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Jon Boyer
Vaca Dixon BESS LLC and Arges BESS LLC
4350 Executive Drive, Suite 320
San Diego, California 92121

Subject: Burrowing Owl Habitat Assessment and Protocol Survey Report for the Vaca Dixon Power Center Project in Solano County, California

Dear Mr. Boyer:

Rincon Consultants, Inc. (Rincon) is pleased to provide this report documenting the findings of a western burrowing owl (*Athene cunicularia*) habitat assessment and protocol-level breeding season surveys conducted for the Vaca Dixon Power Center Project (Project), located near the City of Vacaville, Solano County, California. Please refer to Attachment 1 - Figure 1 for an illustration of the Project location. This report provides findings specific to the portion of the Project Area north of Interstate-80 (I-80), where the overhead transmission intertie (gen-tie) lines are proposed on the western portion of the Pacific Gas & Electric Company (PG&E) Vaca-Dixon Substation property within Accessor's Parcel Number 0133-060-070. Though the proposed gen-tie corridor for this Project only encompasses a small portion of the PG&E parcel north of I-80, the Project Area was extended to include the entire western portion of the overall parcel plus a 500-foot study area buffer to account for any future changes to Project design and ensure all potential impact areas were adequately surveyed. Survey results for the breeding season protocol surveys conducted in the battery energy storage system (BESS) portion of the Project Area are provided in the 2025 Protocol Survey Report (Rincon Consultants, Inc. 2025).

Western Burrowing Owl Natural History

The western burrowing owl is a candidate species under the California Endangered Species Act (CESA). Burrowing owls prefer desert, grassland, and shrubland habitat with the presence of fossorial mammals, whose burrows are used for nesting and roosting (Klute et al. 2003). The burrowing owl is a yearlong resident of open grasslands, especially prairie, plains, and savanna, and sometimes other open areas such as vacant lots near human habitation or airports. This species spends much of its time on the ground or on low perches such as fence posts, and nests in abandoned burrows such as those dug by ground squirrels, desert kit foxes, and badgers (Zeiner et al. 1990). During migration and winter, burrowing owls are more widespread in lowland areas of the state and reach offshore islands (Shuford and Gilardi. 2008).

The burrowing owl is crepuscular (active primarily during dusk and dawn) and perches during daylight hours at the entrance to its burrow or on low posts. Nesting typically occurs from March through August. Burrowing owls form a pair-bond for more than one (1) year and exhibit high site fidelity, reusing the same burrow year after year. The female remains inside the burrow during most of the egg laying and incubation periods and is fed by the male through the brooding period. Burrowing owls are opportunistic feeders, consuming a diet that includes flying insects, small mammals, birds, and occasionally amphibians and reptiles (Shuford and Gardali 2008). Typical burrowing owl sign includes, but is not limited to, feathers, white-wash, and pellets.

The burrowing owl was once abundant and widely distributed in coastal southern California, but it has declined in counties such as Los Angeles, Orange, San Diego, Riverside, and San Bernardino. Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of burrowing owls include habitat destruction, insecticide poisoning, rodenticide for squirrels and prairie dogs, and collisions with automobiles (Shuford and Gardali 2008).



Methodology

Prior to conducting field surveys, Rincon conducted a literature and database review. This review included a review of recent aerial photography (Google Earth Pro 2026), eBird (2026), and a query of the California Natural Diversity Database (CNDDDB; CDFW 2026a) and Biographic Information and Observation System (BIOS; CDFW 2026b). The review encompassed the following 7.5-minute U.S. Geological Surveys quadrangles: *Allendale, Elmira, Dozier, Dixon, Merritt, Winters, Monticello Dam, Mt. Vaca, and Fairfield North*, California, and/or a five-mile radius around the Project Area north of I-80.

Rincon biologists, skilled in burrowing owl life history with experience identifying burrowing owls and their sign, conducted a total of four field surveys within the Project Area north of I-80 and a 150-meter (~500-foot) survey buffer (herein referred to as the survey area; Attachment 1 - Figure 2) during the typical breeding season for burrowing owls (February 1 through August 31). Please refer to Table 1, below, for a summary of the survey dates, surveyors, and site conditions.

The surveys were conducted according to guidelines outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Field surveys were performed by systematically searching for potential foraging and nesting habitat within the survey area. The survey area was assessed on foot by the biologists walking transects spaced approximately 15 meters apart, appropriately adjusted to allow for 100 percent visual coverage of the ground surface. Areas within the survey area that were inaccessible (i.e., I-80, Gibson Canyon Creek, private property) were investigated with binoculars to the greatest extent possible. During each survey, if burrowing owls or potentially suitable burrows that may be used by burrowing owl were observed, they were documented using a handheld Global Positioning System unit capable of recording positions at sub-meter accuracy. If present, other signs of burrowing owl, such as whitewash around burrows, owl pellets, eggshell fragments, prey remains, and owl feathers would have been recorded. Representative site photographs captured during the survey effort are provided as Attachment 2.

Table 1 Survey Dates and Site Conditions

Date	Time (24-hour)	Surveyor(s)	Air Temp (°F)	Wind Speed (mph)	Weather Notes
March 30, 2026	0730 - 0915	Asha Pluton Grace Myers	54-62	0-5	40% cloud cover
April 28, 2026	0700 – 0830	Grace Myers	50-56	0-3	0% cloud cover
May 19, 2026	0715 – 0825	Grace Myers	63-71	0-3	0% cloud cover
June 16, 2026	0715 – 0852	Grace Myers	61-69	2-5	0% cloud cover

Summary of Findings

Database Search and Literature Review

The CNDDDB query resulted in 78 occurrences of burrowing owl within the nine-quad/five-mile CNDDDB search area (CDFW 2026a). Of those 78 occurrences, the nearest occurrences were recorded approximately 1.20 and 1.23 miles southwest of the Project Area during the breeding season of both 2004 and 2018, respectively, and 15 additional observations recorded within five miles of the Project Area (CDFW 2026a). The online eBird database documented several observations of burrowing owl within five miles of the Project Area, with the nearest observation occurring 0.95 mile northwest of the Project Area in 2002 (eBird 2026).



Existing Conditions

As observed during the field survey effort, the survey area consisted primarily of non-native annual grassland that is regularly maintained by the property owner for fuel reduction (e.g., mowing and/or herbicides). The survey area also supported landscaped and developed areas, including portions of the existing PG&E facilities and the I-80 corridor to the east and south, and open water occurring in adjacent agricultural ponds and Gibson Canyon Creek to the north. Both the ponds and Gibson Canyon Creek are within the survey area buffer but are outside of the Project Area. The survey area also consists of seasonal wetlands and a swale feature, supporting perennial rye grass fields. South of I-80, but within the survey area buffer, the vegetation and land cover types include a fresh emergent wetland, orchard, open water occurring in agricultural ditches/canals, agricultural fields, and barren/ruderal areas. Please refer to Attachment 1 - Figure 3 for an illustration of the vegetation and other land cover documented within the survey area.

The survey area is relatively flat, with elevations between approximately 79 to 84 feet above mean sea level. Based on the most recent U.S. Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS) soil survey for Solano County, California (USDA, NRCS 2019), the survey area contains Clear Lake clay, 0 to 2 percent slopes, MLRA 17, San Ysidro sandy loam, 0 to 2 percent slopes, and San Ysidro sandy loam, thick surfaces, 0 to 2 percent slopes as well as areas mapped as water (Attachment 1 - Figure 4).

Field Survey Results

During the field surveys, no burrowing owls, or sign of burrowing owls, were observed. Bird species observed included Canada geese (*Branta canadensis*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), killdeer (*Charadrius vociferus*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorrhous mexicanus*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*). Potentially suitable burrows created by California ground squirrel (*Otospermophilus beecheyi*) were observed within the southeastern and northern/central portion of the survey area, though these burrows are concentrated in small areas and are surrounded by hard-packed soil (Attachment 1 - Figure 5; Attachment 2: Photographs 2 and 3). A limited number of smaller burrows attributable to other small mammals were observed throughout the survey area; however, these burrows were not considered suitable for burrowing owl use. There is a berm that runs north/south in the southern portion of the site that this species could use to perch, if present, though no sign of burrowing owl was observed along the berm during the surveys. Due to the ongoing mowing activities occurring in the survey area, and lack of foraging habitat for flying invertebrates, the available prey base for burrowing owl was minimal. A complete list of plant and wildlife species detected during the surveys is provided in Attachment 3.

Discussion

Due to documented occurrences of burrowing owl observed within 1.2 miles from the Project Area, and the existing conditions of the survey area, specifically within the areas that support the regularly mowed non-native grasslands and California ground-squirrel burrows, the Project Area may provide suitable habitat for burrowing owls. However, due to the survey area's regular disturbance by the ongoing vegetation maintenance for fuel reduction and the high traffic area of the I-80 corridor to the south, the minimal prey base detected, the small number of potentially suitable burrows observed in the survey area with predominately hard-packed soil throughout the site, and the nearest observation occurring nearly eight years ago, the suitability of the survey area is greatly reduced. Additionally, no burrowing owls or sign of burrowing owls were observed during the focused survey effort.

This survey effort was completed during the breeding season between February 1 and August 31. Based on the results of the literature and database review, as well as the field surveys, overall habitat suitability



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for burrowing owl within the survey area during the breeding season was determined to be low. No burrowing owls were determined to be present within the survey area.

Thank you for the opportunity to work with you on this Project. Please contact us if you have any questions or concerns regarding the information presented herein.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Grace Myers".

Grace Myers
Biologist

A handwritten signature in black ink, appearing to read "Thea Benson".

Thea Benson
Senior Biologist

A handwritten signature in black ink, appearing to read "T. Schuyler".

Tish Schuyler
Director of Natural Resources

Attachments

- Attachment 1 Figures
- Attachment 2 Representative Site Photographs
- Attachment 3 Flora and Fauna Compendium



References

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Attachment 1

Figures

Figure 1 Project Location



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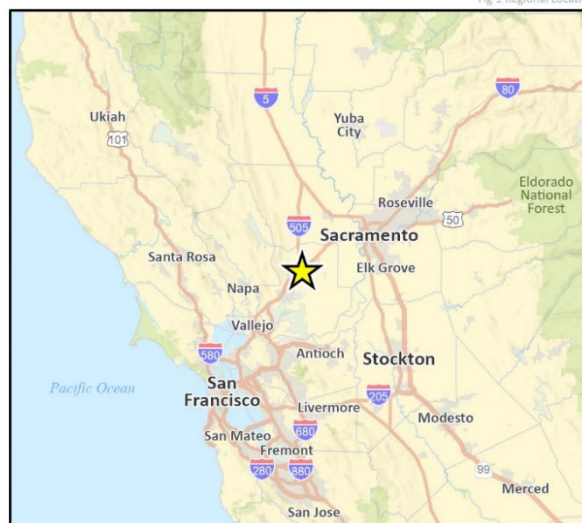
23-14333 BIO
Fig 1 Regional Location

Figure 2 Project Area and 500-foot Survey Buffer (Survey Area)



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25: 17851 Bio
Fig X Gen-Tie Project Parcel

Figure 3 Vegetation Communities/Land Cover Types Within the Survey Area

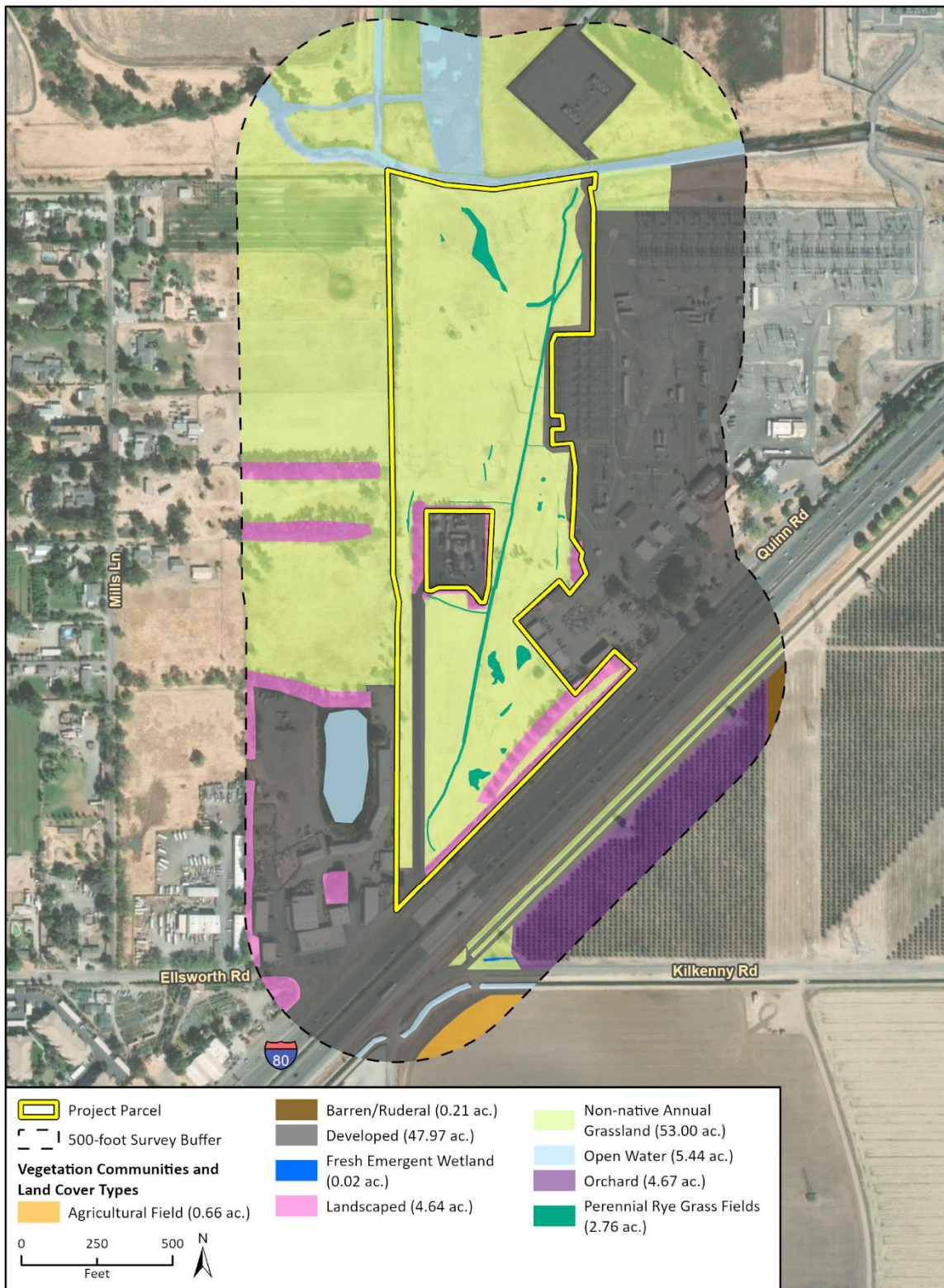
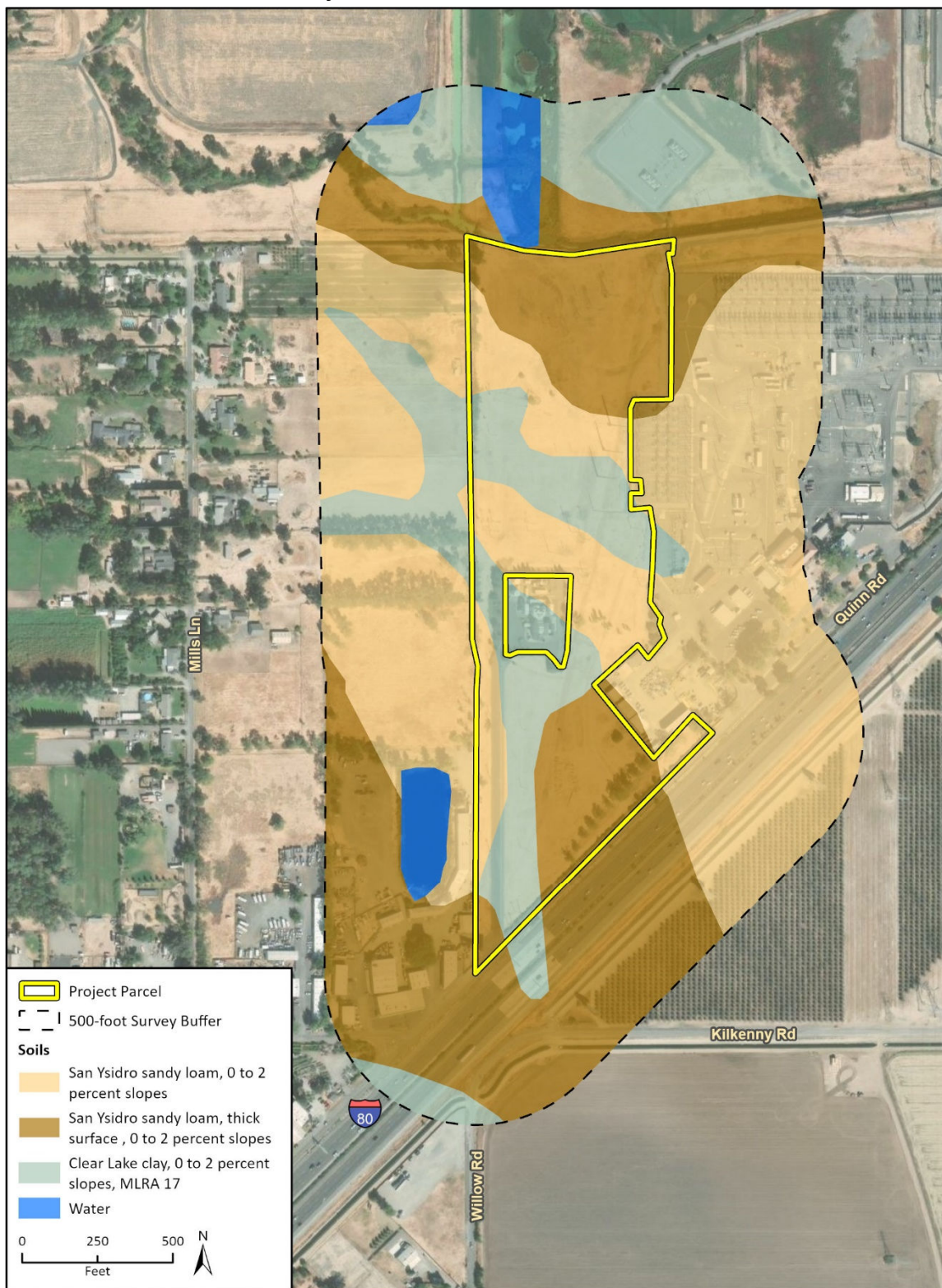


Figure 4 Soils Within the Survey Area



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Additional data provided by the Natural Resource Conservation Service Soil Survey Geography, 2025.

25_17851_Bio
 Fig X Gen-tie Project Parcel Soils - 500ft Buffer

Figure 5 Protocol Survey Results



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25_17851 Bio
Fig X Suitable BUOW Burrows

Attachment 2

Representative Site Photographs



Photograph 1. View of the mowed non-native annual grassland area within the survey area, facing north. April 28, 2026.



Photograph 2. View of the area within the non-native annual grassland containing a ground squirrel complex with burrows that may be suitable for burrowing owl, facing east. April 28, 2026.



Photograph 3. View of potential suitable burrowing owl burrows observed within the ground squirrel burrow complex (Photograph 2, above), facing south. April 28, 2026.



Photograph 4. View of the swale and non-native annual grassland areas within the southern portion of the survey area, north of I-80, facing south. April 28, 2026.



Photograph 5. View of a portion of the swale and the mowed non-native annual grassland within the northern portion of the survey area, facing south. April 28, 2026.



Photograph 5. View of a pond and surrounding riparian vegetation north of Gibson Canyon Creek, within the survey area buffer, facing north. April 28, 2026.

Attachment 3

Flora and Fauna Compendium



Wildlife Species Detected Within Survey Area

Scientific Name	Common Name
<i>Agelaius phoeniceus</i>	red-winged blackbird
<i>Aphelocoma californica</i>	California scrub jay
<i>Ardea alba</i>	great egret
<i>Bombycilla cedrorum</i>	cedar waxwing
<i>Branta canadensis</i>	Canada goose
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Callipepla californica</i>	California quail
<i>Calypte anna</i>	Anna's hummingbird
<i>Cathartes aura</i>	turkey vulture
<i>Charadrius vociferus</i>	killdeer
<i>Corvus brachyrhynchos</i>	American crow
<i>Haemorhous mexicanus</i>	house finch
<i>Melospiza melodia</i>	song sparrow
<i>Mimus polyglottos</i>	northern mockingbird
<i>Molothrus ater</i>	brown-headed cowbird
<i>Nycticorax nycticorax</i>	black-crowned night heron
<i>Otospermophilus beecheyi</i>	California ground squirrel
<i>Sialia mexicana</i>	western bluebird
<i>Sturnus vulgaris</i>	European starling
<i>Sylvilagus audubonii</i>	desert cottontail
<i>Zenaida macroura</i>	mourning dove
<i>Zonotrichia atricapilla</i>	golden-crowned sparrow



Plant Species Observed Within the Survey Area

Scientific Name	Common Name
<i>Achyrachaena mollis</i>	blow wives
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish lotus
<i>Aegilops triuncialis</i>	goatgrass
<i>Amaranthus albus</i>	tumbleweed
<i>Amsinckia intermedia</i>	common fiddleneck
<i>Amsinckia menziesii</i>	fiddleneck
<i>Asclepias fascicularis</i>	narrow-leaf milkweed
<i>Avena fatua</i>	wild oat
<i>Brachypodium distachyon</i>	purple false brome
<i>Brodiaea terrestris</i> ssp. <i>terrestris</i>	dwarf brodiaea
<i>Bromus diandrus</i>	riggut brome
<i>Bromus hordeaceus</i>	soft chess
<i>Bromus madritensis</i>	foxtail chess
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	yellow star-thistle
<i>Centromadia fitchii</i>	spikeweed
<i>Chenopodium album</i>	lamb's quarters
<i>Cichorium intybus</i>	chicory
<i>Cirsium vulgare</i>	bull thistle
<i>Convolvulus arvensis</i>	field bindweed
<i>Croton setiger</i>	turkey-mullein
<i>Cynodon dactylon</i>	bermuda grass
<i>Cyperus eragrostis</i>	tall cyperus
<i>Digitaria sanguinalis</i>	crabgrass
<i>Dittrichia graveolens</i>	stinkwort
<i>Eleocharis macrostachya</i>	common spike rush
<i>Elymus caput-medusae</i>	medusa head
<i>Erigeron canadensis</i>	Canada horseweed
<i>Erodium botrys</i>	big heron bill
<i>Erodium cicutarium</i>	redstem fillaree
<i>Eryngium aristulatum</i> var. <i>aristulatum</i>	Jepson's button celery
<i>Euphorbia maculata</i>	spotted spurge
<i>Festuca perennis</i>	Italian rye grass
<i>Fraxinus latifolia</i>	Oregon ash
<i>Geranium dissectum</i>	wild geranium
<i>Helminthotheca echioides</i>	bristly ox-tongue
<i>Hirschfeldia incana</i>	mustard
<i>Hordeum marinum</i>	Mediterranean barley

Scientific Name	Common Name
<i>Hordeum murinum</i>	wall barley
<i>Hypochaeris glabra</i>	smooth cat's ear
<i>Hypochaeris radicata</i>	hairy cat's ear
<i>Juglans nigra</i>	black walnut
<i>Kickxia elatine</i>	sharp point fluellin
<i>Lactuca serriola</i>	prickly lettuce
<i>Lotus corniculatus</i>	bird's foot trefoil
<i>Lupinus bicolor</i>	miniature lupine
<i>Lythrum hyssopifolia</i>	hyssop loosestrife
<i>Melaleuca citrina</i>	crimson bottlebrush
<i>Nerium oleander</i>	oleander
<i>Olea europaea</i>	olive
<i>Panicum capillare</i>	old witch grass
<i>Phalaris aquatica</i>	Harding grass
<i>Phyla nodiflora</i>	common lippia
<i>Pistacia atlantica</i>	pistachio
<i>Plantago lanceolata</i>	ribwort
<i>Platanus racemosa</i>	California sycamore
<i>Polygonum aviculare</i> ssp. <i>aviculare</i>	prostrate knotweed
<i>Populus fremontii</i> ssp. <i>fremontii</i>	cottonwood
<i>Portulaca oleracea</i>	common purslane
<i>Proboscidea louisianica</i> ssp. <i>louisianica</i>	common devil's claw
<i>Pyrus calleryana</i>	callery pear
<i>Quercus lobata</i>	valley oak
<i>Raphanus sativus</i>	jointed charlock
<i>Rosa multiflora</i>	multiflora rose
<i>Rosmarinus officinalis</i>	rosemary
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	curly dock
<i>Salix gooddingii</i>	Gooding's willow
<i>Sequoia sempervirens</i>	coast redwood
<i>Sonchus asper</i> ssp. <i>asper</i>	sow thistle
<i>Tragopogon porrifolius</i>	salsify
<i>Trichostema lanceolatum</i>	vinegarweed
<i>Trifolium dubium</i>	little hop clover
<i>Trifolium hirtum</i>	rose clover
<i>Triteleia hyacinthina</i>	wild hyacinth
<i>Typha latifolia</i>	broadleaf cattail
<i>Vicia villosa</i> ssp. <i>villosa</i>	hairy vetch



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Scientific Name	Common Name
<i>Washingtonia robusta</i>	Mexican fan palm
<i>Xanthium spinosum</i>	spiny cocklebur