Lenwood Spreading Grounds

Biological Resources Technical Report

San Bernardino County Department of Public Works

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SUMMARY

The San Bernardino County Department of Public Works (DPW) Flood Control District (District) is proposing to conduct routine maintenance work along approximately 1.7 miles of the existing Lenwood Channel and within the approximately 220-acre Lenwood Spreading Grounds facilities within the City of Barstow. Additionally, between the channel and spreading grounds, a spillway will be constructed to replace the existing spillway significantly damaged during the 2014 storm season. Focused biological surveys for sensitive species including desert tortoise (*Gopherus agassizzii*), burrowing owl (*Athene cunicularia*), and Mohave ground squirrel (*Xerospermophilus mohavensis* -MGS) were conducted during Spring 2017 by Ironwood Consulting, Inc. (Ironwood) to determine the presence/absence of these species within the Project Study Area. The summary results of these surveys include:

- Two live desert tortoises were observed – one within the northern part of the Lenwood spreading grounds, and another in the Project Study Area outside the fence were observed during the surveys. Additional sign of the southern portion of the Lenwood spread grounds being actively used by desert tortoises included active burrows and recent scat. Additional attempts to relocate the tortoise seen in the northern part of the spreading grounds have been made on three occasions since spring 2017 and have not relocated this individual, nor any sign that it remains on the project site.
- One burrowing owl was observed during the second set of burrowing owl surveys but was not observed again during the third and fourth surveys. Three burrows with active burrowing owl sign were also detected in the central part of the Lenwood spreading grounds.
- No MGS were trapped or observed in camera images in any of the project areas.

Data were also taken on all plant and wildlife species observed incidental to these surveys. No rare pants were recorded. LeConte's thrasher (*Toxostoma lecontei*), a California species of concern, was observed once on camera, in the central part of the Lenwood spreading grounds, related to the MGS camera surveys.

Because adverse impacts may occur to the desert tortoise that uses the southern portion of the Lenwood spreading grounds during project implementation, Ironwood recommends using desert tortoise exclusion fencing to exclude those areas of good habitat (intact native creosote bush-white bursage communities with adjacent accessible similar habitats). The area inside the desert tortoise fence would be cleared to determine presence or absence of any desert tortoise or recent sign inside the fence. If no such animals or sign are found project activities will continue with no monitor required for activities conducted inside the fence, assuming the fence remains intact. If any desert tortoise or recent sign are found during the clearance survey, activities will not commence and San Bernardino Flood Control District personnel will contact California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) personnel to initiate formal consultation under the state and federal endangered species acts.

In addition, pre-construction surveys for sensitive species such as nesting birds and burrowing owl may be conducted within 30 days prior to proposed ground-disturbing activities to determine the current status of these resources in order to plan for avoidance and minimization measures during project activities.

1.0 INTRODUCTION

The San Bernardino County Flood Control District (District) proposes to conduct routine maintenance work along approximately 2.0 miles of the existing Lenwood Channel and within the approximately 220 -acre Lenwood Spreading Grounds facilities. The Lenwood Channel and Spreading Grounds Maintenance and Spillway Improvement Project would primarily consist of access road repair and related herbicide treatment, vegetation removal, soil excavation to reestablish flowline and design capacity, bank repair, concrete and appurtenant structure repair, and spillway reconstruction and improvements.

This report represents findings from Spring 2017 biological resource surveys conducted by Ironwood Consulting, Inc. (Ironwood) at the facilities. Focused surveys were conducted for the federally endangered desert tortoise (*Gopherus agassizii*), state species of concern burrowing owl (*Athene cunicularia*), and state threatened Mohave ground squirrel (*Xerospermosphilus mohavensis*-MGS). In addition, all plant and wildlife species observed incidental to these surveys were recorded.

1.1 Project Area and Project Study Area

1.1.1 Project Area

The facilities are located in the southwest portion of the City of Barstow near the community of Lenwood. The proposed Project is west of Interstate 15, south of National Trails Highway (State Route 66), and south of Lenwood Avenue, at the northwest corner of dirt roads Green Desert Drive and Salt Springs Avenue (Figure 1).

1.1.2 Project Study Area

The Project Study Area is an area that encompasses all areas where biological surveys were completed for the proposed Project and encompasses the area of the Project facilities as defined above, and also a buffer area where any potential impacts to these species may occur (area of effect). The Project Study Area are shown on Figure 2.

The Project Study Area is located on the U.S. Geological Survey Hodge and SE Barstow quadrangle maps within township 9N, range 2W and sections 18, 20, and 21 of the San Bernardino Base & Meridian, San Bernardino County, California. Elevations range from approximately 2,200 feet (670 meters) to 2,400 feet (730 meters) above mean sea level. Soils on the project site are a combination of sand and gravel with site slopes approximately 5-15 percent and a western aspect towards the Mojave River located adjacent to the western edge of the Project Study Area. The Project Study Area supports low to moderately disturbed areas of creosote bush-white birsage scrub (Sawyer et al, 2009), highly disturbed areas within existing basins and channels, and unvegetated areas for numerous existing roads.

1.2 Surrounding Land Use

The easternmost extent of the Project is located approximately 1 mile west of Interstate 15 (I-15), which runs in a north-south alignment west of the Lenwood Spreading Grounds. Highway 66 (National Trails Highway) crosses Lenwood Channel approximately 1 mile west (downstream) of the spreading grounds and approximately 0.5 mile southwest of the Highway 66/Lenwood Road intersection. The BNSF rail also crosses the Lenwood Channel approximately 0.3 mile west (downstream) of Highway 66. The surrounding land use designations consist of low-density residential, commercial uses, industrial uses, utilities, transportation corridors and undeveloped open space.

Figure 1. Regional Location

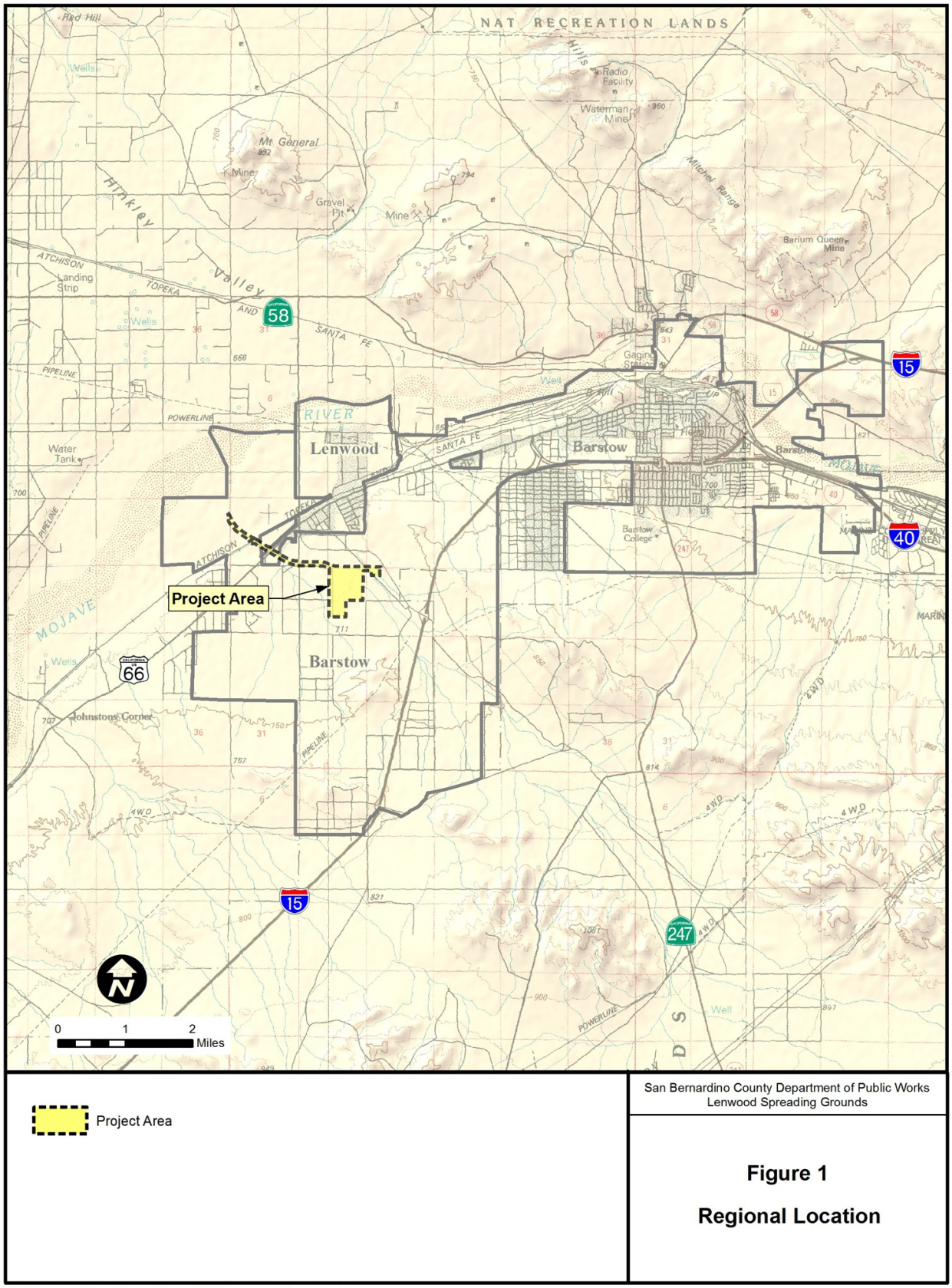
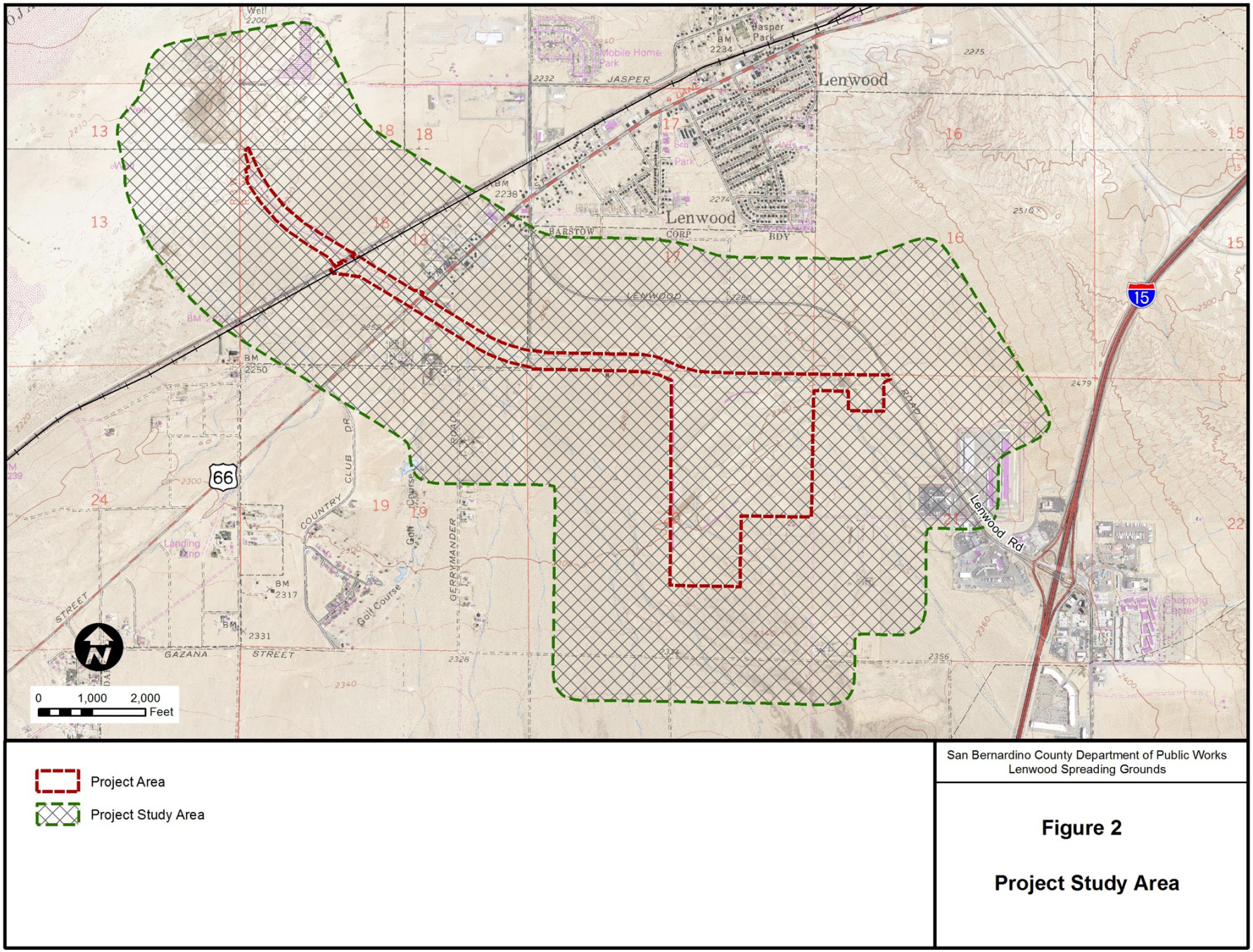


Figure 2. Project Study Area



1.3 Project Description

The District is charged with operating and maintaining its existing flood control facilities throughout the County of San Bernardino. The Barstow area climate, within the Mojave Desert, is extremely arid and the precipitation in the general area of the Project site is largely a result of thunderstorm activity. These desert thunderstorms generally occur during the warm summer months from July through September. The characteristics of desert thunderstorm precipitation consist of high intensities, limited areal coverage, relatively short duration, and erratic frequency.

Because the District does not have regulatory permits to conduct routine maintenance, there has been a lack of maintenance in the channel and spreading grounds. Within the spreading grounds, sediment and debris has built up over time, resulting in a decreased capacity for storm flow containment and groundwater recharge. In some areas, the sediment build-up is 7-9 feet deep. Further, in August 2014, the spillway of the Lenwood Spreading Grounds was destroyed by flooding. Large volumes of debris laden sediment washed down through the spillway, resulting in extensive irreparable damage to the spillway, and wing walls. The facilities convey flows of a drainage area of approximately 43,560 acres. The spillway is an integral part of the flood control facility because it regulates the water flow into Lenwood Channel and allows water to percolate within the spreading grounds. The Project consists of the routine maintenance of the District-owned flood control facilities; maintenance also includes upgrading the channel spillway that was irreparably damaged in 2014.

1.3.1 Maintenance of Access Roads

The District maintains numerous access or service maintenance roads throughout the Project Study Area. Most are 12-15 feet wide and surfaced with native material such as gravel or compacted soil. Maintenance activities include clearing encroaching vegetation, filling ruts and potholes, grading, resurfacing (with similar materials), spraying herbicide on and adjacent to the roads as needed by a licensed applicator, and repairing washouts. This maintenance would occur 2-3 times a year as needed and last about 2-3 weeks. There may be years where access road maintenance may occur more than 3 times, depending on the severity and frequency of erosion caused by storm events. There are approximately 10.5 miles of access roads within the Lenwood spreading grounds.

1.3.2 Lenwood Channel Routine Maintenance

Routine maintenance activities along Lenwood Channel would include

- Grading and sediment and debris removal within the channel bottom to re-establish a consistent flow path,
- Re-establishing the channel sideslopes,
- Removing vegetation as needed to maintain structural integrity,
- Repairing washouts and eroded areas (typically accomplished by filling in the eroded area with native material, and sometimes rip-rap if excessive erosion requires rock to reduce future maintenance in that specific location),
- Maintaining concrete and appurtenant structures, and
- Removing graffiti.

Primarily these activities would encompass approximately 17.0 acres within the 61-acre channel facility and would occur along the channel bottom, and side slopes, for a linear distance of approximately10,560 feet. It is estimated that maintenance will occur 2-3 times a year as needed and take about 1-2 weeks to complete at each visit.

1.3.3 Lenwood Spreading Grounds Routine Maintenance

The Lenwood Spreading Grounds is a series of basins that vary in size and primarily serve to collect water to recharge the groundwater basin. The basins are excavated areas on the upstream side of dikes, and are

where the actual velocity dissipation, short term storage, and water percolation takes place. Flow of water into these basins brings suspended sediment, which is dropped to the basin floors with percolation of the water. This sediment requires periodic removal, which also tills the basin floor, in order for percolation rates to remain efficient.

The Lenwood Spreading Grounds cover approximately 220 acres. A series of weirs and culverts divert local runoff into approximately 16 basins where water is slowed down before entering Lenwood Channel and/or where it can percolate into the regional groundwater basin. The three southeastern most basins (basins 1-3) will remain inactive and inside the fenced Lenwood Spreading Grounds to minimize impacts to desert tortoise known to occur in this part of the Project area.

Routine maintenance activities include:

- Grading and sediment removal within the basin to re-establish percolation function,
- Re-establishing the basin sideslopes,
- Removing vegetation as needed,
- Repairing washouts and eroded areas (typically accomplished by filling in the eroded area with native material, and sometimes rip-rap if excessive erosion requires rock to reduce future maintenance in that specific location),
- Maintaining concrete and appurtenant structures, and
- Removing graffiti.

Maintenance of the Lenwood Spreading Grounds facilities would occur typically in the summer, fall, or winter. Vegetation management and, if required, herbicide spraying, would occur 1-2 times a year, with slope repair occurring at least 1-3 times a year, depending on the frequency and intensity of storm events. Maintenance work, such as slope stabilization activities to repair gullies, may occur on a more frequent basis as needed along the access roads, channel slopes and basin slopes which encompass approximately 20 acres.

Sediment and debris removal activities would occur over the entire 181 acres, but in alternating sections of approximately 90 acres each year over two years. Maintenance work necessary to ensure structural integrity of the facility following a storm, such as slope stabilization activities to repair gullies, may have to occur on a more frequent basis as needed. Sediment and debris removal activities may increase beyond the 90 acres following a severe storm or storm season if required to ensure flood protection, but in an average storm year, the work will be tiered as identified above. Removed sediment will be used for dike, channel, and access road maintenance. It is estimated that the District will remove approximately 1.9 million cubic yards of sediment in the first two years due to accumulation over time (assuming initial excavation of 8.5-foot depth of accumulated sediment), with reduction to approximately 200,000 cubic yards a year thereafter. Removed sediment will be sold, with the remainder used for dike, channel, and access road maintenance. Sediment is only sold when there is a market, so sediment piles may sit for a year or two in designated stockpile locations. Materials sifting and rock processing is not part of the District's operations and maintenance of their facilities. The initial excavation work will take approximately 2.5 years to complete, and 4-6 weeks each year thereafter.

1.3.4 Lenwood Spreading Grounds Spillway Restoration

Severe damage was incurred during heavy storms between August 3 and 12, 2014 when large volumes of debris laden sediment washed down through the concrete spillway destroying the concrete spillway invert and wing walls. The original spillway, constructed in the 1960s, was approximately 36 feet wide by 23.5 feet long consisting of 846 square feet (0.02 acre) of concrete.

2.0 METHODOLOGY

2.1 Literature Review and General Biological Setting

Prior to the surveys, relevant biological information for the site and surrounding area was reviewed, which included reviewing the California Natural Diversity Database [CNDDB, 20177 (Figure 3)], California Native Plant Society's Electronic Inventory (CNPSEI), and historical records of special status species found throughout the area for the past ten years. In addition to this information, the San Bernardino County Ecological Resource Specialist, Milo Rivera, provided known locations of sensitive species (live individuals, burrows and scat) from past surveys at the project site.

Ironwood conducted protocol surveys that covered the Project Study Area for desert tortoise, burrowing owl, and Mohave ground squirrel (MGS) as discussed individually below. In addition, all plant species observed were recorded by botanist Kent Hughes, and all wildlife observed were recorded during all surveys.

2.2 Desert Tortoise

Ironwood conducted a protocol survey (USFWS 2010, revised 2017) for desert tortoise between April 12 and 17, 2017, recording all sign of desert tortoises (live animals, burrows, scat, carcasses, etc.). Desert tortoise surveys were conducted by qualified Ironwood biologists Christopher Fabry, Kent Hughes, Kristin Koeper, Blanca Rivera, and Kathryn Simon. The survey consisted of pedestrian transects spaced 30 feet (10 meters) apart throughout the Project area within the fence, and buffer transects in the remainder of the Project Study Area as shown in Figure 4.

2.3 Burrowing Owl

Ironwood conducted protocol surveys for burrowing owl (BUOW; CDFW 2012) with transects in the fenced Project area at intervals between 15 to 30 meters depending on terrain and vegetation density. A 50-meter buffer area was also included in the survey except where private property in the Project Study Area was avoided. This survey was conducted four times by qualified biologists as listed below on Table 1. Burrowing owl surveys did not occur concurrently with any other wildlife surveys or live-trapping.

Table 1. Burrowing Owl Survey Dates

BUOW visit	Date	Surveying Biologists
1	4/11/2017	Kent Hughes, Chris Fabry, Blanca Rivera
2	5/19/2017-5/22/2017	Lehong Chow
3	6/9/2017	Lehong Chow
4	6/30/2017	Lehong Chow, Blanca Rivera

Figure 3. CNDDB Information

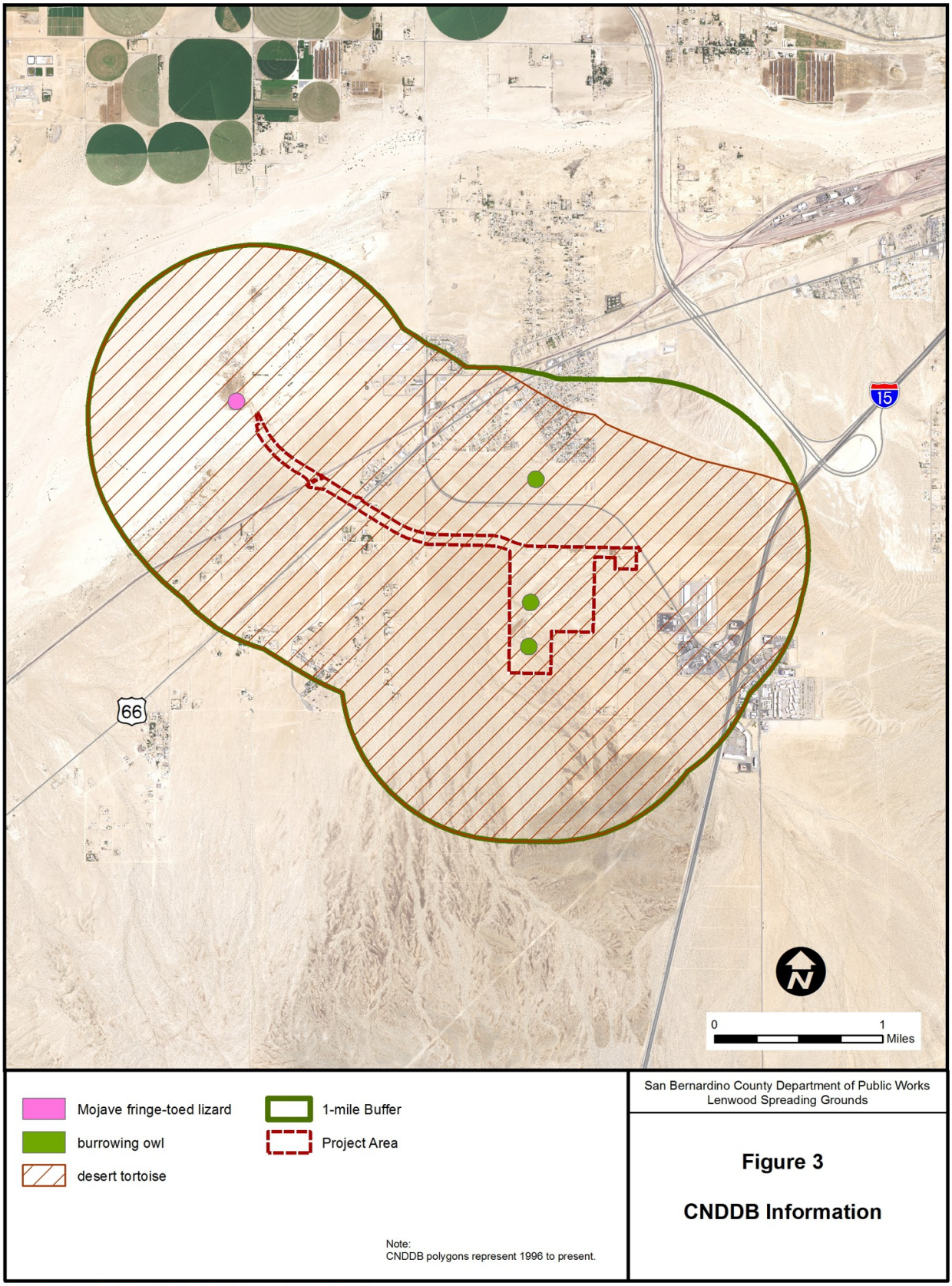
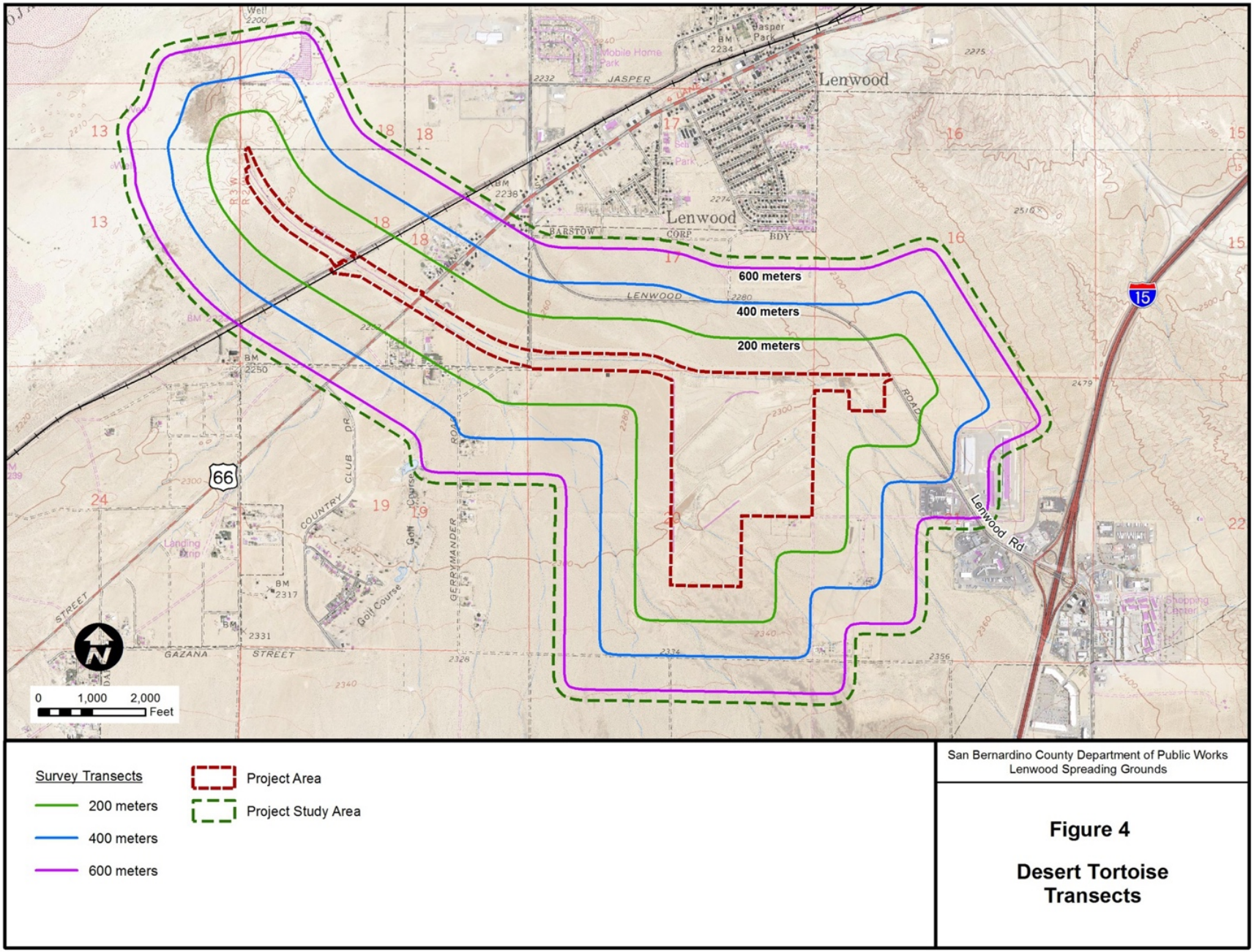


Figure 4. Desert Tortoise Transects



2.4 Mohave Ground Squirrel

Mohave ground squirrel surveys included live-trapping and camera trapping, all conducted by biologists permitted for these activities by California Department of Fish and Wildlife (CDFW) under Principal Investigator Kathryn Simon. Prior to surveys being conducted, Kathryn Simon and District personnel met with Rebecca Jones of CDFW on April 4, 2017 to determine level of effort and locations for live trapping and camera trapping. It was determined that two live trapping grids would occur in the best areas of native habitat within the fenced Project area, and that camera trapping would occur in the remaining areas of potential habitat within the Project area and Project Study Area. The determination was based on the habitat potential identified in previous surveys in 2016 and observations during the site visit. Figure 5 shows the locations of live trapping and camera trapping and Table 2 below lists dates and personnel conducting the surveys.

Table 2. MGS Trapping and Camera Dates

Lenwood 1	**Start**	**End**	**Surveying Biologist**
session 1	4/16/2017	4/20/2017	Lehong Chow
session 2	5/15/2017	5/19/2017	Lehong Chow
session 3	6/26/2017	6/30/2017	Lehong Chow
Lenwood 2	**Start**	**End**	**Surveying Biologist**
session 1	4/22/2017	4/26/2017	Adam Walters, Lehong Chow
session 2	5/20/2017	5/24/2017	Lehong Chow
session 3	6/22/2017	6/26/2017	Adam Walters
Camera Stations	**Setup**	**Pickup**	**Surveying Biologist**
session 1	4/19/2017	4/24/2017	Lehong Chow
session 2	5/16/2017	5/21/2017	Lehong Chow
session 3	6/23/2017	6/28/2017	Adam Walters, Lehong Chow

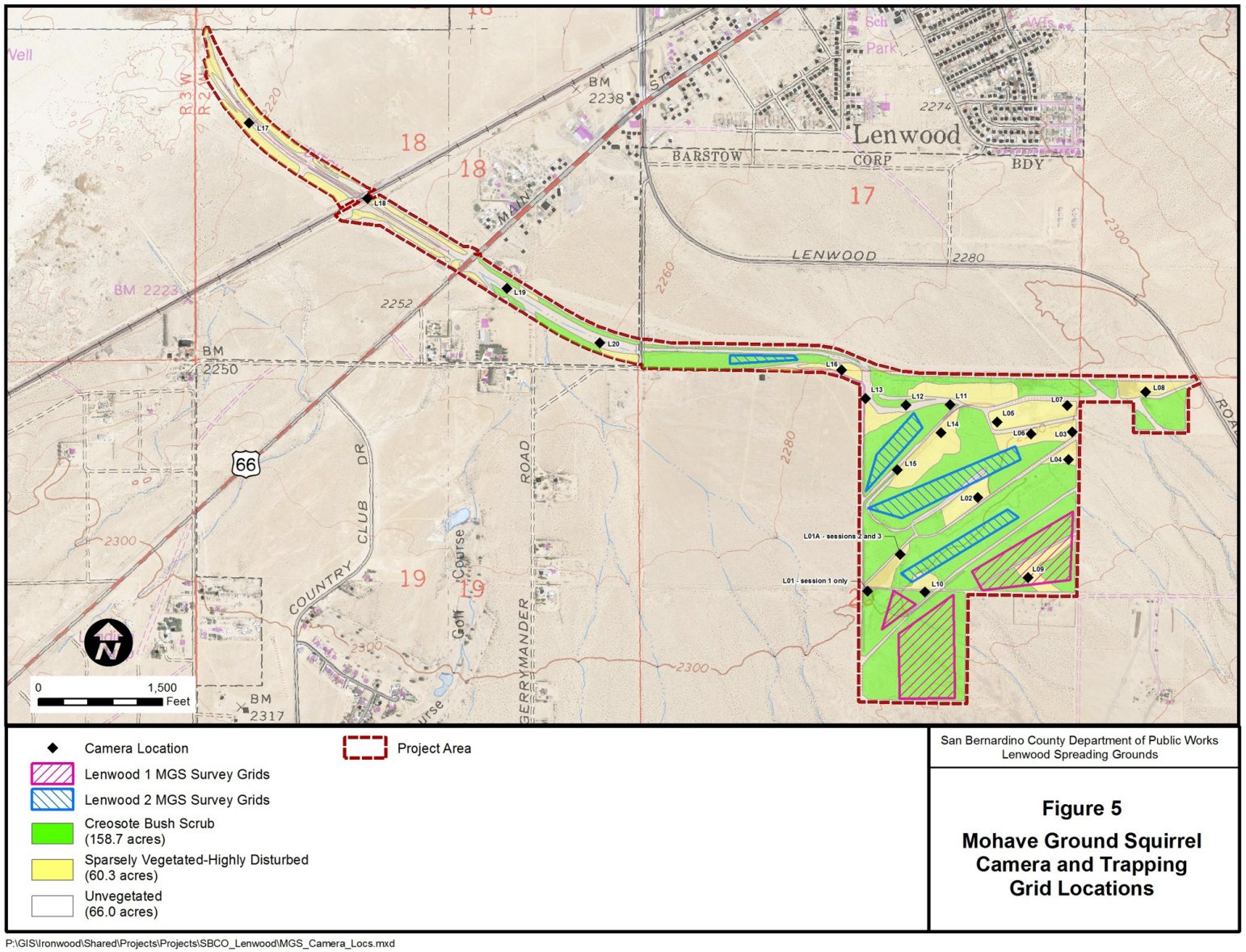
2.4.1 Live Trapping

CDFW guidelines (CDFW 2003, revised 2010) require live trapping for three sessions of trapping- the first session occurs between March and April, the second session in May, and the last session between mid-June and July. Each session consists of five consecutive days of trapping from sunrise to sunset with limits on temperature and inclement weather conditions. Traps were opened near sunrise, checked throughout the day, and then checked and closed before sunset.

Each grid was divided into three portions where the Project area had the best habitat for MGS. Lenwood 1 was located in the southern portion of the Project area while Lenwood 2 was the grid located in the northern portion of the Project area (Figure 5).

One hundred 12-inch aluminum HB Sherman folding live-traps, spaced 35-meters apart, were used for each respective grid during each trapping session. The bait placed into individual traps consisted of a 4-way livestock grain and peanut powder mixture. Cardboard folded in an A-frame and stabilized by soil was placed over each trap to provide shade.

Figure 5. MGS Camera and Trapping Grid Locations



2.4.2 Camera Trapping

The methodology used for camera trapping was based on a camera trapping study conducted by the Desert Tortoise Natural Area that deters raven activity at the camera station (Logan 2015). Twenty camera stations were set using Reconyx HC900 Hyperfire High Output Covert IR Cameras™ - one camera station, L01, was non-productive during session 1 and was moved to another location, L01A for sessions 2 and 3. Cameras were set at high sensitivity to take 3 photos/trigger, rapid-fire interval to take 2 frames/second, and no delay between triggers. Cameras were affixed with zip-ties to two wooden stakes which were also attached together with zip-ties to support the camera weight. Stakes were hammered into the ground so that cameras were 10-13 centimeters (cm) above the ground. Cameras were placed facing north to reduce glare and within large bushes when possible to reduce visibility of cameras to the public.

Bait tubes were used to attract animals to camera locations. These bait tubes were made of 2.54-cm (1 inch) diameter polyvinyl chloride (PVC) pipe cut to 15-cm (5.9 inches) lengths with small holes drilled around the tube. The tubes were filled with 4-way livestock grain, peanut powder, and peanut butter, then capped at each end. Bait tubes were then attached to metal rebar 30.5 cm (12 inches) in length with zip-ties and hammered into the ground in front of cameras to prevent movement of the bait pipe from view of the camera. A smear of peanut butter was placed atop the metal rebar to increase attraction to the station.

Each camera session ran for a minimum of 5 consecutive days for 24 hours each day and were checked within 1-2 days of setting the station to ensure that they were functioning properly. Cameras were picked up after running for 5 full days when each live trapping session ended. Camera trapping days overlapped with live trapping dates from both Lenwood 1 and Lenwood 2. Data cards were downloaded shortly after pickup and photos were reviewed by an authorized MGS biologist

3.0 RESULTS

3.1 General Biological Setting

This section discusses the plants and wildlife recorded incidental to other surveys performed at the site, discussed in detail in the following sections. General site photos are presented in Appendix A and all data sheets from all surveys in Appendix B.

3.1.1 Plants

A list of all plants detected are included in Table 3 on the following page, and no sensitive plant species were detected during surveys. The Project Study Area supports creosote bush scrub (Sawyer 2009; Figure 6), with areas of this community moderately and highly disturbed, as well as unvegetated areas of existing District access roads and facilities. Highly disturbed areas supported many more non-native species.

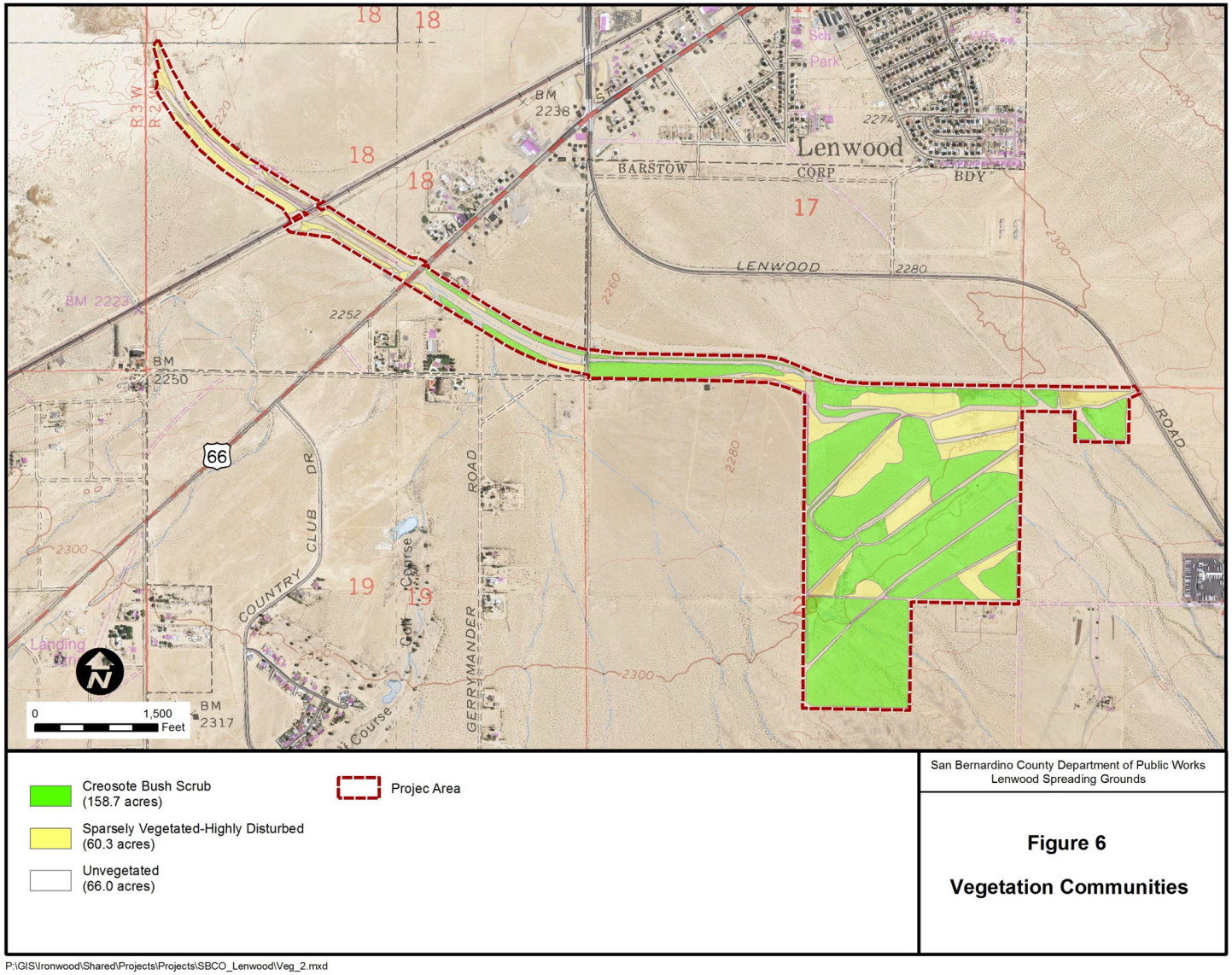
Table 3. Plants Detected

Scientific Name	**Common Name**
Acamptopappus sphaerocephalus	golden head
Ambrosia acanthicarpa	annual bur-sage
Ambrosia dumosa	burrobush
Ambrosia salsola	cheesebush
Amsinckia tessellata	Deill's lettuce
Asclepias erosa	desert milkweed
Atriplex confertifolia	shadscale
*Brassica nigra**	black mustard
*Bromus diandrus**	ripgut brome
*Bromus madritensis rubens**	red brome
*Bromus tectorum**	cheat grass
Camissonia brevipes	suncups
Camissonia campestris campestris	Mojave suncups
Chaenactis fremontii	Fremont's pin cushion
Chorizanthe brevicornus	brittle spineflower
Chorizanthe rigida	rigid spiny spineflower
Cryptantha micrantha	cushion cryptantha
Cryptantha sp.	cryptantha
Cylindropunta echinocarpa	Wiggin's cholla
Datura wrightii	jimson weed
Delphinium parishii	Parish's larkspur
*Descurainia pinnata**	western tansy mustard
Eriophyllum wallacei	Wallace's woolly daisy
*Erodium cicutarium**	filaree

Scientific Name	**Common Name**
Eschscholzia californica	California poppy
Euphorbia albomarginata	white-margin sandmat
Grayia spinosa	spiny hopsage
Heliotropium curvassicum	heliotrope
*Hirschfeldia incana**	short podded mustard
*Hordeum marinum**	barley
Larrea tridentata	creosote bush
Lasthenia californica	California goldfields
Layia glandulosa	white tidy tips
Lycium anersonii	Anderson's boxthorn
Lycium cooperi	Cooper's boxthorn
Malacothrix glabrata	desert dandelion
Menzelia albicaulis	whitestem blazingstar
Opuntia basilaris basilaris	beavertail cactus
Parkinsonia florida	blue palo verde
Pectis papposa	many bristle chinchweed
Phacelia crenulata	phacelia
Phalaris minor	littleseed canarygrass
Prosopsis glandulosa	fatbean mesquite
Rafinesguia neomexicana	New Mexican plumseed
*Salsola tragus**	Russian thistle
*Schmis barbatus**	Mediterranean grass
Senna armata	desert senna
Stephanomeria virgata	wirelettuce
*Sysimbrium irio**	London rocket

**= non-native species*

Figure 6. Vegetation Communities



3.1.2 Wildlife

A list of all wildlife detected are included in Table 4. Three sensitive species were observed incidentally during surveys - burrowing owl (*Athene cuncicularia*), LeConte's thrasher (*Toxostoma lecontei*), and Mojave fringe-toed lizard (*Uma scoparia*). These are California state species of concern, and the two birds are USFWS birds of conservation concern. Mojave fringe-toed lizard was observed at the far western end of the buffer area where there are dune habitats and other recent records of this species. A table of all incidental wildlife species observed is in Table 4.

Photo 1. LeConte's thrasher, camera station L02, session 1

Table 4. Incidental Species Detected

Common Name	Scientific Name
bank swallow	*Riparia riparia*
black phoebe	*Sayornis nigricans*
black-tailed jackrabbit	*Lepus californicus*
black-throated sparrow	*Aphispiza bilineata*
burrowing owl	*Athene cunicularia*
common raven	*Corvus corax*
Costa's humming bird	*Calypte costae*
coyote	*Canis latrans*
desert horned lizard	*Phyrnosoma platyrhinos*
desert spiny lizard	*Sceloporus magister*
desert tortoise	*Gopherus agassizii*
desert woodrat	*Neotoma lepida*
domestic dog	*Canis lupis familiaris*
greater roadrunner	*Geococcyx californianus*
horned lark	*Erimophila alpestris*
horned lizard	*Phyrnosoma platyrhinos*
zebra-tailed lizard	*Callisaurus draconoides*

Common Name	Scientific Name
house finch	*Carpodacus mexicanus*
LeConte's thrasher	*Toxostoma lecontei*
leopard lizard	*Gambelia wislenzenii*
lesser nighthawk	*Chordeilas acutipennis*
Merriam's kangaroo rat	*Dipodymys merriami*
Mojave fringe-toed lizard	*Uma scoparia*
mourning dove	*Zenaida macroura*
pocket mouse	*Chaeotodipus* sp.
red racer snake	*Masticophis flagellum*
red-tailed hawk	*Falco sparverius*
rock wren	*Salpinactes obsoletus*
sage sparrow	*Artemisospiza nevadensis*
side-blotched lizard	*Uta stansburiana*
turkey vulture	*Cathartes aura*
western whiptail	*Aspidoscelis tigris*
white-crowned sparrow	*Zonotrichia leucophrys*

3.2 Desert Tortoise

Two live desert tortoises were observed during the desert tortoise protocol survey – one within the fenced Project area and one within the Project Study Area as shown on Figure 7. Desert tortoise sign observed included two active burrows, one inactive burrow, an old piece of scat, and a carcass.

Figure 8 shows desert tortoise sign found during the 2017 survey as well as all desert tortoise sign that has been recorded in the Project Study Area in previous surveys.

Photo 2. Adult Male tortoise found in Project Study Area outside fence

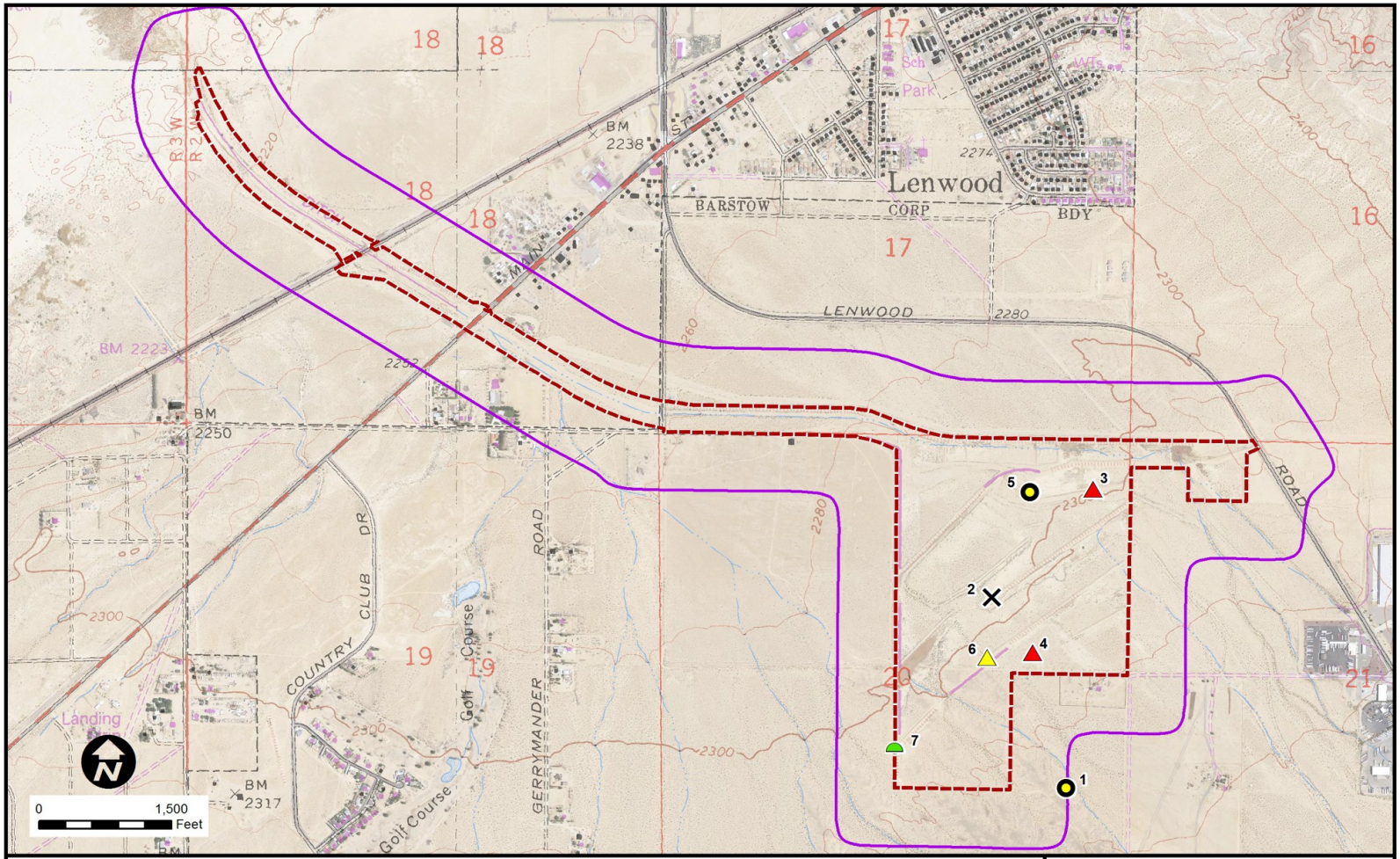
3.3 Burrowing Owl

One burrowing owl was observed on three consecutive days during Session 2 surveys in May. These observations were very close to a pair of burrows that were adjacent to one another with white wash and a feather. A burrow with whitewash was also observed north of those burrows. All burrowing owl observations are displayed on Figure 8.

Photo 3. Burrows with feather and white wash

Photo 4. Burrowing owl individual on shrub

Figure 7. Desert Tortoise Results - 2017



Tortoise Sign

- Tortoise
- Burrow (Class 1)
- Burrow (Class 4)
- Carcass
- Scat

- 200-meter Transect
- Project Area

Map ID	Description
1	Live tortoise, undetermined sex, appprox 245mm, unmarked
2	Scat, not this year
3	Class 1 active burrow
4	Class 1 active burrow
5	Live tortoise, undetermined sex, appprox 180mm, unmarked
6	Class 4 burrow
7	Carcass, undetermined sex, approx 55mm

San Bernardino County Department of Public Works
Lenwood Spreading Grounds

Figure 7

Desert Tortoise Results from 2017 Survey

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Figure 8. Desert Tortoise Results - All

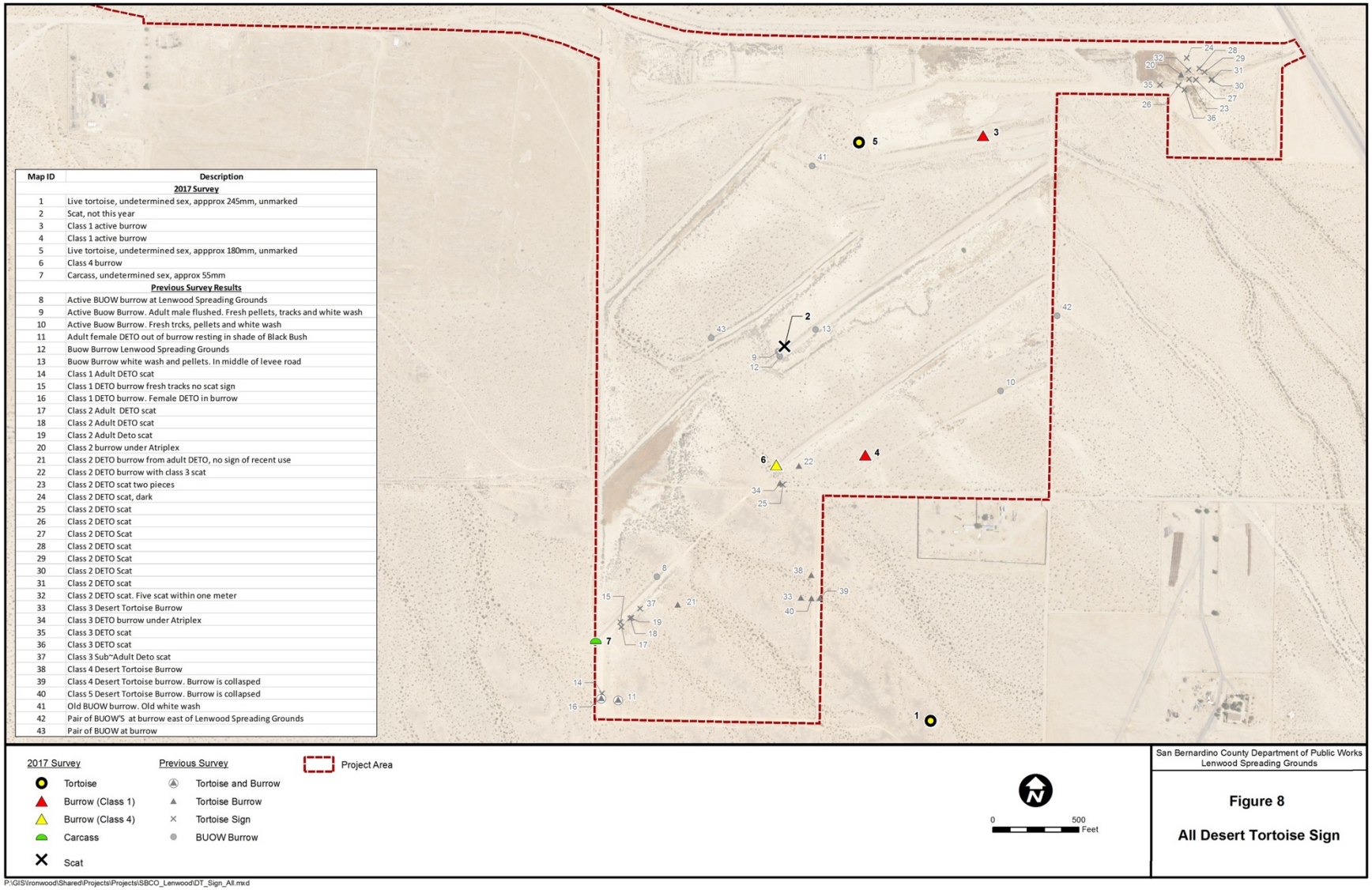
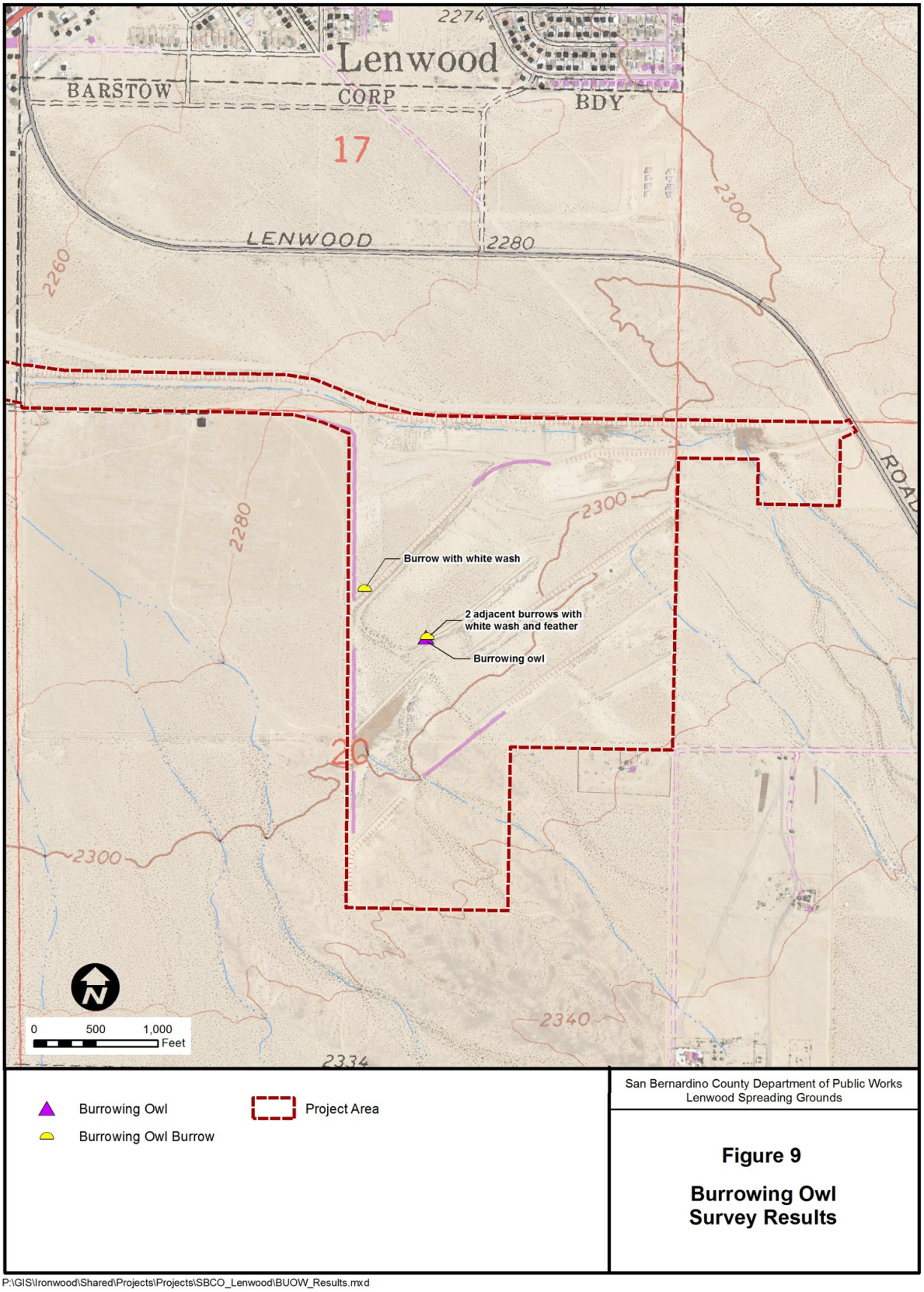


Figure 9. Burrowing Owl Results



3.4 Mohave Ground Squirrel

3.4.1 Live Trapping

Photo 5. RTGS lactating female, Lenwood grid 2, session1

No MGS were trapped during all three trapping sessions. White-railed antelope ground squirrels (*Ammospermophilus leucurus*) were the primary squirrel species live-trapped. Two round-tailed ground squirrels (*Xerospermophilus tereticaudus* - RTGS) were trapped. Both live RTGS individuals trapped were lactating females. A genetic sample was taken from the ear of each individual for genetic analysis. All wildlife species trapped from the live trapping effort is summarized in Table 5 shows results live trapping.

Photo 6. RTGS lactating female, Lenwood grid 1, session 2

Table 5. MGS Live Trapping Results

WILDLIFE SPECIES TRAPPED	NUMBER OF INDIVIDUALS TRAPPED AT GRIDS					
	session 1		session 2		session 3	
	Lenwood 1	Lenwood 2	Lenwood 1	Lenwood 2	Lenwood 1	Lenwood 2
antelope ground squirrel *(Ammospermophilus leucurus)*	14	14	9	23	47	15
desert cottontail *(Syvilagus audobonii)*	-	1	-	-	-	-
round-tailed ground squirrel *(Xerospermophilus tereticaudus)*	-	1	1	-	-	-
desert spiny lizard *(Sceloperus magistar)*		-	1	-	-	-
western whiptail lizard *(Aspedoscelis tigris)*	3	1	3	2	2	1

3.4.2 Camera Trapping

No images of MGS were observed from camera trapping. The most abundant species caught on camera images were white-tailed antelope ground squirrels. Three camera trap stations that had images of RTGS, identified by the roundness and long length of the tail. Camera images from L16 did not show the tail of the squirrel, but this individual was assumed to be a RTGS because all live trapping and camera trapping was positive for RTGS and not MGS. Table 6 summarizes the camera trapping results and photos 4-11 show representative images of species observed on the camera traps.

Photo 7. RTGS, camera station L10, session 3

Photo 8. RTGS, camera station L14, session 2

Photo 9. Assumed RTGS, camera station L16, session 2, no images showing tail

Photo 10. Antelope ground squirrel, camera station L12, session 32

Photo 11. Black-tailed jackrabbit, camera station L04, session 2

Photo 12. Desert kit fox, camera station L02, session 2

Photo 13. kangaroo rat, camera station L05, session 2

Photo 14. Deer mouse, camera station L18, session 2

Table 6. Camera Trapping Results

WILDLIFE SPECIES DETECTED ON CAMERA	CAMERA STATION NUMBERS																				
	L01	L01-A	L02	L03	L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20
antelope ground squirrel *(Ammospermophilus leucurus)*	-	3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	-	3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2
black-tailed Jackrabbit *(Lepus californicus)*	-	-	1,2,3	1,3	1,2,3	-	2,3	2,3	2	-	1,2,3	-	1,2,3	1,3	2	2	1,2	-	3	2	-
black-throated sparrow *(Aphispiza bilineata)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
common raven *(Corvus corax)*	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
desert cottontail rabbit *(Syvilagus audobonii)*	-	-	-	-	1	-	-	-	3	-	-	-	-	-	1	-	2,3	-	1	1,3	-
deer mouse *(Peromyscus sp.)*	-	-	-	-	2	-	-	2	1,3	-	-	-	-	-	-	-	-	-	1,2,3	2	-
desert iguana *(Diposaurus dorsalis)*	-	-	-	1,2	-	-	-	-	2	1,2	-	2	3	2	-	-	1,3	-	-	-	-
desert kit fox *(Vulpes macrostis)*	-	-	1, 2	1	-	-	1	-	-	-	1,3	1	-	1	-	-	2	-	-	1	-
desert spiny lizard *(Sceloperus magister)*	-	2	-	-	-	-	-	3	-	-	-	-	-	3	1	1,2	3	-	2,3	-	-
desert wood rat *(Neotoma lepida)*	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
domestic dog *(Canis lupis familiaris)*	-	-	-	-	-	-	-	1	-	2,3	-	1	-	1,2	2	2	-	-	-	-	-
LeConte's thrasher *(Toxostoma lecontei)*	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
leopard lizard *(Gambelia wislizenii)*	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-

1= session 1 *2=session 2* *3=session 3*

Table 4. Camera Trapping results (continued)

WILDLIFE SPECIES DETECTED ON CAMERA	CAMERA STATION NUMBERS																				
	L01	L01-A	L02	L03	L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20
Merriam's kangaroo rat *(Dipodomys merriami)*	-	3	2	1,2,3	1	1,2,3	2,3	1,2,3	1,2	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	2,3	1,2	1,2,3	3	-	-	1
mourning dove *(Zenaida macroura)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	-	-
pocket mouse *(Chaetodipus sp.)*	-	2,3	1,3	1	2,3	2,3	2,3	-	1,2,3	1,3	1,2	-	2	2,3	2	2,3	-	2	-	2,3	3
red racer snake *(Masticophis flagellum)*	-	-	-	-	-	-	-	3	-	1	-	-	-	-	-	-	-	-	-	-	-
road runner *(Geococcyx californianus)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
round-tailed ground squirrel *(Xerespermophilus tereticaudus)*	-	-	-	-	-	-	-	-	-	-	3	-	-	-	2	-	2	-	-	-	-
sage sparrow *(Artemisospiza nevadensis)*	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
side-blotched lizard *(Uta sp.)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
western banded gecko *(Coleonyx variegatus)*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
western whiptail lizard *(Aspedoscelis tigris)*	-	-	-	1	-	1	1,2	1	-	-	-	-	2	2,3	1	2	-	-	2,3	-	-
zebra-tail lizard *(Callisaurus draconoides)*	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1= session 1 *2=session 2* *3=session 3*

4.0 RECOMMENDATIONS

Ironwood recommends that the following biological resources or species be considered in California Environmental Quality Act (CEQA) documentation for the project with the goal of avoidance, minimization, and/or mitigation for these resources known to be present in the Project Study Area and requiring avoidance or minimization/mitigation of potential impacts:

- Desert tortoise
- Burrowing owl
- Mojave fringe-toed lizard
- Nesting Birds; LeConte's thrasher

Ironwood recommends a pre-construction survey conducted within 30 days of Project activities commencing to determine the status of these resources immediately prior to activities commencing. Results of that survey would be used to refine avoidance and minimization actions during Project activities. Additional measures are recommended below for desert tortoise.

All areas of potential Mojave fringe toed lizard habitat that could be affected by the project will be restricted from project access by placement of temporary visual barriers such as snow fence.

Because protocol surveys were negative for this species, Mohave ground squirrels are considered absent from the Project Study Area for at least one year from the completion of trapping. If project activities begin during that time period, no additional activities for this species are recommended or required. If project activities start after one year, it is recommended that a memo be written to support no further MGS trapping or cameras because site conditions remain unchanged (assuming that is correct). No other listed species are likely to be found in the Project Study Area.

4.1 Desert Tortoise

The proposed Project may have both direct and indirect impacts to the species. Direct impacts could occur if an animal is injured or killed during project implementation, possibly from vehicle traffic or being crushed in a burrow during soils excavation activities. Indirect impacts could occur from the removal of creosote bush-white bursage scrub habitat (permanent impact), and from increased dust and noise during construction (temporary impact).

Ironwood recommends using desert tortoise exclusion fencing to exclude those areas of good habitat (intact native creosote bush-white bursage communities with adjacent accessible similar habitats). The area inside the desert tortoise fence would be cleared to determine presence or absence of any desert tortoise or recent sign inside the fence. If no such animals or sign are found project activities will continue with no monitor required for activities conducted inside the fence, assuming the fence remains intact. If any desert tortoise or recent sign are found during the clearance survey, activities will not commence and San Bernardino Flood Control District personnel will contact California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) personnel to initiate formal consultation under the state and federal endangered species acts.

Ironwood recommends that qualified biological monitors be present during ground disturbing activities that are not within a fenced and cleared area, such as monitoring fence installation, and any activities in the eastern portion of Lenwood channel where creosote bush-white bursage habitat is present.

Additional recommended mitigation includes providing replacement habitat for the good quality habitat that would be removed within the desert tortoise fence, as proposed on the following table and figure. All replacement habitat would include nested mitigation for any impacts to burrowing owl and LeConte's thrasher.

Project Feature	Quality of Existing Desert Tortoise Habitat (Figure 8)	Acres Affected	Mitigation Ratio	Acres
Lenwood spreading grounds	Creosote bush – white bursage, less disturbed (moderate or good)	132.0	1:1	132.0
	Creosote bush – white bursage, highly disturbed or unvegetated	65.8	0:1	0.0
Lenwood channel	Creosote bush – white bursage, less disturbed	26.7	1:1	26.7
	Creosote bush – white bursage, highly disturbed or unvegetated	58.7	0:1	0.0
Lenwood spillway	Creosote bush – white bursage, highly disturbed or unvegetated	0.4	0.0	0.0
			Proposed acres to be provided as compensatory mitigation	*158.7**

*Final compensatory mitigation ratios will be arrived at during the regulatory permitting process and included in the Streambed Alteration Agreement prepared under Section 1602 of the Fish and Game code.

Ironwood recommends that the District prepare a Worker Environmental Awareness Plan (WEAP) that will be given to all personnel at the site. The WEAP will include a discussion of each species, all applicable laws, the permit conditions, and the potential consequences.

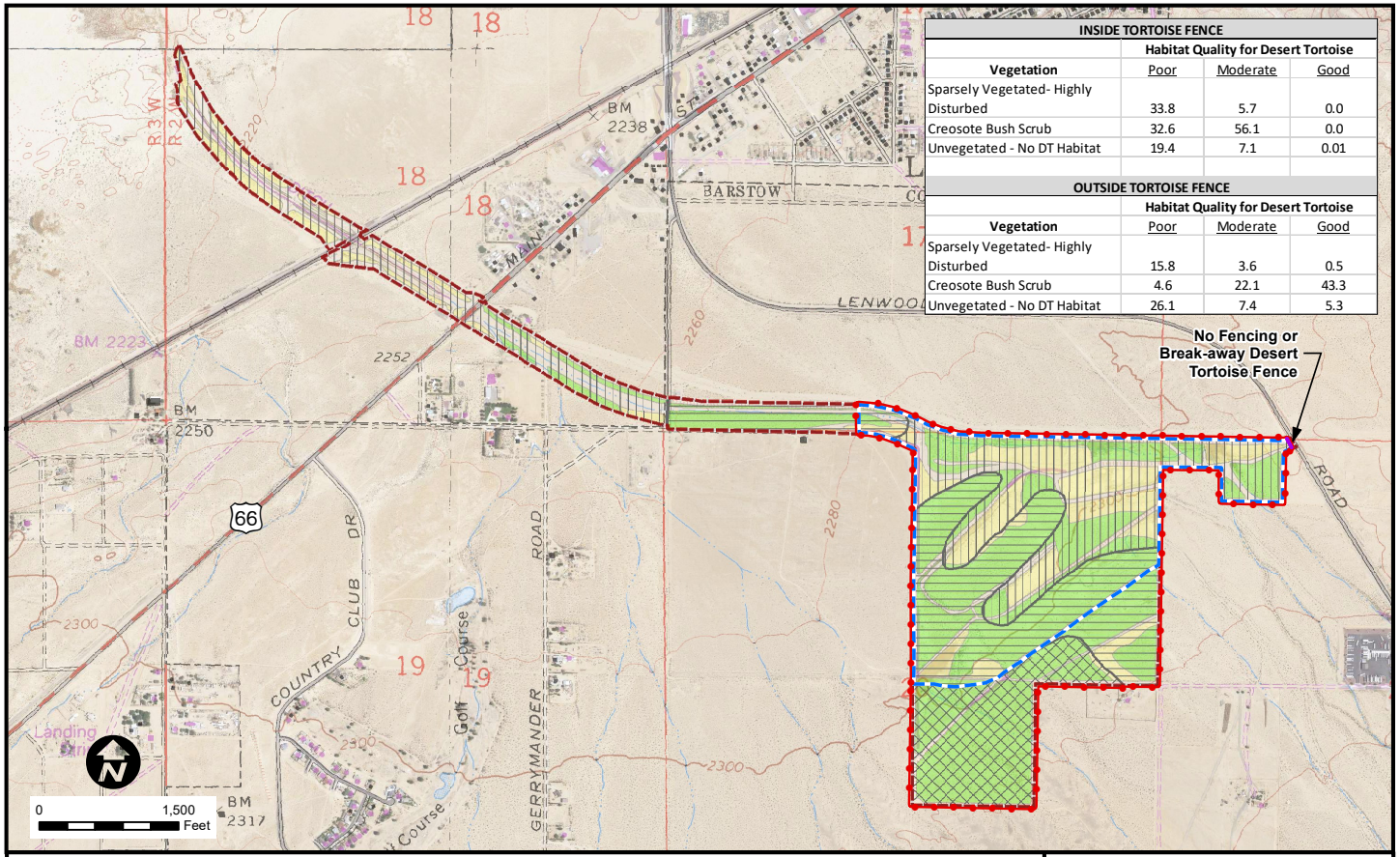
Activities conducted outside the exclusion fence will be monitored where good quality habitat is being removed in the Lenwood channel until the completion of vegetation removal. After vegetation removal and in areas of poor-quality habitat, areas will be spot checked as appropriate to the activity, its timing and duration.

Equipment staging, temporary stockpiling and personnel will within the exclusion fence.

Speeds will be kept to under 20 mph in unpaved areas outside desert tortoise exclusion fence at all times.

Trash will be kept in closed containers at all times and routinely removed from maintenance areas.

Project activities will be limited to daylight hours (approximately 7:00 A.M. to 6:00 P.M.). During night hours, no activities that would unnaturally increase the light or noise within adjacent occupied habitat will occur.



INSIDE TORTOISE FENCE			
	Habitat Quality for Desert Tortoise		
Vegetation	Poor	Moderate	Good
Sparsely Vegetated- Highly Disturbed	33.8	5.7	0.0
Creosote Bush Scrub	32.6	56.1	0.0
Unvegetated - No DT Habitat	19.4	7.1	0.01

OUTSIDE TORTOISE FENCE			
	Habitat Quality for Desert Tortoise		
Vegetation	Poor	Moderate	Good
Sparsely Vegetated- Highly Disturbed	15.8	3.6	0.5
Creosote Bush Scrub	4.6	22.1	43.3
Unvegetated - No DT Habitat	26.1	7.4	5.3

San Bernardino County Department of Public Works
Lenwood Spreading Grounds

Habitat Quality for Desert Tortoise

P:\GIS\Ironwood\Shared\Projects\Projects\SBCO_Lenwood\Habitat_Qual.mxd

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Appendix A - General Site Photos

Southern portion of grid facing north

Southwestern portion of Project with levee facing south

Western portion of Project facing southwest

Northwest corner of the Project facing southeast

Appendix B – Datasheets

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
16-April-2016	Lennwood 1	Assistant(s):

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	610	7:58	1054	1225	1648	1818					
Temp (°F)	49	60	72	82	86	78					
Wind (mph)	0-2	0-2	2-3	2-3	6-9	5-10					
Cloud Cover (%)	40	30	30	30	30	60					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	~~1108~~	94	AMLE	Y (N)	M (F)	A (SA) J		
2	1115	100	"	Y (N)	M (F)	(A) SA J	PREG	
3	1120	66	"	Y (N)	(M) F	(A) SA J	SCR	
4	1147	53	"	Y (N)	(M) F	(A) SA J	SCR	
5	1206	16	"	Y (N)	M (F)	(A) SA J	LAC	
6	1657	84	whiptail	Y (N)	M F	A SA J		
7	1731	52	AMLE	Y (N)	(M) F	A (SA) J		
8	1756	11	"	Y (N)	(M) F	(A) SA J	SCR	
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
17-April-2017	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:10	7:40	10:50	12:12	17:02	18:19					
Temp (°F)	55	60	74	76	77	76					
Wind (mph)	1-2	4-8	4-8	8-10	10-13	8-10					
Cloud Cover (%)	40	40	60	80	70	60					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	11:11	96	AMLE	Y (N)	(M) F	(A) SA J	SCR	
2	11:17	66	"	Y (N)	M (F)	A (SA) J		
3	11:54	19	whiptail	Y N	M F	A SA J		
4	17:19	96	AMLE	(Y) N	M F	A SA J		
5	17:21	97	"	(Y) N	M F	A SA J		
6	17:43	52	"	(Y) N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
18-April-2017	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:02	7:22	10:56	1206	16:45	17:58					
Temp (°F)	58	61	74	76	76	74					
Wind (mph)	1-2	5-8	10-15	11-15	14-16	14-17					
Cloud Cover (%)	5	5	10	30	30	30					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1148	15	AMLE	(Y) N	M F	A SA J		
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
19-April-2017	Lenwood 1	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:06	7:24	10:57	12:22	16:53	18:18					
Temp (°F)	49	55	70	72	81	78					
Wind (mph)	1-3	1-2	0-2	2-4	0-2	6-8					
Cloud Cover (%)	0	0	0	3	5	0					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	11:55	210	whiptail	Y N	M F	A SA J		
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
20-April-2016	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:04	7:15	10:45	11:50	16:14	17:56					
Temp (°F)	50	54	70	72	77	75					
Wind (mph)	4-9	5-8	8-12	13-16	8-14	8-10					
Cloud Cover (%)	0	0	5	5	5	0					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1640	91	AMLE	Y (N)	M (F)	(A) SA J		
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
15-May-2017	Lenwood 1	Assistant(s):

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:50	8:18	1225	1328	1709	1806					
Temp (°F)	50	56	64	65	66	63					
Wind (mph)	8-13	9-12	9-14	13-15	10-14	11-14					
Cloud Cover (%)	5	5	80	80	65	50					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	12:54	48	AMLE	Y (N)	M (F)	(A) SA J	LAC	
2	13:19	4	〃	Y (N)	(M) F	(A) SA J	SCR	
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
16-May-2017	Lenwood 1	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	609	728	11:52	12:51	1705	1824					
Temp (°F)	51	55	71	76	76	73					
Wind (mph)	4-6	8-11	7-10	5-8	7-14	7-13					
Cloud Cover (%)	0	0	10	35	80	90					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1206	90	AMLE	Y (N)	(M) F	(A) SA J		
2	1209	93	"	Y (N)	M (F)	(A) SA J		
3	1213	97	western fence lizard	Y N	M F	A SA J		
4	1247	70	whiptail	Y N	M F	A SA J		
5	1812	48	XETE	Y (N)	M (F)	(A) SA J	LAC	385707O 490172/~~3857070~~ T: 89mm 10.6g
6	1745	15	AMLE	Y (N)	(M) F	(A) SA J	SCR	
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
17-May-2017	Lenwood 1	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	604	709	1220	1321	1705	1810					
Temp (°F)	55	55	71	72	71	68					
Wind (mph)	12-16	12-15	9-12	12-16	12-17	14-19					
Cloud Cover (%)	70	70	20	15	20	15					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1259	55	AMLE	Y (N)	(M) F	(A) SA J	SCR	
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
15-May-2017	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	605	707	1205	1305	1700	1801					
Temp (°F)	49	55	73	82	82	82					
Wind (mph)	1-3	1-2	4-5	2-4	3-6	1-2					
Cloud Cover (%)	0	0	5	5	5	5					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1215	83	whiptail	Y N	M F	A SA J		
2	1701	73	"	Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
19-May-2017	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	607	709	1206	1305	1633	1814					
Temp (°F)	51	60	76	77	82	85					
Wind (mph)	2-3	2-3	4-7	5-8	5-7	0-1					
Cloud Cover (%)	0	0	0	0	2	2					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1234	33	AMLE	Y (N)	M (F)	A (SA) J		
2	1244	15	"	Y (N)	M (F)	(A) SA J	LAC	
3	1712	31	"	Y (N)	M (F)	A SA (J)		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
26-Jun-2016	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	526	727	823	936							
Temp (°F)	76	83	89	94							
Wind (mph)	2-4	6-7	4-6	8-11							
Cloud Cover (%)	hazy	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	826	72	AMLE	Y (N)	M (F)	A SA (J)		
2	856	52	"	Y (N)	M (F)	A (SA) J		
3	915	21	"	Y (N)	M (F)	A (SA) J		
4	925	8	"	Y (N)	M (F)	A (SA) J		
5	931	6	"	Y (N)	(M) F	A SA (J)		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow	
27-Jun-2017	Lenwood 1	Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	5:21	647	837	1011							
Temp (°F)	75	79	89	94							
Wind (mph)	4-5	0-2	6-7	8-11							
Cloud Cover (%)	hazy	hazy	hazy	hazy							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	841	73	AMLE	Y (N)	M (F)	A (SA) J		
2	851	87	"	Y (N)	M (F)	A (SA) J		
3	901	99	"	Y (N)	M (F)	A (SA) J		
4	917	55	"	Y N	M (F)	(A) SA J		
5	919	54	"	Y (N)	M (F)	A (SA) J		
6	921	53	"	Y (N)	M (F)	A SA (J)?		
7	947	23	"	Y N	(M) F	A (SA) J		
8	952	17	"	Y N	(M) F	A (SA) J		
9	1001	1	"	(Y) N	M F	A SA J		
10	1003	2	"	Y (N)	(M) F	A (SA) J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
28 June 2017	Lenwood 1	Lehong Chow	
		Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	517	629	849	1017							
Temp (°F)	76	77	88	91							
Wind (mph)	7-8	3-4	5-6	7-9							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	852	73	AMLE	Y (N)	M (F)	(A) SA J		
2	916	64	"	Y (N)	(M) F	A (SA) J		
3	926	55	"	(Y) N	M F	A SA J		
4	930	49	"	(Y) N	M F	A SA J		
5	940	37	"	Y (N)	M (F)	A (SA) J		
6	955	14	"	Y (N)	M (F)	A SA (J)		
7	959	10	"	Y (N)	(M) F	A (SA) J		
8	1001	9	"	Y (N)	(M) F	A (SA) J		
9	1007	3	"	Y (N)	M (F)	A (SA) J		
10	1009	5	"	(Y) N	M F	A SA J		
11	1010	6	"	Y (N)	(M) F	(A) SA J		
12	1012	67	"	(Y) N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
29-Jun-2017	Lenwood 1	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	521	640	908	1025							
Temp (°F)	73	76	88	91							
Wind (mph)	4-6	5-7	4-7	4-6							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	911	71	AMLE	(Y) N	M F	A SA J		
2	925	92	"	Y N	(M) F	A (SA) J		
3	928	93	"	Y N	M (F)	A (SA) J		
4	930	94	"	Y N	(M) F	(A) SA J		
5	938	65	"	Y N	(M) F	A SA (J)		
6	939	43	whiptail	Y N	M F	A SA J		
7	941	64	AMLE	Y N	M (F)	A (SA) J		
8	942	44	"	(Y) N	M F	A SA J		
9	944	63	whiptail	Y N	M F	A SA J		
10	953	55	AMLE	(Y) N	M F	A SA J		
11	1007	14	"	Y N	M (F)	A (SA) J		
12	1010	12	"	Y N	(M) F	A (SA) J		
13	1016	3	"	(Y) N	M F	A SA J		
14	1018	4	"	(Y) N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
30-June-2017	Lenwood 1	Assistant(s): Blanca Rivera

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	520	626	833	1014							
Temp (°F)	74	75	86	92							
Wind (mph)	0-1	0-1	0-2	2-4							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	8:58	93	AMLE	Y (N)	M F	(A) SA J		Escape
2	904	100	"	(Y) N	M F	A SA J		
3	912	63	"	(Y) N	M F	A SA J		
4	927	29	"	Y (N)	M (F)	A (SA) J		
5	930	35	"	Y (N)	M (F)	A (SA) J		
6	945	16	"	(Y) N	M F	A SA J		
7	958	3	"	(Y) N	M F	A SA J		
8	1001	68	"	(Y) N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE: Apr 22, '17 | GRID: Lenwood 2 | Investigator(s): Adam Walters | Assistant(s):

Circle when traps were closed

	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0640	1005	1220	1343	1640	1800					
Temp (°F)	50°	73°	88.6°	89.1	90.2	90.3					
Wind (mph)	1mph	1mph	4mph	4mph	1mph	1mph					
Cloud Cover (%)	20%	20%	15%	10%	10%	20%					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1302	63	AGS	Y (N)	(M) F	(A) SA J	SCR	
2	1310	71	AGS	Y (N)	(M) F	(A) SA J	SCR	
3	1315	78	AGS	Y (N)	(M) F	(A) SA J	PSCR	
4	1725	64	AGS	(Y) N	M F	A SA J		
5	1734	73	AGS	Y (N)	M (F)	(A) SA J	PREG	
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Adam Walters
Apr 23, '17	Lenwood 2	Assistant(s):

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0645	0800	1205	1328	1620	1733					
Temp (°F)	59°	65.9°	84°	86.4°	86°	80°					
Wind (mph)	2mph	5mph	6mph	10mph	15mph	15mph					
Cloud Cover (%)	30%	20%	15%	10%	30%	25%					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1215	30	Desert Cottontail	Y (N)	M F	A (SA) J		
2	1220	25	AGS	Y (N)	M (F)	A (SA) J		Recap from previous trapping
3	1229	10	AGS	Y (N)	(M) F	A (SA) J	SCR	
4	1322	95	AGS	Y (N)	M (F)	A (SA) J	PREG	
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
24-April-2017	Lenwood 2	Lehong Chow	
		Assistant(s):	

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:06	7:32	11:12	13:21							
Temp (°F)	53	55	68	74							
Wind (mph)	8-12	12-14	22-24	23-26							
Cloud Cover (%)	60	70	70	60							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1			none	Y N	M F	A SA J		
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
25-April-2017	Lenwood 2	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:06	7:23	11:16	13:34	17:02	1807					
Temp (°F)	50	54	69	72	72	70					
Wind (mph)	8-11	9-14	6-9	6-9	4-7	11-12					
Cloud Cover (%)	40	30	40	40	60	40					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1217	62	XETE	Y (N)	M (F)	(A) SA J	LAC	490353/3857311, took ear sample, 118g = 135g-17g
2	1324	98	AMLE	Y (N)	M F	A SA J		
3	17:09	8	AMLE	Y (N)	(M) F	A (SA) J		
4	1749	69	"	Y (N)	(M) F	A (SA) J		
5	1756	86	"	(Y) N	M F	A SA J		
6	1758	91	"	Y (N)	(M) F	(A) SA J	SCR	
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
26-April-2017	Lemwood 2	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	6:06	7:16	11:09	12:04	16:06	17:31					
Temp (°F)	51	61	71	77	76	74					
Wind (mph)	1-2	0-1	3-7	4-8	16-23	8-12					
Cloud Cover (%)	50	40	40	40	75	40					

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1112	18	whitetail	Y N	M F	A SA J		
2	1609	1	AMLE	(Y) N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
20-May-207	Lenwood 2	Lehong Chou	
		Assistant(s):	

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	608	744	1112	1235							
Temp (°F)	60	67	88	90							
Wind (mph)	0-1	1-2	3-4	3-4							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	11:50	69	AMLE	Y (N)	M (F)	(A) SA J	LAC	
2	11:58	81	"	Y (N)	M (F)	(A) SA J	LAC	
3	1200	85	"	Y (N)	M (F)	A SA (J)		
4	1205	93	"	Y (N)	M (F)	A SA (J)		
5	1207	95	"	Y (N)	M (F)	A (SA) J		
6	1209	97	"	Y (N)	M (F)	A SA (J)		
7	1219	2	"	Y (N)	(M) F	(A) SA J		
8	1223	9	whiptail	Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
21-May-2017	Lenwood 2	Assistant(s):	

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	545	653	1013	1129							
Temp (°F)	66	69	89	90							
Wind (mph)	1-3	0-1	2-8	1-4							
Cloud Cover (%)	0	0	5	10							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1048	69	AMLE	Y (N)	(M) F	(A) SA J		
2	1059	83	"	Y (N)	M (F)	A SA (J)		
3	1103	89	"	Y (N)	(M) F	A SA (J)		
4	1105	92	"	Y (N)	M (F)	(A) SA J	PREG	
5	1108	96	"	Y (N)	M (F)	A SA (J)		
6	1109	97	"	Y (N)	(M) F	A (SA) J		
7	11:11	100	"	Y (N)	(M) F	A SA (J)		
8	11:21	16	"	Y (N)	(M) F	(A) SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chou
22-May-2017	Lenwood 2	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	550	455	954	1100							
Temp (°F)	62	72	88	90							
Wind (mph)	2-4	0-1	3-9	2-3							
Cloud Cover (%)	0	5	25	25							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	1025	61	whitetail	Y N	M F	A SA J		
2	1038	81	AMLE	Y N	M (F)	A SA (J)		
3	1042	88	"	(Y) N	M F	A SA J		
4	1046	100	"	(Y) N	M F	A SA J		
5	~~1050~~ ↑	18	"	Y N	M F	A SA J		
6	1055			Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Lehong Chow
23-May-2017	Lenwood 2	Assistant(s): Maribel Lopez

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	545	649	905	959							
Temp (°F)	68	72	88	91							
Wind (mph)	1-2	0-1	1-2	1-2							
Cloud Cover (%)	10	10	10	10							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	955	11	AMLE	(Y) N	M F	A SA J		
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s):	
24-May-2017	Lenwood 2	Lehong Chow	
		Assistant(s):	

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	542	6:45	928	1054							
Temp (°F)	65	72	89	92							
Wind (mph)	0-1	1-2	4-8	11-13							
Cloud Cover (%)	10	15	30	40							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	916	46	AMLE	Y (N)	M (F)	(A) SA J	LAC	
2	1009	166	"	Y (N)	M (F)	A SA (J)		
3	1029	98	"	(Y) N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

MGS Trapping Survey

DATE	GRID	Investigator(s): Adam Walters
6/22/17	Lenwood 2	Assistant(s):

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0520	0710	0820	0930							
Temp (°F)	77°	83°	87°	93°							
Wind (mph)	4	2	2	5							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	0850	89	Western whiptail	Y N	M F	A SA J		
2	0900	93	AGS	Y (N)	M (F)	A (SA) J		
3	0902	94	AGS	Y (N)	(M) F	(A) SA J		
4	0904	95	AGS	Y (N)	M (F)	A (SA) J		
5	0920	1	AGS	Y (N)	M (F)	A (SA) J		
6	0925	9	AGS	Y (N)	(M) F	A (SA) J		
7	0928	7	AGS	Y (N)	(M) F	(A) SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

Burrowing Owl on site

MGS Trapping Survey

DATE	GRID	Investigator(s): Adam Walters
6/23/17	Lenwood 2	Assistant(s):

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0520	0630	0800	0910							
Temp (°F)	72°	74°	84.8°	93°							
Wind (mph)	2	2	1	3							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	0818	27	AGS	Y (N)	(M) F	A (SA) J		
2	0834	65	AGS	Y (N)	(M) F	(A) SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

Burrowing Owl on site again

MGS Trapping Survey

DATE	GRID	Investigator(s): Adam Walters
6/24/17	Lenwood 2	Assistant(s):

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0520	0620	0720	0830							
Temp (°F)	75°	79°	84°	91.9°							
Wind (mph)	3	1	2	2							
Cloud Cover (%)	30	30	25	40							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	0731	26	AGS	(Y) N	(M) F	A (SA) J		
2	0753	73	AGS	Y (N)	(M) F	~~A~~ (SA) J		
3	0800	84	AGS	Y (N)	M (F)	(A) SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

Burrowing Owl Still on Site

MGS Trapping Survey

DATE	GRID	Investigator(s):	Assistant(s):
6/25/17	Lenwood 2	Adam Walters	

Circle when traps were closed	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0520	0620	0720	0830							
Temp (°F)	79°	78°	82°	90.2°							
Wind (mph)	0	0	2	0							
Cloud Cover (%)	2	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1				Y N	M F	A SA J		
2				Y N	M F	A SA J		
3				Y N	M F	A SA J		
4				Y N	M F	A SA J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

Burrowing Owl on site Still

MGS Trapping Survey

DATE	GRID	Investigator(s): Adam Walters
6/26/17	Lenwood 2	Assistant(s):

Circle when traps were closed ☛	Opening		Check #1		Check #2		Check #3		Check #4		NOTES
	Start	End	Start	End	Start	End	Start	End	Start	End	
Time (24 hr)	0520	0620	0715	0835							
Temp (°F)	75°	77°	81.6°	90.1°							
Wind (mph)	3	4	8	8							
Cloud Cover (%)	0	0	0	0							

	Time (24 hr)	Trap #	Species	Recap?	Sex	Age	Repro condition	COMMENTS (GPS NAD 83 coordinates; species measurements, etc.)
1	0805	85	AGS	Y (N)	M (F)	(A) SA J		
2	0811	92	AGS	Y (N)	M (F)	A (SA) J		
3	0817	100	AGS	Y (N)	M (F)	(A) SA J		
4	0827	18	AGS	Y (N)	(M) F	A (SA) J		
5				Y N	M F	A SA J		
6				Y N	M F	A SA J		
7				Y N	M F	A SA J		
8				Y N	M F	A SA J		
9				Y N	M F	A SA J		
10				Y N	M F	A SA J		
11				Y N	M F	A SA J		
12				Y N	M F	A SA J		
13				Y N	M F	A SA J		
14				Y N	M F	A SA J		
15				Y N	M F	A SA J		
16				Y N	M F	A SA J		
17				Y N	M F	A SA J		
18				Y N	M F	A SA J		
19				Y N	M F	A SA J		
20				Y N	M F	A SA J		
21				Y N	M F	A SA J		
22				Y N	M F	A SA J		
23				Y N	M F	A SA J		
24				Y N	M F	A SA J		
25				Y N	M F	A SA J		

**Reproductive Condition: scrotal (SCR); non-scrotal (NSCR); post-scrotal (PSCR); pregnant (PREG); lactating (LAC); post-lactating (PLAC); perforate (PERF); imperforate (IMP)

General Notes or Observations:

Burrowing Owl still on Site

10065
San Bernardino
92423

USFWS 2010 Desert Tortoise Pre-Project Survey Data Sheet

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 17. April. 2017 (day, month, year) Survey biologist(s): Christopher Fabry 360.223.1700 cjfabry@gmail. (name, email, and phone number)

Site description: Small sandy wash with mature LarTri and AmbDum shrub. (project name and size; general location)

County: San Bernardino Quad: _____ Location: _____ (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: Buffer Zone Transect #: 1 Transect length: _____

GPS Start-point: _____ (easting, northing, elevation in meters) Start time: _____ am/pm

GPS End-point: _____ (easting, northing, elevation in meters) End time: _____ am/pm

Start Temp: _____ °C End Temp: _____ °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	490605	3856701	1405	In Open	≈ 245mm	Unmarked
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	490011	3856943	Carcass	≈ 55mm carcass found just outside project footprint.
2				
3				
4				
5				
6				
7				
8				

Transect number: _____

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/13/2017

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Athene Cunicularia

Common Name: Burrowing Owl

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 1 Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # [ ] No [ ] Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Chris Fabry
Address: 2951 Siena Heights Dr #4221 Henderson, NV 89052
E-mail Address: cjfabry@gmail.com
Phone: 360.223.1700.

Plant Information
Phenology:
_____ % vegetative _____ % flowering _____ % fruiting

Animal Information
1 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown
[ ] wintering [ ] breeding [ ] nesting [ ] rookery [■] burrow site [ ] lek [ ] other

Location Description *(please attach map AND/OR fill out your choice of coordinates, below)*

San Bernardino

County: San Bernardino Landowner / Mgr: _____

Quad Name: _____ Elevation: _____

T___ R___ Sec___, ___¼ of ___¼, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GPS

T___ R___ Sec___, ___¼ of ___¼, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: Garmin GPSMap 78

DATUM: NAD27 ( ) NAD83 ( ) WGS84 (●) Horizontal Accuracy: 5m meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 (●) *OR* Geographic (Latitude & Longitude) ( )

Coordinates: 490209, 3857372

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

LarTri, AmbDum scrub with a lot of invasive grasses. One adult was flushed from a 2 entrance canine den. Lots of tracks on apron of den along with insulation feathers, white wash, pellets, and tracks. Seems like more than one individual present.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: Private Property

Visible disturbances: _____

Threats: _____

Comments:

Determination: *(check one or more, and fill in blanks)*
[ ] Keyed (cite reference): _____
[ ] Compared with specimen housed at: _____
[ ] Compared with photo / drawing in: _____
[ ] By another person (name): _____
[ ] Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	[ ]	[ ]	[ ]
Habitat	[ ]	[ ]	[ ]
Diagnostic feature	[ ]	[ ]	[ ]

May we obtain duplicates at our expense? ( ) yes ( ) no

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 16 · April · 2017 (day, month, year) Survey biologist(s): Chris Fabry (name, email, and phone number)

Site description: Lenwood Runoff Drainage Basin. (project name and size; general location)

County: San Bernardino Quad: _____ Location: _____ (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 380+ Acres Transect #: ____ Transect length: _____

GPS Start-point: _____ (easting, northing, elevation in meters) Start time: _____am/pm

GPS End-point: _____ (easting, northing, elevation in meters) End time: _____am/pm

Start Temp: _____°C End Temp: _____°C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	490346	3857364	Scat	Not this year's Scat, @ least 1 year old.
2				
3				
4	490698	3857738	Burrow	entrance ± 180mm in width tunnel ± 0.5m in length
5				
6				
7				
8				

Page: _____of_____

Transect number: _____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 14·April·2017 (day, month, year) Survey biologist(s): Chris Fabry 360.223.1700 cjfabry@gmail.com (name, email, and phone number)

Site description: Lenwood Runoff Basin (project name and size; general location)

County: San Bernardino Quad: _____ Location: _____ (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 380+ Acres Transect #: ____ Transect length: _____

GPS Start-point: _____ (easting, northing, elevation in meters) Start time: _____am/pm

GPS End-point: _____ (easting, northing, elevation in meters) End time: _____am/pm

Start Temp: _____°C End Temp: _____°C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	490489	3857172	Burrow	Entrance ~ 260 mm wide tunnel ≥ 1 m in length.
2				
3				
4				
5				
6				
7				
8				

Page: _____of_____

Transect number: _____

Incidental Species Form ver. 9/9/15

12 - 17 APRIL. 2017

Project Name Lenwood Basin **Date** DDMMMYYYY [redacted]

Your Name Chris Fabry **Add'l Fieldworkers** Kent Hughes

San Bernardino COUNTY CA Blanca Rivera

Kristen Kooper

	Avian Species
	Ash-throated Flycatcher
X	Bank Swallow
	Barn Swallow
X	Black Phoebe
	Black-tailed Gnatcatcher
X	Black-throated Sparrow
	Blue-gray Gnatcatcher
	Brewer's Sparrow
	Bullock's Oriole
	Common Poorwill
X	Common Raven
X	Costa's Hummingbird
	Gambel's Quail
	Great Blue Heron
X	Greater Roadrunner
X	Horned Lark
X	House Finch
	Lesser Goldfinch
X	Lesser Nighthawk
X	Mourning Dove
	Northern Rough-winged Swallow
	Phainopepla
	Rock Wren
	Sage Thrasher
	Say's Phoebe
	Scott's Oriole
	Tree Swallow
X	Turkey Vulture
X	Verdin
	Violet-green Swallow
	Western Kingbird
	Western Scrub-Jay
X	White-crowned Sparrow
	White-throated sparrow
	White-throated Swift
	Wilson's Warbler
	Yellow-rumped Warbler

	Mammals
X	Black-tailed Jackrabbit
	Burro Deer
	California Myotis
	Canyon Bat
X	Desert Cottontail
	Desert Woodrat
	Great Basin Pocket Mouse
	Hoary Bat
	Little Pocket Mouse
	Merriam's Kangaroo Rate
	Mexican Free-tailed Bat
	Palid Bat
	Palm Spring Round-tailed Ground Squirrel
	Small-footed Myotis
	Spiny Pocket Mouse
	Townsend's Big-eared Bat
X	White-tailed Antelope Ground Squirrel
	Yuma Myotis

	Additional Incidental Species
	LeConte's Thrasher
	Fringe-toed Lizard
	Coyote

	Reptiles
	California Kingsnake
	Coachwhip
X	Desert Horned Lizard
X	Desert Iguana
	Gopher Snake
X	Long-nosed Leopard Lizard
X	Side-blotched Lizard
	Sidewinder
	Speckled Rattlesnake
	Western Patch-nosed Snake
	Western Shovel-nosed Snake
X	Western Whiptail
X	Zebra-tailed Lizard

THIS FORM IS PAPER ONLY
NO PAPER OR DIGITAL TORTOISE OBSERVATION RECORD IS NEEDED