

Attachment 3.2-6

**Natural History Descriptions
of Listed Species**

Species Accounts From

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

Status: Federal -Endangered
 State -Threatened
 Other -None

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994.*)

The San Joaquin kit fox is one of the eight recognized subspecies kit fox. It resembles a small lanky dog in appearance, with disproportionately large ears containing an abundance of large, white inner guard hairs. The San Joaquin kit fox is the largest subspecies of kit fox, with adults weighing 4.5 to 5 pounds (2-2.3 kg). Total length is about 32 inches, including up to a 12-inch black-tipped tail. Coloration ranges from light buff to grayish along the back and tail, gray, rust, or yellowish along the sides, and white on the belly (O'Farrell 1983).

San Joaquin kit foxes are generally nocturnal and are opportunistic carnivores. They feed on rodents, lagomorphs, birds, reptiles and insects, as well as on carrion such as road kills. Studies indicate that the primary food items may vary geographically and seasonally (Kakiba-Russell et al. 1991).

Dens are typically excavated in loose soil (O'Farrell 1983), but also occur in harder clay soils in the northern portion of their range. Dens are not found in saturated soils or in areas subjected to periodic flooding (Kakiba-Russell et al. 1991). Individual animals may utilize from 3 to 24 separate dens (Morrell 1972). Number of den entrances may range from 1 to 36 (O'Farrell 1983), and may extend into several tunnels and chambers reaching depths of up to 10 feet (O'Farrell 1987). Most dens are vacant at any given time. During times when dens are unoccupied kit fox, they may be occupied by other burrowing animals such as badger, ground squirrels, skunks, and burrowing owls (Kakiba-Russell et al. 1991). Although occupied dens may show freshly excavated soil, scats, and prey remains (O'Farrell 1987), sign may also be inconspicuous or absent (Hall 1983). Typical den entrances are characteristically higher than wide, and are small enough to prevent access by large carnivores such as coyotes. Den entrance hole dimensions are generally about 8 to 10 inches in height and less than 8 inches in width (O'Farrell 1987), but may be as small as 4 inches in width. Burrows of other animals, particularly California ground squirrels (*Spermophilus beecheyi*), are opportunistically enlarged and utilized as den sites by San Joaquin kit foxes (Balestreri 1981). Most dens are found in areas with slope angles of less than 40 degrees, and natal and pupping dens are found more frequently on gentle slopes or in flat terrain. Man-made structures such as culverts and pipes may also be used as dens (O'Farrell 1983).

Individual San Joaquin kit foxes have an average home range of 1 to 2 square miles (Knapp 1978; Morrell 1972). Courtship and mating occur in December and January. Pups are typically born in February and March, and begin to disperse at around five months of age (Morrell 1972; O'Farrell 1983). About 75% percent of kit fox pups die before the age of eight months (O'Farrell 1984).

San Joaquin kit foxes occur in Valley Saltbush Scrub, Valley Sink Scrub, Interior Coast Range Saltbush Scrub, Upper Sonoran Sub-shrub Scrub, Non-native Grassland, and Valley Sacaton Grassland. In general, kit fox are not found in densely wooded areas, wetland areas, or areas subject to frequent periodic flooding. Habitats altered by

agricultural and urban developments are unsuitable for long-term kit fox inhabitation (Kakiba-Russell et al. 1991).

The San Joaquin kit fox was historically distributed over a large portion of central California, extending roughly from southeastern Contra Costa County south along the eastern flanks of the Interior Coast Range to the southern San Joaquin Valley, including major portions of western Kern County and Tulare County. San Joaquin kit fox were also distributed through adjacent valleys, foothills, and plains, including portions of San Luis Obispo County, Monterey County, and the Santa Clara Valley on the western side of the Interior Coast Range (Morrell 1975).

Habitat conversion for agricultural and a variety of urban uses has been the principal cause of kit fox population declines, and the reason for both state and federal listing of this species. O'Farrell (1983) estimated that approximately 42 percent of suitable kit fox habitat was lost as a result of such developments. Since that estimate was made, substantial additional habitat loss has occurred. Mortality of kit foxes has been documented from attacks by coyotes, road kills, conversion of habitat, shooting, drowning, entombment, pneumonia, and starvation (Morrell 1975; Knapp 1978; O'Farrell et al. 1986; Berry et al. 1987). Additionally, the use of certain rodenticides has resulted in secondary mortality, since kit foxes are vulnerable to poisoning through consumption of poisoned rodents (USFWS 1985b).

***Athene cunicularia* (burrowing owl)**

Status: Federal - Protected under the Migratory Bird Treaty Act of 1918.
State - Species of Special Concern; CNDDDB Special Animal

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994*.)

Adult burrowing owls are sandy colored over the head, back, and wings, with barring on the breast and belly. During summer months females usually appear darker than males (Farrand 1983). Juveniles are smaller, and buffy below. Burrowing owls are medium-sized (body length averages 9.5 inches), yellow-eyed owls with disproportionately long legs. The tail is very short; the head is rounded and lacks ear tufts. The long, exposed lower legs, and the characteristic "bowing" behavior that the bird displays when approached or otherwise disturbed, quickly distinguish this owl from all other small owls (Farrand 1983). During the nesting season, the burrowing owl often perches on a low post or at the entrance to a burrow. Calls are often synchronized with bowing behavior. When approached or flushed, both sexes commonly give a sharp 'chatter' call. A rasping call, similar to a rattlesnake's rattle, may be given from inside the burrow when the bird is disturbed (Farrand 1983).

Burrowing owls breed in midwestern and western North America, and also in south-central Florida. They winter throughout their breeding range and south to Central America. Several breeding populations exist in the Central Valley. Burrowing owls often wander outside their breeding range in the winter.

These owls use burrows throughout the year and although there is evidence that they will dig their own burrows (Thomsen 1971), they more commonly use old burrows dug by mammals.

Resident burrowing owls begin pair formation as early as December, and migratory birds begin upon their arrival in the breeding area, usually in March and April. Six to eleven eggs are laid during late March to early May. Incubation lasts about four weeks. The young emerge from the burrow at about two weeks of age and are able to fly well at about six weeks (Zarn 1974). Nests are generally located in bare, level ground in abandoned mammal burrows (Verner and Boss 1980). Nest chambers in the southern San Joaquin Valley are usually 2 feet or more beneath the surface at the end of a burrow that may be from 5 to 18 feet in length (JHA 1992).

Burrowing owls inhabit dry, open grasslands, rolling hills, desert floors, prairies, savannas, agricultural land, and other areas of open, bare ground. This species prefers lower elevation habitats (Verner and Boss 1980). These owls will also inhabit open areas near human habitation, such as airports, golf courses, shoulders of roads, railroad embankments, and the banks of irrigation ditches and reservoirs.

Burrowing owls forage during any time of the day or night in areas adjacent to burrows and nest sites. Zarn (1974), Marti (1969, 1974), and Thomsen (1971) have thoroughly studied the food habits of this species and agree that they feed primarily on insects and other arthropods, small birds, and mammals. They will take whatever prey species are most abundant in their area, including a wide variety of mice species, other rodents, frogs, toads, crayfish, birds, or reptiles. In the southern San Joaquin Valley, some of their major invertebrate prey include large beetles (*Eleodes* spp.), grasshoppers, crickets, centipedes, and scorpions (Small 1974).

Burrowing owls were formerly a common, even locally abundant, permanent resident throughout much of California. A decline noticeable in the Fresno area by the early 1900's (Miller 1903, Tyler 1913) and statewide by the 1940's (Grinnell and Miller 1944) has continued through to the present (Remsen 1978). In recent years, burrowing owl numbers have been declining throughout California. For example, Remsen (1978) reported that there had been an estimated 70 percent reduction in suitable habitat in Tulare County between 1968 and 1978.

Conversion of grasslands and pasturelands to agriculture, increasing urban development, and destruction of ground squirrel colonies (which reduce prey availability and potential nesting sites) have been the main factors causing the decline of burrowing owl populations (Zarn 1974). Assimilation of poisons applied to ground squirrel colonies has probably also taken a toll (Remsen 1978). The propensity for nesting in roadside banks makes burrowing owls particularly vulnerable to roadside shooting, being hit by cars, mad maintenance operations, and general harassment. Burrowing owls are usually tolerant of human activity, but are vulnerable to predation by domestic cats and dogs.

***Agelaius tricolor* (tricolored blackbird)**

Status: Federal – Species of Concern
 State - Species of Special Concern
 Other - Protected under the Migratory Bird Treaty Act of 1918.

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994.*)

The tricolored blackbird exhibits marked sexual dimorphism; the mostly black males are noticeably larger (body length averages 9 inches) than the dark brown females (body length averages only about 7.5 inches). Males are glossy black and have a deep velvety red shoulder marking bordered by white; the female is rather plain with a brown back and heavily striped buff and brown breast. The red epaulet is often hidden when the bird is at rest so that only the white border is visible (Farrand 1983). The plumage of first-winter males is similar to that of females, but they have dull red shoulders (Farrand 1983).

Tricolored blackbirds have long pointed wings that are well-adapted for the long distance flights often made between nesting colonies and foraging areas, Tricolored blackbird flocks tend to fly across open country in characteristic lines; these are not head-to-tail parades, but rather, are long, phalanx-like waves of birds wing-to wing.

These birds breed from early April to mid-July, with a peak from early May to late June, This species may also breed from late September to late November, depending upon weather conditions conducive to abundant insect populations (Verner and Boss 1980). During the breeding season, tricolored blackbirds nest in dense colonies (up to one nest per 3 square feet) that allows exploitation of relatively small areas of suitable habitat (Bent 1958). DeHaven *et al.* (1975) reported a colony of 2,500 birds nesting in an area only 42 by 13 feet, thus even small patches of suitable habitat should be considered potentially usable by this species (Williams 1989).

Tricolored blackbirds usually require dense tule marshes or patches of tules, cattails, or other emergent vegetation as breeding habitat; breeding marshes may be wet or dry. They also nest in willows, blackberries, grain fields, thistles, and other low vegetation in or near wet areas (Verner and Boss 1980). These birds are generally associated with large marshes, but they are also found in small rule patches that line the edges of canals and mall irrigation reservoirs (Williams 1989). Beetles, caterpillars, and spiders make up approximately 80 percent of their diet during the breeding season; weed seeds and grain comprise their fall and winter diet (Terres 1980).

Tricolored blackbirds occur chiefly throughout the valleys of California west of the Sierra Nevada. While they breed from southern Oregon through California (including coastal areas from Sonoma County south) and to northwest Baja California, their prime range is in the Great Central Valley where they are sporadic but locally abundant (Peterson 1969; DeHaven *et al.* 1975), Most flocks from throughout the species' range move toward the Sacramento-San Joaquin Delta region in fall and winter (Verner and Boss 1980).

DeHaven *et al.* (1975) estimated that in the 35 years prior to 1972, the Central Valley population of tricolored blackbird had declined, "perhaps by more than 50 percent." According to Terres (1980), the number and size of breeding colonies is declining because of the drainage of marshes. One roosting place in a California marsh of 30 to 40 acres once attracted almost half a million birds (Bent, 1958). Today the total population is declining (Terres 1980). Remsen (1978) called for further study to determine if this decline is continuing, particularly since this species is virtually endemic to California and is a potentially vulnerable, colonial breeder.

The number of tricolored blackbird nesting colonies decreases as one travels from the Sacramento-San Joaquin Delta south through progressively more arid habitat. Except for nesting colonies at Kern National Wildlife Refuge, very few records of nesting

tricolored blackbird colonies have been recorded from southwestern Kern County. In the Kern County portion of the Tulare Valley, breeding opportunities for this species are limited by the unpredictable, seasonal, and localized nature of suitable habitat. Unreliable water supplies (in wetlands) and inopportune harvest dates (in cultivated areas) further confound efforts by tricolored blackbirds to establish colonies and to successfully complete a breeding cycle in this portion of the species' range. Livers salvaged from 266 dead tricolored blackbird nestlings at Kesterson National Wildlife Refuge in Merced County in 1986 indicate that high selenium levels may also contribute to nesting failure (Beedy and Hayworth 1987).

***Lanius ludovicianus* (loggerhead shrike)**

Status: Federal - Protected under the Migratory Bird Treaty Act of 1918.
State - Species of Special Concern

(The following species account was taken from the Pleasant Valley Draft Habitat Conservation Plan, 1994.)

The loggerhead shrike is a robin-sized bird (length - 9 inches) with a raptor-like, hooked bill. Dorsal coloration is bluish-gray, and ventral coloration is whitish, with very faint barring, juveniles are more brownish. Most distinctive is the black eye mask, and in flight, the white wing patches on the contrasting dark wings. Distinguished from the northern mockingbird, which it resembles in flight, by darker wing and smaller white wing patches; also, the mockingbird lacks conspicuous eye patch and hooked bill, and has slower wing beats.

This shrike occurs over most of the U.S., Mexico, and central Canada. In California, the shrike occurs as a resident over most of the state, being absent from high mountain regions. Habitat consists of open areas such as savannas and deserts, where bushes, small trees, or other perch sites are available. Also called the "butcher bird," the loggerhead shrike is an impressive predator that characteristically impales its prey on thorns, barbed wire, or other sharp projections. Lacking talons, the shrike impales its prey to facilitate feeding, or to store it for future consumption. Diet includes a variety of insects and spiders, small reptiles, rodents, and small birds (Bent 1958).

The primary threat to the loggerhead shrike in the San Joaquin Valley is the loss of suitable habitat through conversion to agriculture, urbanization, and petroleum development.

***Toxostoma lecontei* (LeConte's thrasher)**

Status: Federal - Protected under the Migratory Bird Treaty Act of 1918.
State - Species of Special Concern

(The following species account was taken from the Pleasant Valley Draft Habitat Conservation Plan, 1994.)

The LeConte's thrasher is the palest in color of all the thrashers. It has sandy gray plumage with a somewhat dark tail. The bill and eye are dark and it has a yellowish tinge on the rump. Its bill is down-turned and it is often observed perching atop saltbush shrubs, other tall shrubs, and fence posts.

LeConte's thrashers inhabit arid, sparsely vegetated deserts of southern Nevada, western Arizona, extreme northwestern Mexico, and southeastern California. It is also

found in the arid San Joaquin Valley. It runs with surprising speed across open desert or along washes. It is uncommon throughout most of its range and is very rare in the San Joaquin Valley.

***Eremophila alpestris actia* (California horned lark)**

Status: Federal - None
State - Species of special concern
Other - None

(The following species account was taken from *California's Wildlife, Volume III*, 1990.)

California horned larks are common to abundant resident in a 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 treeline. Less common in mountain regions, on the North Coast (McCaskie et al. 1979), and in coniferous or chaparral habitats. Mostly leaves mountains in winter, but small flocks may remain to winter on windswept, snow-free areas at high elevations in the Sierra Nevada (Gaines 1977). In winter, flocks in desert lowlands and other areas augmented by winter visitants, many migrating from outside the state (Garrett and Dunn 1981). Resident on the Channel Islands (Garrett and Dunn 1981).

Horned larks feed mostly eats insects, snails, and spiders during breeding season; adds grass and forb seeds and other plant matter to diet at other seasons (Bent 1942). Walks along ground, searching for food.

Breeding season is from March through July, with peak activity in May. Pair nests solitarily; lays 2-5 eggs, average 3-4. Frequently raises 2 broods in a season (Bent 1942). Incubation 10-14 days; altricial young tended by both parents. Young leave nest at 9-12 days, and can fly 3-5 days later (Harrison 1978).

***Pbrynosoma coronatum frontale* (California horned lizard)**

Status: Federal - None
State- Species of Special Concern
Other - None

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan*, 1994.)

The California horned lizard is a flat-bodied lizard *that is* up to 6 inches in length. It has a large crown of spines on the posterior portion of its head. The cranial spines of the California horned lizard tend to be similar in size, whereas the central two spines tend to be longer in the other subspecies. There are large dark spots on the side of its neck and there are two rows of pointed scales at the fringe of its trunk. Coloration is reddish, brown, yellow, or gray with dark blotches on the back; coloration is variable and is possibly dependent upon soil coloration. This lizard lays a clutch of 6 to 12 eggs in May or June, and hatchlings emerge in July or September. Their main food source is ants.

This lizard is diurnal and will inflate with air when frightened so as to avoid predation. It also threatens would-be enemies with an open mouth and hissing noises, and will tilt its

head to expose the cranial spines. It will also bite and spray blood from the corner of its eyes as defensive measures.

The California homed lizard occurs along the coast north of San Francisco Bay to Los Angeles, and inland into the Sacramento and San Joaquin Valley. It inhabits open areas of sandy soil and low sparse vegetation.

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

Status: Federal - Species of Concern
State - Species of Special Concern
Other - None

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994.*)

The California tiger salamander is a relatively large, stocky black salamander with large cream-colored spots and cream-colored bands on the lower sides. It grows to 6.5 in (16 cm) in snout-vent length (its total length can be up to about 10 inches) (Stebbins 1985). Tiger salamanders are carnivorous, feeding on earthworms, fish, insects, amphipods, and a wide variety of invertebrate and vertebrate larvae.

Adult tiger salamanders spend most of their time underground, occupying burrows dug by ground squirrels, gophers, and badgers. They emerge only for brief periods to feed and breed. Although aestivation sites may be as far as 3,000 ft (1,000 m) from the breeding ponds, they are usually much closer. There is considerable site fidelity among tiger salamanders, as they tend to use the same ponds and burrows throughout their adult lives. They emerge from their burrow sites after the onset of winter rains and begin their above-ground activity after their breeding ponds, often temporary rain pools, have begun to form. Migration to breeding ponds usually takes place during rainfall, and often at night (Stebbins 1985). The larvae begin to transform in late spring, and by July most have left the ponds in search of suitable aestivation sites.

California tiger salamanders are found in the Central Valley from Yolo County to Kern County, and in coastal areas from the San Francisco Bay Area to Santa Barbara County. Most records are reported from elevations below 1,000 ft (300 in). They inhabit temporary and permanent ponds such as vernal pools, small lakes and stock ponds where predators are absent (e.g., fish, bullfrogs), yet which hold water for several months, long enough for the salamander larvae to transform. Streams are rarely used as breeding habitat.

The California tiger salamander has experienced direct loss of habitat from agricultural conversion and urbanization, and much of its remaining habitat has been degraded by alteration of breeding ponds and destruction of burrows. Work with allozymes and mitochondrial DNA indicates that populations of *A. t. californiense* are genetically isolated, so efforts to preserve the genetic integrity of the species must focus on protection at the population level (Stanley 1993).

***Scaphiopus hammondi hammondi* (western spadefoot toad)**

Status: Federal – Species of Concern

State - Species of Special Concern
Other - None

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994.*)

Western spadefoot toads are small (1.5 -2.5 inches long) members of the family Pelobatidae. Pelobatids are easily distinguished from true toads (family Bufonidae) by the presence of 'spades' on the hind feet, elliptical pupils, comparatively smooth skin, and by the absence of paratoid glands. *S. b. hammondi* are dusky or gray-green above, with four irregular, light-colored stripes on the back. The wedge-shaped, thickened, glossy black "spade" on each hind foot aids in digging. They burrow by backing into the ground and pushing aside dirt with the "spades," using a circular motion. They are inactive during the dry season, retreating to self-made burrows, or those of pocket gophers, ground squirrels, or kangaroo rats. During the wet season, spadefoot toads feed primarily on aquatic invertebrates. They breed during the winter and spring (January through May) in pools that form after heavy rains, or in slow streams, reservoirs, or irrigation ditches. Breeding in larger pools may confer fitness advantages (Morey 1993). They aestivate after the waters have receded.

Western spadefoot toads are known from the Great Valley, bordering foothills, and Coast Ranges south of San Francisco Bay, into northwestern Baja California. Spadefoot toads are a species of the lowlands, river flood plains, alluvial fans, playas, and alkali flats, but they also range into the foothills and mountains. They prefer areas of open vegetation and short grasses, where the soil is sandy or gravelly, but may also be found in open chaparral, and pine-oak woodlands (Stebbins 1985). They are commonly found in washes, vernal pools, temporary ponds, roadside ditches, and even small puddles.

Spadefoot toads are now extinct throughout much of lowland southern California (Stebbins 1985). Agricultural conversion and loss of marshes, streams and vernal pools on the valley floor have caused the elimination of this species from much of its former range.

Rana aurora draytoni California red-legged frog

Status: Federal - Threatened
State- Species of Special Concern
Other - None

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994.*)

The red-legged frog is a relatively large frog, attaining a length of up to 5 inches. It is reddish-brown to gray in coloration and has many poorly defined dark specks and blotches and a conspicuous dorsolateral fold. This sensitive subspecies can be distinguished from other subspecies by its dark blotches with light centers. The dark mask on its face is bordered by a light stripe on the jaw. It is yellow with a wash of red on its lower abdomen and hind legs. Its toes are not fully webbed, and males have enlarged forearms and swollen thumbs. Red-legged frogs consume insects and other invertebrates. When not breeding, they may be found in damp woods, but are more often associated with ponds or other permanent water where good cover is provided by cattails or other large plants. They are most common in the lowlands and foothills near permanent sources of water. Although this frog is generally found near water, it will disperse after rains and can be seen at night during such times; otherwise, it is primarily

diurnal. It breeds from January to March and lays egg masses in permanent bodies of water.

California red-legged frogs historically ranged from the Oregon border through southern California and northern Baja California. It inhabits the Coast Range inland to the Siskiyou through the Sierra Nevada foothills. Stebbins (1985) notes that the species was perhaps formerly present in parts of the Great Valley of California but now is apparently absent.

California red-legged frogs are declining in numbers due to the loss of riparian habitats and permanent water sources. The control and diversion of water in the coastal, valley and foothill regions has greatly reduced available habitat. Degradation of water quality may also have had a substantial effect on the reproductive success of this species. Another serious threat to the red-legged frog is the presence of the larger, introduced bullfrog (*Rana catesbeiana*) (Verner and Boss 1980): the bullfrog probably both competes with and eats its smaller congener. In fact, where habitat quality appears suitable for red-legged frogs, their absence is often correlated with the presence of bullfrogs,

***Taxidea taxus* American badger**

Status: Federal - None
State - Species of special concern
Other - None

(The following species account was taken from *the Pleasant Valley Draft Habitat Conservation Plan, 1994.*)

American badgers are low, squat animals with conspicuous silver-tipped pelage dorsally and a short, black-tipped tail. The most striking visual feature of this species is its striped face, consisting of two median white stripes proceeding from the tip of its nose to the back of its head. This stripe is flanked by alternating white and dark stripes giving way to bright, white-outlined ears. The badger's wide flattened body is supported by short but powerful legs. The front feet are fitted with noticeably long claws that are especially well-suited for digging out the burrows of the rodents on which it feeds.

Historically, badgers are thought to have been fairly widespread in the open grassland habitats of the lower San Joaquin Valley. Their modern San Joaquin Valley distribution is essentially restricted to the limited, often isolated and remote tracts of native grassland and shrubland habitats. Cultivated lands have been reported to provide little usable habitat for this species, and badgers are believed to be declining throughout California (Williams 1986).

Badgers are solitary animals. They usually forage for burrowing prey such as gophers, ground squirrels, marmots, and kangaroo rats, although they are known to take a variety of nesting mammals, reptiles, and birds.

Badger densities are variable and some reports have suggested that there is little difference between the home range requirements of males and females. Other reports

have shown that a seasonal difference in the home range of individual animals *exists* (Sargeant and Warner 1972; Messick and Homocker 1981).

In California, badgers range throughout the state except for the humid coastal forests of northwestern California in De] Norte County, and the northwestern portion of Humbolt County (Williams 1986). *Badger populations have declined @tically within California over the past century (Gririnel et al. 1937). Grimell et al. (1937) noted that badgers were reduced in numbers throughout California, but were still numerous within the Sanjoaquin Valley. Badgers now survive in low numbers in the San Joaquin Valley on the periphery of the valley and adjacent lowlands to the west in eastern Monterey, San Benito, and San Luis Obispo counties (Williams 1986).*

The principal cause of the decline in American badger populations is the conversion of native grassland habitats to modern agricultural uses. Although no specific estimates are available, American badgers doubtless have suffered a similar reduction in suitable habitat as have other wildlife species resident on the valley floor. Deliberate killing, as well as direct and secondary mortality from rodent poisoning, have also contributed to their decline.

Perognathus inornatus (San Joaquin pocket mouse)

Status: Federal - None
State - Species of special concern
Other - None

The San Joaquin pocket mouse inhabits open grasslands or scrub areas on fine textured soils in the San Joaquin and Salinas valleys, often sharing habitat with kangaroo rats (*Dipodomys* sp.). They forage for plant seed as well as eating green vegetation and insects. Seeds are carried in cheek pouches and stored in burrows for later consumption (CDFG 1990). These small pocket mice (10-20 grams) are very sensitive to cold temperatures and will go into torpor at temperatures below 50° F (pers. Obs).

Rare Plants

There are no known existing occurrences of rare plants in the vicinity of the Tracy Peaker Plant site. The sensitive plants that have potential to occur there along with habitat requirements and distribution can be found in the following table:

TABLE 1. NAME, STATUS, HABITAT, DISTRIBUTION, AND FLOWERING PERIOD OF SPECIAL STATUS PLANTS KNOWN FROM THE VICINITY OF THE GWF TRACY PEAKER PROJECT

<i>Scientific and Common Name</i>	Listing Status FWS/DFG/CNPS (1)	Habitat	County Distribution (2)	Flowering Period
Large-flowered fiddleneck <i>Amsinckia grandiflora</i>	FE/CE/1B	Lower portions of steep, protected north- and east-facing slopes in oak woodlands and grasslands	ALA, CCA, SIQ	April-May
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	FSC/-/1B	Playas, grasslands on adobe clay soils, alkaline vernal pools	ALA*, CCA*, MER, MNT*, NAP*, SBT*, SCL*, SFO*, SIQ*, SOL, SON*, STA*, YOL	March-June
Heartscale <i>Atriplex cordulata</i>	FSC/-/1B	Chenopod scrub and sandy, alkaline grasslands	ALA, BUT, CCA*, FRE, GLE, KNG, KRN, MAD, MER, SIQ*, SOL, STA, TUL	May-October
Brittlescale <i>Atriplex depressa</i>	FSC/-/1B	Alkaline or clay grasslands, chenopod scrub, and playas	ALA, CCA, COL, FRE, GLE, KRN, MAD, MER, SOL, STA*, TUL, YOL	May-October
San Joaquin spearscale <i>Atriplex joaquiniana</i>	FSC/-/1B	Alkaline scrub, meadows, and grasslands	ALA, CCA, COL, GLE, MER, NAP, SAC, SBT, SOL*, SIQ*, AOL, RUL*, YOL	April-September
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	FSC/-/1B	Woodland and grassland, sometimes on serpentine soils	ALA, BUT, MPA, NAP, PLA, SCL, TEH	March-June
Big tarplant <i>Blepharizonia plumosa</i> ssp. <i>plumosa</i>	FSC/-/1B	Grasslands on clay soils, with low cover	ALA, CCA(*?), SIQ*, STA*, SOL*	July-October
Pappose spikeweed (Congdon's tarplant) <i>Centromadia parryi</i> ssp. <i>congdonii</i> (= <i>Hemizonia p.</i> ssp. <i>c.</i>)	FC/-/1B	Grasslands with alkaline soils	ALA*, CCA*, MNT, SCL(*?), SCR*, SLO, SOL*	June-November

<i>Scientific and Common Name</i>	Listing Status FWS/ DFG/CNPS (1)	Habitat	County Distribution (2)	Flowering Period
Slough thistle <i>Cirsium erassicaule</i>	FSC/--/1B	Slow-moving water with saturated soils in various plant communities along canals, and rivers	KNG, KRN, SJQ	June-August
Hispid bird's-beak <i>Cordylanthus mollis</i> ssp. <i>hispidus</i>	FSC/--/1B	Seasonal wetlands in alkali sinks with valley sink scrub, alkali meadows, and alkali marsh communities	ALA, KRN, MER, PLA, SOL	June-July
Palmete-bracted bird's-beak <i>Cordylanthus palmatus</i>	FE/CE/1B	Seasonal wetlands in alkali sinks with valley sink scrub, alkali meadows, and alkali marsh communities.	ALA, COL, FRE, MAD*, SJQ*, YOL	June
Interior California larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	FSC/--/1B	Mesic woodland	ALA, CCA, SCL, SJQ, SLO	April-June
Recurved larkspur <i>Delphinium recurvatum</i>	FSC/--/1B	Grasslands, woodlands, scrub, vernal pools with alkaline soils	ALA, CCA, COL, FRE, KNG, KRN, MER, SLO, SOL, TUL	March-May
Contra Costa buckwheat <i>Eriogonum truncatum</i>	--/--/1A	Dry slopes of serpentine scrub and chaparral habitats	ALA*, CCA*, SOL*	April-June
Diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	--/--/1B	Grasslands with clay soils; recently rediscovered	ALA*, CCA*, COL*, SOL*, STA*	March-April
Fragrant fritillary <i>Fritillaria liliacea</i>	FSC/--/1B	Coastal prairie and scrub, grasslands, often on serpentine soils	ALA, CCA, MNT, MRN, SBT, SCL, SFO, SMT, SOL, SON	February-April
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	FSC/CE/1B	Margins of shallow lakes; vernal pools	FRE, LAK, LAS, MAD, MOD, PLA, SAC, SHA, SJQ, SOL, TEH, OR	April-June
Diablo helianthella <i>Helianthella castanea</i>	FSC/--/1B	Oak and riparian woodland, chaparral, grassland, and coastal scrub	ALA, CCA, MRN*, SFO*, SMT	April-June
Brewer's dwarf flax <i>Hesperolinon breweri</i>	FSC/--/1B	Grassy or brushy slopes underlain by serpentine	CCA, NAP, SOL	May-July
Santa Cruz tarweed <i>Holocarpha macradenia</i>	FT/CE/1B	Coastal prairies and grasslands on clay soils	ALA*, CCA, MNT, MRN*, SCR	June-October
Contra Costa goldfields <i>Lasthenia confjgens</i>	FE/--/1B	Vernal pools	ALA*, CCA*, MEN*, NAP, SBA*, SCL*, SOL	March-June
Showy madia <i>Madia radiata</i>	FSC/--/1B	Cismontane woodland and grasslands, occurs as very scattered populations in only a few locations	CCA*, FRE, KNG, KRN, MNT, SBT, SJQ, SLO	March-May
Colusa grass <i>Neostapfia colusana</i>	FT/CE/1B	Large northern claypan vernal pools with alkali soils that remain flooded until early summer.	COL*, MER, SOL, STA, YOL	May-July
Bearded popcornflower <i>Plagiobothrys hyscriculus</i>	--/--/1A	Grassy hillsides and plains, vernal pools and alkaline communities.	SOL* (localities from other counties are considered misidentifications)	April-May
Adobe samole <i>Sanicula maritima</i>	FSC/CR/1B	Chaparral, coastal prairie, meadow, and grassland habitats on clay or serpentine soils	ALA*, MNT, SFO*, SLO	April-May

<i>Scientific and Common Name</i>	Listing Status FWS/DFG/CNPS (1)	Habitat	County Distribution (2)	Flowering Period
<i>Wright's tricrocoronis</i>	--/--2	Meadows, brackish marshes, riparian forest and vernal pools; often on alkaline soils	COL*, MER*, RIV, SJQ*, SUT*, TX, ++	May-September
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>				
Showy Indian clover <i>Trifolium amoenum</i>	FE/--/1B	Grasslands, sometimes serpentine soils	ALA*, MEN*, MRN*, NAP*, SCL*, SOL*, SON	April-June
Caper-fruited tropidocarpum <i>Tropidocarpum capparidaeum</i>	--/--1A	Grasslands in alkaline hills	ALA*, CCA*, GLE*, MNT*, SCL*, SJQ*	March-April
Greene's tuctoria <i>Tuctoria greenei</i>	FE/--/1B	Vernal pools	BUT, FRE*, MAD*, MER, SHA, SJQ*, STA*, TEH, TUL*	May-July

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service)

FE = Listed as Endangered (in danger of extinction) by the Federal Government.

FT = Listed as Threatened (likely to become endangered within the foreseeable future) by the Federal Government.

FP = Proposed for Listing as Endangered or Threatened.

FC = Candidate to become a *proposed* species.

FSC = Federal Species of Concern. May be endangered or threatened, but not enough biological information has been gathered to support listing at this time.

STATE: (California Department of Fish and Game)

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CR = Listed as Rare by the State of California)

California Native Plant Society

List 1A=Plants presumed extinct in California

List 1B=Plants rare, threatened, or endangered in California and elsewhere

List 2= Plants rare, threatened, or endangered in California but more common elsewhere

SOURCE: CNPS 2001.

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