Jaton LLC

Focused Burrowing Owl and Desert Tortoise Surveys for Sheep Creek Solar Project San Bernardino County, CA

August 2018

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Jaton llc
Building a Sustainable Future

Focused Burrowing Owl and Desert Tortoise Surveys For Sheep Creek Solar

(APN #0457-174-01-0000)
Shadow Mountains SE 7.5 Minute Quadrangle,
N ½, NW ¼, NW ¼, Section 36, Township 6 N, Range 7 W
San Bernardino County, California

Prepared for

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Executive Summary:

Phoenix Biological Consulting (Phoenix) conducted burrowing owl (*Athene cunicularia*) and desert tortoise (*Gopherus agassizii*) focused surveys for the Sheep Creek Solar Plant located west of Adelanto, San Bernardino County, California, at the southeast corner of the intersection of Sheep Creek Road and Parkdale Road. Jaton LLC is developing Sheep Creek Solar Plant (SCSP), a photovoltaic (PV) solar energy generation facility (the Project), up to 3 megawatts (MWac).

The total parcel area is 20.1 acres (APN 045717401; Figure 2). The parcel is relatively undisturbed creosote scrub and is unfenced. Parkdale is an unpaved dirt road. Sheep Creek Road is a paved one lane rural road. Representative photographs and maps of the site are included in this report (Figures 1-4). At the request of Panorama Environmental (Panorama), Phoenix initiated burrowing owl and desert tortoise surveys at the parcel and gen-tie area due to suitable burrowing owl and desert tortoise habitat and the site is within the range of both.

The principal investigator, Mikaila Buchanan, performed the field work. The results of the surveys were negative for burrowing owl (BUOW) and desert tortoise (DT), and thus for CEQA purposes, the Sheep Creek Solar project is not expected to have a significant impact on burrowing owl and desert tortoise.

Introduction and Purpose:

The SCSP project constitute a project pursuant to the California Environmental Quality Act (CEQA) as it is located on private lands in the unincorporated San Bernardino County. Acting in its capacity as a lead agency under CEQA, the county is required to determine the potential for the projects to result in significant impacts, consider mitigation measures and alternatives capable of avoiding significant impacts, and consider the environmental effects of the projects as part of its decision-making process. At the request of Panorama, LLC, Phoenix conducted protocol BUOW and DT surveys.

Location:

The parcel is located in El Mirage Valley, approximately 4 miles south of El Mirage Dry Lake Bed in unincorporated northwestern portion of San Bernardino County, California, at the southeast corner of the intersection of Sheep Creek Road and Parkdale Road. The parcel encompasses approximately 20 acres. The gen-tie route is along Sheep Creek Road, 1,300 feet north of the parcel at the dairy. Representative photographs and maps of the site are included in this report.

The site is situated within the Shadow Mountains SE Quadrangle 7.5 minute series topographic map. The legal description of the sites is a portion of N ½, NW ¼, NW ¼, Section 36, Township 6 N, Range 7 W Unincorporated San Bernardino County. The project site is located within the BUOW and DT range boundary. There are several California Natural Diversity Database (CNDDB) records in the vicinity (Figure 3). Due to the suitable habitat on the project site and relative proximity of known occurrences, protocol BUOW and DT surveys were implemented.

Habitat and Land Use

The parcel is situated at approximately 3,010 feet within the El Mirage Dry Lake Valley. Undisturbed land persists to the north, east and south of the parcel. Previously disturbed land is situated to the west. There is an active dairy farm to the northwest. Otherwise there is no significant disturbance or signs of disturbance for 2 to 3 miles in any direction.

The undisturbed area consists of creosote bush scrub with very low density Joshua trees (*Yucca brevifolia*). There are no true trees in or bordering the sites. Evidence of creosote rings are noticeable in aerial photos of the project area as are intermittent dry desert drainages along the eastern border of the parcel. The initial project area is situated along the western parcel boundary (Figure 2). The soils consist predominantly of Manet loamy sand and Manet coarse sand (USDA, 2018). Existing vegetation is sparsely distributed throughout the parcel and is nearly monotypic in vegetation diversity; very few other shrub types are present.

Burrowing Owl Natural History

Burrowing owls are a small, long-legged, ground-dwelling owl that occurs from British Columbia, throughout North America and portions of Central and South America. They are typically nocturnal but are also known to be crepuscular (active dawn and dusk). Typical prey include invertebrates, small mammals, lizards, snakes and small birds. They nest underground in burrows and clutches range between 9-11 eggs. Burrow entrances and nests area adorned with cow chips, feathers, grass, food items and dog feces. They are typically monogamous and tend to exist in colonies. They exhibit high nest fidelity and will return to the same burrow nest site for multiple years.

Burrowing owls occur in a variety habitat types throughout California such as, annual and perennial grasslands, agriculture fields, deserts and scrublands characterized by low-growing vegetation (CBOC, 1993). Suitable owl habitat may also include areas with trees and shrubs

where canopy cover is less than 30% of ground surface. Suitable burrows may include both artificial and natural burrows that provide shelter from the elements as well as protection from predators. Burrowing owls also use burrows for nesting during spring and early summer months. California ground squirrel (CGS; *Spermophilus beecheyi)* is known to provide suitable burrows as well as inactive coyote, kit fox, badger and desert tortoise burrows. Burrowing owls can also create and/or modify existing burrows. Artificial burrows may include culverts, concrete pipes, wood debris piles and openings beneath cement or asphalt.

In desert scrub habitat, they are usually associated with canid (i.e. fox and coyote) and CGS burrows along mounds that provide vistas for viewing prey and predators. They are also found along washes and wash banks where small mammal and invertebrate abundance is higher. Burrowing owls are a BLM sensitive species and a California species of special concern. They are also protected under the Migratory Bird Treaty Act (MBTA) and within sections 3503, 3503.5 and 3800 of the California Department of Fish and Game Code which prohibits the take, possession, or destruction of birds, their nests or eggs (CBOC, 1993).

Burrowing Owl Survey Methodologies

Burrowing owl surveys were conducted during the spring/summer of 2018. The BUOW surveys were conducted by Mikaila Buchanan. Ms. Buchanan has conducted dozens of protocol level BUOW surveys throughout the species range and has a Master of Science in Environmental Studies and a BA in Environmental Biology. Survey methodology for the BUOW included the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012).

The burrowing owl surveys were conducted by walking straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density. At the start of each transect and, at least, every 100 m, scan the entire visible project area for burrowing owls using binoculars. Four site visits were included for the BUOW surveys. During the pedestrian surveys, the biologists recorded all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. The field biologists also paused at regular intervals to listen for owl vocalizations. Ms. Buchanan used a hand-held mirror to view into any potential burrows. Buffer zone surveys were conducted out to 150 meters from the project edge and along the gen-tie option. The owl surveys started approximately a half hour after sunrise and ending no later than a half hour before sunset. During the survey, Ms. Buchanan's search images included: burrows, burrowing owls, owl feathers, pellets, owl whitewash (scat) and owl vocalizations. Surveys were conducted in all portions of the solar array project site, gen-tie and buffer areas.

Weather conditions during the spring survey effort consisted of seasonally normal temperatures with light winds. Winter rainfall of 2017-2018 is below average. El Mirage Airport which is located 3.7 miles north of the site received 1.93 inches from November 2017 through March 2018. Annual plant abundance was moderate. The morning and afternoon temperatures were taken to ensure surveys were within acceptable parameters for the BUOW.

Table 1: Weather Summary for Burrowing Owl Surveys

Date	Begin Temp (°F)	End Temp (°F)	Begin Cloud %	End Cloud %	Begin Wind (MPH)	End Wind (MPH)
04/15/2018	42.1	56.8	0.0	0.0	6.1	1.5
05/06/2018	58.2	75.8	30.0	10.0	3.1	7.1
05/27/2018	56.7	64.5	0.0	0.0	8.9	4.9
06/17/2018	46.8	62.7	100.0	50.0	3.7	7.3

Burrowing Owl Survey Results

The field results were negative for BUOW. Numerous small burrows were observed during the field effort. The largest burrow on site measured 3-inches wide and was unsuitable for BUOW. The burrows all appeared to be inactive and appear to have been ground squirrel burrows. No BUOW were observed during the survey effort and no BUOW sign was observed.

Desert Tortoise Natural History

The desert tortoise is a species of terrestrial desert turtle native to the Mojave Desert of the southwestern United States and northwestern Mexico. The desert tortoise has a high domed shell, front limbs flattened for digging, and round elephantine hind legs (USFWS, 2010b). Spending most of its lifespan underground, desert tortoises are usually found in burrows dug in dry, gravelly, or sandy soil often at the base of a bush. The plastron (the abdominal plate protecting the turtle's underbelly) is often a yellowish color with the margins of the scutes (the individual polygonal scales that comprise the shell) being varying shades of brown. The small, round head is a red or tan color and the iris is a green-yellow color. The tail is short, and the legs are stumpy with front and hind legs measuring about equal in size. Tortoises occur throughout most of the Mojave Desert, most often found on gently sloping terrain with sandy-gravel. Soils must be firm enough so that burrows do not collapse, but soft enough for digging. Typical habitat for the desert tortoise in the Mojave Desert has been characterized as creosote bush scrub below

1,677 meters (5,500 feet). The ideal habitat would be where the production of ephemeral plants is high, the diversity of perennial plants is relatively high, and where precipitation ranges from 5 to 20 centimeters (cm) (2 to 8 inches) (USFWS, 2011a).

Desert tortoises feed on grasses and a variety of herbaceous annuals. They retreat into their horizontal burrow to avoid high and low temperatures. Desert tortoises mate in spring and can lay 2-3 clutches of eggs. Their populations have decreased dramatically in recent years for a variety of reasons, including habitat loss and a serious respiratory disease. For purposes of the federal Endangered Species Act (FESA), desert tortoise habitat is defined as 1) areas with presence of desert tortoises or desert tortoise sign (e.g., shells, bones, scutes, scats, shelter sites, tracks, egg shell fragments, courtship rings, drinking sites, etc.) that are likely to be part or all of a lifetime home range, 2) dispersal areas (i.e., habitat corridors), or 3) areas suitable for desert tortoises as identified by the USFWS or in the most recent recovery plan for the Mojave population of the desert tortoise (USFWS, 2011a).

The Mojave population of the desert tortoise was emergency listed by the USFWS as an endangered species in August 1989 (54 Federal Register [FR] 32326-32331) and subsequently listed as threatened on April 2, 1990 (55 FR 12178-12191). As provided for by the FESA (16 United States Code Sections 1531-1544), the "taking" of any federally listed species without first obtaining necessary authority from the USFWS is prohibited (FESA §9 [a][1]). The term "taking" includes "harming, harassing, pursuing, hunting, shooting, wounding, killing, capturing, collecting, or attempting to engage in any such conduct" (FESA §3 [18]). The desert tortoise is also listed as threatened by the State of California.

Desert Tortoise Survey Methodologies

Desert Tortoise (*Gopherus agassizzii*) presence/absence survey methodology conformed to the *Desert Tortoise Pre-project Survey Protocol* (USFWS, 2017). The survey was conducted by Mikaila Buchanan who has conducted numerous desert tortoise surveys in Southern California and successfully completed the Desert Tortoise Workshop in 2012.

The desert tortoise survey was conducted by walking straight-line transects spaced 10 m apart. At the start of each transect and, at least, every 100 m, scan the entire visible project area for desert tortoise using binoculars. The desert tortoise survey focused on finding desert tortoise along with both scat and carcasses. The desert tortoise survey was conducted in May when air temperatures are below 40°C (104 °F). During the pedestrian survey, Ms. Buchanan recorded all potential burrows used by desert tortoise as determined by the presence of one or more desert tortoises, scat, and carcasses. Ms. Buchanan used a hand-held mirror to view into any potential

burrows. Buffer zone survey was conducted out to 150 meters from the project edge. During the survey, Ms. Buchanan's search images included: burrows, desert tortoise, scat, tracks, and carcasses. Surveys were conducted in all portions of the project site, gen-tie route and buffer areas.

Weather conditions during the spring survey effort consisted of mild weather in the El Mirage Dry Lake. Winter rainfall of 2017-18 continued to be below average and drought conditions persist throughout the state of California (http://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA). The morning and afternoon temperatures were taken to ensure that the survey was within acceptable parameters for desert tortoise.

Table 2: Weather Summary for the Desert Tortoise Survey

Date	Begin Temp (°F)	End Temp (°F)	Begin Cloud %	End Cloud %	Begin Wind (MPH)	End Wind (MPH)
05/28	61.2	77.4	0.0	0.0	2.1	7.1

Desert Tortoise Survey Results

The field results were negative for desert tortoise. Numerous small burrows were observed during the field effort. The burrows were absent of desert tortoise sign. The burrows all appeared to be inactive and appear to have been ground squirrel burrows. No desert tortoises were observed during the survey effort and no desert tortoise scat was observed.

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Figure 1: Regional Map for the Sheep Creek Renewable Solar Site

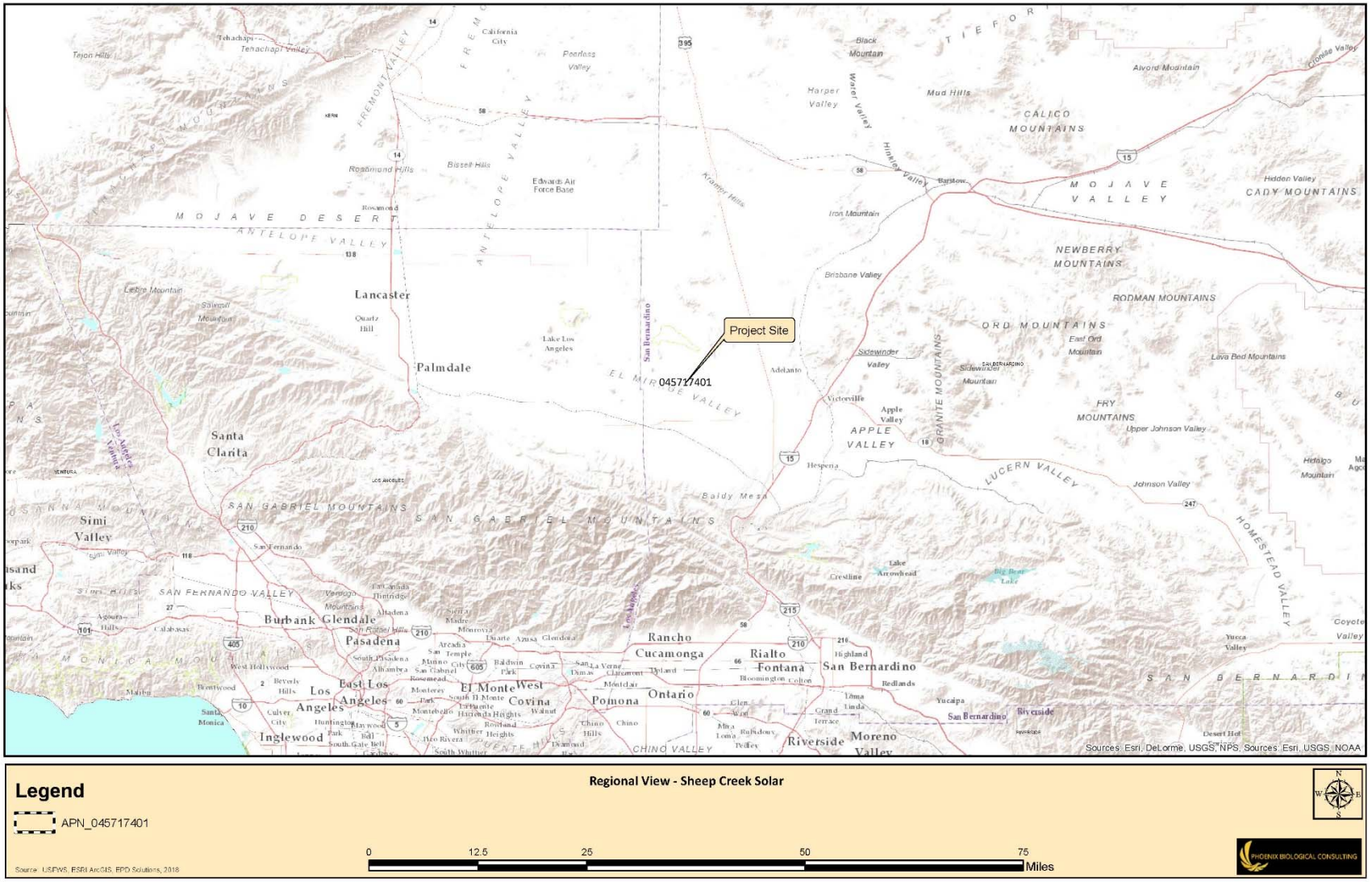

Figure 2: Site Plan for Sheep Creek Renewable Solar Site

Figure 3: CNDDB 10 Mile Search Results for Desert Tortoise and Burrowing Owl

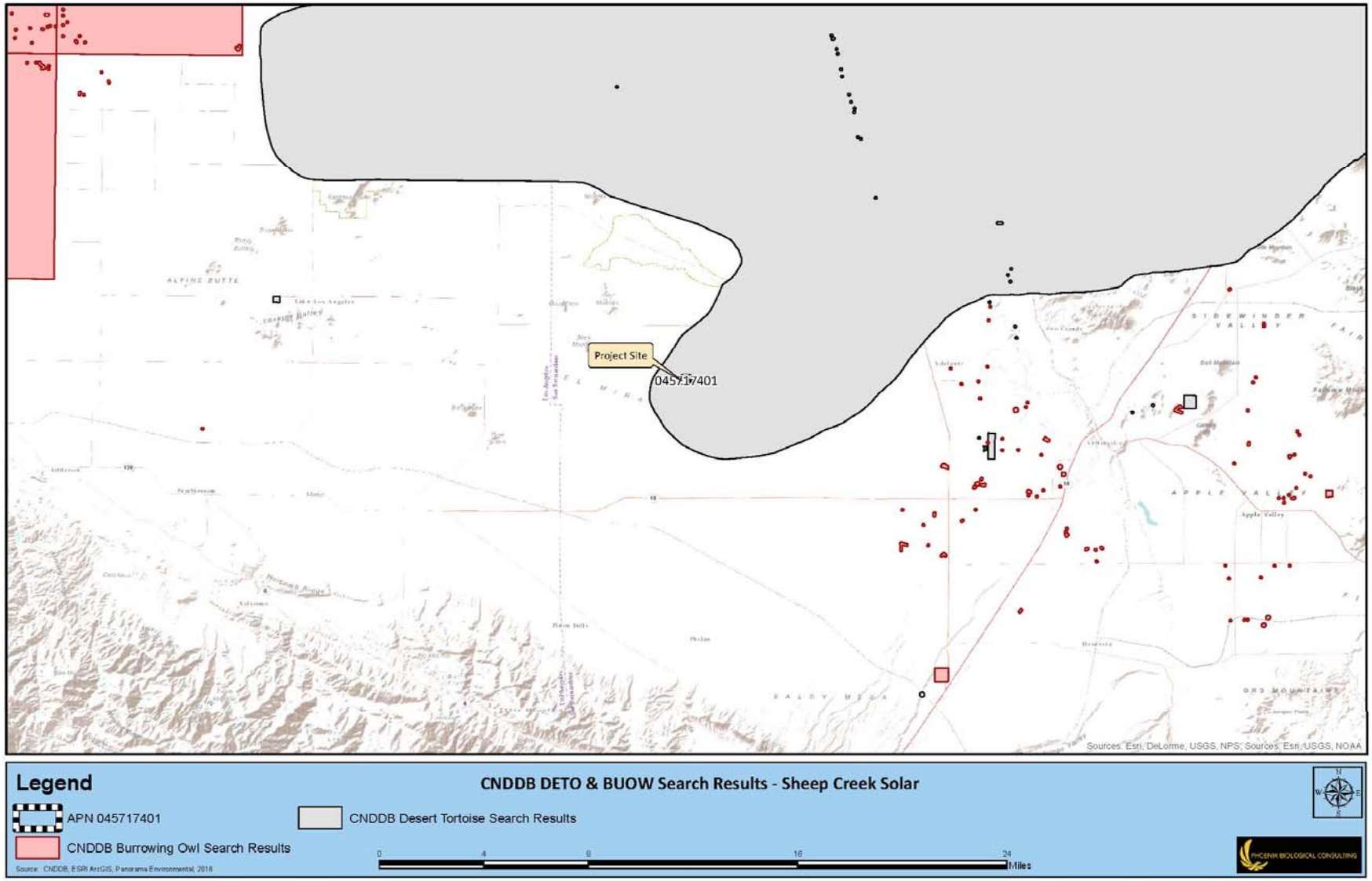

Table 3: Wildlife Compendium

Mammals
Antelope Squirrel (*Ammospermophilus leucurus*)
Black tailed jack rabbit (*Lepus californicus*)
California ground squirrel (*Otospermophilus beecheyi*)
Coyote (*Canis latrans*)-scat only
Birds
Ash throated flycatcher (*Myiarchus cinerascens*)
Black-throated sparrow (*Amphispiza bilineata*)
Bullock's oriole (*Icterus bullockii*)
Common Raven (*Corvus corax*)
Eurasian collared dove (*Streptopelia decaocto*)
Horned lark (*Eremophila alpestris*)
House finch (*Carpodacus mexicanus*)
House sparrow (*Passer domesticus*)
Mourning dove (*Zenaida macroura*)
Red-tailed Hawk (*Buteo jamacensis*)
Western kingbird (*Tyrannus verticalis*)
White crowned sparrow (*Zonotrichia leucophrys*)-migrant
Reptiles
Yellow spiny lizard (*Sceloporus uniformis*)
Western Whiptail (*Cnemidophorus tigris*)

Representative Site Photos

Photo 1: Corner facing SW

Photo 2: Corner facing SE

Photo 3: Corner facing NW

Photo 4: Corner facing NE

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Certification:

I hereby certify that the statements furnished above and in the attached exhibits present the data and information presented are true and correct to the best of my knowledge and belief. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Field Work Performed by:

Date: August 14, 2018 Signature: _____
Mikaila Negrete, Senior Biologist

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