision with 15 lots on 20 acres.
- **Tentative Tract No. 50314.** A residential subdivision with 15 lots on 20 acres.
- **Tentative Tract No. 46485.** A residential subdivision on 80 acres proposed for 53 lots.

**VI. RECOMMENDATIONS FOR FUTURE MANAGEMENT OF THE TONNER CANYON/CHINO HILLS SEA NO. 15**

**ORIGINAL INTENT OF SEA DESIGNATION AND CURRENT USES**

According to England and Nelson (1976), the original designation of Tonner Canyon as an SEA was intended to preserve one of three habitat complexes in the southeastern part of Los Angeles County. The Los Angeles County General Plan (1988) defines compatible use to include England and Nelson's (1976) recommendations. In addition, the General Plan states that compatible uses may also include low density residential development, minor commercial uses serving local residents, public and semi-public uses essential to the maintenance of public health and safety, agricultural uses, and natural resources extraction (gas, oil, etc.). The General Plan recognizes that measures necessary to preserve and enhance SEAs will vary depending on the nature of the resource values present and the degree of threat implied by potentially incompatible development.

Current uses are limited to medium-intensity recreation associated with the Boy Scout Reservation, cattle grazing, a few small buildings and radio tower. Cattle grazing continues to cause loss of understory species and prevents reestablishment of native plants. It also prevents new oaks and walnuts from becoming established as they are grazed off or not allowed to germinate due to soil compaction by livestock.

## **SUGGESTIONS FOR BOUNDARY ADJUSTMENTS**

The current boundaries of the Tonner Canyon SEA are restricted by county lines and recent city incorporation in Diamond Bar. There is some room for expansion of the SEA into areas to the west of the SEA on the west side of SR-57. From review of the aerial photograph, it appears that there are large stands of oak/walnut woodland up to the edges of Rowland Heights and La Habra Heights. Extension of the SEA in this direction could enlarge the acreage of preserved habitat as intended by the SEA designation.

In addition to the proposed extension toward the west, buffer zones should be established in areas where residential/commercial development may encroach upon the SEA. This is because the pattern has been to develop up to the edge of the SEA and then establish fuel abatement zones outside of the development. These fire management zones cause further impacts to the vegetation within the SEA and enlarge the impacts of proposed developments. Establishment of a buffer zone within the SEA would allow future developments to avoid impacts to the main portions of the SEA. This boundary adjustment would not be necessary if during the review process the impact of fuel abatement zones on sensitive habitats were fully addressed in the impact analysis, and adequate mitigation measures incorporated.

## **COMPATIBLE MANAGEMENT MEASURES**

The following section describes potential management measures that may avoid, compensate for, or minimize impacts to biological resources within the Tonner Canyon/Chino Hills SEA No. 15. These measures are designed to enhance the quality of the existing SEA and ensure that future actions within the SEA do not significantly diminish the quality of the biological resources. These measures are not intended to be comprehensive, but provide a general approach that addresses the immediate needs of the Tonner Canyon/Chino Hills SEA No. 15.

### **Measures to Restore Woodland Understory**

The understory of the oak/walnut woodlands in the Tonner Canyon/Chino Hills SEA No. 15 have been converted, in some areas, to non-native grassland. This is most likely the result of cattle grazing in the SEA. In addition to the loss of native understory, grazing adversely affects the growth of seedling oaks and walnuts. Regeneration of these woodlands would not be possible in



the presence of grazing cattle. Proposed developments in non-native grassland communities in and adjacent to SEA No. 15 should be required to mitigate loss of open space through the removal of grazing pressures from oak/walnut woodland communities within the SEA. Existing grazing activities are not consistent with protection of understory habitats in oak/walnut habitats within the SEA.

Where grazing pressure is eliminated, revegetation could be initiated to restore the native understory plants and encourage the germination and growth of young oaks and walnuts. The revegetation funding could come from proposed projects in the SEA that are compatible with preservation of the SEA, or from offsite mitigation needs elsewhere in the county.

#### **Measures to Preserve Oak/Walnut Woodlands**

The Los Angeles County Oak Tree Preservation Ordinance was enacted to prevent the loss of native oaks of the genus Quercus. The preservation of these trees is often mitigated through replacement of trees to be lost to a development at a ratio greater than 1:1. While this replacement may compensate for the loss of individual trees, in most cases it does not replace the valuable habitat that is removed. Avoidance of impacts to the oak/walnut woodlands should be the preferred measure to preserve this habitat. The construction of the Member's Club at Firestone Golf Course and other projects that will remove large areas of oak/walnut woodlands should be redesigned or restricted to avoid mature oak and walnut woodlands and understory resources. For projects that cannot avoid impacts to oak/walnut woodlands, adequate compensation should include replacement of trees as required under the oak tree ordinance and contribution to preservation of suitable habitat elsewhere in the Tonner Canyon/Chino Hills SEA. Any proposed project that could potentially affect mature oak trees must prepare an oak tree report in accordance with Los Angeles County Code, Title 22, Sections 22.56.2050 through 22.56.2140.

The following techniques to stimulate the natural regeneration of oak and walnut seedlings on the site and encouraging the reestablishment of native grasses should be implemented:

- Low oak and walnut regeneration onsite can be attributed to soil compaction brought on by years of cattle grazing practices. The greatest degree of compaction occurs within the top 12 inches of soil in cattle pastures, and treatment would consist of methods of breaking up the soil surface by discing or

augering. Areas of severely compacted soil should be disced in early fall and immediately reseeded with native grassland species in order to prevent the invasion of weeds. If weeds do invade, they could be controlled through mowing or the limited use of appropriate herbicides. Discing should not occur within 5 feet of the dripline of any oak or walnut.

- Once the native grasses are established they will require periodic, intensive maintenance to remove the accumulated thatch. Thatch buildup reduces water infiltration and tends to constrict the growth of native grasses. Thatch buildup can be eliminated with the use of a dethatching device or rake.
- Soil inoculation. Beneficial fungi help oaks survive times of water stress and allow uptake of nutrients in poor soils. These fungi attach to the roots of host species, but do not tend to survive in areas of nonhost species such as annual grasslands. Treatment would consist of inoculating oak regeneration sites with commercially available fungi and other beneficial organisms, and it is strongly recommended for areas where soils are poor and the population of nonhost species is high.
- Natural oak and walnut regeneration should be supplemented with the planting of germinated acorns and walnuts, grown from oaks and walnuts collected onsite. Areas particularly favorable for planting include north-facing slopes, deep soils, swales, or other areas with subsurface water. Planting locations would be augured to enhance root development, and plantings should be temporarily caged to prevent rodent damage. Site surveys would be necessary to determine specific planting number and locations.
- Deadwood/leaf litter removal. Deadwood should not be removed, except for fire management purposes, as logs and branches provide valuable microhabitats for invertebrates, reptiles, small mammals, and birds. In addition, the decomposition of deadwood and leaf litter is essential for the replenishment of the soil's nutrients and minerals.
- Pruning. Pruning or clearing of native trees and shrubs should be avoided, except near residential areas for fuel modification purposes, as dense understory and canopy provide necessary wildlife habitat.
- Fertilizers/Pesticides. Neither fertilizers nor pesticides should be used in the open space areas. Fertilizers are unnecessary for the successful growth of native species and promote excessive weed growth. Pesticides are undesirable as they can have long-term adverse effects on the ecosystem.
- Weed Control. Weed control within the natural open space areas should be limited. For the most part, the existing oak understory is dominated by introduced grasses along with many annual native species. These annual grasses are providing erosion control and should not be removed. Persistent invasive species, such as thistles and mustard should be selectively eliminated through the use of such weed control methods as mechanical clearing, mowing, and the use of nonresidual herbicides.

The primary method of weed eradication that should be used within the natural open space area is mowing. Mowing should be performed twice yearly, in early spring and summer, for fire control, weed control, and to stimulate the growth of native bunchgrasses.

In areas where there are problem weeds, the area should first be cleared of existing non-native species during the early spring, irrigated frequently so as to germinate weed seeds, then mowed in late spring/early summer before the seeds mature. All mechanical weed removal activities should take place 5 feet outside of the dripline of any oak tree so as to avoid damage to existing oaks and oak seedlings. Any weed removal within 5 feet of the dripline of any oak should be done by hand.

Herbicides could be used in the existing habitats only if nonchemical means of weed removal are not successful and control is considered to be of greater benefit than leaving the site as is. Selective spraying with appropriate, nonresidual herbicides should be conducted by a weed control specialist under direction of a qualified biologist.

### **Fuel Modification Program**

The fuel modification plans for areas in and adjacent to the Tonner Canyon/Chino Hills SEA No. 15 would be developed to integrate measures for the protection of structures from fire hazard conditions with the use and management of native plant species and compatible drought-tolerant plants for fire protection. The use of nonvolatile native species and compatible drought-tolerant species would also serve as a natural buffer and transition between residential areas and natural open space. The fuel modification program should include a transition area between a development and open space. Typically, the area is split into three zones that vary the degree of thinning, removal, revegetation, and irrigation.

General guidelines that apply to all three zones include: (1) the retention of nonvolatile native plant species within natural open space areas, including oaks and walnuts; and (2) the replacement of volatile native plant species with nonvolatile native and drought-tolerant plant species within fuel modification areas. The actual widths of the three zones within the fuel modification area would vary according to slope conditions, degree of irrigation, and existing vegetation.

Additionally, development should strongly encourage the use of nonvolatile drought-tolerant and native plant species within development areas and strongly discourage the use of invasive, non-native plant materials such as pampas grass (Cortaderia sellowiana), fountain grass (Pennisetum spp.), ice plant (Delosperma spp.), periwinkle (Vinca major), trailing lantana (Lantana camara),

German ivy (Senecio mikanoides), Spanish broom (Spartium junceum), French broom (Genista monspessulanus), blue gum (Eucalyptus globulus), Brazilian pepper tree (Schinus terebenthifolius), California pepper tree (Schinus molle), and tree of heaven (Ailanthus altissima) in areas outside the development edge of rural residential areas.

Potential guidelines pertaining to each of the three fuel modification zones are presented below:

- **Zone 1.** The first fuel modification zone is normally used to establish the maximum fire prevention area that will receive the most extensive thinning and removal of flammable vegetation. This area is immediately adjacent to the development and can be planted in fire-retardant low groundcover plants and trees that receive regular irrigation. Low volume irrigation systems can be used in order to prevent saturated conditions in natural areas downslope. Jute netting may be required on the slopes in this zone to prevent erosion until the plants are established.
- **Zone 2.** This zone is often within the areas disturbed by project grading but may extend into natural open space areas. The volume of vegetation is often greatly reduced and low fuel volume native plants will be established by seed or from containers. This zone normally receives periodic thinning to maintain low fuel levels. In addition, invasive grasses are cleared. Existing oaks and walnuts within this zone will be retained, although some thinning and dead wood removal will be necessary to reduce fuel load.
- **Zone 3.** Native vegetation furthest away from development should be selectively thinned, removing highly flammable plant species such as California sagebrush, California buckwheat, sages, and deadwood so that the structure of the vegetation is open but the soil is not exposed to erosion. If large volumes of vegetation are removed, the area would normally be replanted with low fuel volume native plants and compatible drought-tolerant species that would stabilize the soil (i.e., toyon, laurel sumac, oak).

#### **Management Measures for the Urban/Natural Interface**

The following guidelines pertain to the transition areas between the SEA and residential and other development sites:

- **Buffer Zone.** Successful integration of wildlife habitat into development depends on proper buffering at the interface of these two areas. Development often results in an edge condition where residential lots are located adjacent to areas of natural open space. A conceptual buffer plan using native plant species has been developed for the management of this edge condition. This buffer will limit potential impacts to the natural areas by screening development from wildlife, capturing excess runoff from landscape irrigation that could potentially injure

sensitive plants, and providing an edge along residential lots that is aesthetically pleasing while providing many plant species that are valuable to wildlife. This edge should be designed so that it may be integrated into a fuel modification plan for the development that meets all of the requirements of the Los Angeles County Fire Department.

Native plants recommended for this buffer include more mesic species such as toyon (Heteromeles arbutifolia), elderberry (Sambucus mexicana), California lilac (Ceanothus spp.), squaw bush (Rhus trilobata), coffeeberry (Rhamnus californica), and dwarf coyote bush (Baccharis pilularis).

Additional native plant species that are low growing and of low fuel volume, and would not impede views into natural areas, could also be used. These include golden yarrow (Eriophyllum confertiflorum), California poppy (Eschscholzia californica), monkey flower (Diplacus spp.), penstemon (Penstemon spp.), California fuchsia (Epilobium spp.), deerweed (Lotus scoparius), woolly blue curls (Trichostema lanatum), and annual lupine (Lupinus spp.). This zone should be periodically thinned to maintain low fuel levels, as well as cleared of invasive grasses.

- **Signage.** Signs should be located in appropriate areas so as to discourage human intrusion into the SEA.
- **Night Lighting.** Night lights near residential areas should be directed away from the SEA so as not to disrupt nocturnal wildlife activity.
- **Fencing.** Fencing should be used where residential lots abut natural areas to discourage human intrusion into the SEA.

### **Measures to Comply with Regulatory Jurisdiction**

State, federal, and local laws and regulations exist to protect wildlife and plant resources. Compliance with federal, state, and local regulations may be required at various stages in the environmental planning process for projects within the Tonner Canyon/Chino Hills SEA No. 15. Compliance with federal regulations becomes necessary when a proposed project involves a federal action, including permits, grants, licenses, or other forms of federal authorizations or approval that may result in construction. The impacts associated with a proposed federal action must be analyzed pursuant to the National Environmental Policy Act (NEPA). All general plan amendments, specific plans, and tentative tract approvals require an assessment of impacts to biological resources pursuant to the California Environmental Quality Act (CEQA). In addition, local regulations require an assessment of impacts when (1) significant biological resources such as rare, threatened, or endangered species, riparian habitat, or mature native trees are affected; (2) sensitive communities of special concern as reported by the California Department of Fish and

Game Natural Diversity Data Base are present; or (3) the project is located within or may affect wildlife movement.

The following section summarizes the major federal and state regulations applicable to the Tonner Canyon/Chino Hills SEA No. 15 that help guide the planning process with respect to biological resources.

#### **Section 404 of the Clean Water Act**

The goal of Section 404 of the Clean Water Act is to maintain the integrity of U.S. waters through the control of discharge of fill materials. Areas that meet the definition of "waters of the United States" include all "blue line" areas as indicated on U.S.G.S. topographic maps. Also included is habitat for migratory birds that cross state lines, habitat used by species covered by the Endangered Species Act, and waters used for recreation by out-of-state visitors.

Section 404 states that no dredge or fill material may be discharged into aquatic ecosystems unless no adverse effects will result, and that there should be no discharge of dredge or fill material into wetlands if there is an alternative that would have less environmental impact. Adverse effects include those that jeopardize endangered or threatened species or critical habitat under the Endangered Species Act of 1973. Section 404 guidelines also recognize that the loss of wetlands is the most significant environmental impact, and that the loss is irreversible.

Authority for Section 404 is delegated to the U.S. Army Corps of Engineers (ACOE). Pursuant to Section 404(b)(1), persons who wish to add fill to a U.S. water must file an application with ACOE. The primary objective of the application is to disclose how much fill will be placed, where fill will be placed, and how and why it will be placed in U.S. waters. Wetland-dependent wildlife species must also be reviewed in consultation with CDFG (under section 1603 of the Fish and Game Code) and USFWS (under section 7 of the Endangered Species Act). Other federal or state agencies may ultimately be involved with the process (for example, waters that fall under CDFG jurisdiction pursuant to section 1603 of the Fish and Game code).

## **California Department of Fish and Game Code Section 1603**

Section 1603 of the Fish and Game code states that it is unlawful for any person to divert or obstruct the flow or to alter the bed, channel, or bank of any river, stream, or lake without notifying the CDFG of such action. Areas in the Tonner Canyon/Chino Hills SEA No. 15 area subject to the CDFG 1603 agreements would likely include Tonner Creek, all of the tributaries to Tonner Canyon within the SEA, tributaries to Brea Canyon within the SEA, and all other "blue line" areas as indicated on USGS topographic maps.

After notification of such activity, the CDFG will inform the applicant of any fish or wildlife resource that may be adversely affected by the alterations. This notification will also include measures that CDFG feels are necessary to protect the fish and wildlife. The persons proposing the action may request an onsite investigation by CDFG, or the CDFG may find an onsite investigation necessary before proposing measures to protect fish and wildlife. It is unlawful to begin projects affected by this section of the Fish and Game code until CDFG has found that fish and wildlife will not be adversely affected, or until CDFG proposals have been incorporated into the project.

Projects falling under 1603 jurisdiction may also require Section 404(b)(1) permits, as discussed above, and may result in consultation with the USFWS pursuant to Section 7 of the Endangered Species Act of 1973, or coordination pursuant to Section 9 and Section 10 of the Endangered Species Act.

### **Measures to Preserve Wildlife Movement**

Based on topographic and vegetative analysis, preservation of the Tonner Canyon SEA is required to maintain wildlife movement between the Chino Hills and Puente Hills. The SEA currently contains the variety of topography and habitat types, as well as semi-permanent water flows, to encourage animal movement through the area. The maintenance of biological diversity throughout the Chino Hills-Tonner Canyon-Puente Hills complex is probably reliant on the preservation of the SEA as it currently exists. Loss of hillside vegetation to residential development and construction of Tonner Canyon Road will seriously diminish the value of the SEA to this function. Piecemeal developments and large projects (such as the golf course) that alter the habitat or increase human intrusion should be avoided. Other management measures outlined in

this section to preserve, restore, or enhance existing habitat will aid the maintenance of the wildlife movement corridor.



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**APPENDIX A**

**LIST OF PARCEL OWNERS WITHIN  
TONNER CANYON/CHINO HILLS SIGNIFICANT ECOLOGICAL AREA NO. 15**

Q.M.S. 91-277-3 TONNER CANYON:

PAGE NUMBER: 1

- 1-1 8714-027-001 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 1-2 8714-026-002 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 1-3 8714-026-003 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 1-4 8714-026-004 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 1-5 8714-026-005 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 2-1 8714-026-900 METROPOLITAN WATER DISTRICT 1111 SUNSET BLVD. LOS ANGELES, CA 90012

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- 1-6 8714-027-001 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 3-1 8714-027-002 SAINT JOSEPHS HILL OF HOPE 7351 CARBON CANYON RD. BREA, CA 92621

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- 3-2 8714-027-003 SAINT JOSEPHS HILL OF HOPE 7351 CARBON CANYON RD. BREA, CA 92621

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- 3-3 8714-027-004 SAINT JOSEPHS HILL OF HOPE 7351 CARBON CANYON RD. BREA, CA 92621

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- 3-4 8714-027-005 SAINT JOSEPHS HILL OF HOPE 7351 CARBON CANYON RD. BREA, CA 92621

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- 4-1 8714-028-001 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 1-7 8714-028-002 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 5-1 8714-028-003 TRANSAMERICA MINERALS CO. 1150 S. OLIVE ST. #2723 LOS ANGELES, CA 90015

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- 4-2 8714-029-001 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 1-3 8714-029-002 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 1-4 8714-029-003 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 1-5 8714-029-004 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

- 4-6 8714-029-005 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 4-7 8714-029-006 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 1-8 8714-029-007 BOY SCOUTS OF AMERICA L.A. AREA COUNCIL 2333 SCOUT WAY LOS ANGELES, CA 90026

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- 4-8 8714-030-001 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 4-9 8714-030-002 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 6-1 8714-030-003 ROSCOE M. MULLER 842 AMHERST DR. BURBANK, CA 91504

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- 4-10 8269-006-001 SHELL OIL COMPANCY c/o: SHELL OIL CO. WESTERN T.A. P.O. BOX 2099 HOUSTON, TX 77067

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- 7-1 8269-006-900 CITY OF BREA #1 CIVIC CENTER CENTER CIRCLE BREA, CA 92621

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- 8-1 8269-008-003 HERITAGE AUXILIARY 18000 CHATSWORTH STREET GRANADA HILLS, CA 91604

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- 9-1 8269-0008-0003 SOUTHPOINTE SUMMIT WEST COMMUNITY ASSN. 19 CORPORATE PLAZA NEWPORT BEACH, CA 92660

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- 4-11 8269-010-002 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN TA P.O. BOX 2099 HOUSTON, TX 77067

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- 4-12 8269-010-007 SHELL OIL COMPANY c/o: SHELL OIL CO. WESTERN TA P.O. BOX 2099 HOUSTON, TX 77067

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- 4-13 8269-010-008 SHELL OIL COMPANY c/o: SHELL OIL COMPANY WESTERN TA P.O. BOX 2099 HOUSTON, TX 77067

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- 10-1 8269-011-008 ARCIERO & SONS INC. 950 N. TUSTIN ST. ANAHEIM, CA 92807

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- 11-1 8269-011-011 HERITAGE AUXILLARY 18000 CHATSWORTH ST. GRANADA HILLS CA 91344

**APPENDIX B**

**FLORAL AND FAUNAL COMPENDIA FOR THE  
TONNER CANYON/CHINO HILLS SIGNIFICANT ECOLOGICAL AREA NO. 15**

## INTRODUCTION TO FLORAL AND FAUNAL SURVEY

Floral components encountered during the survey were recorded in terms of relative abundance and host habitat type. Expected site use by wildlife is derived from survey information combined with documented habitat preferences of regional wildlife species that, whether or not recorded during the survey, are considered likely to include the project area within their range.

Habitat designations used in this report are according to the classification system of Holland (1986). Floral taxonomy used in this report follows that of Roberts (1989), Raven et al. (1986), and Beauchamp (1986). Common plant names, where not available from Roberts or Beauchamp, are taken from Munz (1984) and Abrams (1923). Vertebrates identified in the field by sight, calls, tracks, scat, or other signs are cited according to the nomenclature of Jennings (1983) for amphibians and reptiles, AOU (1983, 1985, 1987, 1989, and 1991) for birds, and Jones et al. (1982) for mammals.



# FLORAL COMPENDIUM<sup>1</sup>

## LEGEND

### HABITAT<sup>2</sup>

- NNG - Non-Native Grassland
- WW - California Walnut Woodland
- OW - Coast Live Oak Woodland
- CSS - Diegan Coastal Sage Scrub
- MC - Mixed Chaparral
- WMS - Southern Willow and Mulefat Scrub
- CW - Southern Cottonwood-Willow Riparian Forest

### ABUNDANCE<sup>3</sup>

- a - abundant--ubiquitous throughout the noted community; occurs in high numbers or in large, pure stands
- c - common--a dominant species in the noted community; occurs in relatively high numbers
- f - frequent--occurs in moderate numbers, but not a dominant element of the noted community
- o - occasional--occurs sporadically in the noted community; generally not an obvious or conspicuous component
- i - infrequent--occurs rarely, or only in a small portion of the noted community; often not apparent unless searched for

### STATUS

- \* Non-native

---

<sup>1</sup> This is not intended as an exhaustive listing of the vegetation occurring on the site; some annual herbs or very uncommon species may not have been detected by the field survey.

<sup>2</sup> Indicates habitat type (plant community) in which species most commonly occurs; species may occur in limited numbers or restricted localities in other communities.

<sup>3</sup> This is simply a gross indication of relative frequency of occurrence on the site. Quantitative sampling methods were not employed to arrive at these determinations.



**APIACEAE - CARROT FAMILY**

NNG WW OW CSS MC WMS CW

<u>Apiastrum angustifolium</u> wild celery	-	-	-	-	-	i	i
* <u>Conium maculatum</u> poison-hemlock	i	-	o	-	-	o	o
* <u>Foeniculum vulgare</u> sweet fennel	o	i	o	i	i	i	i

**APOCYNACEAE - DOGBANE FAMILY**

* <u>Vinca major</u> periwinkle	-	-	-	-	-	i	i
------------------------------------	---	---	---	---	---	---	---

**ASCLEPIADACEAE - MILKWEED FAMILY**

<u>Asclepias californica</u> California milkweed	o	-	-	-	-	-	-
<u>Asclepias fascicularis</u> narrow-leaved milkweed	o	-	-	-	-	-	-

**ASTERACEAE - SUNFLOWER FAMILY**

<u>Ambrosia acanthicarpa</u> annual burweed	o	i	i	i	i	i	i
<u>Ambrosia psilostachya</u> western ragweed	i	i	o	-	-	o	o
<u>Artemisia californica</u> coastal sagebrush	i	i	i	a	o	-	-
<u>Artemisia douglasiana</u> California mugwort	-	i	o	i	i	o	o
<u>Artemisia dracunculul</u> tarragon	i	-	-	-	-	-	-
<u>Baccharis salicifolia</u> mulefat	i	-	-	-	-	f	f
<u>Baccharis pilularis</u> coyote brush	i	i	i	o	o	-	-
<u>Brickellia californica</u> California brickellbush	-	-	-	i	i	-	-
* <u>Centaurea melitensis</u> tocalote	c	o	o	o	o	i	i
<u>Cirsium californicum</u> California thistle	o	i	i	-	-	-	-
<u>Cirsium occidentale</u> cobweb thistle	o	i	i	-	-	-	-
* <u>Cirsium vulgare</u> bull thistle	o	i	i	-	-	-	-

**ASTERACEAE - SUNFLOWER  
FAMILY (continued)**

	<u>NNG</u>	<u>WW</u>	<u>OW</u>	<u>CSS</u>	<u>MC</u>	<u>WMS</u>	<u>CW</u>
* <u>Conyza bonariensis</u> flax-leaved horseweed	o	i	i	i	i	i	i
* <u>Conyza canadensis</u> horseweed	o	i	i	i	i	i	i
* <u>Cynara cardunculus</u> cardoon	o	-	-	-	-	-	-
<u>Encelia californica</u> California bush sunflower	i	-	-	f	o	-	-
<u>Ericameria pinifolia</u> pine goldenbush	i	-	-	i	-	-	-
<u>Eriophyllum confertiflorum</u> golden yarrow	-	-	-	o	o	-	-
<u>Gnaphalium californicum</u> California everlasting	i	-	-	o	i	-	-
<u>Hazardia squarrosa</u> saw-toothed goldenbush	i	-	-	o	o	-	-
<u>Helianthus annuus</u> common sunflower	i	-	-	-	-	i	i
<u>Hemizonia fasciculata</u> fascicled tarweed	c	i	i	o	i	i	i
<u>Heterotheca grandiflora</u> telegraph weed	o	-	-	-	-	-	-
<u>Isocoma veneta</u> coastal goldenbush	i	-	-	o	i	-	-
* <u>Lactuca serriola</u> prickly lettuce	i	-	-	-	-	i	i
<u>Senecio douglasii</u> shrubby butterweed	-	-	o	i	-	-	-
* <u>Silybum marianum</u> milk thistle	o	-	-	-	-	-	-
<u>Solidago californica</u> California goldenrod	i	i	i	i	i	o	o
* <u>Sonchus asper</u> prickly sow-thistle	i	-	-	-	-	i	i
<u>Stephanomeria virgata</u> twiggy wreathplant	i	-	-	o	o	-	-
* <u>Taraxacum officinale</u> common dandelion	i	-	-	-	-	i	i
<u>Venegasia carpesioides</u> canyon sunflower	i	i	i	i	-	-	-
* <u>Xanthium spinosum</u> spiny clotbur	i	-	-	-	-	i	i
* <u>Xanthium strumarium</u> cocklebur	i	-	-	-	-	-	-

**BETULACEAE - BIRCH FAMILY****NNG WW OW CSS MC WMS CW**Alnus rhombifolia  
white alder

- - - - - - i

**BORAGINACEAE - BORAGE FAMILY**Amsinckia intermedia  
common fiddleneck

c i i o o - -

**BRASSICACEAE - MUSTARD FAMILY**\* Brassica geniculata  
short-podded mustard

a o o o o o o

\* Brassica nigra  
black mustard

o o o o o o o

Lepidium nitidum  
shining peppergrass

f - - - - - -

\* Nasturtium officinale  
water-cress

- - - - - i i

\* Raphanus sativus  
wild radish

c o o i i i i

Rorippa curvisilqua  
western yellow-cress

- - - - - i i

**CACTACEAE - CACTUS FAMILY**\* Opuntia ficus-indica  
Indian fig

- - - i - - -

Opuntia littoralis  
coastal prickly pear

i - - f i - -

**CAPRIFOLIACEAE - HONEYSUCKLE FAMILY**Lonicera subspicata  
southern honeysuckle

- o o i i o o

Sambucus mexicana  
Mexican elderberry

i o f o i o o

Symphoricarpos mollis  
spreading snowberry

- - i - - - -

**CARYOPHYLLACEAE - PINK FAMILY**\* Stellaria media  
common chickweed

i o o - - o o

**CHENOPODIACEAE - GOOSEFOOT FAMILY**

	<u>NNG</u>	<u>WW</u>	<u>OW</u>	<u>CSS</u>	<u>MC</u>	<u>WMS</u>	<u>CW</u>
* <u>Chenopodium album</u> lamb's-quarters	o	-	-	-	-	-	-
* <u>Salsola australis</u> Russian-thistle	o	i	i	i	-	-	-

**CONVOLVULACEAE - MORNING-GLORY FAMILY**

<u>Calystegia macrostegia</u> western bindweed	o	o	o	o	i	-	-
* <u>Convolvulus arvensis</u> field bindweed	f	-	-	-	-	-	-
<u>Cuscuta californica</u> California dodder	-	-	-	o	o	-	-

**CUCURBITACEAE - GOURD FAMILY**

<u>Cucurbita foetidissima</u> coyote-melon	o	-	-	-	-	-	-
<u>Marah macrocarpus</u> wild cucumber	-	o	o	o	o	i	i

**EUPHORBIACEAE - SPURGE FAMILY**

<u>Chamaesyce albomarginata</u> rattlesnake spurge	i	-	-	o	o	-	-
<u>Croton californicus</u> California croton	i	-	-	i	-	-	-
<u>Eremocarpus setigerus</u> doveweed	f	-	-	-	-	-	-

**FABACEAE - PEA FAMILY**

<u>Astragalus trichopodus</u> Santa Barbara locoweed	o	-	-	-	-	-	-
<u>Lotus scoparius</u> deerweed	o	-	-	o	i	-	-
<u>Lupinus sp.</u> lupine	o	-	-	i	-	-	-
* <u>Melilotus albus</u> white sweet-clover	o	-	-	-	-	o	o
* <u>Melilotus indicus</u> yellow sweet-clover	o	-	-	-	-	o	o

**FAGACEAE - BEECH FAMILY**

	<u>NNG</u>	<u>WW</u>	<u>OW</u>	<u>CSS</u>	<u>MC</u>	<u>WMS</u>	<u>CW</u>
<u>Quercus agrifolia</u> coast live oak	i	o	a	i	o	i	o
<u>Quercus dumosa</u> California scrub oak	-	-	-	-	f	-	-

**GERANIACEAE - GERANIUM FAMILY**

* <u>Erodium botrys</u> broad-lobed filaree	f	o	o	o	o	i	i
* <u>Erodium cicutarium</u> red-stemmed filaree	f	o	o	o	o	i	i
* <u>Erodium moschatum</u> white-stemmed filaree	o	i	i	i	i	i	i

**HYDROPHYLLACEAE - WATERLEAF FAMILY**

<u>Eriodictyon crassifolium</u> thick-leaved yerba santa	i	-	-	o	i	-	-
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**JUGLANDACEAE - WALNUT FAMILY**

<u>Juglans californica</u> California black walnut	i	a	o	o	o	-	-
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**LAMIACEAE - MINT FAMILY**

* <u>Marrubium vulgare</u> horehound	f	o	o	o	i	o	o
<u>Salvia apiana</u> white sage	i	-	-	f	o	-	-
<u>Salvia leucophylla</u> purple sage	-	-	-	o	o	-	-
<u>Salvia mellifera</u> black sage	-	-	-	c	o	-	-

**MALVACEAE - MALLOW FAMILY**

* <u>Malva parviflora</u> cheeseweed	f	-	-	-	-	i	i
---	---	---	---	---	---	---	---

**MYRTACEAE - MYRTLE FAMILY**

	<u>NNG</u>	<u>WW</u>	<u>OW</u>	<u>CSS</u>	<u>MC</u>	<u>WMS</u>	<u>CW</u>
<u>Eucalyptus</u> sp. gumtree	i	-	-	-	-	i	i
* <u>Eucalyptus globulus</u> blue gum	i	-	-	-	-	i	i

**NYCTAGINACEAE - FOUR-O'CLOCK FAMILY**

<u>Mirabilis californica</u> California wishbone-bush	-	-	-	o	i	-	-
--	---	---	---	---	---	---	---

**PAEONIACEAE - PEONY FAMILY**

<u>Paeonia californica</u> California peony	-	-	-	-	o	-	-
--	---	---	---	---	---	---	---

**PLATANACEAE - SYCAMORE FAMILY**

<u>Platanus racemosa</u> California sycamore	-	-	o	-	-	o	f
---	---	---	---	---	---	---	---

**POLYGONACEAE - BUCKWHEAT FAMILY**

<u>Eriogonum elongatum</u> long-stemmed buckwheat	i	-	-	i	i	-	-
<u>Eriogonum fasciculatum</u> California buckwheat	o	-	-	a	o	-	-
<u>Persicaria amphibia</u> water smartweed	-	-	-	-	-	i	i
* <u>Rumex crispus</u> curly dock	-	-	-	-	-	o	o

**PORTULACACEAE - PURSLANE FAMILY**

<u>Claytonia perfoliata</u> miner's-lettuce	-	o	o	-	i	-	-
--	---	---	---	---	---	---	---

**PRIMULACEAE - PRIMROSE FAMILY**

* <u>Anagallis arvensis</u> scarlet pimpernel	o	i	i	i	i	-	-
--	---	---	---	---	---	---	---



**RANUNCULACEAE - CROWFOOT FAMILY****NNG WW OW CSS MC WMS CW**

<u>Clematis lasiantha</u> chaparral virgin's bower	-	i	o	-	o	o	o
---	---	---	---	---	---	---	---

**RHAMNACEAE - BUCKTHORN FAMILY**

<u>Ceanothus crassifolius</u> hoary-leaved ceanothus	-	-	-	i	o	-	-
<u>Rhamnus californica</u> California coffeeberry	-	o	o	-	o	o	o
<u>Rhamnus crocea</u> redberry	-	-	-	i	o	-	-

**ROSACEAE - ROSE FAMILY**

<u>Adenostoma fasciculatum</u> chamise	-	-	-	i	c	-	-
<u>Heteromeles arbutifolia</u> toyon	-	-	o	o	f	-	-
<u>Rosa californica</u> California wild rose	-	-	-	-	-	o	o
<u>Rubus ursinus</u> California blackberry	-	-	o	-	-	o	o

**SALICACEAE - WILLOW FAMILY**

<u>Salix gooddingii</u> black willow	-	-	-	-	-	c	c
<u>Salix lasiolepis</u> arroyo willow	-	-	-	-	-	c	c

**SAXIFRAGACEAE - SAXIFRAGE FAMILY**

<u>Ribes californicum</u> hillside gooseberry	-	o	o	i	o	-	-
<u>Ribes indecorum</u> chaparral currant	-	o	o	i	o	o	o
<u>Ribes speciosum</u> fuchsia-flowered gooseberry	-	-	-	i	o	-	-

**SCROPHULARIACEAE - FIGWORT FAMILY**

<u>Diplacus longiflorus</u> sticky monkey-flower	-	-	-	f	o	-	-
<u>Keckiella cordifolia</u> heart-leaved penstemon	-	-	o	o	o	-	-

**SCROPHULARIACEAE - FIGWORT  
FAMILY (continued)**

	<u>NNG</u>	<u>WW</u>	<u>OW</u>	<u>CSS</u>	<u>MC</u>	<u>WMS</u>	<u>CW</u>
<u>Penstemon spectabilis</u> royal penstemon	i	-	-	i	-	-	-

**SOLANACEAE - NIGHTSHADE FAMILY**

* <u>Datura stramonium</u> annual jimsonweed	o	-	-	i	-	-	-
* <u>Nicotiana glauca</u> tree tobacco	i	i	i	-	-	o	o
<u>Solanum douglasii</u> Douglas' nightshade	i	o	o	i	i	o	o
<u>Solanum xanti</u> chaparral nightshade	-	-	i	i	i	-	-

**URTICACEAE - NETTLE FAMILY**

<u>Urtica dioica</u> giant creek nettle	-	-	-	-	-	o	o
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**VISCACEAE - MISTLETOE FAMILY**

<u>Phoradendron villosum</u> oak mistletoe	-	-	o	-	-	-	-
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**ANGIOSPERMAE (MONOCOTYLEDONES)**

**ALLIACEAE - ONION FAMILY**

<u>Bloomeria crocea</u> common golden stars	i	o	o	o	i	-	-
<u>Dichelostemma pulchellum</u> blue dicks	o	o	o	o	o	-	-

**ARECACEAE - PALM FAMILY**

* <u>Phoenix canariensis</u> Canary Island date palm	-	-	-	-	-	i	i
* <u>Washingtonia filifera</u> California fan palm	-	-	-	-	-	i	i

**CYPERACEAE - SEDGE FAMILY****NNG WW OW CSS MC WMS CW**Cyperus aristatus  
awned umbrella sedge

- - - - - 0 0

**IRIDACEAE - IRIS FAMILY**Sisyrinchium bellum  
blue-eyed grass

i - - i - - -

**JUNACEAE - RUSH FAMILY**Juncus balticus  
wire rush

- - - - - 0 0

**LEMNACEAE - DUCKWEED FAMILY**Lemna minor  
water lentil

- - - - - i i

**LILIACEAE - LILY FAMILY**Chlorogalum pomeridianum  
soap plant

i 0 0 0 0 - -

**POACEAE - GRASS FAMILY**\* Arundo donax  
giant reed

- - - - - 0 0

\* Avena barbata  
slender oat

f f f 0 0 i i

\* Avena fatua  
wild oat

f f f 0 0 i i

\* Bromus diandrus  
ripgut grass

0 0 0 0 0 0 0

\* Bromus hordeaceus  
soft chess

0 i i i i - -

\* Bromus rubens  
foxtail chess

f 0 0 0 0 0 0

\* Cynodon dactylon  
Bermuda grass

i - - - - 0 0

Elymus condensatus  
giant wild rye

- 0 0 0 i 0 0

\* Hordeum leporinum  
hare barley

0 0 0 i i 0 0

**POACEAE - GRASS FAMILY**

	<u>NNG</u>	<u>WW</u>	<u>OW</u>	<u>CSS</u>	<u>MC</u>	<u>WMS</u>	<u>CW</u>
* <u>Lamarckia aurea</u> goldentop	-	-	-	i	i	-	-
* <u>Lolium multiflorum</u> Italian ryegrass	o	o	o	i	i	o	o
<u>Melica imperfecta</u> coast range melic	-	-	i	o	o	-	-
* <u>Oryzopsis miliacea</u> millet ricegrass	-	-	-	-	-	u	o
<u>Polygogon monspeliensis</u> rabbit's-foot grass	-	-	-	-	-	i	i
<u>Vulpia megalura</u> foxtail fescue	o	o	o	i	i	o	o

**TYPHACEAE - CATTAIL FAMILY**

<u>Typha angustifolia</u> narrow-leaved cattail	-	-	-	-	-	o	o
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# FAUNAL COMPENDIUM<sup>1</sup>

## LEGEND

### ABUNDANCE<sup>2</sup>

- c - common--observed or expected throughout the site in relatively high numbers
- f - fairly common--observed or expected in moderate numbers over most of the site
- u - uncommon--observed or expected in low numbers over a portion or all of the site
- o - occasional--observed or expected only sporadically on the site
- s - scarce--observed or expected rarely on the site

### STATUS

- + Presence noted by direct sighting, call identification or observation of tracks, scat or other signs.
- \* Non-native

### SEASONALITY (Birds Only)<sup>3</sup>

- R - resident or found in vicinity year round
- S - present in summer only
- W - present in winter only
- V - visitor from nearby areas
- T - transient

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<sup>1</sup> List includes species observed or expected to occur on or in the immediate vicinity of the site.

<sup>2</sup> This is simply a gross indication of relative frequency of occurrence on the site; quantitative sampling methods were not employed to arrive at these determinations.

<sup>3</sup> This is simply a gross indication of relative frequency of occurrence on the site; quantitative sampling methods were not employed to arrive at these determinations.

## INVERTEBRATES

### BUTTERFLIES AND SKIPPERS

#### PAPILIONIDAE - SWALLOWTAILS AND PARNASSIANS

Papilio zelicaon zelicaon

anise swallowtail

larval food plant(s): various Umbelliferae, including Foeniculum vulgare; citrus (Rutaceae)

Papilio rutulus rutulus

western tiger swallowtail

larval food plant(s): principally Platanus racemosa (Platanaceae), but also Salix spp. and Populus spp. (Salicaceae)

Papilio eurymedon

pale swallowtail

larval food plant(s): Rhamnus crocea, R. californica, Ceanothus spp. (all Rhamnaceae), Prunus ilicifolia (Rosaceae) and occasionally domesticated Prunus.

#### PIERIDAE - WHITES, SULFURS MARBLES AND ORANGETIPS

Pieris protodice

common white

larval food plant(s): Lepidium fremontii (Brassicaceae) in deserts; many other Brassicaceae also used (Cleome spp., Brassica spp., Sisymbrium spp. etc.)

\* Pieris rapae

cabbage butterfly, cabbage white

larval food plant(s): many Brassicaceae, native and introduced

Colias eurytheme

alfalfa butterfly

larval food plant(s): the non-native Medicago sativa; Lotus scoparius, Trifolium spp. and possibly Astragalus spp. (all Fabaceae)

Colias alexandra harfordii

Harford's sulfur

larval food plant(s): Astragalus spp. (Fabaceae)

Zerene (Colias) eurydice

California dogface

larval food plant(s): Amorpha californica (Fabaceae)

Eurema nicippe

nicippe sulfur

larval food plant(s): Cassia spp. and probably other Fabaceae

Anthocharis sara sara

Sara orangetip

larval food plant(s): Arabis spp., Barbarea vulgaris, Brassica kaber, Descurainaea spp. and Sisymbrium officinale (all Brassicaceae)

**DANAIDAE - MILKWEED BUTTERFLIES**

Danaus plexippus

monarch

larval food plant(s): Asclepias spp. (Asclepiadaceae)

Danaus gilippus strigosus

striated queen

larval food plant(s): Sarcostemma spp., and at least rarely, certain Asclepias spp. (Asclepiadaceae)

**SATYRIDAE - SATYRS, ARCTICS AND RINGLETS**

Coenonympha tullia californica

California ringlet

larval food plant(s): both native and non-native grasses (Poaceae)

Cercyonis sthenele silvestris

sylvan satyr, woodland satyr

larval food plant(s): grasses (Poaceae)

**NYMPHALIDAE - BRUSH-FOOTED BUTTERFLIES**

Euphydryas chalcedona chalcedona

chalcedon checkerspot

larval food plant(s): most commonly Mimulus aurantiacus and Scrophularia californica (both Scrophulariaceae), but a variety of other hosts are also used (mainly Scrophulariaceae)

Melitaea (Chlosyne) gabbii gabbii

Gabb's checkerspot

larval food plant(s): Corethrogyne filaginifolia, Heterotheca grandiflora; Hazardia squarrosa reported (all Asteraceae)

Phyciodes mylitta mylitta

thistle crescent

larval food plant(s): Cirsium spp. (Asteraceae); species not identified

Nymphalis antiopa antiopa

mourning cloak

larval food plant(s): Salix spp. and Populus spp. (both Salicaceae); Ulmus spp. (Ulmaceae)

Vanessa atalanta rubria

red admiral

larval food plant(s): Urtica holosericea, and perhaps Parietaria spp. in deserts (both Urticaceae); widespread non-natives hops, Humulus lupulus (Moraceae) and baby's tears, Soleirolia soleirolii (Urticaceae)

Vanessa (Cynthia) cardui

painted lady

larval food plant(s): Malva spp. (Malvaceae), Cirsium spp. (Asteraceae), Urtica spp. (Urticaceae), Lupinus spp. (Fabaceae), Cryptantha spp. and Amsinckia spp. (Boraginaceae) and many others

Vanessa (Cynthia) carye anabella

west coast lady

larval food plant(s): Malva spp., Sidalcea spp. (Malvaceae), and Urtica holosericea (Urticaceae); Sphaeralcea ambigua (Malvaceae) in desert areas

**NYMPHALIDAE - BRUSH-FOOTED BUTTERFLIES**

Precis coenia

buckeye

larval food plant(s): Plantago erecta and P. lanceolata (Plantaginaceae); Mimulus spp. and Antirrhinum spp. (Scrophulariaceae)

Limenitis lorquini lorquini

Lorquin's admiral

larval food plant(s): Salix spp. (Salicaceae); also Prunus virginiana var demissa (Rosaceae) in the Tehachapi Mts.

Adelpha bredowii californica

California sister

larval food plant(s): Quercus chrysolepis (Fagaceae); possibly other Quercus spp.

**LYCAENIDAE - METALMARKS, HAIRSTREAKS, COPPERS AND BLUES**

**RIODININAE - METALMARKS**

Apodemia mormo virgulti

Behr's metalmark

larval food plant(s): probably Eriogonum fasciculatum ssp. fasciculatum and ssp. polifolium (Polygonaceae)



## THECLINAE - HAIRSTREAKS

### Habrodais grunus grunus

Boisduval's hairstreak

larval food plant(s): Quercus chrysolepis (Fagaceae)

### Strymon melinus pudica

common hairstreak

larval food plant(s): quite varied; includes Malva spp. and Hibiscus spp. (Malvaceae), Humulus (Moraceae), Amorpha spp. and Phaseolus spp. (Fabaceae), Nolina spp. (Agavaceae), Polygonum spp. and Eriogonum spp. (Polygonaceae)

### Satyrium californicum

California hairstreak

larval food plant(s): Quercus spp. (Fagaceae)

### Satyrium sylvinum sylvinum

sylvan hairstreak

larval food plant(s): Salix spp. (Salicaceae)

### Callophrys (Incisalia) augustus iroides

western elfin

larval food plant(s): most extensively Cuscuta spp. (Cuscutaceae); also on Ceanothus spp. (Rhamnaceae), Chlorogalum pomeridanum (Liliaceae), and Arbutus menziesii (Ericaceae)

### Callophrys dumetorum dumetorum

bramble hairstreak

larval food plant(s): Lotus scoparius (Fabaceae) and Eriogonum fasciculatum ssp. fasciculatum, polifolium and foliolosum

### Callophrys affinis perplexa

California green hairstreak

larval food plant(s): Lotus spp. (Fabaceae), Eriogonum spp. (Polygonaceae)

## LYCAENINAE - COPPERS

### Lycaena arota arota

arota copper

larval food plant(s): Ribes californicum var. hesperium and R. roezlii and probably other Ribes spp. (Saxifragaceae)

### Lycaena gorgon

gorgon copper

larval food plant(s): Eriogonum elongatum (Polygonaceae) in southern California

### Lycaena helloides

purplish copper

larval food plant(s): Rumex spp. (Polygonaceae)

## PLEBEJINAE - BLUES

### Leptotes marina

marina blue

larval food plant(s): in urban areas, Plumbago spp. (Plumbaginaceae); elsewhere, many Fabaceae including Medicago spp., Lathyrus spp., and Astragalus spp., and at least in the San Gabriel Mts., Amorpha californica (all Fabaceae)

### Brephidium exilis

pigmy blue

larval food plant(s): Chenopodium spp., Atriplex spp. (Chenopodiaceae)

### Everes amyntula

western tailed blue

larval food plant(s): Astragalus spp. (Fabaceae); species are uncertain

## HESPERIIDAE - SKIPPERS

### Paratrytone melane

umber skipper

larval food plant(s): grasses (Poaceae) including at least Deschampsia caespitosa

### Ochlodes sylvanoides sylvanoides

woodland skipper

larval food plant(s): unidentified grasses (Poaceae)

### Atalopetes campestris

field skipper

larval food plant(s): grasses (Poaceae)

### Hylephila phyleus

fiery skipper

larval food plant(s): bermuda grass, Cynodon dactylon (Poaceae)

### Pyrgus communis albescens

western checkered skipper

larval food plant(s): Malvaceae, especially Malva spp. and Sidalcea spp.

### Erynnis zarucco funeralis

funereal duskywing

larval food plant(s): Lotus scoparius, Olneya tesota and Sesbania exaltata (all Fabaceae); Nemophila membranacea (Hydrophyllaceae) use documented in western Colorado Desert

### Erynnis tristis tristis

mournful duskywing

larval food plant(s): Quercus agrifolia, Q. lobata and Q. douglasii (Fagaceae)

**TERRESTRIAL VERTEBRATES**

**AMPHIBIANS**

**SALAMANDRIDAE - NEWTS**

**Abundance**

Taricha torosa  
California newt

o

**PLETHODONTIDAE - LUNGLESS SALAMANDERS**

Aneides lugubris  
arboreal salamander

u

Batrachoseps pacificus  
Pacific slender salamander

c

Ensatina eschscholtzi  
ensatina

s

**PELOBATIDAE - SPADEFOOT TOADS**

Scaphiopus hammondi  
western spadefoot

o

**BUFONIDAE - TRUE TOADS**

+ Bufo boreas  
western toad

c

Bufo microscaphus  
southwestern toad

o

**HYLIDAE - TREEFROGS**

Hyla cadaverina  
California treefrog

f

+ Hyla regilla  
Pacific treefrog

c

**RANIDAE - TRUE FROGS**

\* Rana catesbeiana  
bullfrog

o

## REPTILES

### EMYDIDAE - BOX AND WATER TURTLES

### Abundance

Clemmys marmorata  
western pond turtle

o

### IGUANIDAE - IGUANID LIZARDS

Phrynosoma coronatum  
coast horned lizard

u

+ Sceloporus occidentalis  
western fence lizard

c

+ Uta stansburiana  
side-blotched lizard

c

### SCINCIDAE - SKINKS

Eumeces skiltonianus  
western skink

c

### TEIIDAE - WHIPTAIL LIZARDS

Cnemidophorus hyperythrus  
orange-throated whiptail

o

+ Cnemidophorus tigris  
western whiptail

f

### ANGUIDAE - ALLIGATOR LIZARDS

Gerrhonotus multicarinatus  
southern alligator lizard

f

### ANNIELLIDAE - CALIFORNIA LEGLESS LIZARDS

Anniella pulchra  
California legless lizard

o

### LEPTOTYPHLOPIDAE - SLENDER BLIND SNAKES

Leptotyphlops humilis  
western blind snake

s

**BOIDAE - BOAS**AbundanceLichanura trivirgata  
rosy boa

u

**COLUBRIDAE - COLUBRID SNAKES**Arizona elegans  
glossy snake

u

Coluber constrictor  
racer

o

Diadophis punctatus  
ringneck snake

f

Hypsiglena torquata  
night snake

o

Lampropeltis getulus  
common kingsnake

f

Masticophis flagellum  
coachwhip

f

Masticophis lateralis  
striped racer

f

+ Pituophis melanoleucus  
gopher snake

c

Salvadora hexalepis  
western patch-nosed snake

o

Tantilla planiceps  
western black-headed snake

u

**VIPERIDAE - VIPERS**Crotalus viridis  
western rattlesnake

c

**BIRDS****ARDEIDAE - HERONS**Egretta thula  
snowy egret

o,V

+ Butorides striatus  
green-backed heron

o,V

**CATHARTIDAE - NEW WORLD VULTURES**+ Cathartes aura  
turkey vulture

f,R

**ACCIPITRIDAE - HAWKS**Abundance

	<u>Elanus caeruleus</u> black-shouldered kite	o,R
	<u>Circus cyaneus</u> northern harrier	o,W
+	<u>Accipiter striatus</u> sharp-shinned hawk	u,W
+	<u>Accipiter cooperii</u> Cooper's hawk	o,R/u,W
+	<u>Buteo lineatus</u> red-shouldered hawk	u,R
+	<u>Buteo jamaicensis</u> red-tailed hawk	f,R
+	<u>Aquila chrysaetos</u> golden eagle	s,V

**FALCONIDAE - FALCONS**

+	<u>Falco sparverius</u> American kestrel	f,R
	<u>Falco mexicanus</u> prairie falcon	s,W

**PHASIANIDAE - PHEASANTS & QUAILS**

+	<u>Callipepla californica</u> California quail	f,R
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**COLUMBIDAE - PIGEONS & DOVES**

*	<u>Columba livia</u> rock dove	u,V
	<u>Columba fasciata</u> band-tailed pigeon	o,V
+	<u>Zenaidura macroura</u> mourning dove	c,R

**CUCULIDAE - CUCKOOS & ROADRUNNERS**

+	<u>Geococcyx californianus</u> greater roadrunner	o,R
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**TYTONIDAE - BARN OWLS**Abundance

- + Tyto alba  
barn owl o,R

**STRIGIDAE - TRUE OWLS**

- Otus kennicottii  
western screech-owl u,R
- + Bubo virginianus  
great horned owl o,R

**CAPRIMULGIDAE - GOATSUCKERS**

- Phalaenoptilus nuttallii  
common poorwill u,S/u,T

**APODIDAE - SWIFTS**

- Chaetura vauxi  
Vaux's swift f,T
- + Aeronautes saxatalis  
white-throated swift f,R

**TROCHILIDAE - HUMMINGBIRDS**

- + Archilochus alexandri  
black-chinned hummingbird u,S
- + Calypte anna  
Anna's hummingbird f,R
- Calypte costae  
Costa's hummingbird o,T
- Selasphorus rufus  
rufous hummingbird f,T
- Selasphorus sasin  
Allen's hummingbird o,T

**PICIDAE - WOODPECKERS**

- + Melanerpes formicivorus  
acorn woodpecker f,R
- Sphyrapicus ruber  
red-breasted sapsucker s,W
- + Picoides nuttallii  
Nuttall's woodpecker f,R

**PICIDAE - WOODPECKERS (continued)**Abundance

	<u>Picoides pubescens</u> downy woodpecker	o,V
+	<u>Colaptes auratus</u> northern flicker	f,W/f,T

**TYRANNIDAE - TYRANT FLYCATCHERS**

	<u>Contopus borealis</u> olive-sided flycatcher	u,T
+	<u>Contopus sordidulus</u> western wood-pewee	f,T
+	<u>Empidonax traillii</u> willow flycatcher	u,T
	<u>Empidonax hammondii</u> Hammond's flycatcher	o,T
	<u>Empidonax wrightii</u> gray flycatcher	s,T
+	<u>Empidonax difficilis</u> Pacific-slope flycatcher	f,T
+	<u>Sayornis nigricans</u> black phoebe	f,R
+	<u>Sayornis saya</u> Say's phoebe	f,W
+	<u>Myiarchus cinerascens</u> ash-throated flycatcher	f,S
+	<u>Tyrannus verticalis</u> western kingbird	u,S

**ALAUDIDAE - LARKS**

	<u>Eremophila alpestris</u> horned lark	s,W
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**HIRUNDINIDAE - SWALLOWS**

	<u>Tachycineta bicolor</u> tree swallow	f,T
+	<u>Tachycineta thalassina</u> violet-green swallow	u,T
+	<u>Stelgidopteryx serripennis</u> northern rough-winged swallow	u,T
+	<u>Hirundo pyrrhonota</u> cliff swallow	f,T
	<u>Hirundo rustica</u> barn swallow	f,T



**CORVIDAE - JAYS & CROWS**Abundance

- + Aphelocoma coerulescens c,R  
scrub jay
- + Corvus brachyrhynchos c,R  
American crow
- + Corvus corax f,R  
common raven

**PARIDAE - TITMICE**

- + Parus inornatus f,R  
plain titmouse

**AEGITHALIDAE - BUSHTITS**

- + Psaltriparus minimus c,R  
bushtit

**SITTIDAE - NUTHATCHES**

- Sitta carolinensis o,R  
white-breasted nuthatch

**CERTHIDAE - CREEPERS**

- Certhia americana s,W  
brown creeper

**TROGLODYTIDAE - WRENS**

- + Campylorhynchus brunneicapillus u,R  
cactus wren
- + Thryomanes bewickii f,R  
Bewick's wren
- + Troglodytes aedon u,R  
house wren

**MUSCICAPIDAE - KINGLETS, GNATCATCHERS, THRUSHES & BABBLERS**

- Regulus satrapa s,W  
golden-crowned kinglet
- Regulus calendula f,W/f,T  
ruby-crowned kinglet

**MUSCICAPIDAE - KINGLETS, GNATCATCHERS, THRUSHES  
& BABBLERS (continued)**

Abundance

	<u>Polioptila caerulea</u> blue-gray gnatcatcher	u,R
+	<u>Sialia mexicana</u> western bluebird	u,R
+	<u>Catharus ustulatus</u> Swainson's thrush	f,T
+	<u>Catharus guttatus</u> hermit thrush	c,W
+	<u>Turdus migratorius</u> American robin	f,W
+	<u>Chamaea fasciata</u> wrentit	u,R

**MIMIDAE - THRASHERS**

+	<u>Mimus polyglottos</u> northern mockingbird	f,R
+	<u>Toxostoma redivivum</u> California thrasher	f,R

**BOMBYCILLIDAE - WAXWINGS**

+	<u>Bombycilla cedrorum</u> cedar waxwing	u,W
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**PTILOGONATIDAE - SILKY-FLYCATCHERS**

+	<u>Phainopepla nitens</u> phainopepla	f,S
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**LANIIDAE - SHRIKES**

+	<u>Lanius ludovicianus</u> loggerhead shrike	o,R
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**STURNIDAE - STARLINGS**

+	* <u>Sturnus vulgaris</u> European starling	f,R
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**VIREONIDAE - VIREOS**Abundance

	<u>Vireo solitarius</u> solitary vireo	o,T
+	<u>Vireo huttoni</u> Hutton's vireo	f,R
+	<u>Vireo gilvus</u> warbling vireo	f,T

**EMBERIZIDAE - WOOD WARBLERS, TANAGERS, BUNTINGS & BLACKBIRDS**

+	<u>Vermivora celata</u> orange-crowned warbler	c,T
	<u>Vermivora ruficapilla</u> Nashville warbler	u,T
+	<u>Dendroica petechia</u> yellow warbler	f,T
+	<u>Dendroica coronata</u> yellow-rumped warbler	c,W/f,T
	<u>Dendroica nigrescens</u> black-throated gray warbler	f,T
+	<u>Dendroica townsendi</u> Townsend's warbler	f,T
+	<u>Dendroica occidentalis</u> hermit warbler	u,T
	<u>Oporornis tolmiei</u> MacGillivray's warbler	u,T
+	<u>Geothlypis trichas</u> common yellowthroat	f,T
+	<u>Wilsonia pusilla</u> Wilson's warbler	c,T
	<u>Icteria virens</u> yellow-breasted chat	o,T
+	<u>Piranga ludoviciana</u> western tanager	f,T
+	<u>Pheucticus melanocephalus</u> black-headed grosbeak	f,T
	<u>Guiraca caerulea</u> blue grosbeak	s,T
+	<u>Passerina amoena</u> lazuli bunting	u,T
+	<u>Pipilo erythrophthalmus</u> rufous-sided towhee	f,R
+	<u>Pipilo crissalis</u> California towhee	c,R
	<u>Aimophila ruficeps</u> rufous-crowned sparrow	u,R
	<u>Spizella passerina</u> chipping sparrow	f,T

**EMBERIZIDAE - WOOD WARBLERS, TANAGERS,  
BUNTINGS & BLACKBIRDS (continued)**

	<u>Abundance</u>
+ <u>Spizella atrogularis</u> black-chinned sparrow	f,S
+ <u>Chondestes grammacus</u> lark sparrow	o,R
<u>Passerculus sandwichensis</u> savannah sparrow	u,W
<u>Passerella iliaca</u> fox sparrow	f,W
+ <u>Melospiza melodia</u> song sparrow	f,R
<u>Melospiza lincolnii</u> Lincoln's sparrow	u,W
+ <u>Zonotrichia atricapilla</u> golden-crowned sparrow	u,W
+ <u>Zonotrichia leucophrys</u> white-crowned sparrow	c,W
+ <u>Junco hyemalis</u> dark-eyed junco	f,W
+ <u>Agelaius phoeniceus</u> red-winged blackbird	o,V
+ <u>Sturnella neglecta</u> western meadowlark	u,W
<u>Euphagus cyanocephalus</u> Brewer's blackbird	o,V
+ <u>Molothrus ater</u> brown-headed cowbird	f,S/f,T
<u>Icterus cucullatus</u> hooded oriole	o,T
+ <u>Icterus galbula</u> northern oriole	f,T/E,S

**FRINGILLIDAE - FINCHES**

<u>Carpodacus purpureus</u> purple finch	o,W
+ <u>Carpodacus mexicanus</u> house finch	c,R
<u>Carduelis pinus</u> pine siskin	o,W
+ <u>Carduelis psaltria</u> lesser goldfinch	f,R
<u>Carduelis lawrencei</u> Lawrence's goldfinch	o,V
<u>Carduelis tristis</u> American goldfinch	u,W

**PASSERIDAE - OLD WORLD SPARROWS**

Abundance

+\* Passer domesticus  
house sparrow

o,R

**MAMMALS**

**DIDELPHIDAE - NEW WORLD OPOSSUMS**

\* Didelphis virginiana  
Virginia opossum

o

**SORICIDAE - SHREWS**

Sorex ornatus  
ornate shrew

o

**TALPIDAE - MOLES**

+ Scapanus latimanus  
broad-footed mole

o

**PHYLLOSTOMIDAE - LEAF-NOSED BATS<sup>1</sup>**

Macrotus californicus  
California leaf-nosed bat

**VESPERTILIONIDAE - EVENING BATS<sup>1</sup>**

Myotis lucifugus  
little brown myotis

Myotis yumanensis  
Yuma myotis

Myotis evotis  
long-eared myotis

Myotis thysanodes  
fringed myotis

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<sup>1</sup> The site is within the range of a number of bat species in several families, but it is unlikely that all are present. As their distribution varies according to season, and as the precise habitat requirements of each species are not well known, it is difficult to determine which species are present on the property.

VESPERTILIONIDAE - EVENING BATS (continued)

Abundance

- Myotis volans  
long-legged myotis
- Myotis californicus  
California myotis
- Myotis leibii  
small-footed myotis
- Pipistrellus hesperus  
western pipistrelle
- Eptesicus fuscus  
big brown bat
- Lasiurus borealis  
red bat
- Lasiurus cinereus  
hoary bat
- Plecotus townsendii  
Townsend's big-eared bat
- Antrozous pallidus  
pallid bat

MOLOSSIDAE - FREE-TAILED BATS<sup>1</sup>

- Tadarida brasiliensis  
Brazilian free-tailed bat
- Tadarida femorosacca  
pocketed free-tailed bat
- Eumops perotis  
western mastiff bat

LEPORIDAE - HARES & RABBITS

- + Sylvilagus bachmani c  
brush rabbit
- + Sylvilagus audubonii f  
desert cottontail

SCIURIDAE - SQUIRRELS

- + Spermophilus beecheyi f  
California ground squirrel
- + Sciurus griseus u  
western gray squirrel

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<sup>1</sup> The site is within the range of a number of bat species in several families, but it is unlikely that all are present. As their distribution varies according to season, and as the precise habitat requirements of each species are not well known, it is difficult to determine which species are present on the property.

**GEOMYIDAE - POCKET GOPHERS**

Abundance

- + Thomomys bottae c  
Botta's pocket gopher

**HETEROMYIDAE - POCKET MICE & KANGAROO RATS**

- Perognathus californicus u  
California pocket mouse
- + Dipodomys agilis c  
agile kangaroo rat

**CRICETIDAE - NEW WORLD RATS & MICE**

- Reithrodontomys megalotis f  
western harvest mouse
- Peromyscus californicus f  
California mouse
- Peromyscus maniculatus f  
deer mouse
- + Neotoma fuscipes f  
dusky-footed woodrat
- Microtus californicus f  
California vole

**MURIDAE - OLD WORLD RATS & MICE**

- \* Mus musculus u  
house mouse

**CANIDAE - WOLVES & FOXES**

- + Canis latrans c  
coyote
- +\* Canis familiaris u  
domestic dog
- + Urocyon cinereoargenteus f  
gray fox

**PROCYONIDAE - RACCOONS**

- + Procyon lotor f  
raccoon

**MUSTELIDAE - WEASELS, SKUNKS & OTTERS**

Abundance

<u>Mustela frenata</u>	o
long-tailed weasel	
<u>Taxidea taxus</u>	s
badger	
<u>Spilogale gracilis</u>	o
western spotted skunk	
+ <u>Mephitis mephitis</u>	f
striped skunk	

**FELIDAE - CATS**

* <u>Felis catus</u> s	
domestic cat	
+ <u>Felis concolor</u>	s
mountain lion	
+ <u>Felis rufus</u> u	
bobcat	

**CERVIDAE - DEERS**

+ <u>Odocoileus hemionus</u>	c
mule deer	

**BOVIDAE - BISON, GOATS & SHEEP**

+* <u>Bos bovis</u> c	
domestic cattle	