

Appendix D-2

Vegetation Mapping and Wildlife Assessment

Vegetation Mapping and General Wildlife Assessment for the Alta Wind Center, Sun Creek Subarea Project in Kern County, California

TO: Robert Skaggs, Alta Windpower Development, LLC

FROM: Bridget Canty , Russell Huddleston and Corinna Lu, CH2M HILL

DATE: September 29, 2009

Introduction

Alta Windpower Development, LLC is proposing to develop a wind-energy facility in the Sun Creek Subarea, located in Kern County, California. The Project is located in Kern County, California, in the western Mojave Desert (see Figure 1, located at the end of this document).

The majority of the project study area is located in sections 26, 27, 28, 33, 34 and 35 in Township 32 south, Range 35 east of the Mount Diablo Meridian. Section 31 of township 12 north, Range 12 west of the San Bernardino Meridian as well as small areas of the adjacent sections are also included. The project is located in the northwest corner of the Mojave and northeast corner of the Monolith United States Geological Service 7.5 minute Quadrangle maps. The center of the project is located at approximately 118° 13' 08" west longitude and 35° 06' 35" north latitude.

This memorandum documents the general vegetation communities and habitat types present in the project study area, discusses the potential special-status plant and wildlife species that may be present on project study area, and provides recommendations for additional biological resource evaluations that would be necessary to fully characterize the presence or absence of certain species to support project permitting.

Methods

An information review was conducted using the following resources:

- The California Natural Diversity Database (CNDDB) (CNDDB 2009)
- The California Native Plant Society (CNPS) on-line inventory (CNPS 2009) (Attachment 1)
- U.S. Fish and Wildlife Service's (USFWS) Federally Listed Threatened and Endangered Species that May Occur in Kern County, California (USFWS 2009) (Attachment 2)
- BLM's Final Environmental Impact Report and Statement for the West Mojave Plan (BLM 2005).

The vegetation mapping and wildlife habitat surveys were conducted between May 26 and 28, 2009. Biologists used aerial photographs and topographic maps in conjunction with Holland's Preliminary Vegetation Descriptions of California (1986) to broadly classify vegetation communities within the project study area. Wildlife habitat types were classified using the California Wildlife Habitat Relationships (CWHR) system (CDFG 2009). In addition, wildlife observations were recorded including habitats used; behaviors; locations of nests, burrows, caves, and other habitat features; as well as indirect signs (i.e. tracks, scat, bones) of use. Most of the project study area was covered by pedestrian survey; however, some areas were surveyed by automobile.

Results

Vegetation Communities

Classification of the vegetation communities in the project study area are based on the Terrestrial Natural Community Types used by the California Department of Fish and Game's Vegetation Classification and Mapping Program and Natural Diversity Database (CDFG 2003). Descriptions of these types included observations from the field reconnaissance surveys as well as information from the Preliminary list of terrestrial natural communities of California (Holland 1986) and A Manual of California Vegetation (Sawyer and Keeler-Wolf 1995). Three general community types were identified in the project study area: creosote bush scrub; Mojave Mixed Woody Scrub and California Buckwheat Scrub. Substantial overlap in species composition occurs among the community types and the boundaries are generally diffuse with gradual transitions between the mapped community types. Therefore the vegetation boundaries shown on Figure 2 are intended to show the general distribution of the three community types and provide relative percentages of each type within the project study area. The majority of the habitat is highly disturbed as a result of past wind project development, construction of the California aqueduct, various access roads, railroad tracks and extensive, ongoing off-road vehicle use throughout this area. The following sections provide a general description of the community types followed by a discussion of the Joshua Tree Woodland classification. Plant species observed during the vegetation mapping and general wildlife assessment are listed in Attachment 3.

Creosote Bush Scrub (33.010.00)¹

Creosote bush scrub is a common and widespread community found throughout the Mojave Desert and is often the dominant plant community at elevations below 4,000 feet. This community is characterized by creosote bush (*Larrea tridentata*), that are generally widely spaced and range in height from 2 to 10 feet. Ground cover and associated species between the shrubs is highly variable depending on seasonal and local conditions such as moisture availability, soils and level of disturbance.

In the project study area this community is widespread along the eastern part of the project study area, south of Cache Creek, on gentle slopes and in low lying areas with relatively deep, sandy soils (Figure 2). Creosote shrubs are relatively dense in the central and southern areas and become generally more scattered to the north and east. Joshua trees

¹ Number refers to the numerical code associated with the *List of California Terrestrial Natural Communities* used by the California Department of Fish and Game (CDFG 2003b).

(*Yucca brevifolia*) are relatively common, but widely spaced and provide relatively low total cover. Diversity and abundance of associated species is variable across the project study area. Relatively common associated shrubs include California buckwheat (*Eriogonum fasciculatum*), California ephedra (*Ephedra californica*), box thorn (*Lyceum* spp.) and interior goldenbush (*Ericameria linearifolia*). Disturbance tolerant species such as rabbit brush (*Chrysothamnus* spp.), fiddleneck (*Amsinckia tessellata*), cheat grass (*Bromus tectorum*), red brome (*Bromus madritensis* ssp. *rubens*) and filaree (*Erodium cicutarium*) are common in many areas of this community. Despite the relatively high degree of disturbance, native forbs including *Penstemon* spp., desert trumpet (*Eriogonum inflatum*), primrose (*Camissonia* spp.), purple sage (*Salvia dorii*), and brittle spineflower (*Chorizanthe brevicornu*) are also present in many of the open areas between the shrubs. This community is similar to the Mojave Mixed Woody Scrub (34210) described by Holland (1986) and most closely resembles the Bladderpod-California ephedra-narrowleaf goldenbush series described by Sawyer and Keeler-Wolf (1995).

Mojave Mixed Woody Scrub (32.211.00)

The Mojave mixed woody scrub community is characterized by open, generally low shrubs with occasional Joshua trees often present in some areas. This community tends to occur on excessively drained soils on rolling hills and steep slopes with low water holding capacity and slightly alkaline soils. Mojave mixed woody scrub habitat is widely scattered along the eastern Sierra Nevada from the Owens Valley southward along the Tehachapi, San Gabriel, San Bernardino, San Jacinto, and Peninsular ranges.

This community type is found on the gently sloping alluvial fans, lower slopes and terraces on the north side of Cache Creek (Figure 2). Within the project study area this community is characterized by low shrubs such as California buckwheat and California ephedra. Other common associates include box thorn, interior goldenbush, bladderpod (*Isomeris arborea*), and brittlebush (*Encelia farinosa*). Beavertail cactus (*Opuntia basilaris*), buckhorn cholla (*Opuntia acanthocarpa*) and Chaparral yucca (*Yucca whipplei*) are found in scattered locations. Creosote bush and Joshua tree are also common associates within this community type along sandy alluvial fans and low terraces in the project study area. Herbaceous vegetation includes species such as cheat grass, red brome, Mediterranean grass (*Schismus barbatus*), and filaree in the more disturbed areas. Common native forbs include desert mallow (*Sphaeralcea* spp.) and purple sage. This community is similar to the Mojave Mixed Woody Scrub (34210) described by Holland (1986) and most closely resembles the Bladderpod-California ephedra-narrowleaf goldenbush series described by Sawyer and Keeler-Wolf (1995).

California Buckwheat Scrub (32.040.00)

California buckwheat scrub is very similar to the Mojave mixed wood scrub described above, but is distinguished by the near complete dominance by California buckwheat and California ephedra (Figure 2). This community is found along the upper slopes and ridge tops of the project study area generally along the northern and western parts of the study area, presumably in areas with shallow, rocky soils. Other low shrubs are present, but occur much more widely scattered than in the mixed woody scrub type. Creosote bush and Joshua tree are very uncommon to nearly absent. Common herbaceous species include Mojave aster (*Xylorhiza tortifolia*), gilia (*Gilia* sp.) and Phacelia (*Phacelia* spp.). This

community type most closely resembles the Upper Sonoran sub-shrub scrub described by Holland (1986) and the California buckwheat series as described by Sawyer and Keeler-Wolf (1995).

Joshua Tree Woodland Classification

Habitats in which Joshua trees are a conspicuous component of the community are often recognized as Joshua Tree Woodlands; however, the floristic validity of such a distinction has been questioned in areas with low cover that are characterized by shrubs that often occur without Joshua trees (Barbour et al. 2007). In addition Joshua trees are frequently described as components of other Mojave shrub communities types in Holland (1986). Sawyer and Keeler-Wolf (2006) distinguish the Joshua tree series as characterized by dense Joshua trees and note habitats in which other trees are more common, the most dominant tree species should be used to define the series even though Joshua trees may be common associates. On the other hand, recent vegetation studies in the Mojave Desert suggest that despite low total cover values (frequently only 1 to 2 percent) areas with evenly spaced Joshua trees may represent distinct associations, the most commonly occurring being types associated with creosote bush as a dominant shrub component (Barbour et al. 2007).

Within the project study area Joshua trees are common and widely distributed, although they account for a low percentage of the total cover (less than 5 percent). Therefore the community types were classified based on the Holland (1986) and Sawyer and Keeler-Wolf (1995) community types rather than described as Joshua Tree Woodland types. Habitats in which Joshua tree cover exceeds 10 percent are uncommon (Barbour et al. 2007). Based on the initial site surveys and visual estimates the maximum density of Joshua trees within the creosote bush scrub habitat does not appear to exceed 5 percent total.

Wildlife

Wildlife Habitat

The project study area is comprised of one CWHR wildlife habitat type, desert scrub. Within the project study area, this habitat is frequently dominated by creosote bush with a variety of other scrubby species including: interior goldenbush, California ephedra, box thorn, and rabbitbrush. In some areas, this habitat includes pockets of Joshua trees. In disturbed examples of this habitat, the herbaceous layer is frequently dominated by fiddleneck, filaree, red brome, and cheat grass. This shrub-dominated habitat provides important cover, forage, and nesting opportunities for a variety of mammals, birds, and reptiles. Areas of desert scrub with Joshua tree provide somewhat higher habitat values due to the increased structural complexity represented by the Joshua trees. Rabbitbrush-dominated areas, which frequently develop in disturbed areas (i.e. grazed areas and roadsides), provide somewhat lower habitat values for many wildlife species as they often form monotypic stands that lack the relative diversity of cover, forage and nesting opportunities associated with more structurally diverse habitats. Wildlife species observed during the vegetation mapping and general wildlife assessment are listed in Attachment 4.

Special-status Species

A list of special-status plants and wildlife that occur or potentially occur in the project study area was developed based on available occurrence data in the California Natural Diversity

Data Base (CDFG 2009) the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Plants of California (CNPS 2009), the U.S. Fish and Wildlife Service list of threatened and endangered species for Kern County (USFWS 2009) and BLM's West Mojave Plan (2005) (Attachment 5). A map of the CNDDDB occurrences within 2 miles of the project study area is shown in Figure 1.

Special-status species include those species that are considered to be rare, threatened or endangered in California and elsewhere in their known range. For the purpose of this evaluation a species was considered to have special status if it met one or more of the following criteria:

- Currently listed as threatened or endangered under the federal ESA;
- Currently listed as rare, threatened, or endangered under the California ESA or the California Native Plant Protection Act;
- Proposed or candidate for listing as threatened or endangered under either the federal or state ESA;
- Included on the California Native Plant Society's (CNPS) list of rare, threatened or endangered plants of California; or
- Included as a Kern County species of interest in the West Mojave Plan (BLM 2005)

Plants

The initial database search resulted in a total of 24 species, of which six were considered to have at least some potential for occurrence in the project study area (Attachment 3). No special-status plant species were detected during the vegetation mapping. Following is a brief discussion of each of the six plant species, their habitat requirements and likelihood of occurrence in the project study area.

Alkali mariposa-lily (*Calochortus striatus*) CNPS 1B.2. Alkali mariposa lily is a perennial herb in the Lily family (Liliaceae) found in Kern, Los Angeles, San Bernardino and Tulare counties in southern California and in western Nevada at elevation generally between 200 and 5,000 feet. In Kern County It is generally found in moist alkali meadows and seeps associated with saltgrass (*Distichlis spicata*), creeping wildrye (*Leymus triticoides*), alkali sacaton (*Sporibilis airoides*), rushes (*Juncus* spp.) and spiny saltbush (*Atriplex spinifera*). It has also been reported to occur in ephemeral washes and Joshua tree woodland habitat at Edwards Air Force Base (CDFG 2009). The pale lavender to pinkish purple flowers typically bloom between April and early June. The nearest known occurrence is located on Edwards Air Force Base approximately 9 miles south of the project study area.

Barstow woolly sunflower (*Eriophyllum mohavense*) CNPS 1B.2. Barstow woolly sunflower is an annual herb in the sunflower family (Asteraceae) and is endemic to California. This species is found at elevations ranging from 1,600 to 3,200 feet in Fresno, Kern, Los Angeles and San Bernardino Counties. Clusters of yellow flowers bloom in April and May. It is typically associated with moist sites and playas in chenopod scrub, Mojave Desert Scrub and Joshua Tree Woodland habitats. The nearest known population is approximately 6.5 miles east of the project study area at the Hyundai test track site southwest of California City.

Charlotte's Phacelia (*Phacelia nashiana*) CNPS 1B.2. Charlotte's phacelia is a California endemic annual plant in the waterleaf family (Hydrophyllaceae). Showy blue flowers are generally present between March and June. This species is found in Inyo, Kern and Tulare Counties at elevations ranging from 1,900 to 7,200 feet. It occurs in Joshua Tree Woodland, Mojave Desert Scrub and Pinyon and Juniper Woodland habitats usually granitic, sandy soils. The nearest reported occurrence to the project study area is approximately 5.5 mile to the north east along a barren ridge approximately 4.5 miles southwest of Pine Tree Canyon.

Red Rock Poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*) CNPS 1B.2. Red rock poppy is an annual herb in the poppy family (Papaveraceae) that is endemic to California. This species is found at elevations ranging from 2,200 to 4,000 feet in Kern and San Bernardino Counties. The showy yellow flowers bloom between March and May. It is generally found in Mojave Desert Scrub habitats on loose sandy or gravelly soils. The nearest reported occurrences are approximately 9 miles southeast of the project study area, on Edwards Air Force Base and approximately 12 miles northeast of the project study area growing on the lower slope of Water Canyon.

Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) CNPS 2.2. Sagebrush loeflingia is an annual herb in the pink family (Caryophyllaceae). This species is widely distributed and is found in Inyo, Kern, Lassen, Los Angeles and San Bernardino Counties in California as well as in Nevada, Oregon and Wyoming. It is found in a variety of habitats including Desert Dunes, Great Basin Scrub, and Sonoran Desert Scrub, generally on open, loose sandy soils at elevations between 2,300 and 5,300 feet. In Kern County this species has been found in open sandy areas within creosote bush-Joshua tree and other mix Mojave scrub habitats. The nearest reported occurrence of this species is approximately 7.5 miles south of the project study area.

White pygmy –poppy (*Canbya candida*) CNPS 4.2. White pygmy poppy is an annual herb in the poppy family (Papaveraceae) that is endemic to California. This species is found in Imperial, Inyo, Kern, Los Angeles, and San Bernardino Counties at elevations ranging from approximately 1,900 to 5,000 feet. In Kern County this species is typically found in mixed Mojave scrub, saltbush scrub, juniper woodlands and Joshua Tree Woodlands, typically on sandy soils. Clusters of small white flowers bloom between March and June. There are 16 reported occurrences of this species in Kern County. The nearest record to the project study area is a 1934 collection from 2 miles north of Mojave.

Wildlife

Twenty-five special-status wildlife species with the potential to occur in the project vicinity were identified during the information review. Special-status wildlife species observed during the surveys included: the state and federal threatened desert tortoise (*Gopherus agasazii*) and the state species of special concern loggerhead shrike (*Lanius ludovicianus*). In addition, potentially suitable habitat was identified for three other special-status species: Mohave ground squirrel (*Spermophilus mohavensis*), burrowing owl (*Athene cunicularia*), and Le Conte's thrasher (*Toxostoma lecontei*). Following is a brief discussion of the wildlife species with potential to occur in the project study area.

American badger (*Taxidea taxus*) State Species of Special Concern. The American badger is a primarily nocturnal mammal found in a variety of open, arid, treeless habitats with friable

soils and plentiful rodent prey. This species inhabits burrows where young are born from March to late April. The nearest CNDDDB occurrence of this species overlaps the southwest portion of the project study area. However, this record dates from 1925 and the species may no longer be present. One potential badger burrow was identified during the general wildlife assessment. Potentially suitable habitat is present on the project study area for this species.

Mohave Ground Squirrel (*Spermophilus mohavensis*), State Threatened. The Mohave ground squirrel occupies burrows in sandy to gravelly soils in open desert scrub, alkali scrub, Joshua Tree Woodlands, and annual grasslands of the Mojave Desert. The nearest CNDDDB occurrence of this species is 0.88 mile south of the project study area and dates from 1987 (CNDDDB 2009). The project study area is located near the extreme western edge of this species' range (Stewart 2005). A protocol-level survey for this species was conducted in portions of the project study area in 2006 (Vanderweg 2006). Although the species was not observed during these surveys, anecdotal reports suggest that it may still be present in low numbers. No Mohave ground squirrels were observed during wildlife surveys conducted between April 2007 and December 2008 (MHWA 2008).

San Joaquin pocket mouse (*Perognathus inornatus inornatus*) BLM sensitive. This species occurs in arid grasslands and open scrub in the Central and Salinas valleys at elevations ranging from 1,000 to 2,000 feet. This habitat is absent from the project study area. The nearest CNDDDB occurrence is documented 0.84 mile southwest of the project study area (CNDDDB 2009). This species was not observed during wildlife surveys conducted between April 2007 and December 2008 (MHWA 2008).

Tulare grasshopper mouse (*Onychomys torridus tularensis*) State Species of Special Concern, BLM sensitive. This species occurs in low, open scrub and semi-scrub habitats of the southern San Joaquin Valley south to the foothills of the Tehachapi Mountains at elevations ranging from 279 to 2,650 feet. However, the nearest CNDDDB occurrence is documented 0.84 mile southwest of the Subarea at an elevation of 3,900 feet. This species was not observed during wildlife surveys conducted between April 2007 and December 2008 (MHWA 2008). Potentially suitable habitat for this species is present on the project study area.

Bat Species. There are 24 species of bats in California, of which 18 have ranges in or near the project study area (Bat Conservation International [BCI] 2006 in WEST 2009a). Of these, only nine species are likely to occur in the Tehachapi Pass area, and none of these are likely to occur in substantial concentrations (Bureau of Land Management [BLM] pers. comm. 2004 in WEST 2009a). Six species that are considered either a species of special concern by CDFG (CDFG 2009) or a BLM sensitive species have the potential to occur in the project area. Most of the bat species potentially occurring in the project study area are considered resident, non-migratory species. Acoustic monitoring is currently being conducted at the site.

Sensitive bat species with the potential to occur in the project area include:

- Pallid bat (*Antrozus pallidus*) BLM sensitive, State species of special concern
- Townsend's big-eared bat (*Corynorhinus townsendii*) BLM sensitive, State species of special concern
- California myotis (*Myotis californicus*) BLM sensitive

- California leaf-nosed bat (*Macrotus californicus*), BLM sensitive, State species of special concern
- Big brown bat (*Eptesicus fuscus*) BLM sensitive
- Western pipistrelle (*Pipistrellus hesperus*) BLM sensitive

Burrowing Owl (*Athene cunicularia*) State Species of Special Concern, BLM Sensitive. This species is typically associated with open desert habitat similar to that of desert tortoise and Mohave ground squirrel. No potential burrows for this species and no burrowing owls were identified during the general wildlife habitat survey; however, the species was documented in the project study area incidentally during non-protocol desert tortoise surveys conducted by M.H. Wolfe and Associates (MHWA) in 2007 as well as during bat acoustics surveys in 2008 (MHWA 2007a and 2007b). The CNDDDB had no record of this species within the site vicinity. Suitable open habitat is present.

California Condor (*Gymnogyps californianus*) Federal and State Endangered, Fully Protected. The California condor is the largest flying bird in North America. It forages in open grassland areas and nests in habitats ranging from chaparral to forested montane regions. After reaching a population low of 22 wild birds in 1982, a recovery program was implemented in 1987 and as of 2008 the total population in the world is 320, with 80 wild birds in California.

There are no CNDDDB occurrences of this species within the project vicinity, but one condor was observed approximately 25 miles southwest of the project study area. This species was not observed during wildlife surveys conducted by MHWA (2008) for CPC East, CPC Proper or Ward or by WEST (2009b) in the Sun Creek project area. The Mojave Desert is out of the historical range of this species and any birds that may occur in the area would likely be migrants.

Ferruginous Hawk (*Buteo regalis*) BLM Sensitive. The ferruginous hawk is found in arid and semi-arid grasslands of North America. The project is not within the nesting range for this hawk. This species is a winter migrant in the Mojave Desert and is not expected to nest in the project study area. There are no CNDDDB occurrences within the project vicinity and none were observed during surveys conducted by MHWA (2008) and WEST (2009b), although suitable wintering habitat is present.

Prairie falcon (*Falco mexicanus*) State Watch List, BLM sensitive. Prairie falcons inhabit open, arid habitats including grasslands, desert steppe, and canyons. They require cliffs or other structures for nesting. The species was not observed during the general wildlife assessment; however, one individual of this species was observed at the project study area during wildlife surveys conducted from April 2007 to December 2008 (MHWA 2008). In addition, the CNDDDB documents its occurrence 1.6 miles west of the project study area. Potentially suitable foraging habitat is present at the project study area for this species.

Le Conte's Thrasher (*Toxostoma lecontei*) State Species of Special Concern, BLM Sensitive. Le Conte's Thrasher inhabits desert flats, washes and alluvial fans with sandy and/or alkaline soil and scattered shrubs. The nest typically is placed in a cactus, thorny shrub, or small tree, chosen to offer protection from predators and sun. Creosote bush does not provide the structure necessary for nest placement. The CNDDDB had several records of this species

within the site vicinity. The nearest CNDDDB occurrence was located approximately 3.75 miles southwest of the project study area. This species was not observed during the general wildlife habitat survey; however, several Le Conte's thrashers were observed on the project study area during wildlife surveys conducted from April 2007 to December 2008 (MHWA 2008) and also during studies conducted by WEST in 2009.

Loggerhead shrike (*Lanius ludovicianus*) State Species of Special Concern, BLM Sensitive. Loggerhead shrikes inhabit open terrain with suitable perching sites including fence posts, transmission lines, and barbed wire fences from which they hunt large insects, reptiles, small mammals, and small birds. Nests are hidden in large clumps of shrubs or low trees and are often located in the transition zone between two habitat types. The CNDDDB had no record of this species within the site vicinity. Two loggerhead shrikes were identified during the general wildlife habitat survey and several individuals of this species were observed on the project study area during wildlife surveys conducted by from April 2007 to December 2008 (MHWA 2008) and also during studies conducted by WEST in 2009. Suitable nesting and foraging habitat is present at the project study area for this species.

Desert Tortoise (*Gopherus agassizii*) Federal and State Threatened. The desert tortoise is native to the Mojave Desert and Sonoran Desert of the southwestern United States and northern Mexico. They are frequently found in alluvial fans, washes, and canyons in the Mojave Desert and spend at least 95 percent of its life in burrows. The nearest CNDDDB occurrence of this species is approximately 0.44 mile north of the project study area. Six tortoise occurrences were documented within the project study area boundaries during protocol-level surveys in the project study area conducted during the spring of 2009. While the USFWS has designated critical habitat for this species, the project study area does not lie within the designated critical habitat area. The nearest critical habitat unit is located approximately 22 miles northeast of the project study area (USFWS 2009b).

Surveys In Progress or Already Completed

The following surveys are either in progress or have already been completed.

Completed Surveys

- Protocol-level desert tortoise surveys (completed in the spring of 2009 by Sundance Biological).

Surveys in Progress

- Avian use surveys (WEST, Inc.)
- Bat acoustics study (WEST, Inc.)

Recommendations for Additional Surveys

Based on the results of the spring 2009 vegetation mapping and general wildlife assessment, the following resource surveys are recommended to support project permitting:

- Protocol-level rare plant surveys

- Protocol-level Mohave ground squirrel surveys. These surveys are recommended because the survey results are valid only for one year and only a portion of the site was trapped.
- Raptor aerial nest surveys

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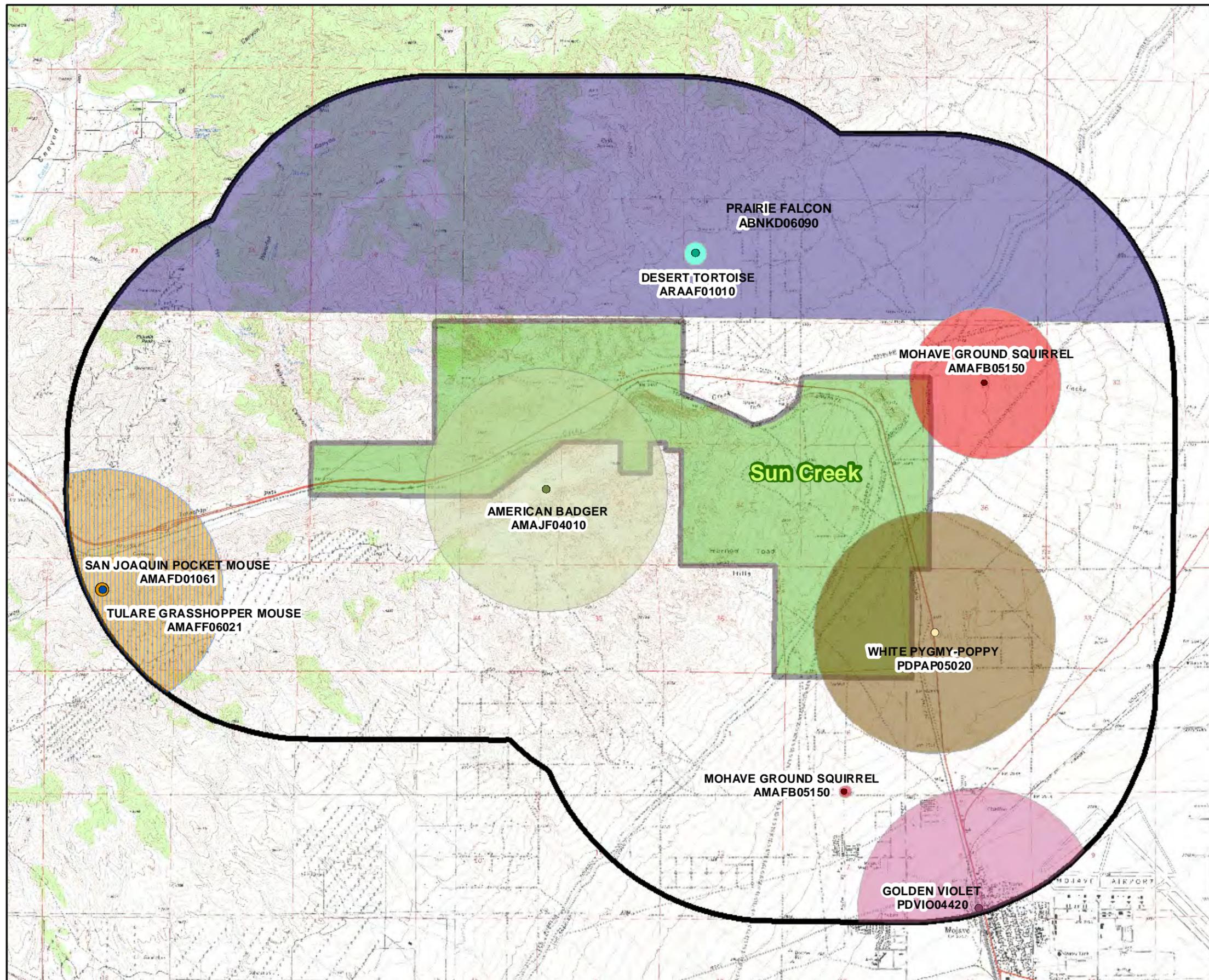
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- LEGEND**
- Tulare grasshopper mouse
 - San Joaquin pocket mouse
 - American badger
 - Mohave ground squirrel
 - desert tortoise
 - golden violet
 - white pygmy-poppy
 - ▨ Tulare grasshopper mouse
 - ▨ San Joaquin pocket mouse
 - ▨ American badger
 - ▨ Mohave ground squirrel
 - ▨ desert tortoise
 - ▨ golden violet
 - ▨ prairie falcon
 - ▨ white pygmy-poppy
- Project Boundary**
- ▭ Sun Creek
 - ▭ Sun Creek 2 Mile Buffer

Notes:
 1. A rea of interest subject to change.
 2.

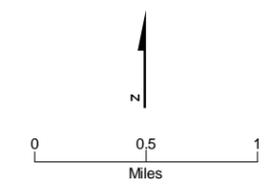
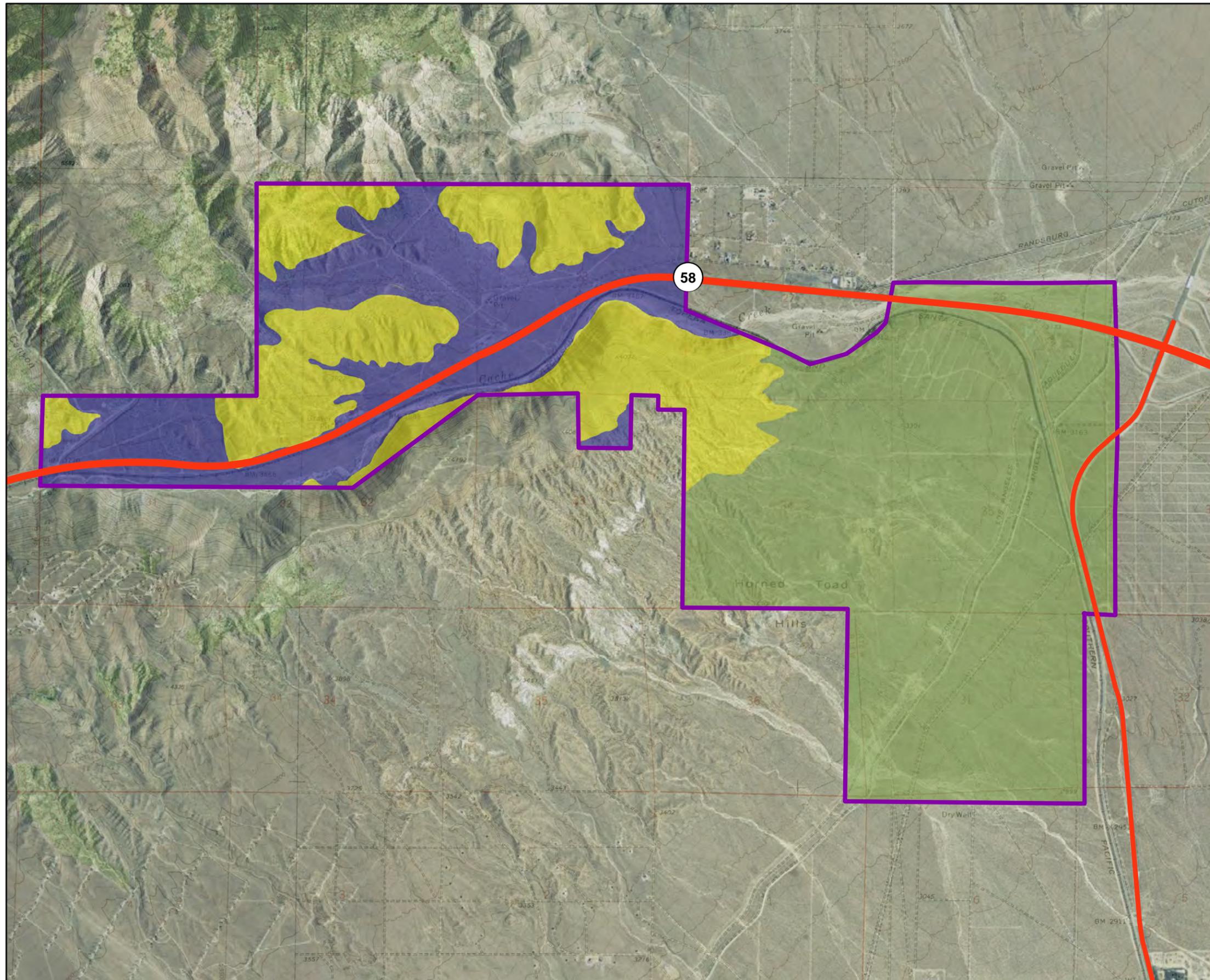


FIGURE 1
California Natural Diversity
Datab ase (CNDDb)
 Sun Creek
 Alta Wind Center



- LEGEND
- Vegetation Community Type**
- Mojave Mixed Woody Scrub
 - Creosote Bush Scrub
 - California Buckwheat Scrub
 - Project Study Area
 - Highway

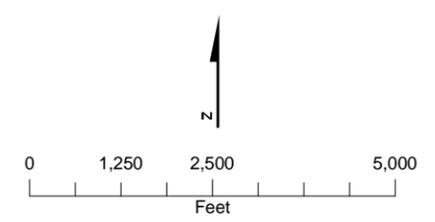


FIGURE 2
Vegetation Communities
 Sun Creek
 Alta Wind Center Project

Attachment 1
CNPS Species List

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CNPS Species List

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	CNPS STATUS	FLOWERING PERIOD
<i>Allium shevockii</i>	Spanish Needle onion			List 1B.3	May-Jun
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch			List 1B.1	May-Oct
<i>Astragalus leucolobus</i>	Big Bear Valley woollypod			List 1B.2	May-Jul
<i>California macrophylla</i>	round-leaved filaree			List 1B.1	Mar-May
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa lily			List 1B.2	Apr-Jul
<i>Calochortus striatus</i>	alkali mariposa lily			List 1B.2	Apr-Jun
<i>Eriastrum tracyi</i>	Tracy's eriastrum		Rare	List 1B.2	Jun-Jul
<i>Eriogonum kennedyi</i> var. <i>pinicola</i>	Kern buckwheat			List 1B.1	May-Jun
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower			List 1B.2	Apr-May
<i>Eschscholzia procera</i>	Kernville poppy			List 3	Jun-Jul(Aug)
<i>Fritillaria brandegeei</i>	Greenhorn fritillary			List 1B.3	Apr-Jun
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields			List 1B.1	Feb-Jun
<i>Layia heterotricha</i>	pale-yellow layia			List 1B.1	Mar-Jun
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush loeflingia			List 2.2	Apr-May
<i>Mimulus pictus</i>	calico monkeyflower			List 1B.2	Mar-May
<i>Monardella linoides</i> ssp. <i>oblonga</i>	Tehachapi monardella			List 1B.3	Jun-Aug
<i>Navarretia peninsularis</i>	Baja navarretia			List 1B.2	Jun-Aug
<i>Navarretia setiloba</i>	Piute Mountains navarretia			List 1B.1	Apr-Jul
<i>Orthotrichum spjutii</i>	Spjut's bristle moss			List 1B.3	
<i>Phacelia nashiana</i>	Charlotte's phacelia			List 1B.2	Mar-Jun
<i>Streptanthus cordatus</i> var. <i>piutensis</i>	Piute Mountains jewel-flower			List 1B.2	May-Jul
<i>Viola aurea</i>	golden violet			List 2.2	Apr-Jun

Attachment 2
USFWS Species List for Kern County



Ventura Fish & Wildlife Office
California/Nevada Regional Office

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003



**Federally Listed Threatened & Endangered
Species
Which May Occur In Kern County, CA**

Bird

California Condor	Gymnogyps californianus	E , CH
Least Bell's Vireo	Vireo bellii pusillus	E
Southwestern Willow Flycatcher	Empidonax trallii extimus	E
Yellow-Billed Cuckoo	Coccyzus americanus	C

Reptile

Desert Tortoise	Gopherus agassizii	T , CH
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E - Endangered	T - Threatened	CH - Critical habitat
PE - Taxa proposed for listing as endangered	PT - Taxa proposed for listing as threatened	PCH - Critical habitat which has been proposed

**** DISCLAIMER NOTICE - The information provided on this page should not be considered an OFFICIAL species list. If you have a proposed project and are in need of an official species list, please mail a detailed request to the address listed at the top of the page. ****

Attachment 3
Plant Species Observed in the Sun Creek
Subarea During the Vegetation Mapping and
General Wildlife Assessment

ATTACHMENT 3

Plant Species Observed in the Sun Creek Subarea During the Vegetation Mapping and General Wildlife Assessment

Common Name	Scientific Name
Trees	
California juniper	<i>Juniperus californica</i>
Cacti and Yucca	
Beavertail cactus	<i>Opuntia basilaris</i>
Buckhorn cholla	<i>O. acanthocarpa</i>
Chaparral yucca	<i>Y. whipplei</i>
Joshua tree	<i>Yucca brevifolia</i>
Shrubs	
Bladderpod	<i>Isomeris arborea</i>
Box thorn	<i>Lycium</i> sp.
Brittlebush	<i>Encelia farinosa</i>
California buckwheat	<i>Eriogonum fasciculatum</i>
California ephedra	<i>Ephedra californica</i>
Cheesebush	<i>Hymenoclea salsola</i>
Creosote bush	<i>Larrea tridentata</i>
Narrow-leaf goldenbush	<i>Ericameria linearifolia</i>
Pygmy-cedar	<i>Peucephyllum schottii</i>
Rabbitbrush	<i>Chrysothamnus</i> spp.
Spiny hop-sage	<i>Grayia spinosa</i>
White bursage	<i>Ambrosia dumosa</i>
Winterfat	<i>Krascheninnikovia lanata</i>
Herbs	
Big galleta grass	<i>Pleuraphis rigida</i>
Brittle spineflower	<i>Chorizanthe brevicornu</i>
Cheat grass	<i>Bromus tectorum</i>
Chia	<i>Salvia columbariae</i>
Desert trumpet	<i>Eriogonum inflatum</i>
Fiddleneck	<i>Amsinckia tessellate</i>
Filaree	<i>Erodium cicutarium</i>
Gilia	<i>Gilia</i> sp.
Mallow	<i>Sphaeralcea</i> spp.

ATTACHMENT 3

Plant Species Observed in the Sun Creek Subarea During the Vegetation Mapping and General Wildlife Assessment

Common Name	Scientific Name
Mediterranean grass	<i>Schismus barbatus</i>
Mojave aster	<i>Xylorhiza tortifolia</i>
Penstemon	<i>Penstemon</i> spp.
Phacelia	<i>Phacelia</i> spp.
Primrose	<i>Camissonia</i> spp.
Purple sage	<i>Salvia dorii</i>
Red brome	<i>Bromus madritensis</i> ssp. <i>rubens</i>

Attachment 4
Wildlife Species Observed in the Sun Creek
Subarea During the Vegetation Mapping and
General Wildlife Assessment

ATTACHMENT 4

Wildlife Species Observed in the Sun Creek Subarea During the Vegetation Mapping and General Wildlife Assessment

Common Name	Scientific Name
Mammals	
Black-tailed jackrabbit	<i>Lepus californicus</i>
California ground squirrel	<i>Spermophilus beecheyi</i>
Cottontail	<i>Sylvilagus</i> sp.
Coyote	<i>Canis latrans</i>
Desert woodrat	<i>Neotoma lipida</i>
Grasshopper mouse	<i>Onychomys</i> sp.
Kangaroo rat	<i>Dipodomys deserti</i>
White-tailed antelope squirrel	<i>Ammospermophilus leucurus</i>
Birds	
American crow	<i>C. corax</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Black phoebe	<i>Sayornis nigricans</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>
California quail	<i>Callipepla californica</i>
Common raven	<i>Corvus brachyrhynchos</i>
Horned lark	<i>Eremophila alpestris</i>
Lark sparrow	<i>Chondestes grammicus</i>
Loggerhead shrike (CDFG species of special concern)	<i>Lanius ludovicianus</i>
Mourning dove	<i>Zenaida macroura</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Western scrub jay	<i>Amphelocoma californica</i>
Reptiles	
Desert horned lizard	<i>Phrynosoma platyrhinos</i>
Desert iguana	<i>Dipsosaurus dorsalis</i>
Desert tortoise (federal and state threatened)	<i>Gopherus agasazii</i>
Great Basin whiptail	<i>Aspidoscelis tigris tigris</i>
Long-nosed leopard lizard	<i>Gambelia wislizenii</i>
Pacific gopher snake	<i>Pituophis catenifer catenifer</i>
Red coachwhip	<i>Masticophis flagellum piceus</i>

ATTACHMENT 4

Wildlife Species Observed in the Sun Creek Subarea During the Vegetation Mapping and General Wildlife Assessment

Common Name	Scientific Name
Side-blotch lizard	<i>Uta stansburiana</i>
Zebra-tailed lizard	<i>Callisaurus draconoides</i>

Attachment 5
Special Status Species that Occur or Potentially
Occur within 2 Miles of the Alta Wind Center
Sun Creek Subarea

ATTACHMENT 5

Special Status Species that Occur or Potentially Occur within 2 Miles of the Alta Wind Center Sun Creek Subarea

Species	Federal Status	State Status / CNPS List	Occurrence within 2 miles of Project study area / Comments
Mammals			
American badger <i>Taxidea taxus</i>	--	SC	Yes. Nearest documented occurrence (1925 record) overlaps southwest portion of Subarea. Moderate potential to occur in the project study area.
Mohave ground squirrel <i>Spermophilus mohavensis</i>	--	T	Yes. Nearest occurrence overlaps northeast portion of Subarea. Species is also documented 0.88 mile south of Subarea (CNDDDB 2009). None found during trapping conducted in eastern portion of Subarea in 2006. Moderate potential to occur in the project study area.
Yellow-eared pocket mouse <i>Perognathus xanthonotus</i>	BLM	--	No. The project study area is out of the range of this species (CA Gap Analysis Project http://depts.washington.edu/natmap/maps/CA_maphtml/m090.html)
San Joaquin pocket mouse <i>Perognathus inornatus inornatus</i>	BLM	--	Yes. Nearest occurrence documented 0.84 mile southwest of Subarea.
Tulare grasshopper mouse <i>Onychomys torridus tularensis</i>	BLM	SC	Yes. Nearest occurrence documented 0.84 mile southwest of Subarea.
Pallid bat <i>Antrozous pallidus</i>	BLM	SC	No. Suitable habitat is present for this species. Moderate potential to occur.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	BLM	SC	No. Suitable habitat is present for this species. Moderate potential to occur.
California myotis <i>Myotis californicus</i>	BLM	--	No. Suitable habitat is present for this species. Moderate potential to occur.
California leaf-nosed bat <i>Macrotus californicus</i>	BLM	SC	No. Suitable habitat is present for this species. Moderate potential to occur.
Big brown bat <i>Eptesicus fuscus</i>	BLM	--	No. Suitable habitat is present for this species. Moderate potential to occur.
Western pipistrelle <i>Pipistrellus Hesperus</i>	BLM	--	No. Suitable habitat is present for this species. Moderate potential to occur.
Birds			
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	T, CH; BLM	SC	No. prefers sandy beaches and dunes. No suitable habitat present.
California condor <i>Gymnogyps californianus</i>	E, CH	E, FP	No. The closest known occurrence is approximately 25 miles away. Mojave Desert is not within the historical range of the species. Low potential to occur.
Ferruginous hawk <i>Buteo regalis</i>	BLM	WL	No. Winter migrant in the Mojave Desert. Moderate potential to occur.

ATTACHMENT 5

Special Status Species that Occur or Potentially Occur within 2 Miles of the Alta Wind Center Sun Creek Subarea

Species	Federal Status	State Status / CNPS List	Occurrence within 2 miles of Project study area / Comments
Prairie falcon <i>Falco mexicanus</i>	BLM	WL	Yes. Documented during 2007 avian surveys. Nearest CNDDDB occurrence occurs adjacent to northern boundary of Subarea. Known to occur in the project study area.
Burrowing owl <i>Athene cunicularia</i>	BLM	SC	Yes. Documented during 2007 desert tortoise and 2008 bat surveys. Potential burrows also identified during 2007 tortoise surveys. Nearest CNDDDB occurrence ~4 miles away. Known to occur in the project study area.
Long-eared owl <i>Asio otus</i>	BLM	SC	No. Found in riparian areas. No suitable habitat present.
Least Bell's vireo <i>Vireo belli pusillus</i>	E, CH	E	No. Prefers riparian areas. No suitable habitat present.
Gray vireo <i>V. vicinior</i>	BLM	SC	No. Found in chaparral or pinyon-juniper woodland. No suitable habitat present.
Loggerhead shrike <i>Lanius ludovicianus</i>	--	SC	Yes. Documented during 2007 avian surveys and during spring 2009 general habitat survey. Known to occur in the project study area.
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C	E	No. No suitable habitat present.
Le Conte's thrasher <i>Toxostoma lecontei</i>	BLM	SC	Yes. Documented during 2007, 2008 and 2009 avian surveys. Nearest CNDDDB occurrence ~ 3.75 miles away. Known to occur in the project study area.
Southwestern willow flycatcher <i>Empidonax trailli extimus</i>	E, CH	--	No. Prefers riparian areas. No suitable habitat present.
Amphibians and Reptiles			
Desert tortoise <i>Gopherus agassizii</i>	T, CH	T	Yes. Documented in Subarea during spring 2009 general habitat survey. Nearest CNDDDB documented occurrence 0.44 mile north of Subarea. Five identified in Subarea during spring 2009 protocol surveys. Known to occur in the project study area.
Southwestern pond turtle <i>Actinemys marmorata pallida</i>	BLM	SC	No. No suitable habitat present.
Plants			
Alkali mariposa lily <i>Calochortus striatus</i>	BLM	1B.2	No. Low potential to occur.
White pygmy-poppy	--	4.2	Yes. Nearest documented occurrence (1935 record) overlaps southeast portion of

ATTACHMENT 5

Special Status Species that Occur or Potentially Occur within 2 Miles of the Alta Wind Center Sun Creek Subarea

Species	Federal Status	State Status / CNPS List	Occurrence within 2 miles of Project study area / Comments
<i>Canbya candida</i>			subarea. Moderate potential to occur.
Barstow woolly sunflower <i>Eriophyllum mohavense</i>	BLM	1B.2	No. Low potential to occur.
Red Rock poppy <i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i>	BLM	1B.2	No. High potential to occur.
Sagebrush loeflingia Loeflingia squarrosa var. Artemisiarum	BLM	2.2	No. Moderate potential to occur.
Charlotte's phacelia <i>Phacelia nashiana</i>	BLM	1B.2	No. Moderate potential to occur.

-- = No status

Regulatory Status

Federal Status:

- T Listed as Threatened by the USFWS
- E Listed as Endangered by the USFWS
- C Listed as being a Candidate Species by the USFWS
- CH Critical Habitat has been designated
- BLM Designated as BLM Sensitive

State Status:

- E Listed as Endangered by the CDFG
- T Listed as Threatened by the CDFG
- SC CDFG Species of Special Concern
- SR CDFG Rare
- FP CDFG Fully Protected Species
- WL CDFG Watch List Species

California Native Plant Society (CNPS) List:

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