

Southern California Edison
WODUP A.13-10-020

DATA REQUEST SET A.13-10-020 WODUP ED-SCE-02

To: ENERGY DIVISION
Prepared by: Paul Yamazaki
Title: Senior Biologist
Dated: 04/02/2014

Question BIO-01a:

Biological Resources

BIO-1 The Proponents Environmental Assessment (PEA) states that aeolian sand habitat was mapped and surveyed for Coachella Valley Jerusalem cricket and Coachella giant sand treader cricket on the right-of-way (ROW), but the cricket survey report was not included in the appendices to the Biological Resources Technical Report (BRTR).

a. Please provide the survey report for Coachella Valley Jerusalem cricket and Coachella giant sand treader cricket (AMEC 2012).

Response to Question BIO-01a:

The Draft Habitat Assessment and Focused Survey for Special Status Invertebrates (AMEC, 2012) is attached, per your request.

The Draft Report by AMEC (June 2012) titled "Habitat Assessment and Focused Survey for Special Status Invertebrates" was not finalized pending the development of the project description. The study area for the assessment and field survey included the existing ROW where the project will take place. However, the study was conducted without any additional "buffer" outside the ROW and was limited to the portion of the project from Devers Substation west to the Interstate 10 (I-10) crossing in Beaumont. The surveys stopped at the I-10 crossing because no special status invertebrate species are known or considered potentially present west of the I-10 crossing, except potential fairy shrimp, which were the subject of separate studies conducted by LSA and included with the PEA. The special status invertebrate study provides a very brief project description and defines the study area on the first page of the report in the Introduction section. Although the report was submitted as a Draft, the results and figures presented therein needed no revisions and the report's findings should be considered "Final." The current project description is the element that would have been inserted under the "Project Description" heading in the reports had it been available at the time. The literature review, habitat assessment, and field studies conducted by AMEC provided important guidance indicating that additional surveys were not warranted for Casey's June beetle, Coachella giant sand treader cricket, and Coachella Valley Jerusalem cricket, in the project area due to the absence of suitable habitat and/or because the study area lies outside the known range of these species.



DRAFT

**WEST OF DEVERS UPGRADE PROJECT
Habitat Assessments and Focused Surveys
for
Special-status Invertebrates**

Submitted to:

Scott Holbrook, Senior Consulting Biologist
(PCR Services Corp.)
Corporate Environmental Services
Southern California Edison Company
1218 South 5th Avenue
Monrovia, CA 91016
Office: (626) 462.8636; PAX: 74636
Mobile: 626.506.5417

Submitted by:

AMEC Environment & Infrastructure, Inc.
3120 Chicago Avenue, Suite 110
Riverside, CA 92507

Contact: Michael D. Wilcox
(951) 369-8060
FAX: (951) 369-8035
michael.wilcox@amec.com

4 June 2012

DRAFT
WEST OF DEVERS UPGRADE PROJECT
Habitat Assessments and Focused Surveys
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DRAFT
WEST OF DEVERS UPGRADE PROJECT
Habitat Assessments and Focused Surveys
for
Special-status Invertebrates

1.0 INTRODUCTION

At the request of Southern California Edison (SCE), habitat assessments and focused surveys for potentially-occurring special-status invertebrates were conducted by AMEC Environment & Infrastructure, Inc. (AMEC) for the proposed West of Devers Upgrade Project (project) located along an approximate 26.5-mile SCE electrical transmission line corridor (site) in the San Geronio Pass area of unincorporated Riverside County, California (see Appendix 1, Figure 1).

The site is located north of Interstate 10 (I-10) from where the power lines cross I-10 on the west side of the City of Beaumont, east to the Devers Substation located southwest of the City of Desert Hot Springs, Riverside County, California (see Appendix 1, Figure 1). The eastern end of the site is located on the southern edge of Section 5, Township 3 South, Range 4 East, as shown on the USGS 7.5 minute *Desert Hot Springs, Calif.* quadrangle. The western end of the site is located in the northeast $\frac{1}{4}$ of Section 31, Township 2 South, Range 1 West, as shown on the USGS 7.5 minute *El Casco, Calif.* quadrangle.

The project proposes to upgrade the existing electrical transmission lines to accommodate additional energy resources, including renewable energy, to the power grid. The project will involve the removal and replacement of the existing 220 kilovolt (kV) transmission lines with new double-circuit 220 kV transmission lines between the existing Devers Substation (located near Palm Springs), El Casco Substation (located in Western Riverside County), Vista Substation (located in Grand Terrace), and San Bernardino Substation (located in San Bernardino).

AMEC biologists assessed the 26.5-mile segment of this alignment for potential habitat for special-status invertebrate species known to occur in the area: Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilensis*), Coachella giant sand treader cricket (*Macrobaenetes valgum*) and Casey's June beetle (*Dinacoma caseyi*). Focused surveys were conducted for the Coachella Valley Jerusalem cricket and the Coachella giant sand treader cricket.

2.0 PROJECT DESCRIPTION

Scott – Per your request, I left this section blank. Please insert project description here.

3.0 BACKGROUND INFO FOR COACHELLA VALLEY JERUSALEM CRICKET

The Coachella Valley Jerusalem cricket is not listed as endangered or threatened or designated as a "Species of Concern" by either the USFWS or CDFG. This species, however, is fully covered under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and has been given a global rank of G1G2 and a state rank of S1S2 by the California Natural Diversity Database (CNDDDB), which generally means that the CNDDDB considers this species to

be potentially sensitive and vulnerable to future threats. For these reasons, the CNDDDB is interested in keeping track of the current trends relative to the status of this species.

This member of the Stenopelmatidae, or Jerusalem cricket family, is associated with both wind-deposited (aeolian) sand dunes, drift sands and water deposited (alluvial) gravelly/sandy soils in the western Coachella Valley and eastern San Geronio Pass area. It is known to occur south of I-10 from Fingal's Finger east to Windy point and the sand dunes surrounding the Palm Springs Airport. The Coachella Valley Jerusalem cricket has also been documented north of I-10, in Whitewater Hills east of Whitewater Canyon and west of State Route 62.

Jerusalem crickets, including the Coachella Valley species, are vulnerable to desiccation, despite occurring in one of the nation's most arid regions of southern California. To prevent drying out, Jerusalem crickets migrate up and down with the current moisture regime present in the local soils. In the winter and early springs months, when rainfall increases moisture levels present on or near the surface, Jerusalem crickets can be found foraging, courting and taking cover beneath surface objects such as decomposing wood, rocks, duff and other debris.

4.0 BACKGROUND INFO FOR COACHELLA GIANT SAND TREADER CRICKET

The Coachella giant sand treader cricket is not listed as endangered or threatened or designated as a "Species of Concern" by either the USFWS or CDFG, but is fully covered under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and has been ascribed a global rank of G1G2 and a state rank of S1S2 by the CNDDDB.

This member of the Rhabdiphoridae, or camel cricket family, is endemic to the active aeolian dunes, sand hummocks and sand fields in the Coachella Valley. This species is most abundant in the active dunes and ephemeral sand fields at the west end of the Coachella Valley, west of Palm Drive at least to Snow Creek Road, adjacent to the Whitewater River and San Geronio River washes from Palm Drive west to the vicinity of Snow Creek Road (CNDDDB 2012). Sites that are most favorable for permanent habitation of this species include areas with spring-moistened blow sands.

Although little is known of the Coachella giant sand treader cricket life history, their primary surface activity is during the spring where this nocturnal insect forages on decomposing organic materials found in or on the sand and mates. During daylight hours sand treader crickets remain deep underground burrows dug in the sand. The burrows are often found among roots of perennial shrubs, underneath surface debris such as boards and rocks. During the warmer months, adults and immature instars are not found on the surface and are likely concealed deep within the sand where moisture levels are high and the temperature are favorable. Juveniles begin coming to the surface in late fall, continuing through early winter. By mid to late spring the adults have also burrowed deep into the sands where they remain until favorable weather returns or they die as this species completes its life cycle in a 4-6 month period ending in early summer.

5.0 BACKGROUND INFO FOR CASEY'S JUNE BEETLE

Casey's June beetle was federally listed by the USFWS as endangered on September 22, 2011. Approximately 587 acres of critical habitat for this species were also designated by the USFWS on this day. The USFWS also released the Draft Casey's June Beetle Survey Area in

2012. Although initially considered for coverage under the CVMSHCP, the USFWS-issued 10(a)(1)(B) “take” permit did not include Casey's June beetle, and thus this species is not a fully covered species under the CVMSHCP.

Casey's June beetle belongs to the Melolonthinae subfamily of the much larger scarab beetle family, Scarabaeidae (commonly called “scarab beetles” or simply “scarabs”). Melolonthine scarabs are commonly referred to as “May beetles”, “June beetles”, or sometimes simply “chafers”.

Casey's June beetle is currently known to occur on fewer than 800 acres in the vicinity of Palm Canyon Wash and on portions of Agua Caliente Indian Tribal lands in southern Palm Springs, Riverside County, California. Currently this species distribution appears to be entirely restricted to the mouth and alluvial floodplain of Palm Canyon within and just south of Palm Springs, in association with deposits of fine silts, sands and gravels. Historically, Casey's June beetle may have occurred throughout much of this general area. Much of this species habitat has been converted to commercial and residential development. Despite this habitat conversion, the species remains extant within some of these areas.

Adult Casey's June beetles emerge from the ground and become active for approximately two to four weeks, typically from early April to early June, depending on annual climatic conditions. Their crepuscular and early nocturnal flights are generally occur during calm evenings from around twilight, or just after dusk, generally between 1900 and 2200 Pacific Daylight (Savings) Time (PDT), however they can also fly for extended periods beyond 2200 PDT. During their relatively brief nightly activity, males are known to fly low to the ground (within approximately 3 feet) in search of females, which are flightless and emit pheromones to attract mates. Like many other insects, the males are highly phototrophic, strongly attracted streetlights, lights on buildings, in swimming pools, in parking lots, etc..

Little is known of Casey's June beetle larval host plant relationships, however, like other melolonthine scarabs, the larvae are believed to feed on the roots of a variety of native plants and/or unground decomposing organic material. The dominant perennial shrub in areas where Casey's June beetle occurs is cheesebush (*Hymenoclea salsola*). Larval development occurs underground within alluvial-derived Coachella fine sand series (CpA) and Myoma fine sands (MaB), although other soils types such as Carsitas sand series and Riverwash soils may also be suitable. Adults emerge from pupal cells located beneath the surface of the sand and begin their annual flight and courtship activities.

6.0 METHODS

6.1 Literature Review

In preparation for the field surveys, a literature search was conducted to determine the known locations of special-status invertebrates reported from the vicinity (defined as within an approximate 5-mile radius) of the project site.

The literature search included a review of the following documents:

- California Department of Fish and Game's (CDFG) Natural Diversity Data Base (CNDDDB) version 3.1.1 RAREFIND application (CDFG 2011)
- CNDDDB's Special Animals List (CNDDDB 2011)

-
- Unpublished locality information for Coachella Valley Jerusalem cricket
 - Draft Recommended Survey Area for Casey's June Beetle (USFWS 2012)
 - Soil Survey of Riverside County, Coachella Valley Area (Natural Resources Conservation Service (NRCS), United States Department of Agriculture (USDA) Soil Conservation Service 2005)
 - USGS 7.5' *Desert Hot Springs* and *Whitewater*, California Quadrangles

The review also included an overview of other unpublished biological survey reports and data collected from the general vicinity. Additionally, experienced naturalists, biologists, and persons with knowledge of and/or experience in the area, were consulted regarding reliable sightings and/or the potential for occurrence of special status species from the area.

Scientific nomenclature for this document follows standard reference sources: for flora, Hickman (1993); for invertebrates, Hogue (1993); for reptiles, Stebbins (2003); and for mammals, Laudenslayer et al. (2005).

6.1 Habitat Assessments

Habitat assessments were conducted by AMEC biologists Nathan T. Moorhatch and Michael D. Wilcox on 17-18 November 2011. Areas along the alignment were assessed on foot for components of potentially-suitable habitat for each of the special-status invertebrates known to occur in the vicinity of the site. Areas of fine sandy loose aeolian and alluvial substrates (active and stabilized dunes, sand fields, hummocks, washes, etc.) suitable for the Coachella Valley Jerusalem cricket, areas of active aeolian sand for the Coachella giant sand treader cricket and desert dry washes containing alluvial sandy substrates and sparse native perennial vegetation such as cheesebush (*Hymenoclea salsola*) for Casey's June beetle were noted and mapped.

6.2 Focused Surveys

6.2.1 Coachella Valley Jerusalem Cricket

A total of fifty-six (56) two-feet by two-feet (2'x2') cover boards were placed within areas of potentially suitable habitat along the alignment, GPS'd and mapped on 17-18 November 2011. Focused surveys for the Coachella Valley Jerusalem cricket were conducted by AMEC biologists Moorhatch and Wilcox and biological subconsultant Ted Rado beginning in December 13, 2011 and continuing through April 27, 2012. Weather forecasts and local weather patterns were closely monitored in order to schedule surveys following rainfall events resulting in moist soil conditions onsite. Inspections of the cover boards were conducted within 1-2 days following rainfall resulting from late winter and early spring storms. An additional eight (8) existing cover objects (i.e., plywood, boards, a mattress and other debris) of various sizes were also found, GPS'd and mapped along and immediately adjacent to the alignment for future sampling. The locations of the cover boards are in areas exhibiting low to high quality sandy substrates within the project alignment between the Devers Substation and the Whitewater River (see Appendix 1, Figure 2).

6.2.2 Coachella Giant Sand Treader Cricket

Focused surveys for the Coachella Giant sand treader cricket were conducted concurrent with the surveys for the Jerusalem cricket from December 2011 and continued through April 2012 following measurable precipitation resulting from late winter storms. Surveyors searched for this

species distinctive delta-shaped excavation tailings in the area of potentially-suitable habitat adjacent to the Whitewater River (see Appendix 1, Figure 3). Cover boards were also placed in this area and checked along with other existing surface debris for this species.

6.2.3 Casey's June Beetle

Although areas of what appear to be potentially suitable habitat for Casey's June beetle (i.e., washes, floodplains and alluvial soils and native vegetation including cheesebush) were present at several locations along the alignment, focused surveys for this species were not conducted. At the closest point, the alignment is approximately 10 miles northwest of the Draft Recommended Survey Area for Casey's June beetle (USFWS 2012) (see Appendix 1, Figure 3).

7.0 RESULTS

7.1 Literature Review

The review of the CNDDDB, CDFG Special Animal Lists, unpublished reports and data from the vicinity, and consultation with other experienced biologists/naturalists resulted in known records of the Coachella Valley Jerusalem cricket and Coachella giant sand treader cricket in the vicinity of the project alignment.

A total of ninety (90) records of the Coachella Valley Jerusalem cricket were recorded in 2003 and 2009 by UCR Entomologist Thomas R. Prentice (L. Rodriguez pers. com., unpub. data). All but six (6) of these are from areas south of I-10. The six records north of I-10 are all from a very small area on Whitewater Hill east of Whitewater Canyon, 0.42 miles south of the alignment. The CNDDDB reports six records for the Coachella giant sand treader cricket, the closest of which is from 1950 from the "Palm Springs Depot" approximately 1.5 miles south of the alignment. The closest record for Casey's June beetle relative to the project alignment is from the vicinity of Snow Creek which is approximately 3 miles south of the alignment. This record, however, is from 1930 and is considered by the USFWS to be extirpated. Currently, the closest known extant location of Casey's June beetle relative to the project site is from southern Palm Springs approximately 10 miles southeast of the project alignment (CNDDDB 2012, unpublished data, pers. obs.).

7.2 Weather Conditions

Weather conditions present during the focused surveys ranged from sunny skies with mild temperatures and calm winds to overcast, cool and windy. Skies ranged from clear (0% cloud cover) to overcast (100% cloud cover). Temperatures ranged from 50 to 78 degrees Fahrenheit. Winds were calm to breezy, with estimated wind speeds of mostly 0-10 mph. Gusts of up to 20 mph were, however, present during two of the field surveys.

7.3 Habitat Assessments

Potentially suitable habitat for the Coachella Valley Jerusalem cricket occurs along the alignment at two primary locations: 1) within the floodplain, on the east side of the Whitewater River and 2) within the Whitewater Hills between Whitewater Canyon and State Route 62. The cover boards were placed mostly in these areas. Cover boards were also placed within several

small ephemeral drainages and small rivulets containing sandy substrates located between SR 62 and Devers Substation.

Potentially suitable habitat for the Coachella giant sand treader cricket is restricted to only one small area within the floodplain, on the east side of the Whitewater River. The coarser and more stabilized sands present along the alignment on the Whitewater Hills east of the Whitewater Canyon and the more alluvial sands present within the various ephemeral drainages and rivulets along the alignment are considered to be unsuitable for this Aeolian obligate species.

Marginally suitable habitat for Casey's June beetle is present within the Whitewater River floodplain and within several of the ephemeral desert drainages present along portions of the alignment.

7.4 Focused Surveys

7.4.1 Coachella Valley Jerusalem Cricket

The Coachella Valley Jerusalem cricket was not detected along the alignment during the focused surveys. Routine inspections of the 56 cover boards and other existing surface debris conducted immediately following rainfall events resulted in the detection of least twenty-six (26) invertebrates and four (4) vertebrates (See Appendix 3).

7.4.2 Coachella Giant Sand Treader Cricket

The Coachella giant sand treader cricket was not detected along the alignment during the focused surveys. Focused searches for the species distinctive delta-shaped burrow tailings failed to detect the species onsite. Routine inspections of the 56 cover boards and other existing surface debris conducted immediately following rainfall events resulted in the detection of at least twenty-six (26) invertebrates and four (4) vertebrates (See Appendix 3).

7.4.3 Casey's June Beetle

Focused surveys for Casey's June beetle were not considered to be warranted due to the sites distance (10+ miles) from the survey area; therefore surveys for this species were not conducted.

Table 1. Focused Survey Data

Date	Personnel	Times	Weather	Temperature	Wind (mph)
12/13/11	NM, MW	1300-1530	Cloudy (100%cc), rain previous day	50	0-2
1/25/12	NM, MW	1030-1300	Clear (0%)	76 - 78	2-8
2/29/12	NM, MW	1030-1230	Clear (0%)	59 - 61	2-21
3/20/12	MW	1400-1700	Clear (0%)	68 - 70	2-4
3/28/12	MW	1130-1500	Partly cloudy (30%)	70	4-12

Table 1. Focused Survey Data

Date	Personnel	Times	Weather	Temperature	Wind (mph)
4/12/12	MW	1030-1430	Partly cloudy (10%)	60 - 63	7-20
4/17/12	NM, TR	0745-1010	Clear (0-2%)	65 - 71	2-15

8.0 DISCUSSION

The results of the focused surveys indicate that the Coachella Valley Jerusalem cricket and Coachella giant sand treater cricket are absent from the project alignment as neither species were detected during the focused surveys. The highest quality potentially suitable habitat for the Coachella Valley Jerusalem cricket along the alignment is between the Whitewater River and SR 62. Only one location for the Coachella Valley Jerusalem cricket is currently known from north of I-10, Whitewater Hill, between Whitewater Canyon and SR-62, 0.42 mile south of the project alignment. Although considered to be the “highest quality” habitat for this species present along the alignment, it should be noted that these areas are limited in size and frequency of occurrence, with much of the soils present along the alignment being coarse, cobbly and/or gravelly, and not comprised of the finer wind-blown or fine alluvial sands that this species generally prefers.

Potentially suitable habitat for the Coachella giant sand treater cricket is limited to one small area immediately adjacent to the Whitewater River, the only location along the alignment where a narrow strip of active aeolian fine sands were observed.

Weather conditions, particularly rainfall, play an important role in the activity (and detectability) of both of these species. In years of below average rainfall, these species may be fewer in numbers or at least be less likely to detect. The mean annual rainfall for the Palm Springs over the past 96 years is 5.08 inches with the bulk (average 81.5% of the annual average) of precipitation falling in the winter between the months November and March. Only 1.88 inches of rain was recorded in Palm Springs between November 2011 and March 2012 (0.37% of the annual average) (<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6635>).

Although marginally suitable habitat is present in several areas of the alignment, Casey’s June beetle is nevertheless considered to absent. Extant records for this species and the Draft Casey’s June Beetle Survey Area are over 10 miles southeast of the project site.

9.0 PERSONAL CONTACTS, LITERATURE CITED AND REFERENCES

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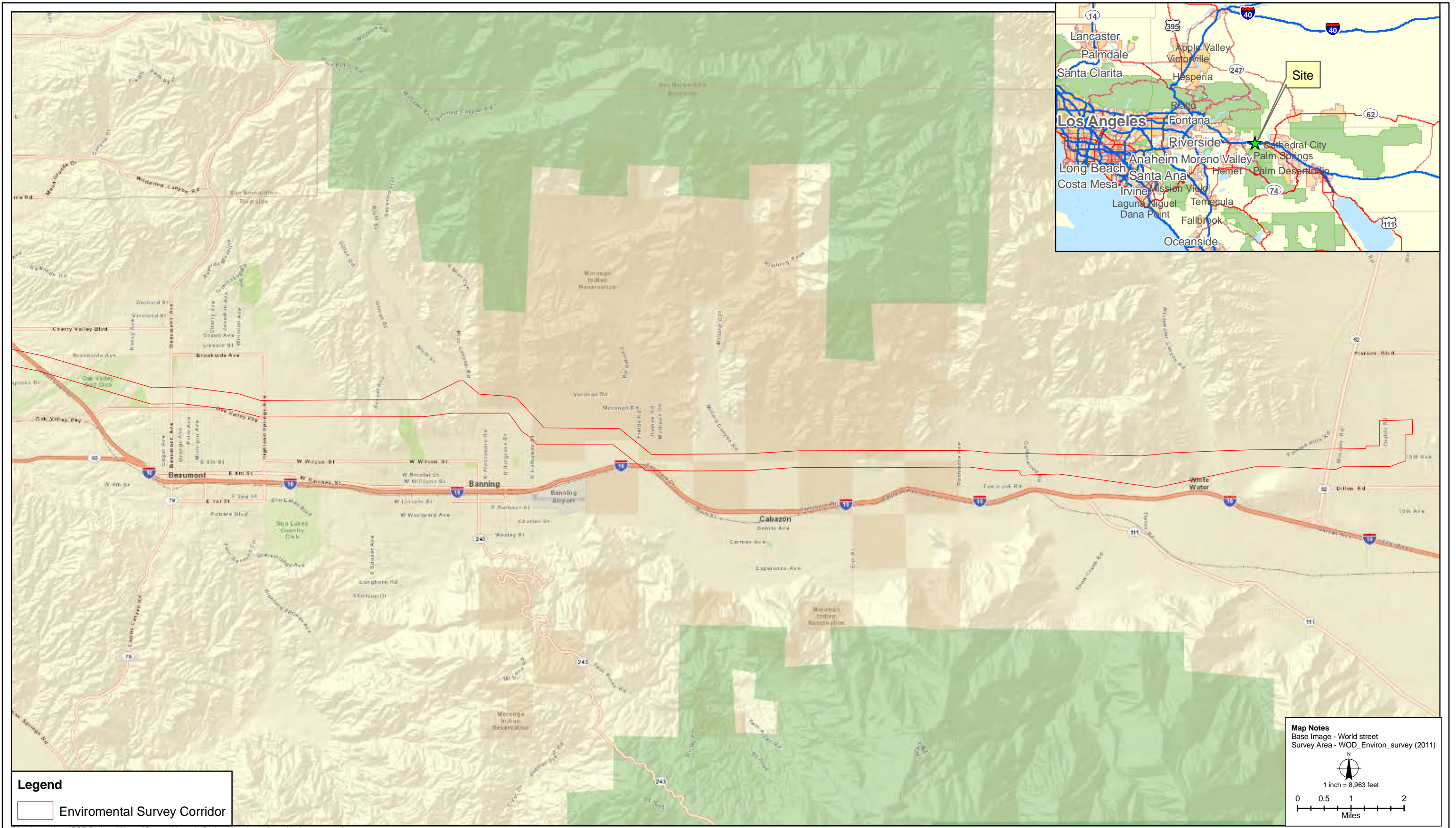
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APPENDIX 1

MAPS & FIGURES



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5/31/12



Vicinity & Location
 Habitat Assessments and Focused Surveys for Special-status Invertebrates
 West Of Devers Upgrade Project

FIGURE

1



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Cover Board Survey Locations
Habitat Assessments and Focused Surveys for Special-status Invertebrates
West of Devers Upgrade Project

FIGURE
2



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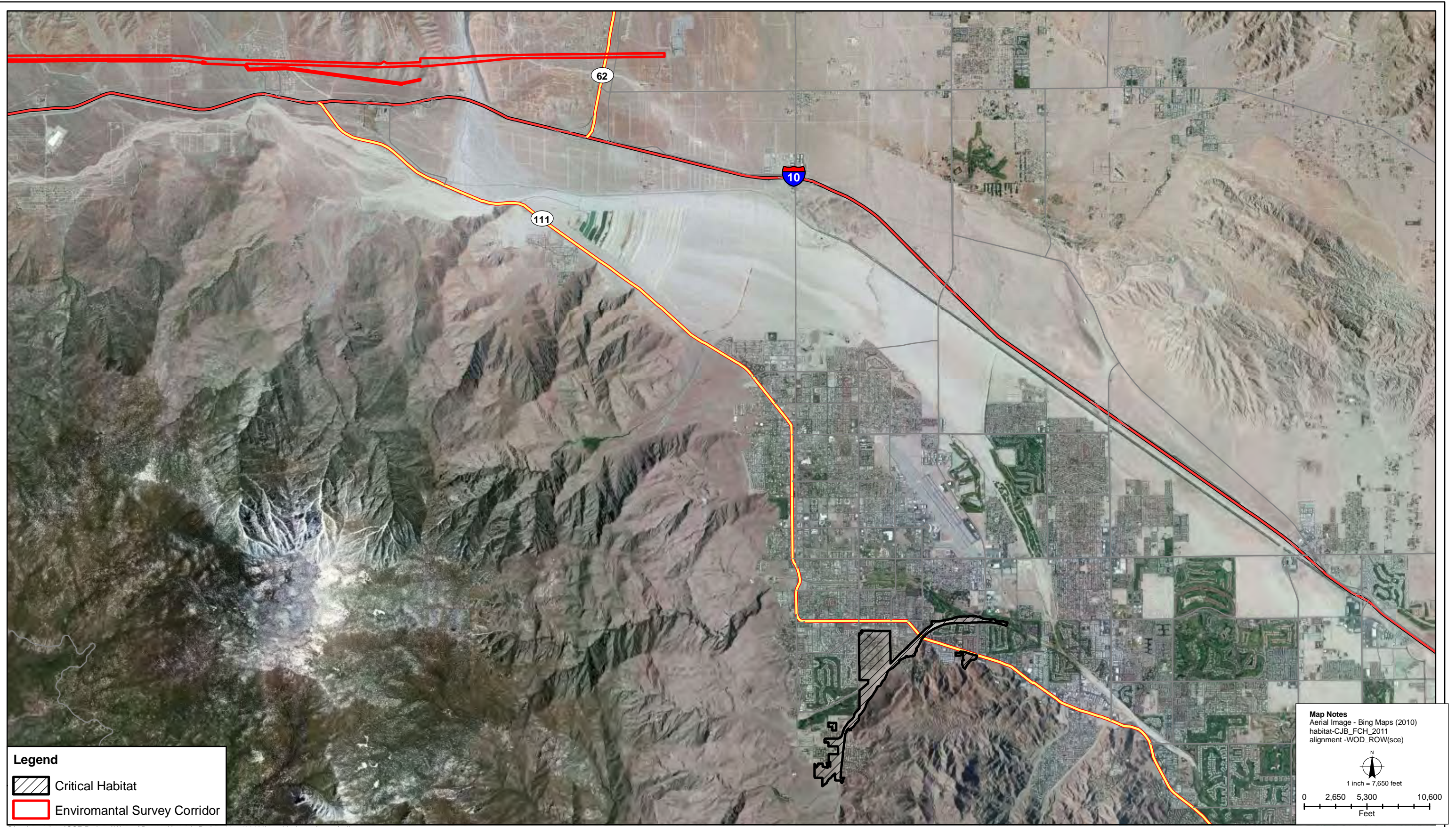
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Coachella Giant Sand Treader Cricket Survey Area
Habitat Assessments and Focused Surveys for Special-status Invertebrates
West of Devers Upgrade Project

FIGURE

3



Casey's June Beetle Critical Habitat
Habitat Assessments and Focused Surveys for Special-status Invertebrates
West of Devers Upgrade Project

FIGURE
4

APPENDIX 2

PHOTOGRAPHIC EXHIBITS

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Photo 1. Representative gravelly and cobbly condition of the upland soils present along the alignment between the Devers Substation and SR 62. Only a few ephemeral desert washes or rivulets containing sandy substrates were present along this portion of the alignment. View facing west.



Photo 2. Representative course sandy condition of the upland soils present along the alignment between SR 62 and Whitewater Canyon. View facing south.

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Photo 3. Representative example of an ephemeral desert dry wash along the alignment between SR 62 and Whitewater Canyon. View facing north.



Photo 4. Representative example of a small rivulet along the alignment between SR 62 and Whitewater Canyon. View facing southeast.

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Photo 5. Representative example of sandy soils present along the alignment within Whitewater Canyon. View facing south.



Photo 6. Location of cover board # 15. View facing southeast.

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Photo 7. Example of cover board located within blow sand habitat in Whitewater Canyon. View facing south.



Photo 8. Cover board # 50. View facing southwest

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Photo 9. Representative example of damp soil conditions beneath the cover boards during the surveys.



Photo 10. Representative example of the small burrows observed during the Coachella giant sand treader cricket surveys.

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Photo 11. Representative example of the small burrows observed during the Coachella giant sand treader cricket surveys.



Photo 12. Representative example of the small burrows observed during the Coachella giant sand treader cricket surveys.

APPENDIX 3
WILDLIFE SPECIES LIST

Wildlife Species List

This list reports only the wildlife observed onsite during AMEC's field survey. Other species may have been overlooked or undetectable due to their activity patterns or weather conditions. Scientific nomenclature for this document follows standard reference sources: for invertebrates, Hogue (1993); for reptiles, Stebbins (1985, 2003); and for mammals, Laudenslayer and Grenfell (1991). [sp. = identified only to genus, cf = compares favorably with]

INVERTEBRATA

INSECTA

BLATTODEA

Corydiidae (formerly Polyphagidae)
Arenivaga sp.

COLEOPTERA

Carabidae
unidentified genus/species

Curculionidae
Apleurus cf. albovestita
unidentified genus/species

Elateridae
unidentified genus/species

Meloidae
unidentified genus/species

Scarabaeidae
unidentified genus/species

Tenebrionidae
Eleodes sp.
unidentified genus/species

INVERTEBRATES

INSECTS

ROACHES

Corydid (formerly Polyphagid) Family
sand roach

BETLES

Ground Beetles
unidentified genus/species

Weevils
no common name
unidentified genus/species

Click Beetles
unidentified genus/species

Blister Beetles
unidentified genus/species

Scarab Beetles
unidentified genus/species

Darkling Beetles
unidentified darkling/skink beetle
unidentified genus/species

HEMIPTERA

Unidentified True Bug Family
unidentified genus/species

HYMENOPTERA

Formicidae
Messor pergandei
Pogonomyrmex californicus
unidentified genus/species

ISOPTERA

Unidentified Termite Family
unidentified genus/species

ORTHOPTERA

Rhaphidophoridae
unidentified genus/species

ZYGENTOMA

Unidentified Silverfish Family
unidentified genus/species

ARACHNIDA

ACARI

Unidentified Mite Family
unidentified genus/species

ARANEAE

Unidentified Spider Family
unidentified genus/species

Theridiidae

Latrodectus hesperus

OPILIONES

TRUE BUGS

Unidentified True Bug Family
unidentified genus/species

ANTS, BEES, and WASPS

Ants

desert harvester ant
California harvester ant
unidentified genus/species

TERMITES

Unidentified Termite Family
unidentified genus/species

GRASSHOPPERS & RELATIVES

Camel Crickets

unidentified genus/species

SILVERFISH

Unidentified Silverfish Family
unidentified genus/species

ARACHNIDS

MITES & TICKS

Unidentified Mite Family
unidentified genus/species

SPIDERS

Unidentified Spider Family
unidentified genus/species

Comb-footed Spiders

western black widow

HARVESTMEN

Unidentified Harvestmen Family
unidentified genus/species

SCORPIONIDA

Vaejovidae
cf. Paruroctonus sp.
Vaejovis sp.

CHILOPODA

Scolopendridae
Scolopendra cf. polymorpha

Unidentified Family
unidentified genus/species

DIPLOPODA

Unidentified Family
unidentified genus/species

Scolopendridae
Scolopendra cf. polymorpha

VERTEBRATA

REPTILIA

Phrynosomatidae
Sceloporus magister
Uta stansburiana

Viperidae
Crotalus cerastes

MAMMALIA

Cricetidae
Neotoma lepida

Unidentified Harvestmen Family
unidentified genus/species

SCORPIONS

Vaejovid Scorpions
unidentified sand scorpion
unidentified vaejovid scorpion

CENTIPEDES

Scolopendrid Centipedes
multicolored centipede

Unidentified Family
unidentified genus/species

MILLIPEDES

Unidentified Family
unidentified genus/species

Scolopendrid Centipedes
multicolored centipede

VERTEBRATES

REPTILES

Horned, Spiny Lizards & Relatives
desert spiny lizard
sideblotch lizard

Vipers
sidewinder

MAMMALS

New World Mice and Rats
desert woodrat