

APPENDIX A

Table 1. Special status plants of the Big Bear Valley and surrounding mountains.

Special Status Plants	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
<i>Eriophyllum lanatum</i> var. <i>obovatum</i> Southern Sierra woolly sunflower	Open montane coniferous forests, 4200-8100 ft. elev.; S Sierra Nevada and western San Bernardino Mts.	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Low (margin of geogr. range)
<i>Fimbristylis thermalis</i> Hot springs fimbristylis	Alkaline meadows near hot springs; San Bernardino Mts., Sierra Nevada Mts. (Kern, Mono, Inyo Cos.), Nevada, and Arizona; wide elev. range	July - Sept.	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-1	Absent (no suitable habitat)
<i>Galium jepsonii</i> (syn. <i>G. angustifolium</i> var. <i>subglabrum</i>) Jepson's bedstraw	Sandy or gravelly soils, montane coniferous forest, 6500-8100 ft. elev.; San Gabriel and San Bernardino Mts	July - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Galium johnstonii</i> (syn. <i>G. angustifolium</i> var. <i>pinetorum</i>) Johnston's bedstraw	Dry rocky slopes, open mixed conifer forest, 5300-7500 ft. elev.; San Gabriel and San Bernardino Mts.	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Gentiana fremontii</i> Moss gentian	Meadows; only Calif. occurrences in San Geronimo Wilderness above about 7800 ft. elev.; widespread in much of interior Western N America	June - August	Fed: none Calif: S2.3 CNPS: List 2 R-E-D:3-1-1	Absent (well below elev. range)
<i>Gilia leptantha</i> ssp. <i>leptantha</i> San Bernardino Mtn. gilia	Sandy or gravelly soils in open pine forest; endemic to San Bernardino Mts., about 5000 to 7700 ft. elev.	June - Aug	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	High (suitable habitat occurs)
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	Freshwater marsh, coastal salt marsh (Skinner & Pavlik 1994), wet ground, 1000-1500 ft. (Munz 1974); historic sites (extirpated) in LA, San Bern. and Orange Cos.	Aug. - Oct.	Fed: C1* Calif: SH CNPS: List 1A R-E-D: n/a	Absent (presumed extinct; no suitable habitat, well above elev. range)
<i>Heuchera hirsutissima</i> Shaggy-haired alum root	Subalpine and upper montane forests, above about 7200 ft. elev.; endemic to San Jacinto and Santa Rosa Mts (one unconfirmed record from San Bernardino Mts.)	May - July	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:3-1-3	Low (poorly suitable habitat)
<i>Heuchera parishii</i> Parish's alumroot	Rocky places, montane coniferous forests and alpine boulderfields, above 4800 ft. elev.; San Bernardino Mts endemic	June - July	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	Low (poorly suitable habitat)
<i>Horkelia wilderae</i> Barton Flats horkelia	Pine forest and chaparral, endemic to Barton Flats area; about 7000 to 10,000 ft. elev.	May - Sept.	Fed: none Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Low (probably outside geogr. range)

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<i>Hulsea vestita</i> ssp. <i>parryi</i> Parry's sunflower	Rocky sites in conifer forests, gen. loose eroding soil and talus; San Bernardino Mts and Little San Bern. Mts; about 5500-9500 ft. elev.	April - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Low (poorly suitable habitat)
<i>Hulsea vestita</i> ssp. <i>pygmaea</i> Pygmy hulsea	Subalpine forest, gen above about 10,000 ft. elev., San Gorgonio Wilderness	Summer	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	Absent (well below elev. range)
<i>Ivesia argyrocoma</i> Silver-haired ivesia	Pebble plains, dry or seasonally moist meadows and drainages; ±5000-7500 ft. elev.; San Bernardino Mts and a long-disjunct site in Baja Calif mts	June - August	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-2	Occurs (reported by MBA 2000)
<i>Juncus duranii</i> Duran's rush	Meadows or other wet places, montane coniferous forest, 5800-9000 ft. elev.; San Bernardino, San Gabriel, and San Jacinto Mts	July - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High? (suitable habitat occurs)
<i>Lesquerella kingii</i> var. <i>bernardina</i> San Bernardino Mtns. bladderpod	Carbonate soils above about 6800 ft. elev.; San Bernardino Mts. endemic	May - June	Fed: END Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Absent (no suitable habitat)
<i>Lewisia brachycalyx</i> Short-sepaed lewisia	Wet meadows, forest openings, 4500-7500 ft. elev.; San Bernardino Mts to Baja Calif, Utah, New Mex.	May - June	Fed: none Calif: S3.2 CNPS: List 2 R-E-D:2-2-1	Low-Moderate (marginal habitat)
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> Ocellated Humboldt lily	Stream banks and shaded forest or chaparral, usually N-facing slopes; below about 6000 ft. elev; S and central Calif mts	June - July	Fed: none Calif: S3.2 CNPS: List 4 R-E-D:1-2-3	Absent (above elev. range, marginal habitat)
<i>Lilium parryi</i> Lemon lily	Meadows and streambanks above about 4000 ft. elev.; mts. of S Calif. and SE Arizona	July - August	Fed: none Calif: S2.1 CNPS: List 1B R-E-D:2-2-2	Low (marginal habitat)
<i>Linanthus killipii</i> Baldwin Lake linanthus	Pebble plains, alkaline meadows, forest openings, 5500-7800 ft. elev.; San Bernardino Mts endemic	May - July	Fed: none Calif: S2.1 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Malaxis monophyllos</i> ssp. <i>brachypoda</i> Adder's mouth	Meadows above about 7200 ft. elev., San Gorgonio Wilderness (San Bernardino Mts.); historically known from Tahquitz Meadow but evidently extinct there; widely distributed in N America	June - August	Fed: none Calif: S1.1 CNPS: List 2 R-E-D:3-3-1	Absent (no suitable habitat, well below local elev. range)

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<i>Mimulus exiguus</i> San Bernardino Mountain monkeyflower	Meadows, seeps, drainages, 5800-7500 ft. elev.; San Bernardino Mts and high mts of Baja Calif.	June - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-2	High (suitable habitat occurs)
<i>Mimulus purpureus</i> var. <i>purpureus</i> Purple monkeyflower	Meadow edges, forests, drainages, seeps, 6100-7500 ft. elev.; San Bernardino Mts and high mts of Baja Calif.	May - July	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-2	High (suitable habitat occurs)
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	Montane forests and mixed chaparral, ±2000-6500 ft. elev.; San Bernardino, San Gabriel, and Peninsular Ranges	June - August	Fed: none Calif: S3.3 CNPS: List 1B R-E-D:2-1-3	Absent (poorly suitable habitat, above elev. range)
<i>Navarretia peninsularis</i> Baja navarretia	Open, seasonally wet places in coniferous forests, 4800-7500 ft. elev.; mts of central and S Calif. and N Baja Calif.	June - August	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-2	Low (small patches of marginal habitat)
<i>Oxytheca caryophylloides</i> Chickweed oxytheca	Sandy soils in conifer forests, 3900-8500 ft. elev.; S Sierra Nevada, Transverse Ranges, San Jacinto Mts.	July - Sept.	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Oxytheca parishii</i> var. <i>cienegensis</i> Cienega seca oxytheca	Sandy, gen. alluvial granitic soils in open, ±arid conifer forest; perhaps also on carbonate soil in pinyon woodland; about 7000-8000 ft. elev. (lower on carbonate soils?)	June - Sept.	Fed: none Calif: S1.3 CNPS: List 1B R-E-D:3-1-3	Low (all known occurrences well to south and east)
<i>Oxytheca parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	Carbonate soils, about 4200 to 7700 ft. elev.; San Bernardino Mts. endemic; populations fluctuate widely year to year	May - Sept.	Fed: END Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Absent (no suitable habitat)
<i>Oxytropis oreophila</i> Mountain oxytrope	Alpine and subalpine forest, summit of Mt. San Gorgonio, above ca. 11,000 ft. elev.	July - Aug	Fed: none Calif: S2.3 CNPS: List 2 R-E-D:3-1-1	Absent (well below elev. range)
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	Meadows, moist areas in coniferous forest above about 6500 ft. elev.; San Bernardino Mountains and (disjunct) Arizona and New Mex.	June - August	Fed: none Calif: S2.2? CNPS: List 2 R-E-D:2-2-1	High (suitable habitat occurs)
<i>Phacelia exilis</i> (syn. <i>P. mohavensis</i> var. <i>exilis</i>) Transverse Range phacelia	Sandy or gravelly soils, forest openings, meadows, pebble plains, 3500-8800 ft. elev.; S Sierra Nevada and Transverse Ranges	May - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)

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<i>Phacelia mohavensis</i> Mojave phacelia	Sandy or gravelly soils, woodlands, conifer forests, dry meadows and streambeds, 4500-8100 ft. elev.; San Gabriel & San Bernardino Mts	April - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Phlox dolichantha</i> Bear Valley phlox	Montane coniferous forest; 6500-8800 ft. elev.; San Bernardino Mts endemic	June - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Poa atropurpurea</i> San Bernardino bluegrass	Open, flat meadows, 4800-7200 ft. elev.; San Bernardino Mts and Laguna Mts (San Diego Co.)	May - June	Fed: END Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Poliomintha incana</i> Frosted mint	Subshrub; dunes, sandy soils, rocky slopes below about 5500 ft. elev.; SW states; only CA record, Cushenbury Spr, now presumed extinct	June - July	Fed: none USFS: none Calif: SH CNPS: List 1A	Absent (no suitable habitat, above elev. range)
<i>Polystichum kruckebergii</i> Krukeberg's sword fern	Rocky places, montane coniferous forest, 6800-10,400 ft. elev.; Calif. mts to British Columbia, Montana, Utah (occurrence in San Bernardino Mts uncertain)	June - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-1	Absent (poor habitat, geogr. range)
<i>Populus angustifolia</i> Narrow-leaved cottonwood	Riparian habitat in montane coniferous forests, Sierra Nevada Mts. Local report in CNPS data base presumably in error.	Mar - April	Fed: none Calif: S2S3 CNPS: List 2 R-E-D:3-2-1	Absent (local reports based on misidentification)
<i>Pyrrocoma uniflora</i> ssp. <i>gossypina</i> (<i>Haplopappus uniflorus</i> ssp. <i>gossypinus</i>) Bear Valley pyrrocoma	Meadows (usually alkaline), pebble plains, about 5200 - 7600 ft. elev.; San Bernardino Mts endemic	July - August	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Rupertia rigida</i> (syn. <i>Psoralea rigida</i>) Parish's rupertia	Chaparral, forests, and woodlands, below ±8100 ft. elev.; San Bernardino Mts, Peninsular Ranges, Baja Calif.	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-2	High (suitable habitat occurs)
<i>Scutellaria bolanderi</i> ssp. <i>austromontanum</i> Southern mountain skullcap	Stream banks and other moist sites, a few scattered sites from Victorville through San Diego Co; 1900-6500 ft. elev.	June - August	Fed: none Calif: S2.2? CNPS: List 1B R-E-D:2-2-3	Low (marginal habitat, above elev. range)
<i>Sedum niveum</i> Davidson's stonecrop	Rocky ledges and crevices, upper montane coniferous forest, 7100-9800 ft. elev.; San Bernardino Mts, Santa Rosa Mts	June - July	Fed: none Calif: S3.2 CNPS: List 4 R-E-D:1-2-2	Absent (no suitable habitat)

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<i>Selaginella asprella</i> Bluish spike-moss	Rocks, crevices, & rocky soils, dry sites in coniferous forests, 5200-8800 ft. elev.; scattered mtn. ranges of cent. & S Calif., Baja Calif.	July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-2	Low (marginal habitat)
<i>Senecio bernardinus</i> San Bernardino butterweed	Dry meadows (sometimes alkaline), 5800-7500 ft. elev.; San Bernardino Mts endemic	May - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	Low (marginally suitable habitat)
<i>Senecio ionophyllus</i> Tehachapi ragwort	Crevices, rocky places in dry coniferous forest, 4800-8900 ft. elev.; S Sierra Nevada, San Gabriel and San Bernardino Mts	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Low (marginally suitable habitat)
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i> Parish's checkerbloom	Chaparral, oak shrublands, pine forests; San Bernardino Mts and a few Santa Barbara Co sites, about 3200-8200 ft. elev.	June - August	Fed: Candidate Calif: S1.2 CNPS: List 1B R-E-D:3-2-3	Low (marginally suitable habitat)
<i>Sidalcea pedata</i> Bird's foot checkerbloom	Meadows (freshwater or alkaline clay), sometimes streambanks, 5200-8100 ft. elev.; San Bernardino Mts endemic	May - July	Fed: END Calif: END , 1.1 CNPS: List 1B R-E-D:3-3-3	High (suitable habitat occurs)
<i>Sphenopholis obtusata</i> Prairie wedge grass	Riparian woodlands, wet meadows, streambanks; a few widely scattered locations in Calif. but widespread in North America	April - July	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-1	High (suitable habitat occurs)
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	Chaparral, hardwood forests, coniferous forest, about 3900-8100 ft. elev.; mts. of S Calif. (San Bern. Mtn. records much farther west)	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Streptanthus campestris</i> Southern jewelflower	Rocky sites, chaparral, coniferous forest, pinyon woodland, 2900-7500 ft. elev.; Transverse and Peninsular Ranges, Baja Calif.	May - July	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-2	High (suitable habitat occurs)
<i>Swertia neglecta</i> (syn. <i>Frasera neglecta</i>) Pine green-gentian	Coniferous forests and pinyon woodland., 4500-8100 ft. elev.; S Coastal Ranges and Transverse Ranges	May - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D: 1-1-3	High (suitable habitat occurs)
<i>Taraxacum californicum</i> California dandelion	Wet meadows, 6300-7800 ft. elev.; San Bernardino Mts endemic	May - July	Fed: END Calif: S2.1 CNPS: List 1B R-E-D: 3-2-3	High (suitable habitat occurs)

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<i>Thelypodium stenopetalum</i> Slender-petaled thelypodium	Meadows (mesic, usually alkaline clay), about 6200 - 7200 ft. elev.; San Bernardino Mts endemic; all populations in Big Bear and Holcomb Valleys	June - July	Fed: END Calif: END, 1.1 CNPS: List 1B R-E-D:3-3-3	High (suitable habitat occurs)
<i>Trichostema micranthum</i> Small-flowered bluecurls	Dry margins of lakes, meadows, and streams, 6500-7500 ft. elev., San Bernardino Mts and Baja Calif.	July - Sept.	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-1	High (suitable habitat occurs)
<i>Viola pinetorum</i> ssp. <i>grisea</i> Grey-leaved violet	Coniferous forests, about 4800-11,100 ft. elev.; S Sierra Nevada Mts and possibly San Bernardinos [Skinner & Pavlik include SB Mtns in range but Hickman (ed.) does not]	April	Fed: none Calif: S1.3 CNPS: List 1B R-E-D:3-1-3	Low (geographic range)

General references: CDFG 2001, CNPS 2001, Rarefind 2000, Hickman (ed.) 1993, Munz 1974, Sanders et al. 1995, Tibor 2001, US Fish and Wildlife Service 1999.

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Special Status Invertebrates	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Euchloe hyantis ssp. andrewsi</i> Andrews' marble butterfly	Montane chaparral and woodlands, 5000'-6000' elev. in the San Bernardino Mountains	Spring and summer	Fed: FSC Calif: None	Low (above known elev., marginal habitat)
General References: Emmel and Emmel 1973; Garth and Tilden 1986; CDFG 2000b				
Sensitive Amphibian and Reptile Species	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Taricha torosa torosa</i> Coast Range newt	Riparian habitat along permanent or intermittent streams and adj. uplands, breeds in streams	Winter Spring	Fed: None Calif: CSC	Absent (no habitat, above elevation)
<i>Ensatina escholtzii klauberi</i> Large-blotched salamander	Moist sites in forests, e.g. beneath fallen logs; Peninsular Ranges	Spring	Fed: FSC Calif: CSC, S2S3	Low
<i>Ensatina escholtzii croceater</i> Yellow-blotched salamander	Moist sites in forests, e.g. beneath fallen logs; Transverse Ranges	Spring	Fed: FSC Calif: CSC, S2S3	Moderate
<i>Scaphiopus hamondii</i> Western spadefoot toad	Grasslands, open chaparral and pine-oak woodlands, below 4,500 feet elevation	Spring Summer	Fed: FSC Calif: CSC, CP	Absent (above elevation)
<i>Rana muscosa</i> Mountain yellow-legged frog	Perennial mountain streams above about 6000 ft. elev.; Sierra Nevada Mts. and mts. of S. Calif. (where its elev. range historically was as low as 3000 ft.); extinct in much of range.	Just after snow-melt to August (diurnal)	Fed: proposed END Calif: CSC, S2S3	Absent (no suitable habitat)
<i>Aniella pulchra pulchra</i> Silvery legless lizard	Chaparral, pine-oak woodland, riparian vegetation, loose alluvium, leaf litter near drainages, below 6500 ft. elev.	Spring	Fed: FSC Calif: CSC	Low (above known elev.)
<i>Phrynosoma coronatum ssp. blainvillei</i> San Diego horned lizard	Forest, shrubland or grassland with sandy areas; W Calif. from LA Co. S through Baja Calif., below ±6000 ft. elev.	Spring - summer	Fed: FSC Calif: CSC S2S3	Low (above known elev.)
<i>Cnemidophorus tigris multiscutatus</i> Coastal western whiptail	Woodlands, shrublands; SW Calif. through much of Baja Calif., below ±7500 ft. elev.	Spring - summer	Fed: SOC Calif: S2S3	High
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	Rock outcrops in shrublands, to 5000 ft. elev.; SW Calif. through much of N Baja Calif.	Spring - summer	Fed: SOC Calif: S2S3	Absent (above known elev., no suitable outcrops)
<i>Sceloporus graciosus vandenbergianus</i> Southern sagebrush lizard	Forest, shrubland above about 3000 ft. elev.; Transverse and Peninsular Ranges, S Calif and N Baja Calif	Spring-summer	Fed: FSC Calif: none	Expected

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Sensitive Amphibian and Reptile Species	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Lichanura trivirgata roseofusca</i> Coastal rosy boa	Rocky, chaparral-covered hillsides; LA Co. through NW Baja Calif. Elevation to about 4,500 ft.	Spring - summer	Fed: FSC Calif: S3S4	Absent (well above known elevation)
<i>Charina bottae umbricata</i> Southern rubber boa	Moist montane forest and woodland; Mt. Pinos, San Bernardino and San Jacinto Mts; usually cool, moist areas w/ deep rocky crevices (no records in San Gabriel Mts, but habitat and elev. seem suitable)	Summer	Fed: FSC Calif: THR S2S3	Low (see text)
<i>Salvadora hexalepis virgulata</i> Coast patch-nosed snake	Shrublands, usually with open sand; Sta. Barb. Co. through SW Calif., to NW Baja Calif. Elevation to about 4,500 ft.	Spring - summer	Fed: FSC Calif: CSC S2S3	Absent (poor habitat, above elevation)
<i>Diadophis punctatus modestus</i> San Bernardino ringneck snake	Variety of habitats, cismontane to about 6500' elevation, typically under rocks and logs	Spring - summer	Fed: FSC Calif: None S2	Low (above known elev.)
<i>Lampropeltis zonata parvirubra</i> San Bernardino Mountain kingsnake	Forests and chaparral with rock outcrops or talus, often riparian, about 1200 - 8100 ft. elev.; San Gabriel, San Bernardino and San Jacinto Mts endemic	Spring - summer	Fed: FSC Calif: CSC S2?	High (uncommon)
<i>Thamnophis hammondi hammondi</i> Two-striped garter snake (formerly classified as ssp. of western aquatic garter snake, <i>T. couchii</i>)	In or near perennial fresh water and adjacent riparian habitat, usually about pools in streams; SW Calif and NW Baja Calif. to ±7000 ft. elev.	Spring - summer	Fed: None Calif: CSC S2	Absent (no suitable habitat)

General references: CDFG 2000, CDFG 2000b, Jennings and Hayes 1994, Stebbins 1985, Stephenson and Calcarone 1999; San Bernardino National Forest 2000, USFWS 1999, Zeiner et al. 1988.

Sensitive Bird Species	Habitat and Distribution	Local occurrence	Status Designation	Occurrence Probability
<i>Elanus leucereus</i> White-tailed kite	Breeds in woodlands and riparian forests, forages over open terrain; Pacific Coast (Calif., N Baja, Oregon), other scattered localities worldwide	Spring - summer	Fed: None Calif: CFP	Nesting: Low Foraging: Low
<i>Haliaeetus leucocephalus</i> Bald eagle	Breed in large trees, usually near major rivers or lakes; wide but scattered distribution in N America; esp. coastal regions	Winter	FWS: END Calif: S3 END	Nesting: Absent Winter: Expected

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<i>Aquila chrysaetos</i> Golden eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Year-around	Fed: None Calif: CSC S3 (year-around)	Nesting: Absent Foraging: High (rare)
<i>Circus cyaneus</i> Northern harrier	Breeds colonially in grasslands and wetlands; forages over open terrain; N America and Eurasia	Winter; rare in summer	Fed: None Calif: S3 (nesting)	Nesting: Absent Foraging: Low
<i>Buteo regalis</i> Ferruginous hawk	Forages over grassland and shrubland; winters in W and SW N Amer. (breeds in Great Basin and N plains)	Winter	Fed: FSC Calif: CSC S3S4 (wintering)	Nesting: Absent Winter: Low
<i>Accipiter striatus</i> Sharp-shinned hawk	Nests and hunts in forests and woodlands, also forages in open areas; throughout N America, parts of S America; rarely nests in San Bernardino Mts.	Spring - early summer	Fed: None Calif: CSC S3 (nesting only)	Nesting: Low (local rarity) Winter: Expected
<i>Accipiter cooperii</i> Cooper's hawk	Nests and hunts in forests and woodlands occasionally forages in open areas; most of US, Central and S America	Year-around	Fed: None Calif: CSC S3 (nesting only)	Nesting: Moderate Foraging: Expected
<i>Accipiter gentilis</i> Northern goshawk	Dense coniferous forests; much of N Amer (Canada, Rocky Mtns, montane W US); rarely reported in San Jacinto, San Bernardino Mts..	Spring-Fall	Fed: FSC Calif: CSC S3 (nesting)	Nesting: Absent Foraging: Low
<i>Falco peregrinus anatum</i> American peregrine falcon	Nests on high cliffs, forages primarily over open lands, fresh and saltwater marshes	Spring-Fall	Fed: delisted Calif: END S3 (nesting)	Nesting: Absent Foraging: Low
<i>Falco mexicanus</i> Prairie falcon	Nests on high cliffs, forages primarily over open lands; occurs throughout arid western US and Mexico	Year-around	Fed: none Calif: CSC S3 (nesting only)	Nesting: Absent Foraging: Low
<i>Falco columbaris</i> Merlin	Uncommon wintering species in S Calif. desert and valleys (breeds in northern N America and Eurasia)	Winter	Fed: none Calif: CSC S3 (winter)	Nesting: Absent Winter: High (rare)
<i>Strix occidentalis occidentalis</i> California spotted owl	Nests and forages year-around in dense conifer, oak, or (sometimes) riparian forest; Sierra Nevada, cent & S Coast Ranges, S Calif mts.	Year-around	Fed: FSC Calif: CSC S3	Nesting: Low Foraging: High

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Sensitive Bird Species	Habitat and Distribution	Local occurrence	Status Designation	Occurrence Probability
<i>Asio otus</i> Long-eared owl	Breeds and roosts in riparian forests and woodlands or other dense forest; forages (at night) over open lands; increasingly rare breeding in S Calif.; occurs through N America and Eurasia	Year-around	Fed: None Calif: S3 CSC	Nesting: Low Foraging: Moderate
<i>Cypseloides niger</i> Black swift	Mountains and along coastline; nest behind waterfalls on cliffs; capture insects in flight	Summer	Fed: None Calif: CSC S2	Nesting: Absent Foraging: Low
<i>Empidonax traillii</i> <i>extimus</i> Southwestern willow flycatcher	Breeds in dense riparian vegetation, willows are most commonly used, but other dense riparian vegetation is occasionally used, surface water is common but not essential	Spring - summer	Fed: END Calif: END (at species level)	Nesting: Low-moderate Migrant: High (rare)
<i>Lanius ludovicianus</i> Loggerhead shrike	Woodlands, shrublands, open areas with scattered perch sites; widespread in N America	Year-around	Fed: FSC Calif: CSC S4	Absent (above elevation)
<i>Vireo vicinior</i> Gray vireo	Arid chaparral, oak shrubland, and pinyon-juniper woodlands; breeds in mountains of SW US, winters in W Mexico	Spring - summer	Fed: None Calif: CSC S2	Low (habitat marginal at best)
<i>Eremophila alpestris actia</i> California horned lark	Grasslands, meadows, alkali flats; breeds in western Calif (San Diego Co through Humboldt Co) and Baja Calif	Summer	Fed: None Calif: CSC, S3	Absent (above elevation)
<i>Progne subis</i> Purple martin	Secondary cavity nester, hardwood and conifer woodlands; much of N. Amer., rare in Calif. (almost all extant S. Calif. breeding sites are montane)	Summer	Fed: None Calif: CSC S3 (nesting only)	Low (local rarity)
<i>Dendroica petechia</i> Yellow warbler	Breeds in riparian habitat; much of N Amer. but increasingly rare in S Calif. (habitat loss, cowbird parasitism); winters Mex. to S Amer.	Spring - summer	Fed: None Calif: CSC S2 (nesting only)	Low-moderate
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	Coastal sage scrub, open chaparral; S Calif. and NW Baja Calif.	Year - around	Fed: FSC Calif: CSC S2S3	Absent (above elevation)
<i>Amphispiza belli belli</i> Bell's sage sparrow	Coastal sage scrub, chaparral, saltbush scrub, cismontane cent. and S Calif., NW Baja Calif.	Year - around	Fed: FSC Calif: CSC S2?	Absent (above elevation)
<i>Piranga flava</i> Hepatic tanager	Pinyon woodland with pockets of taller white fir and Jeffrey pine, pine oak woodlands on desert slopes	Spring - summer	Fed: None Calif: CSC S2 (nesting only)	Low (marginal habitat)

General references: CDFG 2000, CDFG 2000b, Ehrlich et al. 1988, Garrett & Dunn 1981, Grinnell & Miller 1944,

APPENDIX A

Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

National Geographic Society 1999, Remsen 1978, USFWS 1999, Zeiner et al. 1990.

Sensitive Mammals	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Antrozous pallidus</i> Pallid bat	Rock outcrops of shrublands, mostly below about 6000 ft. elev.; Calif (exc high mts), SW N Amer through interior Oregon and Washington; hibernates in winter	Warm season	Fed: None Calif: CSC S3	Roosting: Low Foraging: Low
<i>Euderma maculatum</i> Spotted bat	Desert (cool seasons) to pine forest (summer), much of SW N Amer. but very rare; roosts in deep crevices in cliffs, feeds over open water	Unknown	Fed: FSC Calif: CSC S2S3	Roosting: Absent Foraging: Unknown
<i>Eumops perotis californicus</i> Greater western mastiff bat	Lowlands (with rare exceptions); cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roost in deep rock crevices, forage over wide area	Year-around	Fed: FSC Calif: CSC S3?	Roosting: Absent Foraging: Low
<i>Plecotus (Corynorhinus) townsendii townsendii</i> Pacific western big-eared bat	Many habitats throughout Calif and W N Amer, scattered pop'ns in E; day roosts in caves, tunnels, mines; feed primarily on moths	Year-around	Fed: FSC Calif: CSC S2S3	Roosting: Absent Foraging: Unknown
<i>Myotis lucifugus</i> Occult little brown bat	Gen pine forests, 6000-9000 ft. elev. (also lower elev. riparian habitat); roosts in buildings, trees, rocks, etc.; feed over water or open sites; hiber-nates in winter; SE Calif through Arizona and New Mexico	warm season	FWS: FSC Calif: CSC S2S3	Roosting: High Foraging: High
<i>Myotis yumanensis</i> Yuma myotis	W North America, British Columbia to cent. Mexico; in the US, mostly the Pacific states; roost in buildings, bridges, caves, mines; feed over open water	warm season?	Fed: FSC Calif: CSC S4?	Roosting: Low Foraging: Low
<i>Myotis volans</i> Long-legged myotis	W North America, SE Alaska to Vera Cruz, E through Rocky Mtns; forests and arid woodland above about 4000 ft. inland, to sea level in Calif.; roost in buildings, crevices, and trees; forage over water and in forest openings	warm season?	Fed: FSC Calif: S4?	Roosting: Moderate Foraging: Moderate
<i>Myotis thysanodes</i> Fringed myotis	W North America, primarily 4-corners states, also Calif. and other scattered locns.; arid forests, woodlands, gen. 4000-7000 ft. elev.; roost in caves, mines, buildings, rock crevices	warm season?	Fed: FSC Calif: S4	Roosting: Low Foraging: Moderate

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Sensitive Mammals	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Myotis evotis</i> Long-eared myotis	W North America, British Columbia to N Baja, E to Rocky Mtns; conifer forests; roosts poorly known (use trees, buildings and caves); forage in woods & over water	Year-around	Fed: FSC Calif: S4?	Roosting: Moderate Foraging: High
<i>Myotis ciliolabrum</i> (<i>M. leibii</i>) Small footed myotis	Much of W North America, wide elev. range; roost in caves, mines, buildings, rock crevices, sometimes buildings & bridges; forage over water and in open woods	Year-around	Fed: FSC Calif: S?	Roosting: Low Foraging: High
<i>Nyctinomops femorosaccus</i> (syn. <i>Tadarida f.</i>) Pocketed free-tailed bat	Deserts and arid lowlands; E Riv and San Diego Cos, through SW US, Baja Calif., mainland Mexico; Roost mainly in crevices of high cliffs	Year-around	Fed: None Calif: CSC S2S3	Roosting: Absent Foraging: Unknown
<i>Perognathus alticola alticola</i> White-eared pocket mouse	Open pine forests with bracken fern and sage brush, historically from San Bernardino Mts, locally extirpated	Year-around	Fed: FSC Calif: CSC THSH	Low (habitat marginal; presumed extinct locally)
<i>Glaucomys sabrinus californicus</i> San Bernardino Mountain flying squirrel	Occurs in mixed conifer forest (white fir, black oak) above ±5200 ft. elev.; SB and San Jacinto Mts (expected in San Gabriels)	Year-around (nocturnal)	Fed: FSC Calif: CSC, S3?	Nesting: Low Foraging: High
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	Open country with grass, sagebrush, or other shrubs, sandy gravelly soils	Year-around	Fed: FSC Calif: CSC, S3S4	Absent (no suitable habitat)
<i>Ovis canadensis nelsoni</i> Nelson's bighorn sheep	Remote cliffs and steep rocky terrain	Year-around	Fed: None Calif: S3	Absent
<i>Taxidea taxus</i> American badger	Mountains, deserts, interior valleys where burrowing animals are avail as prey and soil permits digging; throughout cent and W N Amer	Year-around	Fed: None USFS: sensitive Calif: S4	Expected rarely
<i>Felis concolor</i> Mountain lion	Large natural areas where prey (primarily deer) is available; throughout W N Amer	Year-around	Fed: None USFS: sensitive Calif: none	Expected rarely

General references: Barbour & Davis 1969, CDFG 2000, CDFG2000b, Hall 1981, Ingles 1965, Williams 1976, USFWS 1999.

Federal designations: (federal Endangered Species Act, US Fish and Wildlife Service):

END: Federally listed, endangered.

THR: Federally listed, threatened.

C: Candidate for listing as threatened or endangered. Sufficient data are available to support federal listing, but not listed at this time. (Prior to 1996, FWS maintained a list of "category 2 candidates," of species for which threat and/or distribution data not sufficient to support federal listing. Some agencies, but *not* FWS, continue to report these as federal "species of concern.")

APPENDIX A

Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

State designations: (California Endangered Species Act, California Dept. of Fish and Game)

END: State listed, endangered.

THR: State listed, threatened.

RARE: State listed as rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)

CDF&G Natural Diversity Data Base Designations: Applied to special status plants and sensitive plant communities; where correct category is uncertain, CDF&G uses two categories or question marks.

S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.

S1.1: Very threatened

S1.2: Threatened

S1.3: No current threats known

S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimel suffixes same as above).

S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimel suffixes same as above).

S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.

S5: Demonstrably secure or ineradicable in California. No threat rank.

SH: Presumed extinct in California.

California Native Plant Society (CNPS) designations: (Note: According to CNPS (Smith and Berg 1988), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code.)

List 1A: Plants presumed extinct in California.

List 1B: Plants rare and endangered in California and throughout their range.

List 2: Plants rare, threatened or endangered in California but more common elsewhere in their range.

List 3: Plants about which we need more information; a review list.

List 4: Plants of limited distribution; a watch list.

CNPS R-E-D Code:

Rarity 1: Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.

2: Occurrence confined to several populations or one extended population.

3: Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

Endangerment 1: Not endangered.

2: Endangered in a portion of its range.

3: Endangered throughout its range.

Distribution 1: More or less widespread outside California.

2: Rare outside California.

3: Endemic to California (i.e., does not occur outside California).

Definitions of occurrence probability:

Occurs: Observed on the site during surveys described here, or recorded on-site by other qualified biologists.

High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.

Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.

Low: Site is within the known range of the species but habitat on the site is rarely used by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Unknown: No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.



An Environmental Planning/Resource
Management Corporation

December 17, 2001

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RBF CONSULTING

VIA E-MAIL AND MAIL

Mr. Glenn Lajoie
RBF Consulting
14725 Alton Parkway
Irvine, CA 92618

Subject: Biological Constraints Report for the County of San Bernardino Land Use
Services Department, Moon Camp Environmental Impact Report

Dear Glenn:

BonTerra Consulting ecologists Brian Leatherman and Scott White conducted a field survey of the Moon Camp project site on December 10, 2001. The project site is located in Fawnskin, on the northern shore of Big Bear Lake, in San Bernardino County, California. The emphasis of the field survey was to evaluate the habitat suitability for special status plant and wildlife species and determine the need for further focused biological surveys. During the field survey, weather was partly cloudy and cold (31°F) with light to moderate wind. This letter report briefly describes the vegetation and habitat found on the property, and offers recommendations for further surveys to meet the documentation requirements of the California Environmental Quality Act (CEQA). The discussion presented in this letter report is limited to listed Threatened or Endangered plant and wildlife species and a few others of special local concern (California spotted owl [*Strix occidentalis occidentalis*], San Bernardino Mountains flying squirrel [*Glaucomys sabrinus californicus*], and white-eared pocket mouse [*Perognathus alticola alticola*]). Many other special status plant and wildlife species are known from the region, and some of these may occur on the site. These species would be addressed in more detail in the Biological Resource section of the Environmental Impact Report (EIR) for the proposed project. Appendix A contains a list of all special status plant and wildlife species within the region.

Vegetation and Habitat

Most of the site is open Jeffrey pine (*Pinus jeffreyi*) forest with scattered western juniper (*Juniperus occidentalis*) and California black oak (*Quercus kelloggii*) in the overstory. The tree canopy is especially open in the western half of the site. In the eastern half, especially around a mapped ephemeral stream, overstory canopy is higher. Beneath the trees, there is an open shrub layer consisting of Great Basin sagebrush (*Artemisia tridentata*), curleaf mountain mahogany (*Cercocarpus ledifolius*), birchleaf mountain mahogany (*C. betuloides*), cupleaf ceanothus (*Ceanothus greggii*) and a few other species. The herbaceous layer includes a variety of grasses and other species, most of which could not be identified this time of year. Standing dead trees, fallen trees, and leaf litter are fairly common, especially in the eastern half of the site.

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Patches of meadow and riparian habitat occur along the southern margin of the site, between Highway 38 and the lake shore. Most plants could not be identified, but dominant herbaceous species present include sedges (*Carex* spp.), rushes (*Juncus* spp.) and grasses (genera unknown). Shrubby willow trees (*Salix* sp.) occur in scattered patches.

Special Status Wildlife

In general, habitat on the site is marginally suitable for several special status wildlife species of the San Bernardino Mountains. The discussion below is limited to listed Threatened or Endangered wildlife species and a few others of special local concern.

California Spotted Owl

The California spotted owl generally does not nest in open forest habitat, but is likely to forage on the project site. The nest of a dusky-footed woodrat (*Neotoma fuscipes*), which is the owl's primary prey, was observed on the site. The California spotted owl has a low potential to nest on the site due to the lack of dense conifer, oak, or riparian forest onsite.

Southern Rubber Boa

Southern rubber boa (*Charina bottae umbratica*), a state-listed Threatened snake, generally occurs in mesic forest habitat with rocky outcrops where it hibernates. This species is extremely secretive and lives underground for much of the time and can be very difficult to detect. The southern rubber boa has a low probability of occurring on the site.

San Bernardino Mountains Flying Squirrel

San Bernardino Mountains flying squirrel generally occurs where black oak and white fir (*Abies concolor*) are more common than currently present on the project site. This species is not expected to nest on the site but likely forages in the area.

White-eared Pocket Mouse

The white-eared pocket mouse historically occurred in the San Bernardino Mountains but has not been recorded in this area in decades. It apparently occurred in pine forest with bracken fern understory, and thus would not be expected on the project site.

Mountain Yellow-legged Frog

The U.S. Geologic Service-designated blue line stream near the eastern border of the project site does not provide suitable habitat for the mountain yellow-legged frog (*Rana muscosa*), a species proposed for federal listing as Endangered. This species is not expected due to the lack of suitable habitat.

Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) overwinter at Big Bear Lake. They are commonly observed during winter roosting in trees in the immediate vicinity of the project site, and probably on the site itself, which offers a wide view of the lake surface. Hunting eagles use perches in trees on the lake shore to watch for prey (fish, waterfowl) on the lake. Although this species is not expected to nest onsite, it is expected to occur onsite during winter to forage on the adjacent lake.

Southwestern Willow Flycatcher

Patches of willow trees along the lake shore could support breeding southwestern willow flycatchers, a state and federally listed Endangered migratory bird.

Special Status Plants

Open areas in the western portion of the project site match published descriptions of "pebble plains" (Derby & Wilson 1978; 1979), a unique habitat type supporting several listed Threatened or Endangered plant species. One Threatened species, ash-gray Indian paintbrush (*Castilleja cinera*), has been recorded on the site (MBA 2000). The site survey confirmed the occurrence of ash-gray Indian paintbrush and noted other low growing plants which could not be identified this time of year. One species on the site is a matting buckwheat, either Wright's buckwheat (*Eriogonum wrightii* ssp. *subscaposum*, a common species) or southern mountain buckwheat (*E. kennedyi* var. *austromontanum*, federally listed as Threatened). One other listed pebble plains endemic plant which could occur, but could not be documented during winter, is Bear Valley Sandwort (*Arenaria ursina*). In addition, several other special status plants not listed as Threatened or Endangered could likely occur in this habitat. These species are listed in Appendix A.

Patches of meadow and riparian habitat occur along the southern margin of the site, between Highway 38 and the lake shore. There are four federally listed plants endemic to meadows in the Big Bear Valley; these include San Bernardino bluegrass (*Poa atropurpurea*), bird's foot checkerbloom (*Sidalcea pedata*), California dandelion (*Taraxacum californicum*), and slender-petaled thelypodium (*Thelypodium stenopetalum*). These species all have a potential to occur on the project site.

Recommendations

Adverse impacts to any of the listed Threatened or Endangered species mentioned above, or to some other species not listed (California spotted owl, white-eared pocket mouse) may meet CEQA significance criteria. To evaluate the proposed project's impacts in terms of CEQA, it will be necessary to determine, to the extent possible, the presence or absence of each of the above species. Focused biological surveys that are recommended or those surveys that are not warranted for each of the species discussed above are outlined below.

California Spotted Owl

The California spotted owl has a low potential to nest on the site. Because this species potentially occurs onsite, focused surveys following U.S. Fish and Wildlife Service (USFWS) protocol are recommended. The site should be visited at night six times during the breeding season. (Note that the California spotted owl is not on state or federal Endangered species lists but has been petitioned for listing and its local population is in steep decline [Noon & McKelvey 1992; LaHaye et al. 1994]).

Southern Rubber Boa

The western half of the site is not suitable habitat for the southern rubber boa due to open, dry conditions with little leaf litter or other cover material. The eastern half is marginally suitable, with moderate leaf cover and numerous down logs. No rock outcrops (normally used for hibernation) occur on the site. The site is mapped as potential habitat by the California Department of Fish and Game (CDFG). The CDFG has developed a draft survey protocol that recommends three years of intensive surveys, but has not yet released the protocol. In the absence of any formal protocol, it is recommended that a survey for the rubber boa be conducted using three pitfall trap arrays, all in the eastern half of the property. Please note that failure to detect the southern rubber boa will

not enable us to reach a conclusion of "absent" because of this species secretive nature. However, a focused trapping effort will at least provide basis for a conclusion that they are unlikely to occur.

San Bernardino Mountains Flying Squirrel

Flying squirrels are uncommon and difficult to find. The site does not support their favored forest tree species in high densities and is likely only marginal habitat. Flying squirrels are almost never seen except when deliberately trapped (e.g., William La Haye, in 15 years of nocturnal spotted owl surveys, has seen only one flying squirrel). There is no formal survey protocol, but presence or absence determinations would necessitate nocturnal live-trapping surveys carried out over several nights, using fruit and/or fungi as trap bait. BonTerra does not recommend focused trapping surveys because (1) the species is not listed Threatened or Endangered and does not appear to meet this criteria under CEQA guidelines and (2) no recognized survey methodology exists, so failure to find flying squirrels may not support a determination of "absent". We recognize that San Bernardino County may request focused surveys of some type, and will design a methodology to comply if requested.

White-eared Pocket Mouse

This pocket mouse has been considered extinct locally, but little effort has been made to substantiate this presumption. Impacts, if they occur, would probably meet CEQA significance criteria. The site does not support their favored forest understory composition (bracken fern) and is likely not suitable habitat. As described above for San Bernardino Mountains flying squirrel, there is no formal survey protocol. Surveys would likely require warm-season nocturnal live-trapping surveys carried out over several nights, using grain, peanut butter, or oats as trap bait. We do not recommend focused trapping surveys for the same reasons described above for San Bernardino Mountains flying squirrel.

Mountain Yellow-legged Frog

This species is not expected on the project site due to the lack of suitable habitat. Therefore, no focused surveys are recommended for this species.

Bald Eagle

BonTerra does not recommend surveys, since bald eagle use of perch trees in the area has already been well documented. The use of the site by bald eagles will be documented in the resources section of the EIR based on recorded occurrences of eagles onsite and in the immediate vicinity, according the Forest Service information and other sources. Mitigation measures will be identified in the EIR that minimize the loss of suitable perch trees within view of the lake.

Southwestern Willow Flycatcher

Following USFWS protocol, patches of willow scrub habitat along the lake shore should be visited five times during breeding season to determine presence or absence.

Special Status Plants

The site should be thoroughly surveyed by a qualified botanist familiar with the local flora at least three times during the spring and summer, scheduled to coincide with the flowering seasons of listed species potentially occurring in the area. BonTerra recommends scheduling the field visits as follows: (1) early spring (late April or early May) to survey for San Bernardino bluegrass (it may flower through August, but is best searched for early because two very similar and abundant species, *P. pratensis* and *P. palustris* begin flowering in June); (2) late spring, to coincide with the

height of flowering season for the area; and (3) mid-summer (late July or later), to coincide with flowering season of southern mountain buckwheat.

If the EIR proceeds prior to the completion of special status species surveys listed above, a finding of potentially significant may be made for project impacts. Mitigation for these impacts will include completion of the focused surveys, and mitigation that would be required if the species were found to be present. If surveys are completed during the public review period of the environmental document, the survey findings will be incorporated into the responses to the comments on the document.

Thank you for the opportunity to work on this project. If you have any questions about this report, please feel free to call me at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING


Ann M. Johnston
Associate Principal, Biological Services

Attachments: Appendix A

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APPENDIX A

Table 1. Special status plants of the Big Bear Valley and surrounding mountains.

Special Status Plants	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
<i>Abronia nana</i> ssp. <i>covillei</i> Coville's dwarf abronia	Carbonate and sandy soils within pinon-juniper woodlands; San Bernardino Mts. and mountains of E Mojave, ±5200-9200 ft.	May - August	Fed: none Calif: S3.2 CNPS: List 4 R-E-D:1-2-1	Low (marginally suitable habitat)
<i>Allium parishii</i> Parish's onion	Open shrublands & woodlands, gen. loose soil of bajada or mountain slopes, often carbonate soils, about 3000 - 6000 ft. elev.	Apr - May	Fed: none Calif: S3.3? CNPS: List 4 R-E-D:1-1-2	Low (suitable habitat, but above known elev. range)
<i>Antennaria marginata</i> White-margined everlasting	Dry places in conifer forests, above about 4500 ft. elev.; Arizona to Colorado, Texas, and Sonora, disjunct to San Bernardino Mts (Barton Flats area)	May - August	Fed: none Calif: S1.3 CNPS: List 2 R-E-D:3-1-1	Low (margin of geogr. range, distant from only known S.B. Mts. locn.)
<i>Arabis breweri</i> var. <i>pecuniaria</i> San Bernardino rock-cress	Only two known occurrences, on rocky ledges in San Geronio Wilderness above about 9000 ft. elev.	Mar - Aug	Fed: none Calif: S1.2 CNPS: List 1B R-E-D:3-2-3	Absent (well below elev. range)
<i>Arabis dispar</i> Pinyon rock-cress	Granitic gravelly soils, Joshua tree woodland, pinyon-juniper woodland, desert shrubland; about 3900 - 8000 ft. elev.; Mojave Desert & adjacent Mts.	March - June	Fed: none Calif: S2.3 CNPS: List 2 R-E-D:2-1-1	Low (poorly suitable habitat)
<i>Arabis parishii</i> Parish's rock cress	Pebble plains; open dry sites in coniferous forest; about 6300-9500 ft. elev.; San Bernardino Mts. endemic	April - May	Fed: none Calif: S2.1 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Arabis shockleyi</i> Shockley's rock-cress	Carbonate or quartzite soil, pinyon-juniper woodland; about 3000 to 7000 ft. elev.; N slope of San Bernardino Mts and disjunct to Inyo Co., Nevada, Utah	May - June	Fed: none Calif: S 2.2 CNPS: List 2 R-E-D:3-2-1	Low (poorly suitable habitat)
<i>Arenaria lanuginosa</i> ssp. <i>saxosa</i> (<i>A. confusa</i>) Rock sandwort	Streamsides, sandy soils in meadows, about 5900 to 9000 ft. elev.; San Bernardino Mts. and mts. of N Baja Calif.	July - Aug	Fed: none Calif: S1.3 CNPS: 2 R-E-D:3-1-1	Moderate (moderately suitable habitat)
<i>Arenaria ursina</i> Bear Valley sandwort	Pebble plains, carbonate soils, about 6400 - 6900 ft. elev.; San Bernardino Mts. endemic	June - July	Fed: THR Calif: S2.1 CNPS: 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Astragalus albens</i> Cushenbury milk vetch	Carbonate outcrops and alluvial / colluvial deposits to about 6000 ft. elev.; San Bernardino Mts endemic	March - May	Fed: END Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Absent (no suitable habitat)

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<i>Astragalus bicristatus</i> Crested milk vetch	Rocky slopes, montane coniferous forests; 5500-8200 ft. elev.; San Bernardino, San Gabriel, and San Jacinto Mts	May - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Astragalus lentiginosus</i> var. <i>sierrae</i> Big Bear Valley milk vetch	Rocky meadows, pine woodlands, 5800-8500 ft. elev.; San Bernardino Mts. endemic	April - August	Fed: none Calif: S1? CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Astragalus leucolobus</i> Bear Valley woollypod	Rocky soils, pine forests and sagebrush scrub, 5600-8000 ft. elev.; San Bernardino, San Gabriel, San Jacinto, and Sta Rosa Mts.	May - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	Occurs? (tentative identification during winter)
<i>Atriplex parishii</i> Parish's smallscale	Alkali sink, saltbush scrub; Central Valley, Palm Springs, Big Bear Valley; presumed extinct until recent rediscovery in San Jacinto Valley	June - October	Fed: none Calif: S1.1 CNPS: List 1B R-E-D:3-3-2	Absent (no suitable habitat)
<i>Berberis fremontii</i> Fremont's barberry	Rocky areas; Joshua tree, pinyon and juniper woodl, about 3000-6000 ft.; Mojave Des (CA, AZ, UT, NM) and Peninsular Ranges; historic record on Big Bear City quad now presumed extinct	April - June	Fed: none Calif: S2? CNPS: List 3 R-E-D:??-1	Absent (no suitable habitat, above elev. range)
<i>Botrychium crenulatum</i> Scalloped moonwort	Freshwater meadows, marshes, bogs, 4800-8100 ft. elev.; high mts. throughout Calif., to Washington and Utah	June - July	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-1	Absent (no suitable habitat)
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa lily	Meadows and other sites where water available in spring, $\pm$ 3900-7200 ft. elev.; S Coast Ranges, Transverse Ranges	May - June	Fed: none Calif: S2.1 CNPS: List 1B R-E-D:2-2-3	Moderate (marginally suitable habitat)
<i>Calochortus plummerae</i> Plummer's mariposa lily	Chaparral, alluvial fans, pine forest, below $\pm$ 5500 ft. elev.; widespread but uncommon throughout S. Calif. mtns., foothills & valleys	May - July	Fed: none Calif: S3.2 CNPS: List 1B R-E-D:2-2-3	Absent (above elev. range)
<i>Castilleja cinerea</i> Ash-gray Indian paintbrush	Pebble plains, dry meadows, about 5900 to 9100 ft. elev.; San Bernardino Mountains endemic	May - August	Fed: THR Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	Occurs (see text)
<i>Castilleja lasiorhyncha</i> (syn. <i>Orthocarpus</i> L.) San Bernardino Mountain owl's clover	Meadows, streamsides, seeps, other mesic sites, $\pm$ 4200-7500 ft. elev.; S Calif. mtns.	June - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)

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<i>Dryopteris filix-mas</i> Male fern	Widespread in N hemisphere, esp. at high latitudes; only two widely separated locations in Calif., incl. one in Holcomb Valley	July - Sept.	Fed: none Calif: S1.3 CNPS: List 2 R-E-D:3-1-1	Low (local rarity)
<i>Dudleya abramsii</i> ssp. <i>affinis</i> San Bernardino Mts. dudleya	Pebble plains & rocky outcrops (often on carbonate); pinyon woodland, open pine forests, 5800-8500 ft. elev.; San Bernardino Mts. endemic	April - June	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	Moderate (marginal habitat)
<i>Erigeron breweri</i> var. <i>jacintus</i> San Jacinto Mts. daisy	Open rocky places on mountain slopes and ridgetops, above about 8800 ft. elev.; San Jacinto, San Bernardino, and San Gabriel Mts	June - Sept.	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Absent (below elev. range)
<i>Erigeron parishii</i> Parish's daisy	Carbonate soils to 6400 feet elev., San Bernardino Mountains endemic	May - June	Fed: THR Calif: 2.1 CNPS: 1B R-E-D:2-3-3	Absent (no suitable habitat)
<i>Erigeron unicaulis</i> Limestone daisy	Limestone soils of desert mountain ranges; eastern Calif. to Nevada; above about 6800 ft. elev. Local report probably erroneous (misidentified <i>E. aphanactis</i> ?)	June - July	Fed: none Calif: S1 CNPS: List 2 R-E-D:3-2-1	Absent (no suitable habitat, outside geogr. range)
<i>Eriogonum foliosum</i> Leafy buckwheat	Sand; chaparral, lower montane coniferous forest, pinyon wld., 3900-7200 ft. elev.; scattered locations, Big Bear Valley to N Baja Calif.	July - Oct.	Fed: none Calif: SH CNPS: 1B R-E-D:3-2-2	High (suitable habitat occurs)
<i>Eriogonum kennedyi</i> var. <i>alpigenum</i> Southern alpine buckwheat	Granitic slopes and mountaintops above about 8750 ft. elev.; Peaks of San Gabriel, San Bernardino Mts., and Mt. Pinos, also pebble plains around Big Pine Flat	July - August	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	Absent (below elev. range)
<i>Eriogonum kennedyi</i> var. <i>austromontanum</i> Southern mountain buckwheat	Pebble plains and similar soils, about 6200 - 6900 ft. elev.; nearly endemic to Big Bear Valley area but also occurs at Mt. Pinos	July - August	Fed: THR Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	Absent (field survey)
<i>Eriogonum ovalifolium</i> var. <i>vineum</i> Cushenbury buckwheat	Carbonate soils, outcrops, and talus; about 3900 to 7000 ft. elev.; San Bernardino Mountains endemic	May - June	Fed: END Calif: 1.1 CNPS: List 1B R-E-D:3-3-3	Absent (no suitable habitat)

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<i>Eriophyllum lanatum</i> var. <i>obovatum</i> Southern Sierra woolly sunflower	Open montane coniferous forests, 4200-8100 ft. elev.; S Sierra Nevada and western San Bernardino Mts.	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Low (margin of geogr. range)
<i>Fimbristylis thermalis</i> Hot springs fimbristylis	Alkaline meadows near hot springs; San Bernardino Mts., Sierra Nevada Mts. (Kern, Mono, Inyo Cos.), Nevada, and Arizona; wide elev. range	July - Sept.	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-1	Absent (no suitable habitat)
<i>Galium jepsonii</i> (syn. <i>G. angustifolium</i> var. <i>subglabrum</i>) Jepson's bedstraw	Sandy or gravelly soils, montane coniferous forest, 6500-8100 ft. elev.; San Gabriel and San Bernardino Mts	July - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Galium johnstonii</i> (syn. <i>G. angustifolium</i> var. <i>pinetorum</i>) Johnston's bedstraw	Dry rocky slopes, open mixed conifer forest, 5300-7500 ft. elev.; San Gabriel and San Bernardino Mts.	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Gentiana fremontii</i> Moss gentian	Meadows; only Calif. occurrences in San Geronio Wilderness above about 7800 ft. elev.; widespread in much of interior Western N America	June - August	Fed: none Calif: S2.3 CNPS: List 2 R-E-D:3-1-1	Absent (well below elev. range)
<i>Gilia leptantha</i> ssp. <i>leptantha</i> San Bernardino Mtn. gilia	Sandy or gravelly soils in open pine forest; endemic to San Bernardino Mts., about 5000 to 7700 ft. elev.	June - Aug	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	High (suitable habitat occurs)
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	Freshwater marsh, coastal salt marsh (Skinner & Pavlik 1994), wet ground, 1000-1500 ft. (Munz 1974); historic sites (extirpated) in LA, San Bern. and Orange Cos.	Aug. - Oct.	Fed: C1* Calif: SH CNPS: List 1A R-E-D: n/a	Absent (presumed extinct; no suitable habitat, well above elev. range)
<i>Heuchera hirsutissima</i> Shaggy-haired alum root	Subalpine and upper montane forests, above about 7200 ft. elev.; endemic to San Jacinto and Santa Rosa Mts (one unconfirmed record from San Bernardino Mts.)	May - July	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:3-1-3	Low (poorly suitable habitat)
<i>Heuchera parishii</i> Parish's alumroot	Rocky places, montane coniferous forests and alpine boulderfields, above 4800 ft. elev.; San Bernardino Mts endemic	June - July	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	Low (poorly suitable habitat)
<i>Horkelia wilderae</i> Barton Flats horkelia	Pine forest and chaparral, endemic to Barton Flats area; about 7000 to 10,000 ft. elev.	May - Sept.	Fed: none Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Low (probably outside geogr. range)

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<i>Hulsea vestita</i> ssp. <i>parryi</i> Parry's sunflower	Rocky sites in conifer forests, gen. loose eroding soil and talus; San Bernardino Mts and Little San Bern. Mts; about 5500-9500 ft. elev.	April - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Low (poorly suitable habitat)
<i>Hulsea vestita</i> ssp. <i>pygmaea</i> Pygmy hulsea	Subalpine forest, gen above about 10,000 ft. elev., San Gorgonio Wilderness	Summer	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-3	Absent (well below elev. range)
<i>Ivesia argyrocoma</i> Silver-haired ivesia	Pebble plains, dry or seasonally moist meadows and drainages; $\pm$ 5000-7500 ft. elev.; San Bernardino Mts and a long-disjunct site in Baja Calif mts	June - August	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-2	Occurs (reported by MBA 2000)
<i>Juncus duranii</i> Duran's rush	Meadows or other wet places, montane coniferous forest, 5800-9000 ft. elev.; San Bernardino, San Gabriel, and San Jacinto Mts	July - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High? (suitable habitat occurs)
<i>Lesquerella kingii</i> var. <i>bernardina</i> San Bernardino Mtns. bladderpod	Carbonate soils above about 6800 ft. elev.; San Bernardino Mts. endemic	May - June	Fed: END Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Absent (no suitable habitat)
<i>Lewisia brachycalyx</i> Short-sepaled lewisia	Wet meadows, forest openings, 4500-7500 ft. elev.; San Bernardino Mts to Baja Calif, Utah, New Mex.	May - June	Fed: none Calif: S3.2 CNPS: List 2 R-E-D:2-2-1	Low-Moderate (marginal habitat)
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> Ocellated Humboldt lily	Stream banks and shaded forest or chaparral, usually N-facing slopes; below about 6000 ft. elev; S and central Calif mts	June - July	Fed: none Calif: S3.2 CNPS: List 4 R-E-D:1-2-3	Absent (above elev. range, marginal habitat)
<i>Lilium parryi</i> Lemon lily	Meadows and streambanks above about 4000 ft. elev.; mts. of S Calif. and SE Arizona	July - August	Fed: none Calif: S2.1 CNPS: List 1B R-E-D:2-2-2	Low (marginal habitat)
<i>Linanthus killipii</i> Baldwin Lake linanthus	Pebble plains, alkaline meadows, forest openings, 5500-7800 ft. elev.; San Bernardino Mts endemic	May - July	Fed: none Calif: S2.1 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Malaxis monophyllos</i> ssp. <i>brachypoda</i> Adder's mouth	Meadows above about 7200 ft. elev., San Gorgonio Wilderness (San Bernardino Mts.); historically known from Tahquitz Meadow but evidently extinct there; widely distributed in N America	June - August	Fed: none Calif: S1.1 CNPS: List 2 R-E-D:3-3-1	Absent (no suitable habitat, well below local elev. range)

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<i>Mimulus exiguus</i> San Bernardino Mountain monkeyflower	Meadows, seeps, drainages, 5800-7500 ft. elev.; San Bernardino Mts and high mts of Baja Calif.	June - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-2	High (suitable habitat occurs)
<i>Mimulus purpureus</i> var. <i>purpureus</i> Purple monkeyflower	Meadow edges, forests, drainages, seeps, 6100-7500 ft. elev.; San Bernardino Mts and high mts of Baja Calif.	May - July	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-2	High (suitable habitat occurs)
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	Montane forests and mixed chaparral, ±2000-6500 ft. elev.; San Bernardino, San Gabriel, and Peninsular Ranges	June - August	Fed: none Calif: S3.3 CNPS: List 1B R-E-D:2-1-3	Absent (poorly suitable habitat, above elev. range)
<i>Navarretia peninsularis</i> Baja navarretia	Open, seasonally wet places in coniferous forests, 4800-7500 ft. elev.; mts of central and S Calif. and N Baja Calif.	June - August	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-2	Low (small patches of marginal habitat)
<i>Oxytheca caryophylloides</i> Chickweed oxytheca	Sandy soils in conifer forests, 3900-8500 ft. elev.; S Sierra Nevada, Transverse Ranges, San Jacinto Mts.	July - Sept.	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Oxytheca parishii</i> var. <i>cienegensis</i> Cienega seca oxytheca	Sandy, gen. alluvial granitic soils in open, ±arid conifer forest; perhaps also on carbonate soil in pinyon woodland; about 7000-8000 ft. elev. (lower on carbonate soils?)	June - Sept.	Fed: none Calif: S1.3 CNPS: List 1B R-E-D:3-1-3	Low (all known occurrences well to south and east)
<i>Oxytheca parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	Carbonate soils, about 4200 to 7700 ft. elev.; San Bernardino Mts. endemic; populations fluctuate widely year to year	May - Sept.	Fed: END Calif: S1.1 CNPS: List 1B R-E-D:3-3-3	Absent (no suitable habitat)
<i>Oxytropis oreophila</i> Mountain oxytrope	Alpine and subalpine forest, summit of Mt. San Gorgonio, above ca. 11,000 ft. elev.	July - Aug	Fed: none Calif: S2.3 CNPS: List 2 R-E-D:3-1-1	Absent (well below elev. range)
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	Meadows, moist areas in coniferous forest above about 6500 ft. elev.; San Bernardino Mountains and (disjunct) Arizona and New Mex.	June - August	Fed: none Calif: S2.2? CNPS: List 2 R-E-D:2-2-1	High (suitable habitat occurs)
<i>Phacelia exilis</i> (syn. <i>P. mohavensis</i> var. <i>exilis</i>) Transverse Range phacelia	Sandy or gravelly soils, forest openings, meadows, pebble plains, 3500-8800 ft. elev.; S Sierra Nevada and Transverse Ranges	May - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)

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<i>Phacelia mohavensis</i> Mojave phacelia	Sandy or gravelly soils, woodlands, conifer forests, dry meadows and streambeds, 4500-8100 ft. elev.; San Gabriel & San Bernardino Mts	April - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Phlox dolichantha</i> Bear Valley phlox	Montane coniferous forest; 6500-8800 ft. elev.; San Bernardino Mts endemic	June - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Poa atropurpurea</i> San Bernardino bluegrass	Open, flat meadows, 4800-7200 ft. elev.; San Bernardino Mts and Laguna Mts (San Diego Co.)	May - June	Fed: END Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Poliomintha incana</i> Frosted mint	Subshrub; dunes, sandy soils, rocky slopes below about 5500 ft. elev.; SW states; only CA record, Cushenbury Spr, now presumed extinct	June - July	Fed: none USFS: none Calif: SH CNPS: List 1A	Absent (no suitable habitat, above elev. range)
<i>Polystichum kruckebergii</i> Krukeberg's sword fern	Rocky places, montane coniferous forest, 6800-10,400 ft. elev.; Calif. mts to British Columbia, Montana, Utah (occurrence in San Bernardino Mts uncertain)	June - August	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-1	Absent (poor habitat, geogr. range)
<i>Populus angustifolia</i> Narrow-leaved cottonwood	Riparian habitat in montane coniferous forests, Sierra Nevada Mts. Local report in CNPS data base presumably in error.	Mar - April	Fed: none Calif: S2S3 CNPS: List 2 R-E-D:3-2-1	Absent (local reports based on misidentification)
<i>Pyrrocoma uniflora</i> ssp. <i>gossypina</i> (<i>Haplopappus uniflorus</i> ssp. <i>gossypinus</i>) Bear Valley pyrrocoma	Meadows (usually alkaline), pebble plains, about 5200 - 7600 ft. elev.; San Bernardino Mts endemic	July - August	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	High (suitable habitat occurs)
<i>Rupertia rigida</i> (syn. <i>Psoralea rigida</i>) Parish's rupertia	Chaparral, forests, and woodlands, below ±8100 ft. elev.; San Bernardino Mts, Peninsular Ranges, Baja Calif.	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-2	High (suitable habitat occurs)
<i>Scutellaria bolanderi</i> ssp. <i>austromontanum</i> Southern mountain skullcap	Stream banks and other moist sites, a few scattered sites from Victorville through San Diego Co; 1900-6500 ft. elev.	June - August	Fed: none Calif: S2.2? CNPS: List 1B R-E-D:2-2-3	Low (marginal habitat, above elev. range)
<i>Sedum niveum</i> Davidson's stonecrop	Rocky ledges and crevices, upper montane coniferous forest, 7100-9800 ft. elev.; San Bernardino Mts, Santa Rosa Mts	June - July	Fed: none Calif: S3.2 CNPS: List 4 R-E-D:1-2-2	Absent (no suitable habitat)

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<i>Selaginella asprella</i> Bluish spike-moss	Rocks, crevices, & rocky soils, dry sites in coniferous forests, 5200-8800 ft. elev.; scattered mtn. ranges of cent. & S Calif., Baja Calif.	July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-2	Low (marginal habitat)
<i>Senecio bernardinus</i> San Bernardino butterweed	Dry meadows (sometimes alkaline), 5800-7500 ft. elev.; San Bernardino Mts endemic	May - July	Fed: none Calif: S2.2 CNPS: List 1B R-E-D:2-2-3	Low (marginally suitable habitat)
<i>Senecio ionophyllus</i> Tehachapi ragwort	Crevices, rocky places in dry coniferous forest, 4800-8900 ft. elev.; S Sierra Nevada, San Gabriel and San Bernardino Mts	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	Low (marginally suitable habitat)
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i> Parish's checkerbloom	Chaparral, oak shrublands, pine forests; San Bernardino Mts and a few Santa Barbara Co sites, about 3200-8200 ft. elev.	June - August	Fed: Candidate Calif: S1.2 CNPS: List 1B R-E-D:3-2-3	Low (marginally suitable habitat)
<i>Sidalcea pedata</i> Bird's foot checkerbloom	Meadows (freshwater or alkaline clay), sometimes streambanks, 5200-8100 ft. elev.; San Bernardino Mts endemic	May - July	Fed: END Calif: END, 1.1 CNPS: List 1B R-E-D:3-3-3	High (suitable habitat occurs)
<i>Sphenopholis obtusata</i> Prairie wedge grass	Riparian woodlands, wet meadows, streambanks; a few widely scattered locations in Calif. but widespread in North America	April - July	Fed: none Calif: S2.2 CNPS: List 2 R-E-D:2-2-1	High (suitable habitat occurs)
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	Chaparral, hardwood forests, coniferous forest, about 3900-8100 ft. elev.; mts. of S Calif. (San Bern. Mtn. records much farther west)	June - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-3	High (suitable habitat occurs)
<i>Streptanthus campestris</i> Southern jewelflower	Rocky sites, chaparral, coniferous forest, pinyon woodland, 2900-7500 ft. elev.; Transverse and Peninsular Ranges, Baja Calif.	May - July	Fed: none Calif: S2.3 CNPS: List 1B R-E-D:2-1-2	High (suitable habitat occurs)
<i>Swertia neglecta</i> (syn. <i>Frasera neglecta</i>) Pine green-gentian	Coniferous forests and pinyon woodland., 4500-8100 ft. elev.; S Coastal Ranges and Transverse Ranges	May - July	Fed: none Calif: S3.3 CNPS: List 4 R-E-D: 1-1-3	High (suitable habitat occurs)
<i>Taraxacum californicum</i> California dandelion	Wet meadows, 6300-7800 ft. elev.; San Bernardino Mts endemic	May - July	Fed: END Calif: S2.1 CNPS: List 1B R-E-D: 3-2-3	High (suitable habitat occurs)

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Table 1. Special status plants of the Big Bear Valley and surrounding mountains.

Special Status Plants	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
<i>Thelypodium stenopetalum</i> Slender-petaled thelypodium	Meadows (mesic, usually alkaline clay), about 6200 - 7200 ft. elev.; San Bernardino Mts endemic; all populations in Big Bear and Holcomb Valleys	June - July	Fed: END Calif: END, 1.1 CNPS: List 1B R-E-D:3-3-3	High (suitable habitat occurs)
<i>Trichostema micranthum</i> Small-flowered bluecurls	Dry margins of lakes, meadows, and streams, 6500-7500 ft. elev., San Bernardino Mts and Baja Calif.	July - Sept.	Fed: none Calif: S3.3 CNPS: List 4 R-E-D:1-1-1	High (suitable habitat occurs)
<i>Viola pinetorum</i> ssp. <i>grisea</i> Grey-leaved violet	Coniferous forests, about 4800-11,100 ft. elev.; S Sierra Nevada Mts and possibly San Bernardinos [Skinner & Pavlik include SB Mtns in range but Hickman (ed.) does not]	April	Fed: none Calif: S1.3 CNPS: List 1B R-E-D:3-1-3	Low (geographic range)

General references: CDFG 2001, CNPS 2001, Rarefind 2000, Hickman (ed.) 1993, Munz 1974, Sanders et al. 1995, Tibor 2001, US Fish and Wildlife Service 1999.

APPENDIX A

Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Special Status Invertebrates	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Euchloe hyantis ssp. andrewsi</i> Andrews' marble butterfly	Montane chaparral and woodlands, 5000'-6000' elev. in the San Bernardino Mountains	Spring and summer	Fed: FSC Calif: None	Low (above known elev., marginal habitat)
General References: Emmel and Emmel 1973; Garth and Tilden 1986; CDFG 2000b				
Sensitive Amphibian and Reptile Species	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Taricha torosa torosa</i> Coast Range newt	Riparian habitat along permanent or intermittent streams and adj. uplands, breeds in streams	Winter Spring	Fed: None Calif: CSC	Absent (no habitat, above elevation)
<i>Ensatina escholtzii klauberi</i> Large-blotched salamander	Moist sites in forests, e.g. beneath fallen logs; Peninsular Ranges	Spring	Fed: FSC Calif: CSC, S2S3	Low
<i>Ensatina escholtzii croceator</i> Yellow-blotched salamander	Moist sites in forests, e.g. beneath fallen logs; Transverse Ranges	Spring	Fed: FSC Calif: CSC, S2S3	Moderate
<i>Scaphiopus hamondii</i> Western spadefoot toad	Grasslands, open chaparral and pine-oak woodlands, below 4,500 feet elevation	Spring Summer	Fed: FSC Calif: CSC, CP	Absent (above elevation)
<i>Rana muscosa</i> Mountain yellow-legged frog	Perennial mountain streams above about 6000 ft. elev.; Sierra Nevada Mts. and mts. of S. Calif. (where its elev. range historically was as low as 3000 ft.); extinct in much of range.	Just after snow-melt to August (diurnal)	Fed: proposed END Calif: CSC, S2S3	Absent (no suitable habitat)
<i>Aniella pulchra pulchra</i> Silvery legless lizard	Chaparral, pine-oak woodland, riparian vegetation, loose alluvium, leaf litter near drainages, below 6500 ft. elev.	Spring	Fed: FSC Calif: CSC	Low (above known elev.)
<i>Phrynosoma coronatum ssp. blainvillei</i> San Diego horned lizard	Forest, shrubland or grassland with sandy areas; W Calif. from LA Co. S through Baja Calif., below ±6000 ft. elev.	Spring - summer	Fed: FSC Calif: CSC S2S3	Low (above known elev.)
<i>Cnemidophorus tigris multiscutatus</i> Coastal western whiptail	Woodlands, shrublands; SW Calif. through much of Baja Calif., below ±7500 ft. elev.	Spring - summer	Fed: SOC Calif: S2S3	High
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	Rock outcrops in shrublands, to 5000 ft. elev.; SW Calif. through much of N Baja Calif.	Spring - summer	Fed: SOC Calif: S2S3	Absent (above known elev., no suitable outcrops)
<i>Sceloporus graciosus vandenbergianus</i> Southern sagebrush lizard	Forest, shrubland above about 3000 ft. elev.; Transverse and Peninsular Ranges, S Calif and N Baja Calif	Spring-summer	Fed: FSC Calif: none	Expected

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Sensitive Amphibian and Reptile Species	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Lichanura trivirgata roseofusca</i> Coastal rosy boa	Rocky, chaparral-covered hillsides; LA Co. through NW Baja Calif. Elevation to about 4,500 ft.	Spring - summer	Fed: FSC Calif: S3S4	Absent (well above known elevation)
<i>Charina bottae umbricata</i> . Southern rubber boa	Moist montane forest and woodland; Mt. Pinos, San Bernardino and San Jacinto Mts; usually cool, moist areas w/ deep rocky crevices (no records in San Gabriel Mts, but habitat and elev. seem suitable)	Summer	Fed: FSC Calif: THR S2S3	Low (see text)
<i>Salvadora hexalepis virgulata</i> Coast patch-nosed snake	Shrublands, usually with open sand; Sta. Barb. Co. through SW Calif., to NW Baja Calif. Elevation to about 4,500 ft.	Spring - summer	Fed: FSC Calif: CSC S2S3	Absent (poor habitat, above elevation)
<i>Diadophis punctatus modestus</i> San Bernardino ringneck snake	Variety of habitats, cismontane to about 6500' elevation, typically under rocks and logs	Spring - summer	Fed: FSC Calif: None S2	Low (above known elev.)
<i>Lampropeltis zonata parvirubra</i> San Bernardino Mountain kingsnake	Forests and chaparral with rock outcrops or talus, often riparian, about 1200 - 8100 ft. elev.; San Gabriel, San Bernardino and San Jacinto Mts endemic	Spring - summer	Fed: FSC Calif: CSC S2?	High (uncommon)
<i>Thamnophis hammondi hammondi</i> Two-striped garter snake (formerly classified as ssp. of western aquatic garter snake, <i>T. couchii</i>)	In or near perennial fresh water and adjacent riparian habitat, usually about pools in streams; SW Calif and NW Baja Calif. to ± 7000 ft. elev.	Spring - summer	Fed: None Calif: CSC S2	Absent (no suitable habitat)
General references: CDFG 2000, CDFG 2000b, Jennings and Hayes 1994, Stebbins 1985, Stephenson and Calcarone 1999; San Bernardino National Forest 2000, USFWS 1999, Zeiner et al. 1988.				
Sensitive Bird Species	Habitat and Distribution	Local occurrence	Status Designation	Occurrence Probability
<i>Elanus leucereus</i> White-tailed kite	Breeds in woodlands and riparian forests, forages over open terrain; Pacific Coast (Calif., N Baja, Oregon), other scattered localities worldwide	Spring - summer	Fed: None Calif: CFP	Nesting: Low Foraging: Low
<i>Haliaeetus leucocephalus</i> Bald eagle	Breed in large trees, usually near major rivers or lakes; wide but scattered distribution in N America; esp. coastal regions	Winter	FWS: END Calif: S3 END	Nesting: Absent Winter: Expected

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Sensitive Bird Species	Habitat and Distribution	Local occurrence	Status Designation	Occurrence Probability
<i>Aquila chrysaetos</i> Golden eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Year-around	Fed: None Calif: CSC S3 (year-around)	Nesting: Absent Foraging: High (rare)
<i>Circus cyaneus</i> Northern harrier	Breeds colonially in grasslands and wetlands; forages over open terrain; N America and Eurasia	Winter; rare in summer	Fed: None Calif: S3 (nesting)	Nesting: Absent Foraging: Low
<i>Buteo regalis</i> Ferruginous hawk	Forages over grassland and shrubland; winters in W and SW N Amer. (breeds in Great Basin and N plains)	Winter	Fed: FSC Calif: CSC S3S4 (wintering)	Nesting: Absent Winter: Low
<i>Accipiter striatus</i> Sharp-shinned hawk	Nests and hunts in forests and woodlands, also forages in open areas; throughout N America, parts of S America; rarely nests in San Bernardino Mts.	Spring - early summer	Fed: None Calif: CSC S3 (nesting only)	Nesting: Low (local rarity) Winter: Expected
<i>Accipiter cooperii</i> Cooper's hawk	Nests and hunts in forests and woodlands occasionally forages in open areas; most of US, Central and S America	Year-around	Fed: None Calif: CSC S3 (nesting only)	Nesting: Moderate Foraging: Expected
<i>Accipiter gentilis</i> Northern goshawk	Dense coniferous forests; much of N Amer (Canada, Rocky Mtns, montane W US); rarely reported in San Jacinto, San Bernardino Mts..	Spring-Fall	Fed: FSC Calif: CSC S3 (nesting)	Nesting: Absent Foraging: Low
<i>Falco peregrinus anatum</i> American peregrine falcon	Nests on high cliffs, forages primarily over open lands, fresh and saltwater marshes	Spring-Fall	Fed: delisted Calif: END S3 (nesting)	Nesting: Absent Foraging: Low
<i>Falco mexicanus</i> Prairie falcon	Nests on high cliffs, forages primarily over open lands; occurs throughout arid western US and Mexico	Year-around	Fed: none Calif: CSC S3 (nesting only)	Nesting: Absent Foraging: Low
<i>Falco columbaris</i> Merlin	Uncommon wintering species in S Calif. desert and valleys (breeds in northern N America and Eurasia)	Winter	Fed: none Calif: CSC S3 (winter)	Nesting: Absent Winter: High (rare)
<i>Strix occidentalis occidentalis</i> California spotted owl	Nests and forages year-around in dense conifer, oak, or (sometimes) riparian forest; Sierra Nevada, cent & S Coast Ranges, S Calif mts.	Year-around	Fed: FSC Calif: CSC S3	Nesting: Low Foraging: High

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Sensitive Bird Species	Habitat and Distribution	Local occurrence	Status Designation	Occurrence Probability
<i>Asio otus</i> Long-eared owl	Breeds and roosts in riparian forests and woodlands or other dense forest; forages (at night) over open lands; increasingly rare breeding in S Calif.; occurs through N America and Eurasia	Year-around	Fed: None Calif: S3 CSC	Nesting: Low Foraging: Moderate
<i>Cypseloides niger</i> Black swift	Mountains and along coastline; nest behind waterfalls on cliffs; capture insects in flight	Summer	Fed: None Calif: CSC S2	Nesting: Absent Foraging: Low
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	Breeds in dense riparian vegetation, willows are most commonly used, but other dense riparian vegetation is occasionally used, surface water is common but not essential	Spring - summer	Fed: END Calif: END (at species level)	Nesting: Low-moderate Migrant: High (rare)
<i>Lanius ludovicianus</i> Loggerhead shrike	Woodlands, shrublands, open areas with scattered perch sites; widespread in N America	Year-around	Fed: FSC Calif: CSC S4	Absent (above elevation)
<i>Vireo vicinior</i> Gray vireo	Arid chaparral, oak shrubland, and pinyon-juniper woodlands; breeds in mountains of SW US, winters in W Mexico	Spring - summer	Fed: None Calif: CSC S2	Low (habitat marginal at best)
<i>Eremophila alpestris actia</i> California horned lark	Grasslands, meadows, alkali flats; breeds in western Calif (San Diego Co through Humboldt Co) and Baja Calif	Summer	Fed: None Calif: CSC, S3	Absent (above elevation)
<i>Progne subis</i> Purple martin	Secondary cavity nester, hardwood and conifer woodlands; much of N. Amer., rare in Calif. (almost all extant S. Calif. breeding sites are montane)	Summer	Fed: None Calif: CSC S3 (nesting only)	Low (local rarity)
<i>Dendroica petechia</i> Yellow warbler	Breeds in riparian habitat; much of N Amer. but increasingly rare in S Calif. (habitat loss, cowbird parasitism); winters Mex. to S Amer.	Spring - summer	Fed: None Calif: CSC S2 (nesting only)	Low-moderate
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	Coastal sage scrub, open chaparral; S Calif. and NW Baja Calif.	Year - around	Fed: FSC Calif: CSC S2S3	Absent (above elevation)
<i>Amphispiza belli belli</i> Bell's sage sparrow	Coastal sage scrub, chaparral, saltbush scrub, cismontane cent. and S Calif., NW Baja Calif.	Year - around	Fed: FSC Calif: CSC S2?	Absent (above elevation)
<i>Piranga flava</i> Hepatic tanager	Pinyon woodland with pockets of taller white fir and Jeffrey pine, pine oak woodlands on desert slopes	Spring - summer	Fed: None Calif: CSC S2 (nesting only)	Low (marginal habitat)

General references: CDFG 2000, CDFG 2000b, Ehrlich et al. 1988, Garrett & Dunn 1981, Grinnell & Miller 1944,

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

National Geographic Society 1999, Remsen 1978, USFWS 1999, Zeiner et al. 1990.

Sensitive Mammals	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Antrozous pallidus</i> Pallid bat	Rock outcrops of shrublands, mostly below about 6000 ft. elev.; Calif (exc high mts), SW N Amer through interior Oregon and Washington; hibernates in winter	Warm season	Fed: None Calif: CSC S3	Roosting: Low Foraging: Low
<i>Euderma maculatum</i> Spotted bat	Desert (cool seasons) to pine forest (summer), much of SW N Amer. but very rare; roosts in deep crevices in cliffs, feeds over open water	Unknown	Fed: FSC Calif: CSC S2S3	Roosting: Absent Foraging: Unknown
<i>Eumops perotis californicus</i> Greater western mastiff bat	Lowlands (with rare exceptions); cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roost in deep rock crevices, forage over wide area	Year-around	Fed: FSC Calif: CSC S3?	Roosting: Absent Foraging: Low
<i>Plecotus (Corynorhinus) townsendii townsendii</i> Pacific western big-eared bat	Many habitats throughout Calif and W N Amer, scattered pop'ns in E; day roosts in caves, tunnels, mines; feed primarily on moths	Year-around	Fed: FSC Calif: CSC S2S3	Roosting: Absent Foraging: Unknown
<i>Myotis lucifugus</i> Occult little brown bat	Gen pine forests, 6000-9000 ft. elev. (also lower elev. riparian habitat); roosts in buildings, trees, rocks, etc.; feed over water or open sites; hiber-nates in winter; SE Calif through Arizona and New Mexico	warm season	FWS: FSC Calif: CSC S2S3	Roosting: High Foraging: High
<i>Myotis yumanensis</i> Yuma myotis	W North America, British Columbia to cent. Mexico; in the US, mostly the Pacific states; roost in buildings, bridges, caves, mines; feed over open water	warm season?	Fed: FSC Calif: CSC S4?	Roosting: Low Foraging: Low
<i>Myotis volans</i> Long-legged myotis	W North America, SE Alaska to Vera Cruz, E through Rocky Mtns; forests and arid woodland above about 4000 ft. inland, to sea level in Calif.; roost in buildings, crevices, and trees; forage over water and in forest openings	warm season?	Fed: FSC Calif: S4?	Roosting: Moderate Foraging: Moderate
<i>Myotis thysanodes</i> Fringed myotis	W North America, primarily 4-corners states, also Calif. and other scattered locns.; arid forests, woodlands, gen. 4000-7000 ft. elev.; roost in caves, mines, buildings, rock crevices	warm season?	Fed: FSC Calif: S4	Roosting: Low Foraging: Moderate

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

Sensitive Mammals	Habitat and Distribution	Activity season	Status Designation	Occurrence Probability
<i>Myotis evotis</i> Long-eared myotis	W North America, British Columbia to N Baja, E to Rocky Mtns; conifer forests; roosts poorly known (use trees, buildings and caves); forage in woods & over water	Year-around	Fed: FSC Calif: S4?	Roosting: Moderate Foraging: High
<i>Myotis ciliolabrum</i> (<i>M. leibii</i>) Small footed myotis	Much of W North America, wide elev. range; roost in caves, mines, buildings, rock crevices, sometimes buildings & bridges; forage over water and in open woods	Year-around	Fed: FSC Calif: S?	Roosting: Low Foraging: High
<i>Nyctinomops femorosaccus</i> (syn. <i>Tadarida f.</i>) Pocketed free-tailed bat	Deserts and arid lowlands; E Riv and San Diego Cos, through SW US, Baja Calif., mainland Mexico; Roost mainly in crevices of high cliffs	Year-around	Fed: None Calif: CSC S2S3	Roosting: Absent Foraging: Unknown
<i>Perognathus alticola alticola</i> White-eared pocket mouse	Open pine forests with bracken fern and sage brush, historically from San Bernardino Mts, locally extirpated	Year-around	Fed: FSC Calif: CSC THSH	Low (habitat marginal; presumed extinct locally)
<i>Glaucomys sabrinus californicus</i> San Bernardino Mountain flying squirrel	Occurs in mixed conifer forest (white fir, black oak) above ±5200 ft. elev.; SB and San Jacinto Mts (expected in San Gabriels)	Year-around (nocturnal)	Fed: FSC Calif: CSC, S3?	Nesting: Low Foraging: High
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	Open country with grass, sagebrush, or other shrubs, sandy gravelly soils	Year-around	Fed: FSC Calif: CSC, S3S4	Absent (no suitable habitat)
<i>Ovis canadensis nelsoni</i> Nelson's bighorn sheep	Remote cliffs and steep rocky terrain	Year-around	Fed: None Calif: S3	Absent
<i>Taxidea taxus</i> American badger	Mountains, deserts, interior valleys where burrowing animals are avail as prey and soil permits digging; throughout cent and W N Amer	Year-around	Fed: None USFS: sensitive Calif: S4	Expected rarely
<i>Felis concolor</i> Mountain lion	Large natural areas where prey (primarily deer) is available; throughout W N Amer	Year-around	Fed: None USFS: sensitive Calif: none	Expected rarely

General references: Barbour & Davis 1969, CDFG 2000, CDFG2000b, Hall 1981, Ingles 1965, Williams 1976, USFWS 1999.

Federal designations: (federal Endangered Species Act, US Fish and Wildlife Service):

END: Federally listed, endangered.

THR: Federally listed, threatened.

C: Candidate for listing as threatened or endangered. Sufficient data are available to support federal listing, but not listed at this time. (Prior to 1996, FWS maintained a list of "category 2 candidates," of species for which threat and/or distribution data not sufficient to support federal listing. Some agencies, but *not* FWS, continue to report these as federal "species of concern.")

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Table 2. Special Status Animals of the Big Bear Valley and Surrounding Mountains

State designations: (California Endangered Species Act, California Dept. of Fish and Game)

END: State listed, endangered.

THR: State listed, threatened.

RARE: State listed as rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)

CDF&G Natural Diversity Data Base Designations: Applied to special status plants and sensitive plant communities; where correct category is uncertain, CDF&G uses two categories or question marks.

- S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.
- S1.1: Very threatened
- S1.2: Threatened
- S1.3: No current threats known
- S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimel suffixes same as above).
- S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimel suffixes same as above).
- S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.
- S5: Demonstrably secure or ineradicable in California. No threat rank.
- SH: Presumed extinct in California.

California Native Plant Society (CNPS) designations: (Note: According to CNPS (Smith and Berg 1988), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code.)

- List 1A: Plants presumed extinct in California.
- List 1B: Plants rare and endangered in California and throughout their range.
- List 2: Plants rare, threatened or endangered in California but more common elsewhere in their range.
- List 3: Plants about which we need more information; a review list.
- List 4: Plants of limited distribution; a watch list.

CNPS R-E-D Code:

- Rarity 1:** Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
- 2: Occurrence confined to several populations or one extended population.
- 3: Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

- Endangerment 1:** Not endangered.
- 2: Endangered in a portion of its range.
- 3: Endangered throughout its range.

- Distribution 1:** More or less widespread outside California.
- 2: Rare outside California.
- 3: Endemic to California (i.e., does not occur outside California).

Definitions of occurrence probability:

Occurs: Observed on the site during surveys described here, or recorded on-site by other qualified biologists.

High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.

Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.

Low: Site is within the known range of the species but habitat on the site is rarely used by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Unknown: No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.



An Environmental Planning/Resource
Management Corporation

April 16, 2002



Mr. Glenn Lajoie
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14725 Alton Parkway
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VIA FACSIMILE AND MAIL
(949) 472-8373

Subject: Results of Bald Eagle surveys on Tentative Tract 16136, Moon
Camp, Fawnskin, San Bernardino County, California

Dear Mr. Lajoie:



This letter report presents the results of bald eagle (*Haliaeetus leucocephalus*) surveys performed in February 2002 by William S. La Haye and Brian Kertson on Tentative Tract 16136 in unincorporated San Bernardino County, California (hereafter referred to as the project site). In addition, a summary of a records search of historic sightings of this species on and in the vicinity of the project site is also presented.

Project Location and Description



The project site consists of an approximately 62.5-acre parcel on the north shoreline of Big Bear Lake, San Bernardino County, California. The project site is covered by U.S. Geological Survey's Fawnskin, California Quadrangle at Township 2N, Range 1E and includes portions of Sections 7 and 12. Project regional location and vicinity maps are presented in Exhibits 1 and 2, respectively.

The southwestern portion of the project site includes shoreline of Big Bear Lake and Highway 38 parallels the lakeshore on the property for approximately 1/4 mile. Historically, the project site consisted of Moon Camp, a small cabin resort which existed from the early 1920s through 1951 when a forest fire destroyed most of the buildings. At some later date, most of the remnants of the cabins and foundations were removed from the site.



The project site includes a series of low, rolling hills between approximately 6,940 feet above mean sea level (msl) and 6,740 feet above msl. The vegetation on the site is primarily open Jeffrey pine (*Pinus jeffreyi*) forest near the lake and highway and gradually transitions into mixed-conifer forest towards the northeast portion of the property. Other common trees encountered on the site consist of white fir (*Abies concolor*) and black oak (*Quercus kelloggii*).

Background

The bald eagle is a large raptor which ranges from Alaska to northern Mexico. It typically nests in large trees near lakes and rivers where its prey is plentiful. This species feeds primarily on fish and waterfowl; however, it is also known to

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scavenge large mammal carcasses. The bald eagle population declined dramatically in the 1960s due to the effects of pesticides causing egg shell thinning and reproductive failure. This species is federally-listed as Threatened and state-listed as Endangered.

The bald eagle rarely nests in southern California. However, small wintering populations are found scattered throughout the region. Big Bear Lake supports the largest of these wintering populations and may include as many as 30 individuals in peak years. This species is typically observed at Big Bear Lake between November and March.

Survey Methodology

The project site and the surrounding area was observed on four separate occasions in February 2002 for approximately four hours on each occasion. Trees on the property were visually scanned using binoculars and a spotting scope. Observations were conducted from various vantage points on the property, as well as from Windy Point, approximately 1/2 mile west of the property across Grout Bay. All trees utilized by eagles for perching and/or roosting during these surveys were marked with numbered, circular tree tags. Additionally, the San Bernardino National Forest Service was contacted and a review of their historic records of bald eagle use on the north shore of Big Bear Lake was completed.

Survey Results

Bald eagle observations were performed on February 7, 12, 14, and 21, 2002. Bald eagles were observed on the project site on all four occasions. A minimum of nine, seven, three, and four individual bald eagles were seen on the four observation dates, respectively. Bald eagles were observed perching in three, eight, two, and two separate trees on the project site on the respective observation dates. Nine individual trees were used on the project site by bald eagles during surveys. The sizes and descriptions of the trees used for perching are provided in Table 1. Tree locations on the project site are presented in Exhibit 3.

The best and most reliable data for reviewing historical use of the project site by bald eagles was an unpublished report by Devaud and Devaud in 1990 which presented the findings of surveys conducted during the winter of 1989-1990. The Devauds observed, mapped, and photographed bald eagle perch trees along the north shoreline of Big Bear Lake between December 10 and April 6 of that winter. Eighty of the 176 mapped eagle sightings (45 percent) were located on the project site. The most commonly recorded use of a single perch tree was also on the project site with 51 sightings (i.e., tree number 886). This is clearly the most important eagle perch tree on the project site and potentially the most important on the north shore of Big Bear Lake. The next most commonly recorded use of a single perch tree was off the project site near the east end of the lake with 32 sightings.

Recommendations

The project site contains several trees used extensively by this wintering population of bald eagles. Removal of these trees could restrict access to and/or affect the ability of individual eagles to forage in the vicinity of Big Bear Lake. Removal of important perch trees could be considered a significant impact under the federal and state Endangered Species Acts (ESA). It is recommended that the numbered trees presented in Table 1 are avoided during project construction and preserved in place upon project completion. Additionally, all large trees (i.e., greater than 20-inches diameter at four feet from ground) within approximately 200 yards of the

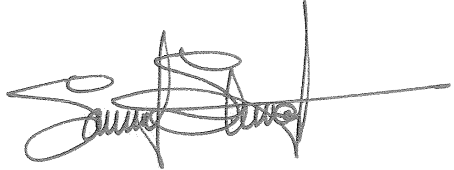
Mr. Glenn Lajoie
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high water line should be considered potential perch trees, avoided during construction, and preserved in place upon project completion, if possible.

Sincerely,

BONTERRA CONSULTING


Ann M. Johnston
Principal, Biological Services


Samuel C. Stewart IV
Assistant Project Manager

R:\Projects\RBFWJ008 Eagle Survey-041602.wpd

Enclosures: Table 1 and Exhibits 1-3

References

Devaud J. & Devaud S. 1990. *Bald Eagle Habitat Use of the North Shore of Big Bear Lake, San Bernardino County, California*. Unpublished Document in San Bernardino National Forest Service Files.

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