



**SNOWLINE SCHOOL DISTRICT DUNCAN ROAD
SOLAR PV PROJECT**

FOCUSED SURVEYS FOR BURROWING OWL

**PHELAN AREA OF UNINCORPORATED SAN BERNARDINO COUNTY,
CALIFORNIA
USGS 7.5' PHELAN, CA QUADRANGLE
TOWNSHIP 5 NORTH, RANGE 7 WEST, WEST ½ OF SOUTHEAST ¼ OF
SECTION 36
APN 3098-311-11**

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1.0 EXECUTIVE SUMMARY

AMEC Environment & Infrastructure, Inc. (AMEC) conducted a general biological resources assessment at the site of a proposed photovoltaic (PV) solar project site located in Phelan (a census-designated place or CDP), San Bernardino County, California. No special status species were observed, but potential habitat for burrowing owl (*Athene cunicularia*) is present. AMEC performed a habitat assessment and completed California Department of Fish and Wildlife (CDFW) protocol focused surveys for burrowing owl (*Athene cunicularia*) on and adjacent to the project site. No burrowing owls or their sign were detected on the project site or within the 500 foot survey buffer around the subject property.

2.0 INTRODUCTION

AMEC Environment and Infrastructure, Inc. was contracted by Reno Contracting, Inc. to conduct a general biological resources assessment at the site of a proposed PV solar project site (Project) located in the City of Phelan, San Bernardino County (see Figure 1 in Appendix A). AMEC was also contracted to perform habitat assessments and focused surveys for a variety of sensitive biological resources that have potential to occur on or adjacent to the project site. This report provides results and discussion of the protocol surveys for burrowing owl.

2.1 Project and Property Description

The 25.89-acre (gross acreage) property is bordered by Greystone Road (dirt) and residential development on the southwest and west, Duncan Road on the south, residential development and Monte Vista Road (dirt) on the east, and a Southern Pacific Railroad line on the north (see Figure 1, Appendix A). The site is in the City of Phelan. The property is located on the 7.5-minute Phelan, CA United States Geological Survey (USGS) quadrangle in Township 5 North, Range 7 West, western ½ of the southeast ¼ of Section 36 (see Figure 2). The Project site gently slopes from an elevation of approximately 3,643 feet above mean sea level (AMSL) on the southern edge of the site adjacent to Duncan Road, down to approximately 3,602 feet AMSL on the northern edge of the site adjacent to the Southern Pacific Railroad line.

Vegetation on the Project site is an intergrade of Creosote Bush Scrub and Joshua Tree Woodland (see Figure 3 and photos in Appendix B), dominated by creosote bush (*Larrea tridentata*), white bur-sage (*Ambrosia dumosa*), Joshua tree (*Yucca brevifolia*), peach thorn (*Lycium cooperi*), and cheesebush (*Ambrosia salsola*). The habitat shows signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, deposition of old sod and some soil piles (see Photos 3 & 4 in Appendix B), off road vehicle tracks, domestic dog “diggings” (dug out burrows), and trash.

Only one specific soil type is mapped on the Project site (USDA 2013): Cajon Sand, 2 to 9 percent slopes. The Cajon series consists of very deep, somewhat excessively drained soils on alluvial fans and river terraces. Cajon soils formed in alluvium from dominantly granitic sources. Soils in this series have slopes ranging from 0 to 15 percent.

The solar power developer for this project will be Sun Edison (in partnership with Reno Consulting, Inc.). This project site is one of three sites that taken in sum total approximately 66.6 acres. These

three sites are considered Phase 2 of a past project completed by Sun Edison and Reno Contracting in 2011. The surrounding area is a patchwork of undeveloped lands, paved and unpaved roads, and low density rural residences. The undeveloped lands provide potential wildlife corridors to/from the site between disturbed areas.

3.0 BURROWING OWL SURVEY

3.1 Burrowing Owl Background

The burrowing owl is a small, tan, short-tailed, ground-dwelling owl that occupies underground burrows. A member of the Strigidae (typical owls family), this species is associated with grasslands and other arid open terrain, including Mojave Creosote Bush Scrub, throughout much of the western United States. Burrowing owls are opportunistic in their selection of burrows, typically utilizing the burrows of small mammals (e.g., ground squirrels, kit fox (*Vulpes macrotis*), but also use desert tortoise burrows, drain pipes, culverts, and other suitable natural or manmade cavities at or below ground level. In California, the species often occurs in association with colonies of the California ground squirrel (*Spermophilus beecheyi*), where it makes use of the squirrel's burrows. The entrance of the burrow is often adorned with animal dung, feathers, debris, and other small objects. The species is active both day and night, and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows. Due to the characteristic fossorial habits of burrowing owls, nest burrows are a critical component of their habitat.

In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. In spite of their apparent tolerance to human activities, burrowing owl populations in California are clearly declining and, if declines continue, the species may qualify for listing under the state and/or federal Endangered Species Acts (California Department of Fish and Game [CDFG] 1995). The declines in Burrowing Owl populations are attributed to loss and degradation of habitat, to ongoing residential and commercial development, and to rodent control programs. The burrowing owl is currently designated a California Species of Concern (CSC) by the CDFG (note that the CDFG changed their name in 2013 to the California Department of Fish and Wildlife [CDFW]), managed as a Bird of Conservation Concern by the U.S. Fish and Wildlife Service (USFWS), is considered "sensitive" by the U. S. Bureau of Land Management (BLM), and protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

The California Burrowing Owl Consortium (CBOC) developed the Burrowing Owl Survey Protocol and Mitigation Guidelines to meet the need of uniform standards when surveying burrowing owl populations and evaluating impacts from development projects (CBOC 1993). In 1995 the CDFG issued the Staff Report on Burrowing Owl Mitigation to all of its regional managers to ensure consistency in standards, policies, and regulatory mandates relating to the burrowing owl (CDFG 1995). Due to the continued decline of burrowing owl populations statewide and as an attempt to reverse this trend, the CDFG issued more effective, viable, coordinated and concerted approach to burrowing owl conservation actions with the release of an updated Staff Report on Burrowing Owl Mitigation (CDFG 2012).

3.2 Burrowing Owl Survey Methods

A protocol level habitat assessment for the Burrowing Owl was conducted by AMEC Biologist Nathan T. Moorhatch and subconsultant Ted Rado on April 9 and 10, 2013. The habitat assessment was

conducted on foot, visually inspecting and mapping all areas of the site and adjacent areas (a 500 foot buffer around the site) for components of Burrowing Owl habitat (i.e., sparsely vegetated areas with appropriate sized burrows or man-made structures suitable for Burrowing Owl use). The first of four focused surveys was conducted concurrent with the habitat assessment. That survey visit and the subsequent surveys were conducted between morning civil twilight sunrise and 10:00 AM. Straight line transects spaced no more than 20 meters apart (ten meters apart on the Project site) were walked throughout all suitable areas of the site and buffer area in order to identify occupiable habitat. Trimble Juno series hand-held global positioning system (GPS) units pre-loaded with transect route coordinates were used by surveyors to navigate along each survey transect line. Burrows suitable for Burrowing Owl occupation were recorded with the Trimble Juno unit, and closely monitored and inspected during each subsequent visit for evidence of Burrowing Owl use (i.e., whitewash, pellets, feathers and other adornments). Binoculars were used to identify birds and to survey perches and potential burrows prior to closer approach. A handheld anemometer was used to record temperatures and wind speeds. Survey dates, times, and weather conditions are presented in Table 1 below.

Table 1. Burrowing Owl Focused Survey Data

Date	Time	Sky (% cloud cover)	Temp. (°F)	Wind
9 April 2013	0610-1405	Clear	40-70	0-5 mph
10 April 2013	0620-0900	Clear	55-61	0-3 mph
3 May 2013	0715-0845	Clear	64-78	0-3 mph
3 June 2013	0728-0825	Clear	72-76	2-5 mph
28 June 2013	0635-0737	Clear	78-85	0-3 mph

3.3 Burrowing Owl Survey Results

The habitat assessment/first focused survey detected several burrows suitable for Burrowing Owl occupation (see Figure 2). All of these were in the buffer zone east of the site. No Burrowing Owls or evidence thereof (i.e., whitewash, pellets, feathers, tracks, prey remains, egg shell fragments, nest adornment materials, etc.) were observed onsite or on adjacent properties surveyed during any of the four survey visits.

3.4 Discussion of Burrowing Owl Survey Results

The results of the breeding season focused survey indicate that the Burrowing Owl does not currently occupy the site or immediately adjacent areas. However, because the area continues to provide suitable shelter and nesting habitat for Burrowing Owls, the potential remains for the species to occur on or adjacent to the site in the future. In accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012), a “take avoidance survey” for the Burrowing Owl should be conducted no less than 14 days prior to the initiation of ground disturbance activities and a final survey should also be conducted within 24 hours prior to ground disturbance. If no Burrowing Owls are detected during the take avoidance surveys, implementation of ground disturbance activities could proceed without further consideration of this species. If Burrowing Owls are detected during the take avoidance survey, avoidance and minimization measures would then be required, under the guidance of the CDFW.

4.0 REFERENCES

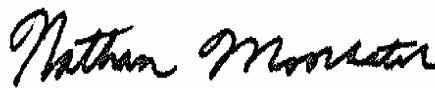
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5.0 CERTIFICATION

CERTIFICATION: "I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. 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."

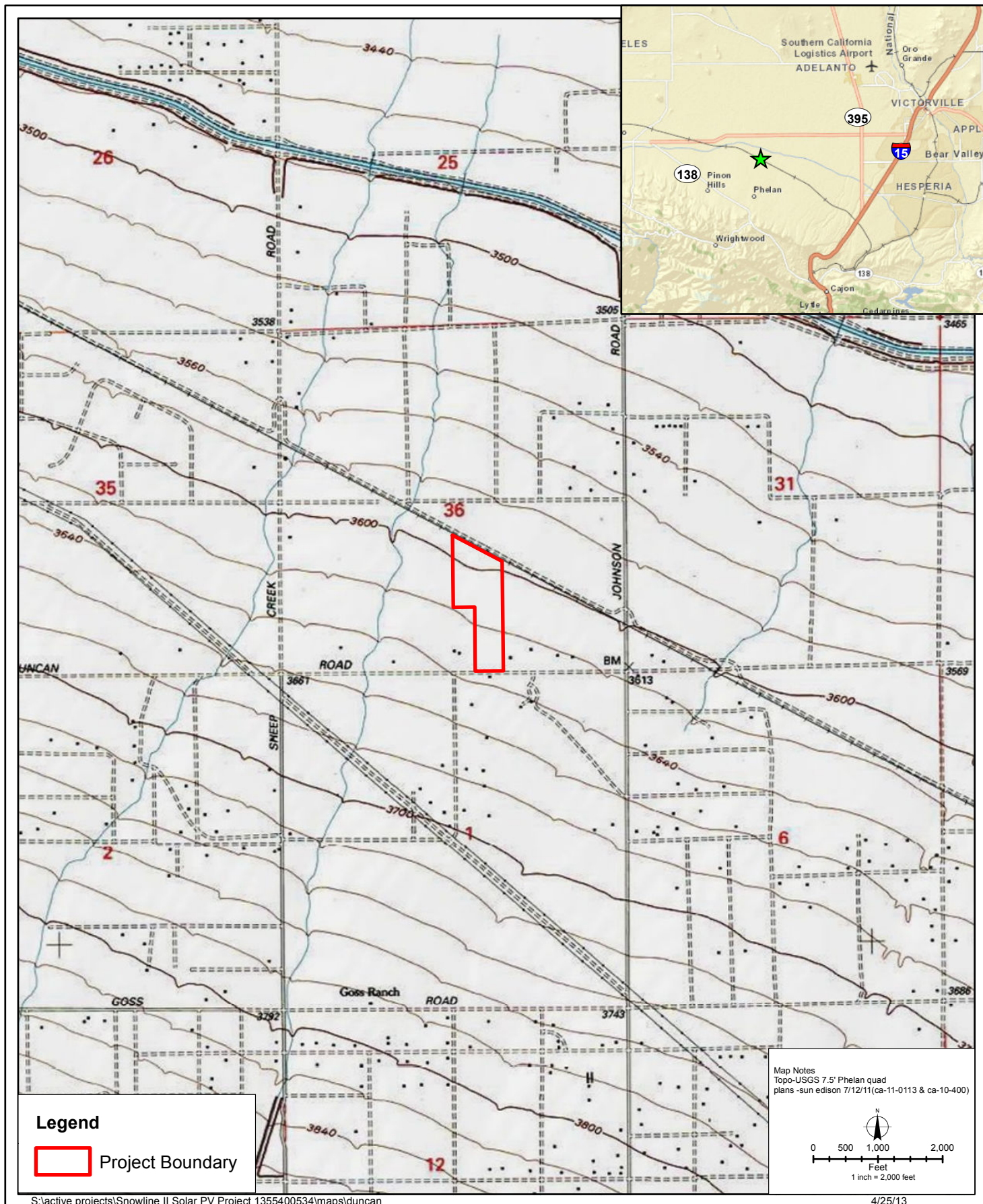
DATE: 16 July 2013

SIGNED:

A handwritten signature in black ink that reads "Nathan Moorhatch".

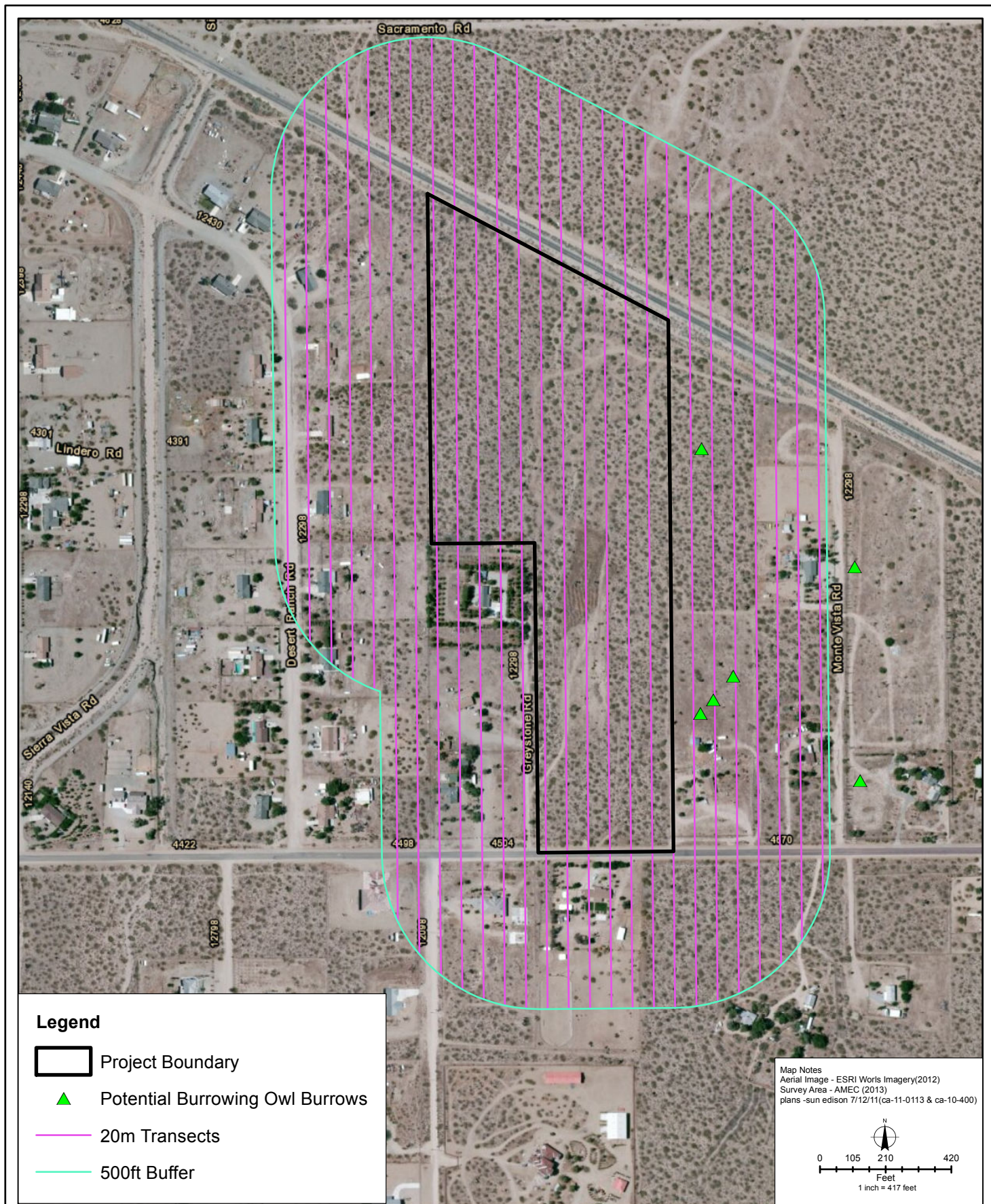
- 1) Fieldwork Performed By:
Nathan T. Moorhatch

Appendix A Project Map Figures



Vicinity & Location
 General Biological Assessment

FIGURE
1



Appendix B Site Photographs



Photograph 1. Representative view of Creosote Bush Scrub/Joshua Tree Woodland intergrade habitat on the Duncan Road project site.



Photograph 2. Trash deposition on buffer area north of project site.



Photograph 3. Cleared ground and sod/soil piles on the central portion of the site.



Photograph 4. Closer view of the sod piles on the project site.



Photograph 5. California ground squirrel “burrow cluster” near east edge of site, within 500 foot buffer. Potential for owl use, but no sign detected.



Photograph 6. Another California ground squirrel burrow, this one is on the eastern edge of the 500 foot buffer (see Map). No owl sign detected.



Photograph 7. Coyote burrow on eastern buffer of Duncan Road site.



Photograph 8. Another California Ground Squirrel burrow present on the buffer just east of the project perimeter.

Appendix C Vertebrate Wildlife

**Vertebrate Species Observed on the Project Site and Buffer
Transects**

REPTILIA

Phrynosomatidae

Uta stansburiana

Teiidae

Aspidooscelis tigris tigris

AVES

Odontophoridae

Callipepla californica

Columbidae

**Columba livia*

**Streptopelia decaocto*

Zenaidura macroura

Cuculidae

Geococcyx californianus

Trochilidae

Calypte costae

Picidae

Picoides scalaris

Tyrannidae

Myiarchus cinerascens

Tyrannus verticalis

Corvidae

Aphelocoma californica

Corvus corax

Alaudidae

Eremophila alpestris

Hirundinidae

Petrochelidon pyrrhonota

Remizidae

Auriparus flaviceps

Troglodytidae

Campylorhynchus brunneicapillus

REPTILES

Spiny and Horned Lizards

Side-blotched Lizard

Whiptails and Relatives

Great Basin Whiptail

BIRDS

New World Quail

California Quail

Pigeons and Doves

Rock Pigeon

Eurasian Collared-dove

Mourning Dove

Cuckoos and Allies

Greater Roadrunner

Hummingbirds

Costa's Hummingbird

Woodpeckers and Allies

Ladder-backed Woodpecker

Tyrant Flycatchers

Ash-throated flycatcher

Western Kingbird

Crows, Jays

Western Scrub-Jay

Common Raven

Larks

Horned Lark

Swallows

Cliff Swallow

Penduline Tits and Verdins

Verdin

Wrens

Cactus Wren

Mimidae

Mimus polyglottos
Toxostoma redivivum

Sturnidae

**Sturnus vulgaris*

Parulidae

Setophaga nigrescens

Emberizidae

Spizella breweri
Amphispiza bilineata
Zonotrichia leucophrys

Icteridae

Sturnella neglecta

Fringillidae

Haemorhous mexicanus

Passeridae

**Passer domesticus*

MAMMALIA**Leporidae**

Lepus californicus
Sylvilagus audubonii

Sciuridae

Spermophilus beecheyi
Ammospermophilus leucurus

Geomyidae

Thomomys bottae

Canidae

Canis latrans

Mockingbirds and Thrashers

Northern Mockingbird
California Thrasher

Starlings

European Starling

Wood-Warblers

Black-throated Gray Warbler

Emberizids

Brewer's Sparrow
Black-throated Sparrow
White-crowned Sparrow

Blackbirds

Western Meadowlark

Fringilline and Cardueline Finches, Allies

House Finch

Old World Sparrows

House Sparrow

MAMMALS**Rabbits, Hares**

Black-tailed Jackrabbit
Desert cottontail

Squirrels and Chipmunks

California Ground Squirrel
White-tailed Antelope Squirrel

Pocket Gophers

Botta's Pocket Gopher (mounds)

Wolves, Foxes, Coyote

Coyote (scat, tracks)

KEY

* = non-native species

This list reports only animals observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season (plants) or their activity patterns and/or subterranean habitats (animals). Nomenclature and taxonomy for fauna generally follows the American Ornithologists' Union Checklist (2013) for avifauna and CDFG (2008) for herpetofauna and mammals.