

## APPENDIX F

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### LIFE HISTORY INFORMATION FOR SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE PROJECT

**Note:** “Sensitive Species” included in this Appendix include State and Federal listed species (i.e., Threatened and Endangered species), as well as “species of concern” (i.e., species that are not listed but that are of concern to certain agencies or in certain areas).

#### INVERTEBRATES

##### **Molestan blister beetle (*Lytta molesta*)**

- Status: Federal Species of Concern
- Habitat & Habits: This species can be found in the Central Valley of California from Contra Costa County to Kern and Tulare Counties. It has been observed from April 1<sup>st</sup> through July. Blister beetles prefer mesic soils in close proximity to flowering plants. The Molestan blister beetles have been found on both *Lupinus* and *Erodium cicutarium* and are known to feed on the flowers.
- Possible Threats: Little is known about what threatens this species.

##### **Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)**

- Status: Federally Listed as Threatened
- Habitat & Habits: Their habitat consists of elderberry shrubs and trees in a variety of habitats and plant communities, but most often in riparian savannah or moist valley oak woodlands along the margins of rivers and streams in the lower Sacramento River and upper San Joaquin Valley. VELBs are more abundant in dense native plant communities with a mature overstory and a mixed understory. Adults feed in riparian areas on the foliage and perhaps flowers of elderberry trees or shrubs.
- Possible Threats: Loss or disturbance to Riparian Habitat.

##### **Conservancy fairy shrimp (*Branchinecta conservatio*)**

- Status: Federally Listed as Endangered
- Habitat & Habits: Lives in ephemeral or temporary vernal pools of fresh water. Dependent on seasonal fluctuations and highly turbid water.
- Possible Threats: Threats result primarily from loss of vernal pool habitats associated with development of grasslands for agriculture or urbanization.

##### **Vernal pool fairy shrimp (*Branchinecta lynchi*)**

- Status: Federally Listed as Threatened Species
- Habitat & Habits: This species is considered common because it appears to be rather widely distributed in the grasslands of the California, from near Red Bluff in Shasta County, south through much of the Central Valley, and ultimately via several disjunct populations to the Santa Rosa Plateau in Riverside County in the South Coast Mountains Region. It is also considered uncommon because *B. lynchi* is not abundant anywhere; when it co-occurs with other fairy shrimp species, which is reasonably often, it is always far outnumbered. Throughout its range *B. lynchi* has been taken from early December to early May and in the Central Valley its residences range from about 10-290m in elevation. Its most common habitat is a small swale, earth slump, or basalt-flow depression basin with a grassy or, occasionally, muddy bottom, in unplowed grassland.

- Possible Threats: Loss of habitat due to development and intensive agriculture.

**Vernal pool tadpole shrimp (*Lepidurus packardii*)**

- Status: Federally Listed as Endangered
- Habitat & Habits: Inhabits large, relatively deep vernal pools, swales and other ephemeral ponds.
- Possible Threats: Loss of habitat due to development and intensive agriculture.

**Shasta crayfish (*Pasifastacus fortis*)**

- Status: Federally Listed as Endangered, California Listed as Endangered
- Habitat & Habits: The Shasta crayfish is restricted to the mid-reaches of the Pit River Drainage in Shasta County, and is primarily limited to Fall River, Hat Creek, and Sucker Spring Creek.
- Possible Threats: This species is threatened by habitat loss due to hydrodiversions, competition by the introduced signal crayfish, stream degradation due to cattle, logging, and construction of levees and roads for agriculture.

**AMPHIBIANS**

**California red-legged frog (*Rana aurora draytonii*)**

- Status: Federally Listed as Threatened, California Species of Special Concern, California Fully Protected, Forest Service Sensitive
- Habitat & Habits: The California red-legged frog inhabits quiet pools of streams, marshes, and ponds. They require permanent or nearly permanent pool for larval development, which takes 11 to 20 weeks. The eggs are deposited in permanent pools attached to emergent vegetation (Zeiner et al 1988). This species requires specific habitat including dense shrubbery or emergent vegetation associated with fresh, permanent, and deep (greater than 3 feet) still or slow-moving water. The California red-legged frog is highly aquatic and prefers the extensive vegetation of shorelines. Due to their highly aquatic nature, they rarely move far from their streamside habitat. The California red-legged frog historically was distributed throughout most of lowland California, occurring in coastal area from Point Reyes National Seashore, Marin County, and inland from Redding, Shasta County, southward into northwestern Baja California, Mexico. They may be found west of the Sierra-Cascade crest and along the Coast Ranges, or the entire length of the state usually below 3936ft. They are uncommon in the Sierra-Cascade portion of the range, and uncommon to common elsewhere (US Fish & Wildlife Service 1992).
- Possible Threats: Direct loss of habitat and habitat degradation such as stream bed erosion, point source pollution, and introduction of exotic fish and bullfrogs (*Rana catesbeiana*).

**California tiger salamander (*Ambystoma californiense*)**

- Status: Federal Candidate Species, California Species of Special Concern and California Fully Protected
- Habitat & Habits: The California tiger salamander has a generally widespread distribution along the Sierran foothills and adjoining Central Valley, and in the Coast Range foothills in the central portion of the State. The species is generally prefers grassland habitats, including the grasslands within Blue Oak Woodland and Blue Oak Foothill Pine communities. The species spends most of its time in subterranean burrows, particularly those of the California ground squirrel (*Spermophilus beecheyi*). Eggs are generally laid in vernal pools, ephemeral ponds and fishless permanent ponds, including man made ponds. Juveniles move to subterranean burrows shortly after metamorphosis. This species' status has been declining due to habitat loss and conversion from urban development, habitat conversion to wine grape production.
- Possible Threats: Loss of habitat due to agriculture and development, fragmentation of migration corridors, and introduction of exotic fish and bullfrogs.

### **Cascades frog (*Rana cascadae*)**

- Status: Federal Species of Concern, California Species of Special Concern, California Fully Protected, and Forest Service Sensitive Species
- Habitat & Habits: This species is found in two locations in the Cascade Mountains of Northern California: Siskiyou County and Lassen Peak. The range is from about 3,000 to 9,000 feet msl. The Cascades frog is closely restricted to water and is found in small streams, mountain lakes, ponds and meadows and associated surrounding vegetation. It may be found on the surface during warm summer periods, and in winter it hibernates in the mud substrates of lakes.
- Possible Threats: Direct loss of habitat and habitat degradation such as stream bed erosion, point source pollution and introduction of bullfrogs and exotic fish species.

### **Foothill yellow-legged frog (*Rana boylei*)**

- Status: Federal Species of Concern, California Species of Special Concern and Forest Service Sensitive Species
- Habitat & Habits: Its range is from West Oregon to Southern California, Los Angeles County near the coast and Kern county inland from sea level to about 6,000 feet; absent in the central valley. The Foothill yellow-legged frog is aquatic and prefers gravelly or sandy streams with sunny banks and open woodlands nearby. Found in a variety of habitats, including valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. During cold weather individuals seek cover under rocks in the streams or on shore within a few meters of water. They breed from March to May when streams have slowed after winter runoff. Egg clusters are attached to downstream side of submerged rocks in moving water near stream margins. Females deposit eggs in clusters of 200 to 300 that hatch in about five days. Tadpoles require water for at least three or four months while completing their aquatic development. Foothill yellow-legged frog feed on aquatic and terrestrial invertebrates.
- Possible Threats: Direct loss of habitat and habitat degradation such as stream bed erosion, point source pollution and introduction of exotic species.

### **Tehachapi slender salamander (*Batrachoseps stebbinsi*)**

- Status: California Fully Protected, California Listed as Threatened, and a Forest Service Sensitive Species
- Habitat & Habits: This terrestrial species prefers valley foothill hardwood and hardwood-conifer and valley riparian habitats, but is uncommon even in these habitats. The biology of this species is still not well understood. It is generally a nocturnal species that is active on the surface during the wet seasons of the year. During dry periods it seeks refuge in underground niches and seepages. The limited distribution and uncommon occurrences even in its preferred habitats makes this species vulnerable to activities and actions related to habitat disturbance and loss.
- Possible Threats: Little is known about what threatens this species.

### **Kern Canyon slender salamander (*Batrachoseps simatus*)**

- Status: Federal Species of Concern, Forest Service Sensitive Species, California Listed as Threatened
- Habitat & Habits: The Kern Canyon Salamander ranges along the south side of Kern River Canyon, Kern County California. The Kern Canyon Salamander is found on north facing slopes in pine oak chaparral community, valley foothill hardwood-conifer between 1,500 feet and 2,000 feet. They live under rocks near moist stream beds and in or beneath rotting pine or oak logs. Breeding habits are uncertain and it is assumed there is no aquatic larval stage. Kern Canyon slender salamanders feed on spider mites, insects, earthworms and snails.
- Possible Threats: Habitat loss of disturbance is a threat to this species, particularly due to its limited range.

**Limestone salamander (*Hydromantes brunus*)**

- Status: Federal Species of Concern, California Listed as Threatened, California Fully Protected and Forest Service Sensitive Species
- Habitat & Habits: The limestone salamander has a restricted distribution in mixed chaparral along the Merced River and its tributaries in Mariposa County. It is active from November through March on steep north and east-facing slopes in mixed chaparral during moist periods. In the vicinity of its distribution, the California buckeye (*Aesculus californica*) may be an indicator species of its habitat.
- Possible Threats: Direct loss of habitat and habitat degradation such as stream bed erosion, point source pollution and introduction of exotic species.

**Mount Lyell salamander (*Hydromantes platycephalus*)**

- Status: Federal Species of Concern, California Species of Special Concern and California Fully Protected Species
- Habitat & Habits: Their range in the Sierra Nevada is from Sonora Pass south. Mount Lyell salamanders can be found on exposed granite outcrops associated with fissures, cave openings, and talus with mixed conifer, red fir, lodgepole pine and subalpine habitats. They favor north-facing slopes from 4,000 to 11,000 feet. Eggs are probably deposited beneath granite rocks or slabs covering moist granite soil, 6-14 eggs are laid and young probably hatch in the fall. Mount Lyell salamanders feed on centipedes, spiders, termites, beetles, and adult and larval flies.
- Possible Threats: Susceptible to human intrusion.

**Relictual slender salamander (*Batrachoseps relictus*)**

- Status: Federal Species of Concern, California Species of Special Concern, Forest Service Sensitive
- Habitat & Habits: Its range is in the Sierra Nevada, Kern to Mariposa counties, Monterey and north San Luis Obispo counties, Santa Cruz island, and Baja California. The Relictual slender salamander is found under logs and rocks near spring seepages or streamlets, but sometimes at considerable distance from water, sea level to 8,000 feet. Breeding habits are uncertain. However, it is assumed to have no aquatic larval stage.
- Possible Threats: Increased development and changes in land use patterns.

**Shasta salamander (*Hydromantes shastae*)**

- Status: Federal Species of Concern, California listed as Threatened and California Fully Protected
- Habitat & Habits: This very secretive salamander is restricted to areas near limestone caves within valley foothill hardwood-conifer, ponderosa pine and mixed conifer habitats at 1,100 to 2,500 feet. There are many small, isolated populations near Shasta Reservoir in Shasta County. This secretive animal is active nocturnally during rainy periods in spring, fall and winter.
- Possible Threats: Commercial demand for limestone may jeopardize existing populations.

**Siskiyou Mountain salamander (*Plethodon stormi*)**

- Status: Federal Species of Concern, California Protected and Federally Listed as Threatened.
- Habitat & Habits: It is found in dense Klamath mixed conifer and white fir forests at the base of talus slopes among the loose rubble. It generally is found in the deep shaded north facing slopes and is active above ground only in the spring and fall.
- Possible Threats: Little is know about what threatens this species.

### **Southern seep salamander (*Rhyacotriton variegatus*)**

- Status: Federal Species of Concern, California Fully Protected and a Forest Service Sensitive Species
- Habitat & Habits: It is generally found in cold, well-shaded streams and seeps in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. In its prime habitats it may be quite common.
- Possible Threats: Projects that may impact the streams and seeps preferred by this species may significantly impact its present status along with timber harvest of coastal old-growth redwood forests.

### **Striped Del Norte salamander (*Plethodon elongatus elongatus*)**

- Status: Federal Species of Concern, California protected and a California Species of Special Concern
- Habitat & Habits: The Striped Del Norte Salamander occurs in the northwest corner of California and the southwest corner of Oregon. It is found in open to dense forests of saplings to mature stands in valley foothill riparian, mixed hardwood-conifer, redwood, and Douglas fir habitats. It prefers areas of rock rubble with fine soils that are moist but not wet within in these forest and habitat types.
- Possible Threats: Timber harvest of old-growth stands.

### **Mountain yellow-legged frog (*Rana muscosa*)**

- Status: Forest Service Sensitive Species, California Species of Special Concern and Federal Species of Concern
- Habitat & Habits: Its range is from the Sierra Nevada Mountains of California and extreme West Nevada. Separate population exist in the San Gabriel, San Bernardino, San Jacinto and Palomar mountains of Southern California. The Mountain yellow-legged frog is found on sunny stream banks and undisturbed ponds and lakes, usually with sloping gravel banks. They crouch on rocks or clumps of grass within a few jumps of water. They are associated with streams in ponderosa pine, montane hardwood-conifer, and montane riparian types. Breeding season is dependent on altitude and weather conditions; March to May in lower regions, June to August at higher elevations. Egg masses are attached to gravel or submerged rocks. Tadpoles may require up to two over-wintering periods to complete their aquatic development. Feeding mostly consists of aquatic and terrestrial invertebrates.
- Possible Threats: Introduction of trout and bullfrogs to high mountain lakes has eliminated most of the *R. muscosa* habitat and has caused a majority of the loss of this species.

### **Northern leopard frog (*Rana pipiens*)**

- Status: California Species of Special Concern and Forest Service Sensitive
- Habitat & Habits: This is the frog often used in medical schools and colleges for training. It appears that it has been released and established in numerous areas from the Colorado River to northern California. The leopard frog is widely distributed in North American, but uncommon and localized in California. It may be found from sea level to 7,000 feet msl. In the PG&E hydro project areas, this frog has established populations in eastern Modoc and northeastern Lassen counties. The Northern leopard frog requires bodies of water that contain emergent and submergent vegetation, and is found in irrigation ditch in agricultural areas. It is terrestrial at times, can be found on the surface during warm rainy periods throughout the year in Southern California but it hibernates in during cold northern California winters. Juveniles will travel long distance after metamorphosis, presumably for dispersal. The Northern leopard frog is California species of special concern and a Forest Service sensitive species.
- Possible Threats: Past habitat has been severely altered because of agricultural grazing practices, the dense tall grass thickets and shelves bordering riparian zones that are essential habitat for this species are either no longer present or so fragmented that the habitat can no longer support populations. Moreover, bullfrogs have become well-established along the riparian corridors where *R. pipiens* was historically present.

### **Spotted frog (*Rana pretiosa*)**

- Status: Federal Candidate Species, California Species of Special Concern, California Protected, and Forest Service Sensitive
- Habitat & Habits: The spotted frog has never been a species of abundant populations. Its distribution is limited to the extreme northeastern corner of California. It inhabits swampy areas and wet meadows in woodlands and alpine forest habitats. It is highly aquatic and utilizes small streams and shallow areas of lakes. During the winter months it may remain buried in mud, but may surface during warmer days in winter. This species is more common and widely distributed in Washington and Oregon.
- Possible Threats: They are most likely to exist in situations that are highly isolated from the widely distributed exotic predatory aquatic fauna and that have been least mechanically altered due to livestock grazing.

### **Tailed frog (*Ascaphus truei*)**

- Status: California Species of Special Concern and California Fully Protected
- Habitat & Habits: The tailed frog occurs in the northwestern corner of California, including Del Norte, Siskiyou, Humboldt, Trinity, Shasta, Tehama and Mendocino counties. Preferred habitat includes cold streams in conifer dominated steep wall canyons and valleys. The frog appears to prefer habitats that are dense stands of conifers and in areas that received at least 40 inches of rain per year. Cold-water streams are preferred as tadpoles may tolerate water temperatures as low as 5°C (41° F). Permanent water is a necessity as larvae take 2-3 years to metamorphose.
- Possible Threats: Removal of timber through harvesting or fire which causes and increase in water temperature.

### **Western spadefoot toad (*Scaphiopus hammondi*)**

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: The Western spadefoot toad is most often found associated with grasslands along the Sierran foothills from sea level up to 4,500 feet msl. However, they may also be found associated with blue oak woodland, fresh wet meadows, lakes and rivers in the Central Valley and foothills. Spadefoots spend most of their life below ground in burrows that they dig themselves. They are rarely found on the surface. They are highly dependent upon adequate rains to form ponds where they breed. The juveniles seek refuge shortly after metamorphosis.
- Possible Threats: Habitat loss due to development and agricultural conversion are threats to this species.

### **Yosemite toad (*Bufo canorus*)**

- Status: Forest Service Sensitive Species and Federal Species of Concern
- Habitat & Habits: The Yosemite toad ranges from Alpine County to Fresno County, California. The Yosemite Toad can be found in damp meadows and forest margins and in seasonal ponds associated with lodgepole pine and subalpine conifer forests from 6,400 feet to 11,000 feet. During inactive periods, they seek cover inside abandoned rodent burrows or adjacent forests. Quiet pools in alpine meadows provide optimal habitat. They breed from May to July in available shallow water. Mean clutch size is about 8,000 and females may not breed every year. Yosemite toads feed on beetles, ants, mosquitoes, dragonfly nymphs, larval lepidopterans, centipedes and spiders.
- Possible Threats: Little is known about what is causing the decline of the Yosemite toad, several theories have been suggested such as increased UV exposure or an increase of predatory fish, nothing has been scientifically proven.

## REPTILES

### California legless lizard (*Anniella pulchra*)

- Status: Federal Species of Concern, California Species of Special Concern.
- Habitat & Habits: There are two subspecies of the legless lizard (*Anniella pulchra pulchra* and *Anniella pulchra nigra*). For the most part, the California legless lizard is found in the sandy and loose organic soils of the San Joaquin Valley from San Joaquin County south to the southern Sierra Nevada. This lizard is most often found in leaf litter or just beneath the ground surface in coastal dune and coastal scrub habitats but may also be found in chaparral.
- Possible Threats: High confidence exists that legless lizards cannot survive in urbanized, agricultural or other areas where a loose substrate in which to burrow has been removed or radically altered.

### Coast horned lizard (*Phrynosoma coronatum blainvillei* and *P.c. frontale*)

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: There are two subspecies of the coast horned lizard and both are California species of special concern. The Coast horned lizard has a range in the Central Valley-Sierra foothill range from Butte County south to Tulare County and from near sea level to about 4,000 feet. Both subspecies are fully protected in California and species of special concern. It is generally found in open grassland communities but also extends into mixed chaparral, valley foothill riparian and blue oak woodland and blue oak foothill pine woodland. The horned lizard is found close to abundant ant colonies as a majority of its diet consists of ants.
- Possible Threats: Habitat loss, conversion to urban development and agriculture and collecting are important elements responsible for the decline in this species.

### Western pond turtle (*C. marmorata*):

- Status: Forest Service Sensitive Species, California Species of Special Concern and Federal Species of Concern
- Habitat & Habits: The Western pond turtle has two subspecies the Northwestern pond turtle (*C. m. marmorata*) and the Southwestern pond turtle (*C. m. pallida*). Northwestern pond turtle range is from British Columbia south to San Francisco Bay. Southwestern pond turtles range from San Francisco bay south into northwest Baja California. Pond turtles can be found in ponds and small lakes with abundant vegetation. They are also seen in marshes, slow moving streams, reservoirs, and occasionally brackish water. They are associated with permanent or nearly permanent water in a wide variety of habitat types. Pond turtles require basking sites such as partially submerged logs, rocks, mats or floating vegetation or open mud banks. Breeding takes place April to August. The female makes an earthen chamber in a sunny spot near water's edge or some distance away in a field. Soil must be at least 10 cm deep for nesting. Females lay one clutch of 3-11 eggs, hatching emerge in about 12 weeks. Northwestern and Southwestern pond turtles are omnivorous and feed on pond lilies, beetles and a variety of aquatic invertebrates as well as fishes, frogs, and carrion.
- Possible Threats: Agriculture or activity of livestock, and increase of raccoons, red foxes and translocated black bears.

## BIRDS

### American white pelican (*Pelecanus erythrorhynchos*)

- Status: California Species of Special Concern, California Fully Protected and a Forest Service Sensitive Species
- Habitat & Habits: In California, now nests only at large lakes in Klamath Basin, especially Clear Lake National Wildlife Refuge. It rests in the day and roosts at night along edge of water, on beaches,

sandbars, or old driftwood, but never in trees. Mortality results mostly from human disturbance and bad weather. Degradation of breeding habitat has eliminated several major colonies in California.

- Possible Threats: Susceptible to pollution of watershed by pesticides, and degradation of breeding habitat.

**Bald eagle (*Haliaeetus leucocephalus*)**

- Status: Currently is Federally Listed as Threatened, but is Proposed for Delisting, California Listed as Endangered, California Fully Protected and a Forest Service Sensitive Species
- Habitat & Habits: Bald eagles perch high in large, stoutly limbed trees and roost in winter in dense sheltered remote conifer stands. They nest in large, old-growth or dominant live tree with open branch work most often with less than 40% canopy. Bald eagles often chose the largest tree in a stand, usually located near a permanent water source. Breeding takes place February through July and clutch size is usually between 1 and 3. Large bodies of water or free-flowing rivers with abundant fish and adjacent snags are required for feeding.
- Possible Threats: Disturbed by logging, recreational development and other human activities near nests.

**Bank swallow (*Riparia riparia*):**

- Status: California Listed as Threatened
- Habitat & Habits: A neotropical migrant found primarily in riparian and other lowland habitats in California west of the deserts during the spring-fall period. In summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs nesting holes. Bank swallows will also roost on logs, shoreline vegetation, and telephone wires.
- Possible Threats: Channelization and stabilization of banks of nesting rivers and other destruction and disturbance of nesting areas have caused a decline.

**Black-capped chickadee (*Poecile atricapillus*):**

- Status: California Species of Special Concern
- Habitat & Habits: An uncommon resident restricted to Del Norte, Humboldt, and Siskiyou Counties in northern California. Occurs locally in montane riparian habitat from coast into mountainous areas inland; also found locally in the more arid Shasta Valley, Siskiyou Counties. Cover is provided by trees and shrubs in montane riparian habitat; also by conifers adjacent to riparian habitat. In California, the Black-capped chickadee is mostly restricted to montane riparian habitat with alder, willow, birch and other deciduous riparian trees.
- Possible Threats: Little is known about what threatens this species.

**Black swift (*Cypseloides niger*):**

- Status: California Species of Special Concern
- Habitat & Habits: Breeds locally in the Sierra Nevada and Cascade Range, the San Gabriel, San Bernardino, and San Jacinto Mountains and in coastal bluffs and mountains from San Mateo County. Nests in moist crevice or cave on sea cliffs above the surf or on cliffs behind or adjacent to waterfalls in deep canyons. Forages widely over many habitats.
- Possible Threats: Little is known about what threatens this species.



**California condor (*Gymnogyps californianus*):**

- Status: California Listed as Endangered and Federally Listed as Endangered
- Habitat & Habits: Their range is from Santa Clara County south to Ventura County and east across south Kern County and north to Fresno County (T1). Condors forage over wide areas of open range lands, roosts on cliffs and in large trees and snags from sea level to 9,000 feet. Nests usually from 2,000 to 6,500 feet. May use old-growth Douglas fir, ponderosa pine and snags in undisturbed areas for nesting sites. Breeding occurs annually or less often. Females lay one egg February to May and incubation lasts 59 days. Young tend to remain in nests for about 5 months but may be fully dependent for a year.
- Possible Threats: Past DDE use caused eggshell thinning, reduced numbers of cattle carcasses because of changes in husbandry practices.

**California gull (*Larus californicus*)**

- Status: California Species of Special Concern
- Habitat & Habits: A fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades and an abundant visitor to coastal and interior lowlands in non-breeding season. Preferred habitats along the coast are sandy beaches, mudflats, rocky intertidal and pelagic areas of marine and estuarine habitats, as well as fresh and saline emergent wetlands. Inland, this species frequents lacustrine, riverine, and cropland habitats, landfill dumps and open lawn in cities. Adults roost in large concentrations along shorelines, landfills, pastures and on islands.
- Possible Threats: Largest colony at Mono Lake was destroyed when mainland predators crossed on a land bridge that emerged with receding lake waters. Diversion of feeder streams from Mono Lake into the Los Angeles Aqueduct has caused the lake to lose about half its volume, survival of this population is threatened if water diversions are not curtailed.

**California spotted owl (*Strix occidentalis occidentalis*):**

- Status: California Species of Special Concern, Federal Species of Concern and Forest Service Sensitive Species
- Habitat & Habits: Its range is throughout the Sierra Nevada. Preferred habitat includes old growth, multi-layered mixed conifer, redwood, and Douglas-fir from sea level up to 7,600 feet. In southern California Spotted Owl are almost always associated with oak and oak-conifer habitats. Roost selection is related to thermoregulatory needs. Nesting is usually in tree or snag cavity or in broken tops of large trees. Breeding is early in March through June with a clutch size of 1-4. Spotted owls feed on a variety of small mammals, small birds, bats and large arthropods.
- Possible Threats: Sensitive to habitat destruction and fragmentation.

**Common loon (*Gavia immer*)**

- Status: California Species of Special Concern
- Habitat & Habits: From September to May, fairly common in estuarine and subtidal marine habitats along entire coast, and uncommon on large, deep lakes in valleys and foothills throughout state. Common loons need at least 60 feet of open water for a running take-off from water surface. Breeding occurs from May to June with a clutch size of 1-3 eggs.
- Possible Threats: Sensitive to habitat disturbance.

**Cooper's hawk (*Accipiter cooperii*):**

- Status: California Species of Special Concern.
- Habitat & Habits: A breeding resident throughout most of the wooded portion of the state. The Cooper's Hawk breeds in southern Sierra Nevada foothills, New York Mountains, Owens Valley and other local areas in southern California. Dense stands of live oak, riparian deciduous or other forest habitats near water used most frequently. Cooper's hawks are seldom found in areas without dense tree stands, or patchy woodland habitat. Breeding pairs have been reduced in recent decades.
- Possible Threats: Little is known about what threatens this species.

**Double crested cormorant (*Phalacrocorax auritus*)**

- Status: California Species of Special Concern
- Habitat & Habits: A yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. It rests in daytime and roosts overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines. Perching sites must be barren of vegetation. Double crested cormorant's require considerable length of water or an elevated perch for labored take-off. Numbers of the double crested cormorant is declining throughout North America.
- Possible Threats: Susceptible to pesticides in water and human disturbance and habitat destruction.

**Ferruginous hawk (*Buteo regalis*):**

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: Uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley and Coast Ranges. The Ferruginous hawk frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinion-juniper habitats. Roosts in open areas, usually in a lone tree or utility pole. Nesting requires large, open tracts of grasslands, sparse shrub, or desert habitats with elevated structures for nesting.
- Possible Threats: Little is known about what threatens this species.

**Golden eagle (*Aquila chrysaetos*):**

- Status: California Species of Special Concern, California Fully Protected Species and a Forest Service Sensitive Species.
- Habitat & Habits: Uncommon permanent resident and migrant throughout California. Habitat typically includes rolling foothills, mountain areas, sage-juniper flats, desert. Nests on cliffs of all heights and in large trees in open areas. Rugged open habitats with canyons and escarpments used most frequently for nesting. Breeds from late January through August with a clutch size of 1-3 eggs.
- Possible Threats: Little is known about what threatens this species

**Great blue heron (*Ardea herodias*)**

- Status: California Department of Forestry and Fire Protection Sensitive Species (Rookeries only).
- Habitat & Habits: Their range is throughout California, in shallow estuaries and fresh and saline emergent wetlands. Less common along riverine and rocky marine shores, in croplands, pastures and in mountains above foothills. Herons perch and roost in secluded tall trees. Breeding begins in February and eggs are laid in late February or March with a clutch size of 1-8. Nearly 75% of the diet is fish but may also eat small rodents, amphibians, snakes, lizards, insects, crustaceans and occasionally small birds.

- Possible Threats: Sensitive to human disturbance near nests and probably to pesticides and herbicides in nesting and foraging areas.

### **Great egret (*Ardea alba*)**

- Status: California Department of Forestry and Fire Protection Sensitive Species (Rookeries only).
- Habitat & Habits: Common yearlong resident throughout California, except for high mountains and deserts. Feeds and rests in fresh, and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures. Nests in large trees, and roosts in trees. Breeding occurs from March to July with clutch sizes averaging 3-5 eggs. Great egrets eat mainly fishes, amphibians, snakes, snails, crustaceans, insects and small mammals.
- Possible Threats: Eggshell thinning from pesticides may reduce breeding success and wetland drainage has markedly reduced available habitat.

### **Great gray owl (*Strix nebulosa*)**

- Status: California Endangered and Forest Service Sensitive Species
- Habitat & Habits: Great gray owls ranges in the Sierra Nevada from Quincy south to the Yosemite region. Great gray owls breed in old-growth red fir, mixed conifer, or lodgepole pine habitats, always in the vicinity of wet meadows, elevation from 4,500 to 7,500 feet. Peak egg laying is probably March through May, one clutch per year with an average of three eggs. Great gray owls feed on meadow dwelling rodents, pocket gophers and voles, and occasionally birds up to grouse size.
- Possible Threats: Loss of old-growth habitats.

### **Horned lark (*Eremophila alpestris*):**

- Status: California Species of Special Concern
- Habitat & Habits: A common to abundant resident in variety of open habitats, usually where trees and large shrubs are absent. Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above tree line. Grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities provide cover. Breeds from March through July with clutch size of 2-5 eggs.
- Possible Threats: Little is known about what threatens this species.

### **Little willow flycatcher (*Empidonax traillii*)**

- Status: California Endangered, Federal Species of Concern and Forest Service Sensitive Species
- Habitat & Habits: Its range runs through the Sierra Nevada and Cascade Range. Little willow flycatchers prefer broad open river valleys or large mountain meadows with lush growth of shrubby willows, wet meadow and montane riparian habitats at 2,000 to 8,000 feet elevation. Dense willow thickets are required for nesting and roosting. Little willow flycatchers are monogamous, June is peak egg laying season with clutch averages 3 to 4 eggs.
- Possible Threats: Numbers have declined because of cowbird parasitism and habitat destruction.

### **Loggerhead shrike (*Lanius ludovicianus*):**

- Status: California Species of Special Concern
- Habitat & Habits: A common resident and winter visitor in lowlands and foothills throughout California. Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest densities of Loggerhead shrikes occur in open-canopies valley foothill hardwood, valley foothill

hardwood-conifer, valley foothill riparian, juniper-juniper, juniper, desert riparian and Joshua tree habitats. Breeding season runs from March into May with an average clutch size of 4-8.

- Possible Threats: Several theories exist as to what has caused the decline of loggerhead shrike, however no absolute results have been determined.

**Long-billed curlew (*Numenius americanus*)**

- Status: California Species of Special Concern
- Habitat & Habits: An uncommon to fairly common breeder from April to September in wet meadow habitat in Northeastern California Siskiyou, Modoc, and Lassen Counties. Uncommon to locally very common as a winter visitant from early July to early April along most of the California Coast and in the Central and Imperial Valleys. Preferred winter habitats include large coastal estuaries, upland herbaceous areas and croplands. Breeding seasons from April to September. Feeds mostly on insects and small crustaceans.
- Possible Threats: Declining numbers probably caused by agricultural practices.

**Long-eared owl (*Asio otus*):**

- Status: California Species of Special Concern and a Forest Service Sensitive Species.
- Habitat & Habits: Uncommon resident or winter visitant throughout most of the northern part of the state, excluding the humid North Coast Range, Cascade Range, and higher elevations of the Sierra Nevada. Riparian habitat is required for the Long-eared owl, and it can also use live oak thickets and other dense stands of trees. Resident populations in the state have been declining since the 1940s, especially in southern California. All reasons for decline not known, but destruction and fragmentation of riparian habitat and live oak groves have been major factors.
- Possible Threats: All reasons for decline not known, but destruction and fragmentation of riparian habitat and live oak groves have been major factors.

**Merlin (*Falco columbarius*):**

- Status: California Species of Special Concern.
- Habitat & Habits: An uncommon winter migrant from September to May in California. They are seldom found in heavily wooded areas or open deserts. Merlin's frequent coastline, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. Its range is from annual grasslands to ponderosa pine and montane hardwood-conifer habitats. Dense tree stands close to bodies of water are needed for cover. The birds feed mostly on birds, numbers have probably been reduced by pesticides.
- Possible Threats: Numbers have probably been reduced by pesticides.

**Mountain plover (*Charadrius montanus*):**

- Status: California Species of Special Concern and a Candidate for Federal Listing
- Habitat & Habits: The Mountain Plover is found on short grassland and plowed fields of the Central Valley from Sutter and Yuba Counties southward, also in the foothill valleys west of San Joaquin Valley, and Imperial Valley. The Plover avoids high and dense cover and uses open shortgrass plains, plowed fields with little vegetation and open sagebrush areas.
- Possible Threats: Little is known about what threatens this species.

**Northern harrier (*Circus cyaneus*)**

- Status: California Species of Special Concern
- Habitat & Habits: Habitat ranges from annual grassland up to lodgepole pine and alpine meadow habitats as high as 10,000 feet. The Northern harrier is a permanent resident of the northeastern plateau and

coastal areas and a less common resident of the Central Valley. California population has decreased recently but can be locally abundant where suitable habitat remains free of disturbance.

- Possible Threats: Destruction of wetland habitat, native grassland, and moist meadows, and burning and plowing of nesting areas during early stages of breeding cycle are major reasons for their decline.

#### **Northern goshawk (*Accipiter gentilis*)**

- Status: California Species of Special Concern, Federal Species of Concern and Forest Service Sensitive Species
- Habitat & Habits: Its range includes the North Coast Ranges through Sierra Nevada. Goshawks prefer middle and higher elevations and mature, dense conifer forests. Breeding begins in April in southern California and by mid-June in northern California. Females lay eggs in three-day intervals for an average clutch of three. Northern goshawks hunt in wooded areas, feeding mostly on birds from robin to grouse in size, small mammals and prey caught in air on ground or in vegetation.
- Possible Threats: Little is known about what threatens this species.

#### **Peregrine falcon (*Falco peregrinus*):**

- Status: California Endangered, Federally Delisted and Forest Service Sensitive Species
- Habitat & Habits: Taken off the endangered species list on August 25, 1999 (ES update). In the winter Peregrine falcon are found throughout the central valley, migrants occur along the coast and in the western Sierra Nevada. Riparian areas and coastal and inland wetlands are important habitats yearlong. For cover, Peregrine falcons require protected cliffs and ledges. Breeding occurs near wetlands, lakes, rivers or other water on high cliffs, banks, dunes, or mounds. Nests are a scrape on a depression or ledge in an open site, will nest on human-made structures, and occasionally use a tree or snag cavity or old nests of other raptors. Breeds early March to late August with a clutch size of 3-7 eggs. Peregrine falcons feed on a variety of birds up to ducks in size, occasionally taking mammals, insects and fish.
- Possible Threats: Decline of the peregrine falcon is associated mostly with DDE contamination.

#### **Pileated woodpecker (*Dryocopus pileatus*)**

- Status: Forest Service Sensitive Species
- Habitat & Habits: An uncommon yearlong resident of mature, montane conifer habitats in the North Coast, Klamath, Cascade, and Sierra Nevada Ranges. Occupies dense, mature forests with large numbers of snags, stumps and logs for cover. Frequents Douglas-fir, white fir and red fir more than other conifers. Breeds from early March to early July with average clutch size of 3-5 eggs. Diet consists of mostly carpenter ants.
- Possible Threats: Numbers apparently declining as a result of logging mature forests and cutting snags.

#### **Prairie falcon (*Falco mexicanus*):**

- Status: California Species of Special Concern
- Habitat & Habits: Uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields and desert scrub areas. The Prairie falcon requires sheltered cliff ledges for cover and reproduction. For foraging the Prairie falcon uses open terrain with canyons, cliffs, escarpments, and rock outcrops.
- Possible Threats: Vulnerable to DDE poisoning.

#### **Purple martin (*Progne subis*):**

- Status: California Species of Special Concern

- Habitat & Habits: An uncommon to rare, local summer resident in a variety of wooded, low-elevation habitats throughout the state; a rare migrant in spring and fall, absent in winter. Woodlands and low-elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine provide cover. Often nests in tall, old trees near a body of water, may also nest occasionally in residential areas.
- Possible Threats: Numbers have declined because of loss of riparian habitat, removal of snags and competition for nest cavities from European starlings and house sparrows.

**Sharp-shinned hawk (*Accipiter striatus*)**

- Status: California Species of Special Concern
- Habitat & Habits: This is a fairly common migrant and winter resident throughout California, except in areas with deep snow. The Sharp-shinned hawk breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. They roost in high canopy forests and nest in dense, even aged, single layered forest canopy.
- Possible Threats: Little is known about what threatens this species.

**Short-eared owl (*Asio flammeus*):**

- Status: California Species of Special Concern.
- Habitat & Habits: A widespread winter migrant, found primarily in the Central Valley, in the western Sierra Nevada foothills, and locally in the southern desert region. Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Numbers have declined over most of the range in recent decades because of destruction and fragmentation of grassland and wetland habitats and grazing.
- Possible Threats: Numbers have declined because of destruction and fragmentation of grassland and wetland habitats, and grazing.

**Swainson's hawk (*Buteo swainsoni*):**

- Status: California Listed as Threatened and Forest Service Sensitive Species
- Habitat & Habits: Formerly abundant in California with wider breeding range, decline caused in part by loss of nesting habitat. Breed in stands with few trees in juniper-sage flats, riparian areas and in oak savannah in the Central Valley. Swainson's hawks forage in adjacent grasslands or suitable grain or alfalfa fields or livestock pastures.
- Possible Threats: Decline has been partially caused by loss of nesting habitat.

**Tricolored blackbird (*Agelaius tricolor*)**

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: Common locally throughout Central Valley and in coastal districts from Sonoma county south. Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Roosts in large flocks in emergent wetland or in trees. Breeding season is from April into July and clutch size is usually 3 or 4 eggs. Forages on ground in croplands, grassy fields, flooded land and along edges of ponds looking mostly for insects.
- Possible Threats: Little is known about what threatens this species.

**Vaux's swift (*Chaetura vauxi*):**

- Status: California Species of Special Concern
- Habitat & Habits: A summer resident of northern California. Breeds fairly commonly in the Coast Ranges from Sonoma County north and very locally south to Santa Cruz county, in the Sierra Nevada and possibly in the Cascade Range. Vaux's swifts prefer redwood and Douglas-fir habitats with nest

sites in large hollow trees and snags, especially tall, burned-out stubs. Roosts in hollow trees and snags, and occasionally in chimneys and buildings. The most important habitat requirement appears to be an appropriate nest-site in a large, hollow tree.

- Possible Threats: Little is known about what threatens this species.

### **Western burrowing owl (*Athene cunicularia hypugea*)**

- Status: California Species of Special Concern and Federal Species of Concern
- Habitat & Habits: Their habitat consists of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of juniper and ponderosa pine habitats. Uses rodent or other burrow for roosting and nesting cover. Breeding occurs March through August with peak in April and May, clutch size 2-10, average 5-6 eggs. The Western burrowing owl feeds mostly on insects, small mammals, reptiles, birds and carrion.
- Possible Threats: Conversion of grassland to agriculture, other habitat destruction, and poisoning of ground squirrels have contributed to the reduction in numbers. Predators include prairie falcons, red-tailed hawks, northern harriers, golden eagles, foxes, coyotes, and domestic dogs and cats.

### **White faced ibis (*Plegadis chihi*)**

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: An uncommon summer resident in sections of southern California, a rare visitor in the Central Valley and more widespread in migration. It prefers to feed in fresh emergent wetland, shallow lacustrine waters, and muddy ground of wet meadows and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland. White faced ibis numbers have declined in California and have stopped breeding regularly, possibly from destruction of extensive marshes required for nesting, pesticides may have also been an issue.
- Possible Threats: Decline probably from destruction of extensive marshes required for nesting.

### **White-tailed kite (*Elanus leucurus*)**

- Status: California Fully Protected
- Habitat & Habits: Common to uncommon, yearlong resident in coastal and valley lowlands, rarely found away from agricultural areas. Inhabits herbaceous and open stages of most habitats mostly in cismontane California. The White-tailed kite uses groves of dense, broad-leafed deciduous trees for nesting and roosting. The White-tailed kite has been able to extend its range and increase numbers over the past few years.
- Possible Threats: Little is known about what threatens this species.

### **Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*):**

- Status: California Listed as Endangered
- Habitat & Habits: An uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California. Densely foliated, deciduous trees and shrubs, especially willows, required for roosting sites. The Yellow-billed cuckoo inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation. They were formerly much more common and widespread throughout lowland California, but numbers drastically reduced by habitat loss.
- Possible Threats: Numbers have declined with the destruction of riparian habitats.

### **Yellow-breasted chat (*Icteria virens*):**

- Status: California Species of Special Concern

- Habitat & Habits: An uncommon summer resident and migrant in coastal California and in foothills of the Sierra Nevada. Found up to about 4800 feet in valley foothill riparian and up to 6500 feet east of the Sierra Nevada in desert riparian habitats. Requires riparian thickets of willow and other brushy tangles near watercourses for cover. Breeds from early May into early August with a clutch size of 3-4.
- Possible Threats: Loss and degradation of riparian habitat have caused a marked decline in the breeding population.

### **Yellow warbler (*Dendroica petechia*)**

- Status: California Species of Special Concern
- Habitat & Habits: Uncommon to common summer resident in the north and locally common in the south. Breeds in riparian woodlands from coastal and desert lowlands up to 8,000 feet in Sierra Nevada. Also breeds in montane chaparral and in open ponderosa pine and mixed conifer habitats with substantial amounts of brush. Cover is provided by cottonwoods, willows, alders and other small trees and shrubs typical of low, open canopy riparian woodland. Breeding occurs from mid-April to early August and has a clutch size of 3-6 eggs. Yellow warblers feed mostly on insects and spiders.
- Possible Threats: Brood parasitism by cowbirds has been a major cause of the decline in numbers.

## **MAMMALS**

### **Pine marten (*Martes americana*)**

- Status: California Species of Special Concern and a Forest Service Sensitive species
- Habitat & Habits: Residents of red fir, lodgepole pine, subalpine conifer, mixed conifer, Jeffrey pine, and eastside pine. Martens use large trees, snags, stumps, logs or burrows, caves and crevices in rocky areas for denning cover. Breeding occurs in summer with a gestation of 220-290 days including delayed implantation. Most litters are born in March and April with an average of 3-4 young.
- Possible Threats: Sensitive to human disturbance, large clearcuts, even-aged forest management, and destruction of mature stands.

### **Riparian brush rabbit (*Sylvilagus bachmani riparius*)**

- Status: Federally Listed as Endangered, California Listed as Endangered
- Habitat & Habits: It occurs in dense, brushy areas, and early successional stages of oak and conifer habitats. It inhabits the length of the state west of the Sierra Nevada, excluding the dry Central Valley and southern arid regions. For cover, they use thickets, vines, brambles or dense riparian species, blackberry and willow patches are favored.
- Possible Threats: May compete with other grazing and browsing species for food.

### **California kangaroo rat (*Dipodomys californicus*)**

- Status: California Species of Special Concern
- Habitat & Habits: It occurs from the Oregon border south to San Francisco Bay and in the Sacramento Valley and Sierra Nevada foothills from El Dorado County north. Usually found in annual grassland habitat but also occurs in clearings in mixed chaparral habitat on the lower slopes of foothills. Burrows excavated in loose soils and sand or silts are required for dust bathing.
- Possible Threats: Little is known about this species.

### **Riparian woodrat (*Neotoma fuscipes riparia*)**

- Status: California Species of Special Concern and Federally Listed as Endangered
- Habitat & Habits: This species is restricted to dense riparian woodlands in the San Joaquin Valley and adjacent Sierra Nevada foothills.



- Possible Threats: Loss of riparian habitat due to development or agriculture.

### **Merced kangaroo rat (*Dipodomys heermanni dixonii*)**

- Status: Federal Species of Concern
- Habitat & Habits: This subspecies is restricted to relatively undisturbed grasslands and rangelands in Merced County.
- Possible Threats: Loss, fragmentation and degradation of habitat.

### **Little brown myotis (*Myotis lucifugus*)**

- Status: California Species of Special Concern
- Habitat & Habits: They are common in North America and their range in California is from the Oregon border to Kern County and along the Colorado River. They are most common in mid to high elevation forests. They use separate day and night roosts. The roosts are located in buildings, trees, under rocks or in caves. Little Brown myotis mates in the fall and births occur in May-August. One young is born each year. They feed on small flying insects located by echolocation. They also prey on seasonally available aquatic insects.
- Possible Threats: Decline attributed to pesticides, disturbance and control efforts.

### **Lodgepole chipmunk (*Tamias speciosus speciosus*)**

- Status: Forest Service Sensitive Species
- Habitat & Habits: It occurs in open-canopy lodgepole pine habitat in the Sierra Nevada from Lassen County to Tulare County. It may also occur in open-canopy stages of other forest habitats including Jeffrey pine, mixed conifer and red fir. Nests in burrows and in cavities in trees, logs, stumps, and snags. A single litter is born in June in the Sierra Nevada, the average litter size is 5 young.
- Possible Threats: Vulnerable to heat stress.

### **Sierra Nevada mountain beaver (*Aplodontia rufa californica*)**

- Status: Federal Species of Concern, California Species of Special concern
- Habitat & Habits: Found throughout the Cascade, Klamath, and Sierra Nevada Ranges. Mountain Beavers occur in dense riparian-deciduous and open, brushy stages of most forest types. Frequent open and intermediate-canopy coverage with a dense understory near water, deep, friable soils are required for burrowing along with a cool, moist microclimate.
- Possible Threats: Little is known about what threatens this species.

### **Mount Lyell shrew (*Sorex lyelli*):**

- Status: California Species of Special Concern
- Habitat & Habits: They have been found in only a few locations in the vicinity of Mt. Lyell, within or near Yosemite National Park in the Sierra Nevada. Information on the current distribution, status, and habitat association of the species is needed. It uses logs, stumps and other surface objects for cover and is found in grass or under streamside willows.
- Possible Threats: Little is known about this species. Current distribution, status and habitat association of the species is needed.

### **Pacific fisher (*Martes pennanti pacifica*)**

- Status: Forest Service Species of Concern, California Species of Special Concern and Federal Species of Concern.

- Habitat & Habits: Its range includes the Southern tier of Canadian provinces south to North California and Rocky Mountains to Utah. Fishers can be found in mature, dense, coniferous or mixed coniferous-hardwood forest with closed canopy. They occur in intermediate to large tree stages. For cover, fishers use cavities in large trees, snags, logs, rock areas, or shelters provided by slash or brush piles. Mating starts in March or April and implantation is delayed 10-11 months with 1-6 young born the following spring. Young are born blind, usually in a nest in a large, hollow tree. Fishers feed on Snowshoe hares and Common porcupine mostly and will also eat rodents, shrews, birds, fruits, and carrion.
- Possible Threats: Loss of habitat.

### **Pale big-eared bat (*Corynorhinus townsendii pallescens*)**

- Status: Federal Species of Concern, California Species of Special Concern and a Forest Service Sensitive Species
- Habitat & Habits: Roosts in large caves and buildings.
- Possible Threats: Extremely sensitive to disturbance of maternity roosts.

### **Pallid bat (*Antrozous pallidus*)**

- Status: California Species of Special Concern and a Forest Service Sensitive Species
- Habitat & Habits: They are a locally common species of low elevations and occur in a wide variety of habitats including grasslands, shrublands, woodlands and forests from sea level up through mixed conifer forests, common in open dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines and occasionally hollow trees. Roosts must protect bats from temperatures. Pallid bats are very sensitive to disturbance of roosting sites. Mating occurs from October to February and young are born April to July, the average litter is two. Pallid bats are adapted to feed on large, hard-shelled prey on the ground or in foliage.
- Possible Threats: Very sensitive to disturbance of roosting sites.

### **Ringtail (*Bassariscus astutus*)**

- Status: California Fully Protected Species.
- Habitat & Habits: Ringtails ranges throughout California in appropriate habitat. This species is typically found in rocky situations such as jumbles of boulders, canyons, talus slopes, and rock piles near permanent streams. Dens are often padded with moss, grass or leaves. One litter of 2-4 young are born late May to early June, occasionally in a nest. Ringtails feed on grasshoppers, crickets, spiders, centipedes, scorpions, snakes, lizards, toads and frogs, small birds, small mammals and rabbits as well as carrion and fruit.
- Possible Threats: Little is known about what threatens this species

### **San Joaquin kit fox (*Vulpes macrotis mutica*)**

- Status: California Listed as Threatened and Federally Listed as Endangered
- Habitat & Habits: San Joaquin kit fox is restricted to relatively undisturbed grasslands in the southern San Joaquin Valley and surrounding foothills. San Joaquin kit foxes prefer shortgrass prairies and other arid areas, grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs and scrub. Dens provide cover. Mating occurs January to February and one litter of 3-5 young is born March to April. Rabbits, ground squirrels, rats, mice, birds, insects, grasses and berries is the primary diet of the Kit fox.
- Possible Threats: Vulnerable to human activities, such as hunting, use of rodenticides and other poisons, off-road vehicles and trapping.

### San Joaquin pocket mouse (*Perognathus inornatus*)

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: It occurs in dry, open grasslands or scrub areas on fine-textured soils between 1100 and 2000 feet in the Central and Salinas Valleys. Not much is known about the San Joaquin pocket mouse.
- Possible Threats: Little is known about what threatens this species.

### Sierra Nevada red fox (*Vulpes vulpes necator*):

- Status: California Listed as Threatened, Federal Species of Concern, and Forest Service Sensitive Species
- Habitat & Habits: Sierra Nevada red fox ranges through much of the northern Sierra Nevada. Sierra Nevada Red Fox can be found in varied habitat, mostly mixed cultivated and wooded areas and brushlands, wet meadow, subalpine conifer, lodgepole pine, red fir, aspen, montane chaparral, montane riparian and ponderosa pine. Mating occurs in January to early March, one litter of 1-10 kits is born from March to May in a maternity den. Gestation usually lasts 51-53 days. They feed heavily in summer on vegetation including corn, berries, apples, cherries, grapes, acorns and grasses, and in winter on birds and mammals.
- Possible Threats: populations reduced by grazing in meadows, trapping, logging, and recreational disturbance.

### Snowshoe hare (*Lepus americanus*)

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: In California, primarily found in montane riparian habitats with thickets of alders and willows and in stands of young conifers interspersed with chaparral. The early seral stages of mixed conifer, subalpine conifer, red fir, Jeffrey pine, lodgepole pine and aspen are likely habitats. Two subspecies are found in California, *L. a. klamathensis* found in Mt. Shasta, the Trinity Mountains and Warner Mountains and *L. a. tahoensis* found in the Sierra Nevada; both are California Species of Special Concern.
- Possible Threats: Exact numbers are unknown, but are expected to be low. Little is known about what is causing the decline.

### Spotted bat (*Euderma maculatum*)

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: They are considered one of the rarest mammals in North America. They are found in the foothills, mountains and desert regions in southern California. They roost in rock crevices, usually on cliffs but occasionally in buildings and caves. The Spotted bat mates in autumn and births occur in June. It feeds in flight, using echolocation. Moths are the principal food.
- Possible Threats: Little is known about this species. Solitary, crevice roosting habits make this species difficult to find.

### Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)

- Status: Federal Species of Concern, California Species of Special Concern, Federal Species of Concern and a Forest Service Sensitive Species
- Habitat & Habits: Their range is throughout California. Townsend's big-eared bat requires caves, mines, tunnels, buildings or other human-made structures. Maternity roosts must be warm. Roosting sites are the most important limiting resource. Mating occurs from November to February and ovulation occurs in the spring, a single litter of one is produced annually. Small moths are the principal food of this species. They capture their prey in flight using echolocation or by gleaning from foliage.

- Possible Threats: Extremely sensitive to disturbance of roosting sites.

**Vagrant shrew (*Sorex vagrans*)**

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: They are common in the Sierra Nevada from the Oregon border to Inyo County and on the coast from the Oregon border to Monterey Bay. Their optimal habitat includes valley foothill and montane riparian, wet meadow, perennial grasslands and saline and fresh emergent wetlands. The vagrant shrew prefers dense ground cover and open grassy areas. They have a 20-day gestation period and most births occur in March to May. The average litter size is six. They feed on invertebrates, including insects, worms, snails, slugs, and spiders. It forages under litter and underground.
- Possible Threats: Most suitable habitat has been lost to development.

**Western mastiff bat (*Eumops perotis californicus*)**

- Status: California Species of Special Concern
- Habitat & Habits: It is uncommonly found in the southeastern San Joaquin Valley and Monterey County through southern California. It occurs in conifer and deciduous woodlands, coastal scrub, grasslands, chaparral and urban. They roost in crevices, high buildings, trees and tunnels. It shares roosts with other large bats. Mating occurs in early spring. Length of gestation period is unknown. Feeds on insects in flight from the ground to tree level. Its wings are long and narrow, which allows for rapid, sustained flight in open habitats.
- Possible Threats: Habitat loss due to development and agriculture, disturbance of roosting sites.

**Western red bat (*Lasiurus blossevillii*)**

- Status: Forest Service Sensitive Species
- Habitat & Habits: Their range is from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crests and deserts. Winter range includes western lowlands and coastal regions south of San Francisco Bay. Roosting habitat includes forests and woodlands from sea level through mixed conifer forests. Western red bats primarily roost in trees and often in edge habitats adjacent to streams, fields or urban areas. Mating occurs in August and September and 2 to 3 young are born late May to July. Utilizing echolocation they feed on a variety of insects and forage from high above treetops to nearly ground level.
- Possible Threats: Habitat loss due to development and agriculture, disturbance of roosting sites.

**White-tailed jackrabbit (*Lepus townsendii*)**

- Status: California Species of Special Concern
- Habitat & Habits: An uncommon to rare year-round resident of the crest and upper eastern slope of the Sierra Nevada. Preferred habitats are sagebrush, subalpine conifer, juniper, alpine dwarf-shrub and perennial grassland. Also uses low sagebrush, wet meadow and early successional stages of various conifer habitats. There is little current information regarding the population status in California, their decline is attributed to overgrazing by livestock as well as cultivation and other development.
- Possible Threats: Overgrazing by livestock as well as cultivation and other development has been cited as the cause for decline of this species.

**Wolverine (*Gulo gulo luteus*):**

- Status: California Listed as Threatened, Federal Species of Concern, and Forest Service Sensitive Species
- Habitat & Habits: Its range includes the Sierra Nevada. Wolverines can be found in forest and tundra with red fir, mixed conifer, lodgepole, subalpine conifer, alpine dwarf-shrub, barren and wet meadows,

montane chaparral and Jeffrey pine in elevations of 6,400 to 10,800 feet. Mating occurs April to September and implantation is delayed until December or March. A litter of 2-5 young are born early in spring in protected areas such as thickets or rock crevices. Dens are usually in high elevation areas. Wolverines feed on moose or elk slowed down in snow, beavers, deer, porcupines, birds and squirrels, eggs and roots and berries.

- Possible Threats: Trapping, human disturbance and grazing of high Sierra Nevada meadows have contributed to the decline.

### **Yuma myotis (*Myotis yumanensis*)**

- Status: Federal Species of Concern, California Species of Special Concern
- Habitat & Habits: They are common and widespread in California and found along the mountain ranges bordering the Colorado River. Habitat ranges from sea level to 3300m in open forests and woodlands. Their roosts are in buildings, mines, caves, or crevices. The Yuma myotis mates in the fall and births occur in May-June. They usually feed over water sources such as ponds or streams. They feed on ants, termites, and midges as well as flying insects such as moths, and flies.
- Possible Threats: Habitat loss due to development and agriculture, disturbance of roosting sites.

The project team has not been able to obtain information on the following species:

Bohart's blue butterfly (*Philotiella speciosa bohartorum*)  
 California floater (Freshwater Mussel) (*Anodonta californiensis*)  
 Sacramento Valley tiger beetle (*Cicindela hirticollis abrupta*)  
 Button's Sierra sideband snail (*Monadenia mormonum buttoni*)  
 Grady's cave amphipod (*Stygobromus gradyi*)  
 Hara's cave amphipod, (*Stygobromus harai*)  
 Hirsute Sierra sideband snail (*Monadenia mormonum hirsuta*)  
 Keeled sideband snail (*Monadenia circumcarinata*)  
 Merced Canyon shoulderband snail (*Helminthoglypta allynsmithi*)  
 Pomo bronze shoulderband snail (*Helminthoglypta arrosa pomoensis*)  
 Spiny rhyacophilan caddisfly (*Rhyacophila spinata*)  
 Tight coin (= Yates snail) (*Ammonitella yatesi*)  
 Wengerors' cave amphipod (*Stygobromus wengerorum*)  
 Yosemite Mariposa sideband snail (*Monadenia yosemitensis*)