

Heatherglen Planned Development, TTM 17604, CUP 15-006

Initial Study – Mitigated Negative Declaration

Appendix F – San Bernardino Kangaroo Rat Population and Distribution Trapping Studies

**2018 SAN BERNARDINO KANGAROO RAT (*DIPODOMYS MERRIAMII PARVUS*)
POPULATION AND DISTRIBUTION TRAPPING STUDIES
HEATHERGLEN RESIDENTIAL DEVELOPMENT
GREENSPOT PARTNERS TT 17604
CITY OF HIGHLAND, COUNTY OF SAN BERNARDINO, CALIFORNIA**

±60 Acres Surveyed

APNs 1210-211-18, -21, -23, 1210-281-01, -02, -03, and -04, TT 17604, City of Highland,
Section 2, Township 1 South, Range 3 West, USGS Redlands 7.5' Topographic Quadrangle

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Trapping Conducted On: July 12-17, 22-27, 27-31, August 1-6, 2018
Report Date: October 2018

CERTIFICATION

This Phase One Survey and Report were conducted and prepared in accordance with professional requirements for small mammal trapping studies by Philippe Vergne (USFWS Permit TE068072-4)

SIGNED: _____ see next page

Philippe Jean Vergne, Field Biologist and Author

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On November 3, 2018

Philippe Jean Vergne, Field Biologist and Author

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1.0) INTRODUCTION

Natural Resources Assessment, Inc. (NRAI) was contracted by L&L Environmental, Inc. to conduct a habitat assessment and live-trapping effort for the federally listed endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*). The study was conducted on an estimated 60 acre site located in the city of Highland, San Bernardino County, California.

The purpose of the current survey is to enhance the project proponent and the USFWS decision making process on the site by determining the areas of SBKR occupancy, the relative densities of SBKR within the occupied areas, and delineation of currently unoccupied and occupied habitat within the project boundaries.

In order to determine relative population densities, capture and recapture of SBKR and passive marking methodologies were used for each five days of trapping, at each trapping area, per the USFWS 15 Day Notification Request (Appendix A).

This report describes the existing conditions of the project site, the general biological resources observed on site, and the results of the trapping studies. The assessment and trapping work were required to determine the presence or absence of the San Bernardino kangaroo rat (SBKR) on the property.

2.0) SITE LOCATION AND PROJECT DESCRIPTION

The property is located to the south of Greenspot Road and to the north of Abbey Way in Highlands. It lies north of the Santa Ana River floodplain. The site is in Section 2, Township 1 south, Range 3 west, on the Redlands U. S. Geological Survey (USGS) 7.5' topographic quadrangle (Figures 1 through 3).

The proposed project is residential development.

3.0) METHODS

A literature review and records check was conducted for sensitive resources within the vicinity of the proposed project. In addition to the literature review, a general field survey of the project area was conducted. The field survey provided information on the existing conditions of the site and the potential for sensitive resources to be present. Trapping surveys for SBKR were conducted in areas containing potential SBKR habitat.

3.1) Literature Review and Records Check

The literature review and records check included a review of standard field guides and texts on sensitive and non-sensitive biological resources potentially onsite, as well as the following sources:

- List of sensitive biological resources provided by the California Natural Diversity Data Base (CNDDDB).
- *The Status and Known Distribution of the San Bernardino Kangaroo Rat (Dipodomys merriami parvus): Field surveys conducted between 1987 and 1996* (McKernan 1997).
- Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered; and Notice of Public Hearing (U. S. Fish and Wildlife Service 1998).
- 2011 and 2016 Trapping Survey Reports for the Heatherglen (aka Greenspot) property by NRAI.

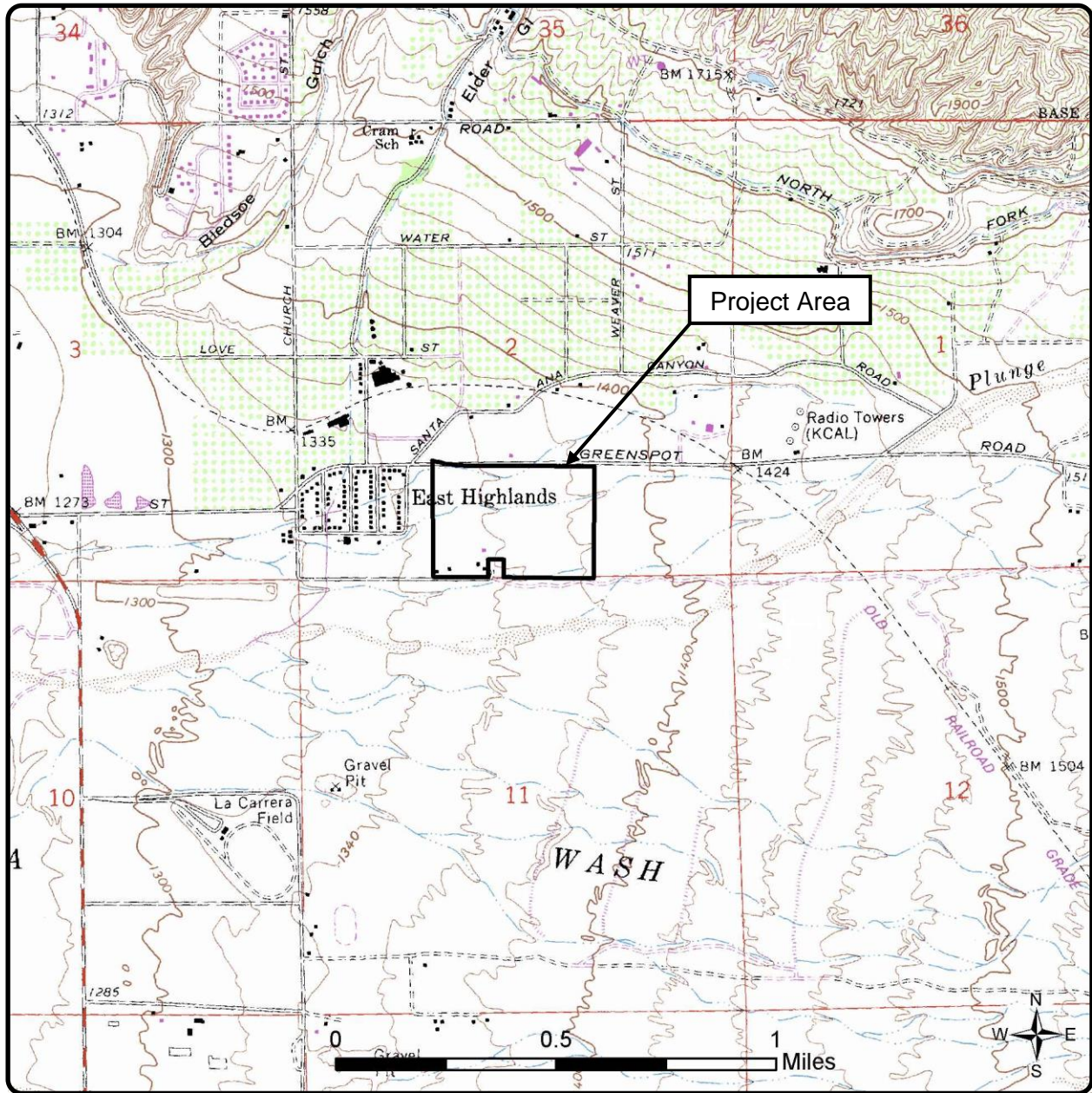


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Figure 1
Project Vicinity Map

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Figure 2
Project Location Map
(USGS Redlands [1988] quadrangle,
Section 2, Township 1 South, Range 3 West)

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Figure 3

Aerial Photograph
(Photo obtained from Google Earth, October 2016)

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3.2) Habitat Evaluation Surveys

Mr. Philippe Vergne, a certified kangaroo rat biologist holding U. S. Fish and Wildlife Permit No. TE068072-4 and current California Department of Fish and Wildlife (CDFW) Memorandum of Understanding, inventoried and evaluated the condition of the soils and plant communities on site in order to assess the potential trapping locations for SBKR or other sensitive species. Mr. Vergne took notes during the surveys of all plant and animal species observed, as well as recording the topography of the site and the soil conditions.

Mr. Vergne conducted an intensive search in all potential habitat areas for such diagnostic kangaroo rat sign as habitat, scat, tracks, dust bowls and burrows. All species identified by sight, call or sign (burrows, scat, tracks, etc.) and visual observation were recorded. Mr. Vergne identified sign belonging to one or more kangaroo rat species.

In addition, site characteristics such as soils, topography, the condition of the plant communities, and evidence of human use of the site were noted. A list of plant and wildlife species observed during the survey is included in Appendix B.

3.3) San Bernardino Kangaroo Rat Trapping Surveys

The purpose of the current survey is to enhance the project proponent and the USFWS decision making process on the site by determining the areas of SBKR occupancy, the relative densities of SBKR within the occupied areas, and delineation of currently unoccupied and occupied habitat within the project boundaries.

In order to determine relative population densities a capture and recapture of SBKR and passive marking methodologies were used for each five days of trapping, at each trapping area, per the USFWS 15 Day Notification Request (Appendix A).

A total of 32 trap lines with 20 to 25 traps each were set across the entire 60 acre project boundary as shown in Exhibit 2. Trap line locations was finalized while in the field setting traps. These locations include suitable and marginal habitats, and all areas of previous SBKR capture.

Trapping was conducted for 5 nights at each line. The four five-day trapping session dates were July 12-17, 22-27, 27-31, and August 1-6 of 2018.

All SBKR captured were passively marked, identified as to sex, weight and general condition (age, scrotal, lactating, pregnant, non-reproductive). GPS points were taken identifying capture location. SBKR were released at point of capture.

Notes were taken on the habitat conditions where the traps were placed. Weather conditions at the time of the trapping were also noted.

4.0) RESULTS

4.1) Sensitive Biological Resources

4.1.1) San Bernardino Kangaroo Rat

The SBKR was emergency listed as endangered in the Federal Register (FR) on January 27, 1998 (63 FR 3835), and listed as endangered on September 24, 1998 (63 FR 51005). Critical habitat for SBKR was initially proposed on December 8, 2000 (65 FR 77178), and designated on April 22, 2002 (67 FR 19812).

Critical habitat for SBKR was subsequently re-proposed on June 19, 2007, and a final designation of the revised critical habitat was published on October 17, 2008 (72 FR 33808 and 73 FR 61936, respectively).

In 2009, a lawsuit was filed challenging the 2008 critical habitat designation. On January 8, 2011, the court ruled for the plaintiffs, vacated the 2008 critical habitat designation, and reinstated the 2002 critical habitat designation. The USFWS completed a 5-year review of the status of SBKR in August 2009, which recommended no change in its listing status (Service 2009). Further information on SBKR and its habitat affinities, life history, status and distribution, threats, and conservation needs across its current range is available at <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A0G8>.

The San Bernardino kangaroo rat is primarily associated with a variety of sage scrub vegetation, where the common elements are the presence of sandy soils and relatively open vegetation structure (McKernan 1997). Flood events break out of the main river channel in a complex pattern, resulting in a braided appearance to the flood plain. This dynamic nature to the habitat leads to a situation where not all the alluvial scrub habitat is suitable for the kangaroo rat at any point in time.

The SBKR prefers open habitat characterized by a low stature open scrub canopy cover of less than 22 percent. Occupied SBKR habitat also typically exhibits a reduced herbaceous cover with a low abundance of European grasses, such as brome (*Bromus*) species. This type of habitat is best described as early to intermediate phase alluvial sage scrub communities that are subject to frequent flooding/scouring. The open vegetation structure in these communities support the highest densities of SBKR.

Mature phase alluvial chaparral, which are usually located above the active channel or on higher benches are not usually occupied by SBKR, although individuals have been trapped in dense upland scrub adjacent to open habitat and SBKR populations (Vergne 2008).

The proposed project is located within the USFWS Final Critical Habitat area (Unit 1) for the SBKR. Previous trapping conducted by NRAI had successfully captured SBKR on-site (NRAI 2005, 2011, 2016) and SBKR are documented as occurring at discrete locations near the project site.

4.1.2) Northwestern San Diego Pocket Mouse

The northwestern San Diego pocket mouse (*Chaetodippus fallax fallax*)-CHFA prefers habitat similar to that preferred by the SBKR. The northwestern San Diego pocket mouse occurs in open, sandy areas in the valleys and foothills of southwestern California.

The range of this species extends from Orange County to San Diego County, and includes Riverside and San Bernardino counties. This mouse is a California Species of Concern (CSC) whose historical range has been reduced by urban development and agriculture.

The CSC designation of species is based on a series of publications prepared by the CDFW on declining species of mammals, birds, fishes, and amphibians and reptiles. The documents were intended to focus attention on declining wildlife in California, species that are not currently listed but may merit listing under the California Endangered Species Act (CESA). Some of the species identified in these documents have been subsequently listed, or are provided protection under provisions in the California Endangered Species Act (CEQA). Others have remained on the CSC list, and have not been elevated to a greater status of protection. The reasons are many, including a lack of understanding on the specific numbers of individuals and populations, the habitats occupied by the species and the threats to those habitats.

The CHFA was previously captured on the project site.

4.1.3) Los Angeles Pocket Mouse

The Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) is one of two pocket mice found in this area of San Bernardino County. Both the Los Angeles pocket mouse and the San Diego pocket mouse occupy similar habitats, but the San Diego pocket mouse has a wider range extending south into San Diego County. The habitat of the Los Angeles pocket mouse is described as being confined to lower elevation grasslands and coast sage scrub habitats, in

areas with soils composed of fine sands (Williams, 1986). The present known distribution of this species extends from Rancho Cucamonga east to Morongo Valley and south to the San Diego County border.

Los Angeles pocket mouse forages in open ground and underneath shrubs. Pocket mice dig burrows in loose soil, although this has not been completely documented for this subspecies.

The L.A. pocket mouse is listed as a California Species of Concern by the California Department of Fish and Wildlife (CDFW).

4.1.4) San Diego Desert Woodrat

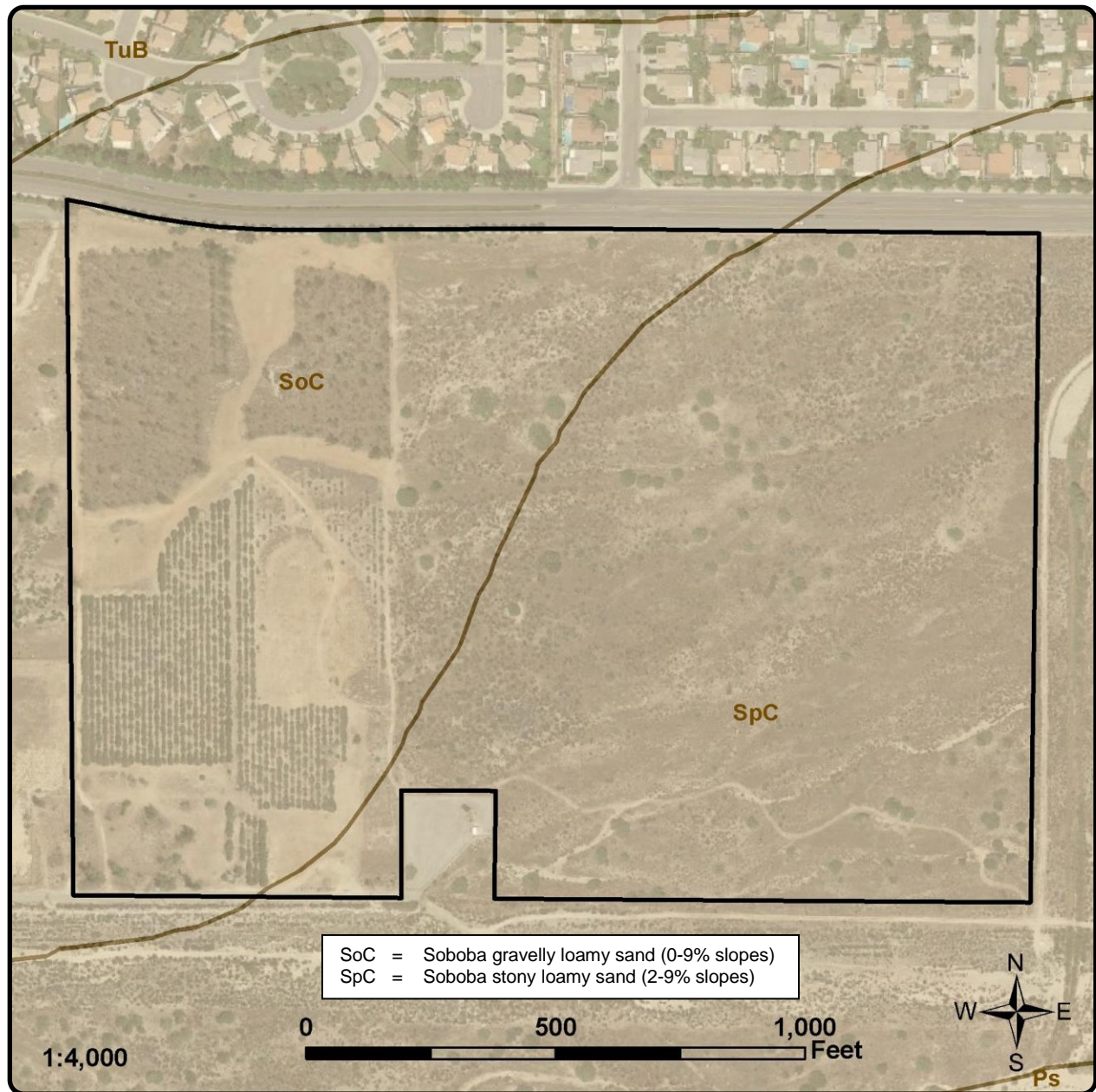
The desert woodrat (*Neotoma lepida*) is a relatively wide-ranging species extending along the coast of California from south of San Francisco through to the border with Baja California. This species also occurs in the Central Valley and the deserts of southern California and extends along the desert side of the Sierra Nevada into southeastern Oregon.

The coastal race of the desert woodrat, the San Diego desert woodrat (*Neotoma lepida intermedia*), prefers scrub habitats such as coastal sage scrub, chaparral and alluvial fan sage scrub. It is more common in areas with rock piles and coarse sandy to rocky soils throughout coastal southern California. The range of this species extends from just south of Sacramento and the San Francisco area to the border with Baja California.

The coastal subspecies of the widespread *Neotoma lepida* is listed as a CSC; its historical range has been impacted by the conversion of scrub habitats into residential, commercial and industrial use.

4.2) Soils and Topography

Soils on site are characterized as Soboba gravely loamy sand and Soboba stony loamy sand (Figure 4). The topography is flat to gently sloping to the southwest.



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Figure 4

Soils Map

(Photo obtained from Google Earth, 4-27-2014,
USDA Nat. Res. Cons. Serv. SSURGO Data)

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4.3) Land Uses

Open space makes up approximately the eastern half of the property. The western half is occupied by an abandoned small farming operation (jojoba and eucalyptus). Open space occurs on the eastern and southern side of the property. Housing is to the north and west.

The abandoned farming operation occupies the western third of the site. Disturbance on site include disking within and adjacent to the planted areas, green-waste dumping, illegal ORV use and dumping.

4.4) Plant Communities

The eastern portion of the site is dominated by alluvial fan sage scrub with a dense understory of invasive grasses and forbs. The dominant scrub species are California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), scalebroom (*Lepidospartum squamatum*), mulefat (*Baccharis salicifolia*), yerba santa (*Eriodictyon wrightii*), and black sage (*Salvia mellifera*).

Herbaceous species making up the understory include California croton (*Croton californica*), red brome (*Bromus madritensis*), Mediterranean grass (*Schismus barbatus*), and weedy forbs such as short-podded mustard (*Hirschfeldia incana*). California juniper (*Juniperus californica*) are scattered throughout this area. Small open and sandy areas occur in limited amounts within the denser scrub.

The western portion of the site is dominated by the eucalyptus grove (*Eucalyptus* spp.), jojoba (*Simmondsia chinensis*) plantation, and currently hard-packed disturbed areas. This portion of the property is 20.1 acres (Figure 5).

4.5) Wildlife

Wildlife activity was moderate during the trapping surveys. Bird species dominated field observations. A list of species observed is given in Appendix B.



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Figure 5

Habitat Map

(Photo obtained from Google Earth, October 2016)

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4.6) San Bernardino Kangaroo Rat Trapping Surveys

4.6.1) Weather Conditions

Weather conditions during the trapping surveys included nighttime temperatures in the low fifties degrees Fahrenheit to low sixties, with clear to partly cloudy skies and winds of less 5 miles per hour. Because of the length of the survey, the moon ran through a full lunar cycle. Daily weather conditions for each day are summarized in Table 1 below.

Table 1. Weather Summary.

Date	Morning Temperatures (F)	Cloud Cover	Wind Speed (miles per hour)
7-12	72	0	<3
7-13	64	0	<3
7-14	64	0	0
7-15	69	0	<3
7-16	68	0	0
7-17	66	20	>5
7-22	66	0	0
7-23	73	0	<5
7-24	73	0	<3
7-25	72	0	<3
7-26	73	0	0
7-27	68	Fog	0
7-28	66	Fog	0
7-29	70	0	0
7-30	75	0	<3
7-31	73	0	<5
8-1	70	10	5-10
8-2	73	0	<5
8-3	72	0	<3
8-4	68	0	<3
8-5	70	0	0
8-6	69	0	0

4.6.2) Trap Site Descriptions

A total of 32 trap lines with 20 to 25 traps each, set 10 to 12 meters apart, were set across the entire 60 acre project boundary. Individual trap line locations were finalized while in the field setting traps (Figure 6). These locations include suitable and marginally/not suitable habitat, and all areas of previous SBKR capture.

Trap lines number 1, 4, 5, 9, 15, 18, 21, 23 were set in the marginally/not suitable habitat. Trap lines 12, 22, and 27 were set overlapping marginally suitable and potential habitat. All other trap lines were set in potential and/or previously documented occupied habitat.

4.6.3) Trapping Survey Results

Trapping success was low (8 percent) over the entire trapping period. A total of 316 individual small mammal making up seven small mammal species, including eleven individual SBKR, were trapped during the survey period. Table 2 provides summary information on the species trapped per trapping location. Trap lines and capture locations are shown on Figure 6.

Table 2. Trapping Results for the Heatherglen Development.

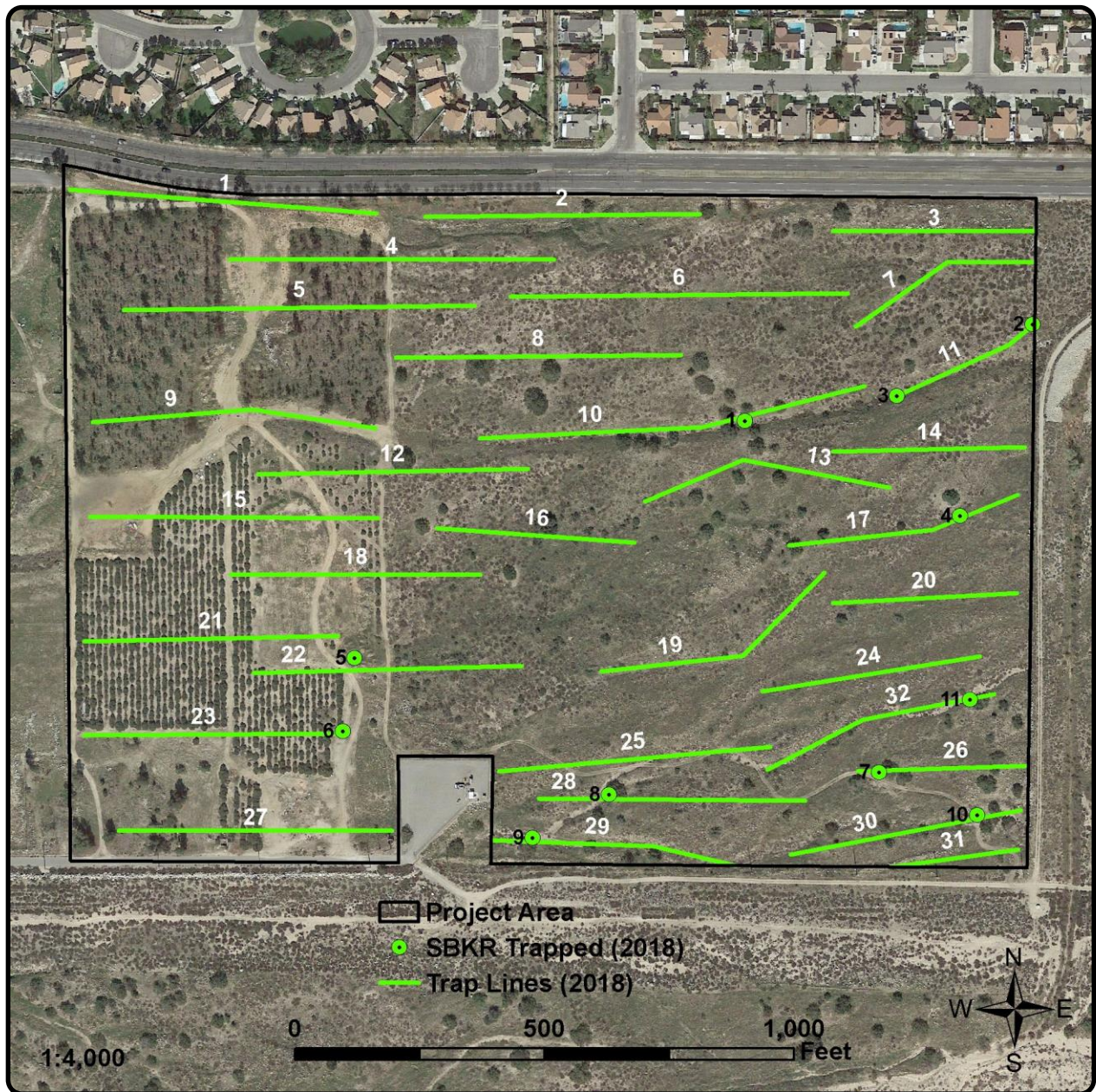
Trap Line	Trap Nights	San Bernardino Kangaroo Rat <i>Dipodomys merriami parvus</i>	Dulzura Kangaroo Rat <i>Dipodomys simulans</i>	Los Angeles Pocket Mouse <i>Perognathus longimembris brevinasus</i>	Cactus Mouse <i>Peromyscus eremicus</i>	Deer Mouse <i>Peromyscus maniculatus</i>	San Diego Pocket Mouse <i>Chaetodippus fallax fallax</i>	Desert Woodrat <i>Neotoma lepida fallax</i>
1	125					5		
2	125		4			4	1	
3	125		5		3			
4	125		1		1	3	2	
5	125					2		
6	125		7		4		3	
7	125		14		5		4	
8	125		6		2		5	
9	125					3		
10	125	1	5		5		2	
11	125	2	5		2		2	
12	125		2		4			
13	125		6		2	2	1	
14	125		9				5	1
15	125					5		
16	125		5				2	
17	125	1	11		5	2	3	
18	125		1			4		
19	125		7		6	1	4	
20	100		4		1		3	
21	100		1			5		
22	125	1	4		2		5	
23	100	1					6	
24	125		3				3	
25	125		7				5	
26	125	1	2				7	
27	100		2				4	
28	125	1	9				3	
29	125	1	2	2	3		4	

Trap Line	Trap Nights	San Bernardino Kangaroo Rat <i>Dipodomys merriami parvus</i>	Dulzura Kangaroo Rat <i>Dipodomys simulans</i>	Los Angeles Pocket Mouse <i>Perognathus longimembris brevinasus</i>	Cactus Mouse <i>Peromyscus eremicus</i>	Deer Mouse <i>Peromyscus maniculatus</i>	San Diego Pocket Mouse <i>Chaetodippus fallax fallax</i>	Desert Woodrat <i>Neotoma lepida fallax</i>
30	100	1	3		1		3	
31	100		7				2	
32	125	1	4		3		4	
Total	3850	11	136	2	49	36	83	1

Table 3. SBKR Additional Info Trapping Results for the Heatherglen Development

SBKR Number	Trap Line	Age and Sex A=Adult SA=Subadult M=Male F=Female	Weight Grams	Reproductive Condition Scrotal*, Pregnant, or Lactating	Recapture		Location	
					Yes/No	Number of Times	North	East
1	10	AM	51	Scrotal	Yes	2	34.108500	-117.163878
2	11	AM	46	Not scrotal	Yes	4	34.109017	-117.161967
3	11	SAF	28	NA	Yes	3	34.108628	-117.162869
4	17	AF	41	Lactating	Yes	3	34.107967	-117.162458
5	22	AM	48	Partial scrotal	Yes	4	34.107214	-117.166475
6	23	AF	42	Pregnant	Yes	4	34.106811	-117.166556
7	26	AM	47	Scrotal	Yes	3	34.106558	-117.163008
8	28**	SAM	36	NA	Yes	2	34.106450	-117.164797
9	29	AM	45	Not scrotal	No	0	34.106214	-117.165306
10	30	SAF	32	NA	Yes	2	34.106319	-117.162361
11	32	AF	41	Lactating	Yes	2	34.106956	-117.162403

*Scrotal – male fully ready for breeding. **Also recaptured on Trap Line 29.



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Figure 6
2018 Trap Lines and SBKR
Capture Locations
(Photo obtained from Google Earth, October 2016)

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5.0) DISCUSSION

Surveys designed to estimate SBKR density or distribution were performed on site were performed according to accepted protocol.

Eleven individual SBKR were captured during the survey. Ten of these were recaptured over successive trapping nights. The eleventh animal was only captured on night two of that trapping session and not recaptured. No new SBKR captures occurred after the third night on any line or in any of the trapping session.

Although not all of the animals on any project will be captured through trapping, based on the capture/re-capture number of eleven individual animals (including 2 lactating [average 4 pups per den] and one pregnant females [4 unborn pups]) during the current surveys, the density of SBKR in the occupied area is low (less than 2 SBKR/acre).

Habitat quality within the occupied habitat is medium to low due to the density of vegetation cover and lack of open connectivity between capture sites. The occupied habitat on site is generally confined to the eastern portion of the property (38.6 acres) within and adjacent to remnant drainages.

The western portion of the property is 20.1 acres and includes eucalyptus groves, jojoba fields, and disturbed areas. The eucalyptus groves and disturbed areas in the northwest portion of the site are currently unsuitable for SBKR occupancy or colonization due to duff cover, vegetation type, density of invasive vegetation, and current use.

In the southwest portion of the site, the abandoned jojoba plantation has suitable soils for occupancy, but supports highly disturbed vegetation.

Trapping results indicate that SBKR inhabit the proposed project area in trace to low densities, or less than 1 to 5 SBKR per acre according to general SBKR density categories (McKernan 1997). Based on occupied habitat of 38.6 acres, we calculate that about 58 animals inhabit the native habitat on the site.

Calculations are as follows: 38.6 acres of occupied habitat with trace density (average of 0.5 animals per acre) yields a total of 19 animals (38.6 acres x 0.5 animals/acre). For 38.6 acres of low density (average of 2.5 animals per acre), the calculation yields a total of 97 animals (38.6 acres x 2.5 animals/acre). Assuming an even mix of trace and low densities within the occupied habitat, we estimate a total of 58 SBKR on the site (the mean of 19 and 97).

The construction of storm drains has resulted in the alteration of sheet-flow to areas offsite but adjacent to the property. As a result, stormwater flow across the property has been altered and scouring on site has been substantially reduced if not completely eliminated. The upstream construction of Seven Oaks Dam has also limited the potential of major floods occurring adjacent to the site and reduced the potential for regular scouring within the adjacent flood plain.

The reduced scouring of the property is resulting in increased scrub cover as well as increased density in cover by brome and forb plant species over time. This will continue to limit the available habitat for SBKR unless the vegetation is opened up through mechanical means, fire, or other cataclysmic event.

Because SBKR were found on site, consultation with the USFWS will be required for project implementation. It should be noted that the USFWS considers small mammal trapping surveys as valid for one year from the date of the trapping.

Three other sensitive mammal species, the Los Angeles pocket mouse, northwestern San Diego pocket mouse, and the San Diego desert woodrat were captured during the focused surveys.

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APPENDIX A: Proposed Methodology 15 Day Notification to USFWS

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June 3, 2018

From: Philippe Vergne

Subject: Heatherglen SBKR Trapping and Population Distribution and Relative Density Survey Methodology and Bid

Per USFWS Permit TE068072-4 we are submitting this request for a project specific change to the permit to allow re-capture of SBKR for a population assessment survey on the previously trapped Heatherglen property as follows:

We submit, for review, the following trapping methodology for the proposed 2018 SBKR presence/Absence, distribution, and population estimate survey on the Heatherglen property.

Area to be surveyed will be footprint within property project boundary (Figure One).

Habitat evaluation (performed by Ricardo Montejo) and SBKR historical captures on site were used to determine potential trap line locations as shown in Figure One. A total of 32 trap lines will be placed across the site.

For all trapping sampling lines, arrays of 20 traps set about 10 meters apart will be used. Actual trap placement might vary slightly based on site conditions with the traps potentially moved one-two meters on either side of lines based on vegetation and soils and to target areas with k-rat or small mammal sign. Trap placement will be marked with GPS and plotted. A total of 640 traps, equivalent to 3,000 trap nights will be used.

The purpose of the survey is to enhance the project proponent and the USFWS decision making process on the site by determining the areas of SBKR occupancy, the relative densities of SBKR within the occupied areas, and delineation of currently not occupied habitat within the project boundaries.

Study findings will assist in proposed development re-structuring or alternative strategies such as formation of mitigation bank.

In order to determine relative population densities a capture and recapture of SBKR and passive marking will be required for five days at each trapping area.

This will require special approval and project specific 10A permit amendment by the USFWS.

Trapping will be conducted as follows within each trap lines:

Trapping will continue for 5 nights at each line. Any SBKR captured will be passively marked, identified as to sex, weight and general condition (age, scrotal, lactating, pregnant, non-reproductive). Trapping will continue on all lines with SBKR capture and recaptures documented for 5 nights to determine presence or absence. SBKR will be released at point of capture. GPS points identifying capture location will be taken.

Post trapping the data will be analyzed and a report of findings and maps showing capture location, estimated densities, and currently occupied habitat will be prepared.

APPENDIX B: Plant and Animal Species Observed

Plants

* denotes non-native plant species.

CONIFERAE

Cupressaceae

Juniperus californica

ANGIOSPERMAE: DICOTYLEDONEAE

Anacardiaceae

Rhus trilobata

**Schinus molle*

Asteraceae

Ambrosia psilostachya

Artemisia californica

Baccharis salicifolia

Helianthus annuus

Heterotheca grandiflora

Lepidospartum squamatum

Boraginaceae

Amsinckia menziesii

Cryptantha intermedia

Brassicaceae

**Brassica nigra*

**Hirschfeldia incana*

**Sisymbrium irio*

Cactaceae

Opuntia sp.

Opuntia littoralis

Caprifoliaceae

Sambucus mexicana

Euphorbiaceae

Chamaesyce albomarginata

Croton californica

Eremocarpus setigerus

Euphorbia nutans

**Ricinus communis*

CONE-BEARING PLANTS

Cypress Family

California juniper

DICOT FLOWERING PLANTS

Sumac Family

Skunk bush

Peruvian pepper tree

Sunflower Family

Western ragweed

California sagebrush

Mulefat

Annual sunflower

Telegraph Weed

Scalebroom

Borage Family

Fiddleneck

Popcorn flower

Mustard Family

Black mustard

Short-podded mustard

London rocket

Cactus Family

Cholla

Coastal prickly pear

Honeysuckle Family

Blue elderberry

Spurge Family

Rattlesnake weed

Croton

Doveweed

Spurge

Castor bean

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Eriodictyon trichocalyx
Phacelia ramosissima

Lamiaceae

Salvia mellifera

Myrtaceae

**Eucalyptus* sp.
**Eucalyptus globulus*

Nyctaginaceae

Abronia villosa

Plantanaceae

Platanus racemosa

Polygonaceae

Eriogonum fasciculatum
Eriogonum gracile

Simmondsiaceae

**Simmondsia chinensis*

Solanaceae

Datura wrightii
**Nicotiana glauca*

ANGIOSPERMAE: MONOCOTYLEDONEAE

Poaceae

**Avena barbata*
**Bromus diandrus*
**Bromus madritensis*
**Bromus mollis*
**Hordeum murinum*
**Schismus barbatus*

Geranium Family

Red-stemmed filaree

Waterleaf Family

Yerba santa
Branching phacelia

Mint Family

Black sage

Myrtle Family

Eucalyptus
Blue gum

Four O'clock Family

Sand verbena

Sycamore Family

Sycamore

Buckwheat Family

California buckwheat
Graceful buckwheat

Joboba Family

Joboba

Nightshade Family

Jimson weed
Tree tobacco

MONOCOT FLOWERING PLANTS

Grass Family

Slender wild oats
Ripgut brome
Red brome
Soft chess
Wild barley
Mediterranean grass

Taxonomy and nomenclature follow Hickman 1993 and Munz 1974.

Animals

REPTILIA

Iguanidae

Uta stansburiana

AVES

Cathartidae

Cathartes aura

Acciptiridae

Buteo jamaicensis

Falconidae

Falco sparverius

Columbidae

Zenaida macroura

Tyrannidae

Sayornis saya

Tyrannus verticalis

Corvidae

Corvus brachyrhynchos

Mimidae

Mimus polyglottos

MAMMALIA

Leporidae

Sylvilagus audubonii

Sciuridae

Spermophilus beecheyi

Geomyidae

Thomomys bottae

Heteromyidae

Perognathus longimembris brevinasus

Chaetodippus fallax fallax

Dipodomys simulans

Dipodomys merriami parvus

REPTILES

Iguanas and Allies

Side-blotched lizard

BIRDS

Vultures

Turkey vulture

Kites, hawks, and eagles

Red-tail hawk

Caracaras and falcons

American kestrel

Pigeons and doves

Mourning dove

Tyrant flycatchers

Say's phoebe

Western kingbird

Crows and ravens

American crow

Mimic thrushes

Northern mockingbird

MAMMALS

Rabbits and hares

Audubon's cottontail

Squirrels, chipmunks, marmots

California ground squirrel

Pocket gophers

Botta's pocket gopher

Pocket mice and kangaroo rats

Los Angeles pocket mouse

Northwestern San Diego pocket mouse

Dulzura kangaroo rat

San Bernardino kangaroo rat

Cricetidae

Peromyscus eremicus
Peromyscus maniculatus

Cricetine mice and rats

Cactus mouse
Deer mouse

Canidae

Canis latrans

Foxes, wolves, and relatives

Coyote

Nomenclature follows California Department of Fish and Wildlife 2018 and Stebbins 1966.

APPENDIX C: Site Photos



Northwest property boundary looking at eucalyptus grove.



East side of project site, looking west.



Habitat in east side of project site.



Northeast portion of site.



Southeast portion of site.



Eucalyptus grove in northwest portion of site.



Better quality SBKR habitat in southeast portion of site.



Remnant drainage in eastern portion of site, note the encroaching grasses.



Southwestern portion of native habitat area.