

APPENDIX C

Biological Resources

C-1. Biological Resources Technical Report

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Biological Resources Technical Report

McCoy Solar Energy Project Riverside County, CA



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EXECUTIVE SUMMARY

McCoy Solar, LLC (McCoy Solar) is proposing to develop the McCoy Solar Energy Project (MSEP or Project), a photovoltaic (PV) solar power plant, in Riverside County, California (Figure 1). The MSEP is an up to 750 megawatt PV solar power plant that will provide renewable energy to the California electrical grid through an interconnection at Southern California Edison's proposed Colorado River Substation. To comply with federal, state, and local laws, natural resources must be evaluated at the Project. As part of evaluating the Project's potential effects on species persistence and/or recovery, the presence of federally listed, state-listed, and other special-status plants and animals must be identified and their distribution and approximate abundance determined. To meet these objectives, comprehensive surveys for biological resources were conducted during Spring 2011 of the proposed Solar Plant Site and Linear Corridor. This document describes the methods and results of those surveys. Environmental review for the MSEP will consist of a joint National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) process. The Bureau of Land Management (BLM) will be the lead NEPA agency; Riverside County will be the CEQA lead.

Vegetation

Vegetation communities in the Project Area include upland vegetation, characterized by associations (i.e., subsets) of the Creosote Bush-White Burr Sage (*Larrea tridentata*-*Ambrosia dumosa*) Scrub Alliance and large expanses of desert pavement on the Solar Plant Site, and agricultural areas, intermittent, loose, shallow sand sheets and dunes, and small, exposed basins along the Linear Corridor. Upland vegetation is largely confined to drainages on the Project Area, probably because most of the available water is in the drainages due to the low regional rainfall and substrate and soil quality. An occasional palo verde (*Parkinsonia florida* [= *Cercidium floridum*]) or ironwood (*Olneya tesota*), or patches of a few individuals, can also be found in some swales or in the more well-developed parts of some runnels.

Special-status Species

The federally and state-threatened desert tortoise was observed within the Project Area in Spring 2010, as well as the state-threatened Swainson's hawk (migrant). Other special-status species observed within the Project Area include the Mojave fringe-toed lizard (*Uma scoparia*), burrowing owl (*Athene cunicularia*), Brewer's sparrow (*Spizella breweri*), Le Conte's thrasher (*Toxostoma lecontei*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), prairie falcon (*Falco mexicanus*), American badger (*Taxidea taxus*, digs only). Two golden eagles (*Aquila chrysaetos*) were observed flying near the Project Area; however, no active golden eagle nests or territories were found in or near the Project Area. Also observed within the Project Area was a hide of the burro deer (*Odocoileus hemionus eremicus*; a managed game species), wild burro scat (*Equus asinus*; managed by BLM); and desert kit fox (*Vulpus macrotis*; protected by California Department of Fish and Game code) natal dens.

Six California Native Plant Society-ranked plants were observed within the Project Area: Harwood's phlox (*Eriastrum harwoodii*), Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*), Las Animas colubrina (*Colubrina californica*), Utah cynanchum (*Funastrum utahense*), ribbed cryptantha (*Cryptantha costata*), and desert unicorn plant (*Proboscidea althaeifolia*).

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1.0 INTRODUCTION

McCoy Solar, LLC (McCoy Solar) is proposing to develop the McCoy Solar Energy Project (MSEP or Project), a photovoltaic (PV) solar power plant, in Riverside County, California (Figure 1). The MSEP is an up to 750 megawatt (MW) PV solar power plant that will provide renewable energy to the California electrical grid through an interconnection at Southern California Edison's proposed Colorado River Substation. To comply with federal, state, and local laws, natural resources must be evaluated at the Project. As part of evaluating the Project's potential effects on species persistence and/or recovery, the presence of federally listed, state-listed, and other special-status plants and animals must be identified and their distribution and approximate abundance determined. To meet these objectives, comprehensive surveys for biological resources were conducted during Spring 2011 of the proposed Solar Plant Site and Linear Corridor. This document describes the methods and results of those surveys. In addition, because desert tortoise were expected to occur on the Solar Plant Site, a potential tortoise translocation area to the west was surveyed in Spring 2011. This area may serve as the recipient site for tortoises translocated from the Solar Plant Site during Project construction.

Environmental review for the MSEP will consist of a joint National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) process. The Bureau of Land Management (BLM) will be the lead NEPA agency; Riverside County will be the CEQA lead.

1.1 Project Description and Terminology

For the purposes of this document, the following terminology applies:

- "Project" refers to the MSEP.
- "Project Area" is the footprint of all Project components, which includes the Solar Plant Site and Linear Facilities.
- "Solar Plant Site" is the area that includes the solar fields, substation, perimeter road, fencing, drainage, operations and maintenance (O&M) facilities.
- "Solar Plant Site ROW Application Boundary" is the approximately 7,700-acre area included in the ROW grant requested from the BLM for the solar plant site.
- "Linear Facilities" includes the generation-tie (gen-tie) line, access road, primary and secondary telecommunication lines, distribution line, and switchyard. With the exception of the switchyard and a portion of the access road, the Linear Facilities will be mostly co-located inside the Linear Right-of-Way (ROW). The switchyard will lie at the southern terminus of the Linear ROW; a portion of the access road north of Interstate 10 (I-10) will be shared with Solar Millennium's Blythe Solar Power Project (BSPP).
- "Linear Corridor" is the area surveyed in 2011 within which all the Linear Facilities ultimately will be sited. The survey area was substantially wider than the ultimate area that will be included in the ROW.
- "Linear ROW" is the legal designation of the area that BLM would define in the final ROW grant for the Linear Facilities; this is likely to be around 100 feet wide.
- "Survey Area" is the total area that was surveyed in Spring 2011 (Figures 5A, 5B). This area was larger than the Project Area.
- "Project Vicinity" is intended to be a general term to describe the broader, surrounding area.

The MSEP will consist of the Solar Plant Site and Linear Facilities and will be up to 750 MW. The majority of the MSEP is on BLM land and McCoy Solar will request a BLM ROW grant to build the facility on public land. There are also three privately-owned parcels within unincorporated Riverside County that are within the current Solar Plant Site. The currently requested BLM ROW encompasses approximately 7,700 acres. The Solar Plant Site is 5,363 acres (approximately 4,893 acres of BLM land and approximately 470 acres of private land) (Figure 2). Acreage devoted to Linear Facilities is expected to be less than 200 acres.

Project water use during operation is anticipated to be only 60 acre-feet per year to support potable supply and periodic cleaning of the PV panels. Water use during construction is expected to be between 650 to 750 acre-feet over about a three-year construction period. The Project will obtain its water supply from groundwater underlying the site using a minimum of two water supply wells located within the eastern half of the Solar Plant Site.

1.2 Construction Schedule

Construction of the Project will occur in sequential phases. The first phase, which is anticipated to be completed in August 2014, will include the first 250 MWs, the access road, water treatment system, initial gen-tie (consisting of the support towers and first circuit), O&M building, and parking area. Construction of the second phase will provide the additional, approximately 500 MW to reach the maximum 750 MW total. It is anticipated that construction on this phase will begin following initiation of commercial operation for the first unit, and will be completed by December 2016.

2.0 PROJECT SETTING

2.1 Project Location

The proposed Project is located in Riverside County, CA, approximately 13 miles northwest of the City of Blythe, California (Figures 1, 2). The MSEP is located immediately north of Solar Millennium's recently-permitted thermal solar B SPP. Surrounding mountain ranges include the McCoy Mountains to the west, the Little Maria Mountains to the north, and the Big Maria Mountains to the northeast. McCoy Wash is located immediately east of the Solar Plant Site, and I-10 is located approximately 5.5 miles south of the Solar Plant Site.

2.2 Environmental Setting

The Project Area lies along the bajada sloping out of the eastern side of the McCoy Mountains. McCoy Wash, a broad wash system flowing into Palo Verde Valley, lies immediately east of the Project Area. Elevations range from 390 to 735 feet above mean sea level.

Vegetation communities are often used as a surrogate to describe habitat. However, habitat is much more than vegetation alone, especially the upper story vegetation typically used as a descriptor of desert habitats. When discussed in the context of wildlife and plants, habitat is best described by vegetation (structure, dominants, common [important] species, cover), topography, substrates (coarse particle size, density and evenness), soils (texture and consistence), and drainage type. A more fine-grained approach to evaluating wildlife values can be achieved by assessing the mosaic of habitats on a site, including both habitat within the drainages as well as in the interstices.

Solar Plant Site and Proposed Translocation Area

The western portion of the Solar Plant Site is dominated by gently undulating terrain with broad patches of largely un-vegetated, well-developed, highly oxidized gravel desert pavement (Figure 3, Appendix A). Widely spaced washes, generally less than approx. 10 feet deep, flow through the pavement plain; associated small runnels flow into these washes. The exception to this is in the southwestern corner of the Solar Plant Site, where there are several 20-25 feet deep drainages. As the bajada flattens to the east, drainages become shallow, braided runnels with a few swales (especially along Black Creek Road). There are patches of sheet flow near McCoy Wash. Consistent with the hydrology and distance from the mountains, substrates become finer toward the eastern portion of the Solar Plant Site, becoming only scattered fine and very fine gravels over soft to slightly hard sandy loam along the eastern side. There are scattered patches of fine gravel- and coarse gravel-desert pavement throughout the eastern, and especially the southeastern, portion of the Solar Plant Site.

The proposed desert toad translocation area west of the Solar Plant Site has similar habitat to the western Solar Plant Site, except near the McCoy Mountains. Substrates there are cobbly and bouldery, with rills and outflows of these larger particles flowing out from the mountain canyons. There are several major arroyos, incised to approx. 30 feet, exiting the mountains along northwestern and southwestern borders of the proposed translocation area.

Vegetation on the Solar Plant Site and in the proposed translocation area is described in this report using alliances developed by Sawyer, Keeler-Wolf and Evens (2009) and used by the California Natural Diversity Data Base (California Department of Fish and Game [CDFG] 2010). Upland vegetation is characterized by associations (i.e., subsets) of the Creosote Bush-White Burr Sage (*Larrea tridentata*-*Ambrosia dumosa*) Scrub Alliance. However, even typical upland vegetation is largely confined to drainages on the Project Area, probably because most of the available water is in the drainages due to the low regional rainfall and substrate and soil quality. On the desert pavement plains in the west, there are essentially no shrubs outside of water courses. In the eastern approximately half of the site, the interstices have moderately low vegetation cover of mostly creosote bush – approximately 7-8 percent cover, but lower in several broad patches. This low cover and the small stature of the plants again points to low available water. Where sheet flow predominates, shrub cover is a little higher (<10 percent), and co-dominants include white burr sage, brittlebush (*Encelia farinosa*), and white rhatany (*Krameria grayii*).

Runnels and very small washes on the Solar Plant Site, including over most of the eastern Solar Plant Site, are dominated by creosote bush, white burr sage, brittlebush, and white rhatany; galleta grass (*Pleuraphis rigida*) is patchily common to co-dominant. An occasional palo verde (*Parkinsonia florida* [= *Cercidium floridum*]) or ironwood (*Olneya tesota*), or patches of a few individuals, can also be found in some swales or in the more well-developed parts of some runnels where water volume is probably higher or water is more consistently available. In the more well-developed washes in the western portion of the site, the vegetation is characterized by the Desert Lavender (*Hyptis emoryi*) Scrub and Catclaw Acacia (*Senegalia* (= *Acacia greggii*) Thorn Scrub Alliances. Desert lavender, Anderson boxthorn (*Lycium andersonii*), catclaw acacia, creosote bush, white burr sage, brittlebush, chuckwalla bush (*Bebbia juncea*), and white rhatany and/or little-leaved rhatany (*Krameria erecta*; mostly upslope) are typical dominants; galleta grass is intermittently co-dominant.

In some of these washes, there are occasional, generally relatively short (mostly under approximately 15 feet in height) palo verde and ironwood. There are rare patches of a few of these moderately sized trees that may also have a couple of larger trees. There are also a couple, several hundred foot stretches where palo verde is common, although many of the trees

are only saplings. The most well-developed of these is an approximately 3,000-foot segment of one wash in the western half of the Solar Plant Site. It is dominated by relatively large palo verde, along with the common wash-shrub species and could be considered a Palo Verde-Ironwood Woodland Alliance. In total, while important to wildlife because of their elevated structure, trees are neither a common feature of the Solar Plant Site's washes nor, with a few exceptions, attain the mature, robust size of individuals found in drainages with higher flow volumes, such as McCoy Wash.

McCoy Wash is a broad wash system east of the Solar Plant Site, the main channel of which is approximately a mile from the Solar Plant Site border. A small distributary lies just east of the Solar Plant Site border. This wash system is characterized by multiple broad, sandy arboreal washes as well as numerous smaller washes and runnels. Large, robust ironwood is the aspect-dominant species; palo verde is a common subdominant tree. Dominant shrubs include creosote bush and white burr sage; white rhatany, big galleta, and Anderson boxthorn are common.

Linear Corridor

The Linear Corridor exits the southeastern corner of the Solar Plant Site onto a barren, densely fine-gravelly, flat plain with little vegetation. As the corridor turns south, it travels through a relatively flat lower bajada with numerous small swales. Soils are generally fine, soft to consolidated loams lightly covered by fine to very fine gravels or none. The shrub cover is dominated by an approximately 10 percent cover of creosote bush and white burr sage; galleta grass is common in the swales, along with occasional ironwood trees. Much of this northern portion of the Linear Corridor runs along or over the edge of a distinctive alluvial deposit of rounded riverine gravel on a long, low ballena. This south-tending pebble terrace, standing 30-75 feet above the surrounding bajadas, is the result of one or more aggradational events when the ancestral Colorado River flowed across the area (Stone 2006). Aeolian sand is deposited in many small patches along this western edge of the pebble terrace.

A well-developed, large-arboreal wash resulting from the coalescence of several small washes meets and crosses the Linear Corridor just south of the pebble terrace. There, it becomes re-routed against a long east-west agricultural berm, where it forms a long swale of dense palo verde and ironwood infested with dense Russian thistle (*Salsola tragus*) and Sahara mustard (*Brassica tournefortii*). The Linear Corridor and adjacent area north and south of this swale is cleared for agriculture (currently not in crops), except in the northwestern half, where native creosote bush and white burr sage habitat, with brittlebush-white burr sage-galleta grass runnels, remains. An actively farmed citrus orchard lies at the eastern end of this portion of the Linear Corridor.

As the Linear Corridor travels west out of the agriculturally developed area, it continues across a flat bajada with habitat similar to that in the southeastern Solar Plant Site. Desert pavement patches and a second pebble terrace intersect the Linear Corridor as it nears the mountains and the substrates generally become more gravelly. Heavy sheeting and well-developed arboreal washes begin to cross the Linear Corridor southwest of the pebble terrace, with numerous arboreal washes where the Linear Corridor travels over the toeslopes of the McCoy Mountains. Vegetation in the interfluvies is generally very sparse creosote bush-white burr sage scrub. Near the freeway, the Linear Corridor crosses a low depression adjacent to a mesa. Both this depression and a nearby borrow pit on the Linear Corridor that was developed during freeway construction have been very disturbed in the past by grading and stockpiling dirt, gravel and concrete. Soils are fine and hard and there is potential for pockets of standing water. The borrow pit hosts a dense honey mesquite-palo verde bosque-ironwood bosque. (Note: Because of the artificial development of this bosque, it does not fall into the Sawyer, Keeler-Wolf and

Evens' [2009] Mesquite Woodland Alliance; the latter is located where groundwater is naturally available and hosts a suite of different species, in addition to honey mesquite.)

South of I-10, the Linear Corridor traverses a flat bajada of low plant diversity (creosote bush and white burr sage) and cover (8 percent). West of the First Solar/ NRG Blythe solar facility, intermittent, loose, shallow sand sheets and dunes and small, exposed basins intersect the Linear Corridor, and ponding water is a potential in some of the basins. Well-developed, low dunes enter the route at the bend and remain characteristic of the ROW through and including most of the switchyard. This habitat contains widely spaced perennial shrubs (2-5 percent cover), with the dominant species including creosote bush, white burr sage, and galleta grass. Several sand-associates and other annuals are also abundant (e.g., sand verbena [*Abronia villosa*], bird cage primrose [*Oenothera deltoides*], desert marigold [*Baileya pauciradiata*], and narrow-leaved forget-me-not [*Cryptantha angustifolia*]). Although there are no coarse particles in the substrate of the dunes, small areas between the dunes that contain more shrubs are partially stabilized by a light gravel layer. In the southern portion of the switchyard and south, the soil remains finely sandy, but fine gravel lightly covers the soil; creosote bush is dominant with white burr sage. Drainage is via sheet flow, small swales and runnels.

Existing Anthropogenic Impacts

The Solar Plant Site and surrounding area show evidence of military training activities in the mid-1900s and old mining activities. Tank tracks are common throughout and especially visible on the desert pavement. There are several old roads to the mountains that were graded for access to mines, but all are at least partially degraded. Otherwise, there is negligible current use of the site. Recreational activity appears to be negligible.

I-10 crosses the Linear Corridor, and there is a borrow pit and extensive adjacent grading adjacent to the freeway, probably associated with freeway construction. South of I-10, the Linear Corridor passes by a new solar facility (First Solar/ NRG Blythe); the switchyard is adjacent to the Devers-Palo Verde 1500 kilovolt transmission line.

In addition to these hardscape features, the noxious exotic weeds in some portions of the Linear Corridor are a result of human activity. South of I-10 on the Linear Corridor, Sahara mustard is abundant, and grows under most creosote bushes, probably due to the proximity of the town of Mesa Verde and agricultural development to the east and south of the town. Sahara mustard and, often, Russian thistle is also dense throughout much of the sand dunes south of I-10. This is on the Linear Corridor north of I-10 and on the Solar Plant Site, Sahara mustard is generally intermittently and sparsely present and confined to washes and runnels. The major exception is the agricultural operation, where both Sahara mustard and Russian thistle are dense in the swales, and common along both the field edges and in tilled fields.

3.0 REGULATORY SETTING

3.1 Federal Laws and Regulations

National Environmental Policy Act (NEPA)

This act requires the analysis of the environmental effects of any federal action. BLM is the administering agency. The BLM follows the NEPA (40 Code of Federal Regulations [CFR] Parts 1500 – 1508), the Federal Land Policy and Management Act of 1976, and the Energy Policy Act of 2005. Additionally, BLM follows guidance in the BLM NEPA Handbook H-1790-1, which was

updated in January 2008, and the BLM Land Use Planning Handbook H-17601-1: *Guidance for Preparing NEPA Documents Associated with Land Use Plans and Resource Management Plans*.

Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 United States Code [USC] 1531 *et seq.*; 50 CFR 17.1 *et seq.*) designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Section 9 of the ESA prohibits “take” of threatened. Under Section 7 of the ESA, any federal agency, including the BLM, must consult with the United States Fish and Wildlife Service (FWS) regarding a proposed action that may adversely affect listed terrestrial and avian species. Formal consultation is requested via a biological assessment, and once the FWS has engaged in consultation with the federal agency taking the proposed action, the FWS may issue a biological opinion (BO) that includes an incidental take statement.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, prohibits “take” of migratory birds (16 USC 703-712). Under the MBTA it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product. All birds that are native to the United States and belong to a family, group or species covered by at least one of the four migratory bird conventions to which the United States is party are covered under the MBTA. There is currently no permitting framework (i.e., incidental take permits) that allow liability protection for project developers. The administering agency is FWS.

FWS’s Division of Migratory Bird Management also maintains a list of Birds of Conservation Concern, which identifies species, subspecies, and populations of migratory and non-migratory birds that may be in need of additional conservation actions. This action was an outcome of a 1988 amendment to the Fish and Wildlife Conservation Act, which mandates the FWS to identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the take of any bald or golden eagle, alive or dead, including any part, nest, or egg. “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” a bald or golden eagle. “Disturb” means to agitate or bother an eagle to a degree that causes, or is likely to cause (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. The administering agency is FWS.

Wild Free-Roaming Horse and Burro Act (Public Law 92-195)

Wild horses and burros are protected from capture, branding, harassment and death, and managed with the intent to achieve and preserve the natural ecological balance on public lands. BLM is the administering agency.

Clean Water Act

Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344) regulates all discharge of dredged and fill material into waters of the United States, including wetlands. The US Army Corps of

Engineers (USACE) and US Environmental Protection Agency (USEPA) share responsibility for administering and enforcing Section 404 including jurisdictional delineations, permitting decisions, and development of policy and guidance. Waters of the United States and wetlands are those defined by the USACE/USEPA in CWA regulations (33CFR 328.3). Field surveys to delineate jurisdictional waters were conducted in Spring 2011 and are addressed under a separate technical report. A formal determination of non-jurisdiction has been requested from the USACE.

3.2 State Laws and Regulations

California Environmental Quality Act

CEQA requires review of any project that is undertaken, funded, or permitted by a state or local governmental agency. Typically, the state or local agency with overall project permitting authority takes the lead for CEQA compliance. The lead agency has the discretion to consider any non-listed species a *de facto* listed species by the statement that “a species not included in any listing in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b)” (CEQA Guidelines §15380, Subsection d). If significant project effects were identified, the lead agency would have the option of requiring mitigation for effects through changes in the project or deciding that overriding considerations make mitigation infeasible (CEQA Sec. 21002). Riverside County (County) is the lead state agency for CEQA review for the MSEP.

California Endangered Species Act

The California Endangered Species Act of 1984 (CESA, CDFG Code Sections 2050 *et seq.*) protects California’s rare, threatened, and endangered species. CDFG Code Sections 1900 *et seq.* designate rare, threatened and endangered plants under the Native Plant Protection Act of 1977. The BLM must consult with CDFG regarding the possibility of “take” under CESA, similar to the federal consultation, above. The CDFG can choose to find the federal BO consistent with state law (a 2080.1 consistency determination), or choose to require a separate state “take” permit (a 2081 permit) if species listed by CESA could be harmed or killed during construction or operation of the project. CDFG is the administering agency.

Title 14, California Code of Regulations, Sections 670.2 and 670.5

Under this code, animals are designated as threatened or endangered in California. California species of special concern is a category conferred by CDFG on those species that are indicators of regional habitat changes or are considered potential future protected species. These species do not have any special legal status, but this designation is used by CDFG as a management tool for consideration when land use decisions are made.

Native Plant Protection Act (NPPA); CDFG Code Sections 1900 *et seq.*

The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for “rare and endangered” are different from those contained in CESA, although CESA-listed threatened and endangered species are included in the list of species protected under the NPPA.

CDFG Code Sections 3503 and 3503.5

These codes state that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, including birds of prey, or take, possess, or destroy birds of prey, except as otherwise provided by this code or any regulation made pursuant thereto.

CDFG Code Sections 3511, 4700, 5050, and 5515

These state laws classify and prohibit the take of “fully protected” birds, mammal, amphibian/reptile, and fish species in California.

CDFG Code Section 3513

This code prohibits any take or possession of birds that are designated by the MBTA as migratory non-game birds, except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

CDFG Code Section 4150

This state law makes it unlawful to take or possess any non-game mammal or parts thereof except as provided in the Fish and Game Code or in accordance with regulations adopted by the commission. However, Title 14 Section 460 prohibits the taking of desert kit foxes.

California Desert Native Plants Act

Pursuant to the California Food and Agriculture Code §§ 80001-80006, the California Desert Native Plants Act (CDNPA) allows the harvest of certain species of non-listed native plants under permits issued by the County Agricultural Commissioner or Sheriff. The purpose of the CDNPA is to prevent the unlawful harvesting of native desert trees and cacti, either for wood, landscaping, or other purposes. Where feasible and practicable, individual plants can be salvaged and used for the Project revegetation program or salvaged by an approved nursery, landscaper, or other group to indirectly reduce unlawful harvesting elsewhere. Species in the MSEP vicinity that are subject to permitting include desert tree species, ocotillo, and cacti.

CDFG Streambed Alteration Agreement; Fish and Game Code Section 1600-1616

Waters of the state of California are subject to the jurisdiction of the CDFG. The CDFG monitors streambed alteration to conserve, protect, and manage California’s fish, wildlife, and native plant resources. California Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify the CDFG before beginning an activity that will substantially divert, obstruct, or change the natural flow of the bed, channel, or bank (including associated riparian vegetation) of a river, stream, or lake; or use material from a streambed prior to commencement of the activity. If CDFG determines that the action could have an adverse affect on existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required. Jurisdictional waters were surveyed separately and are addressed under a separate report. McCoy Solar has initiated discussions with CDFG regarding state-jurisdictional waters; a final determination is pending.

3.3 Relevant Management Plans

Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan

In 1976, Congress designated the 25-million-acre California Desert Conservation Area (CDCA). BLM developed a management plan for the CDCA in 1980, but conditions relative to species

status, conservation programs, wilderness and national park designations, and other land uses have changed since the original plan was developed. BLM has completed a series of regional plan amendments, among them the NECO Plan (BLM and CDFG 2002), which encompasses 5.5 million acres in the southeastern California Desert and the entire Project footprint.

The NECO Plan identifies the following issues that underlie the plan's conservation and management program:

- Adopt standards and guidelines for public land health
- Recover two threatened species: the desert tortoise (*Gopherus agassizii*) and Coachella Valley milkvetch (*Astragalus lentiginosus coachellae*)
- Conserve approximately 60 special-status animals and plants and natural communities
- Resolve management issues of wild horses and burros along the Colorado River
- Designate recreational routes of travel
- Resolve issues of land ownership pattern
- Resolve issues of resource access and regulatory burden
- Incorporate changes created by the 1994 California Desert Plant Act

In addition to a number of specific objectives and actions to meet the goals of the above issues, the NECO Plan provides for conservation and management of several special-status species, in large part through a system of broad management areas such as Desert Wildlife Management Areas (DWMAs) for desert tortoises and Wildlife Habitat Management Areas (WHMAs) for other special-status species and natural communities. In both types of management areas, habitat improvements are prescribed to enhance the species of concern. Cumulative disturbance within DWMAs is limited to one percent of the surface area. The MSEP is not within a designated desert tortoise DWMA. The closest DWMA, the Chuckwalla DWMA, is south of I-10, more than eight miles southwest of the Solar Plant Site and more than four miles west of the switchyard (Figure 4).

At the closest point, the Solar Plant Site is located approximately one-half mile from the boundary of a bighorn sheep WHMA (Figure 4). The proposed Linear Corridor does not overlap any special management areas, except at the interconnection to the switchyard, where it overlaps the Mule Mountains Multiple-species WHMA. The switchyard is located entirely within the Mule Mountains Multiple-species WHMA (Figure 4).

Desert Tortoise Recovery Plan

In June 1994, the final Desert Tortoise (Mojave Population) Recovery Plan was released (FWS 1994a). A Draft Revised Recovery Plan was published in 2008 (FWS 2008). The 1994 Recovery Plan identified six evolutionarily significant units of the desert tortoise in the Mojave region, based on differences in tortoise behavior, morphology and genetics, vegetation and climate. The Draft revised plan revised these to five recovery units based on newer data on genetic, ecological, and physiological distinctions. Within the recovery units, suggested DWMAs act as reserves in which recovery actions are implemented. The Project is not in a designated desert tortoise DWMA (see above).

The recovery plan works in concert with Critical Habitat, designated for the desert tortoise in 1994 (FWS 1994b) by prescribing management actions to aid recovery, with Critical Habitat

providing legal protection. The Project is not within designated desert tortoise Critical Habitat. The closest Critical Habitat Unit to the Solar Plant Site is near I-10, more than six miles southwest of the Solar Plant Site (Figure 4). This Critical Habitat Unit is also over two miles west of the switchyard and other Linear Facilities.

4.0 SURVEY METHODS

4.1 Literature Review

Several species known to occur on or in the vicinity of the Project are accorded “special-status” by federal and state agencies because of their recognized rarity or potential vulnerability to extinction. These species typically have a limited geographic range and/or limited habitat and are referred to collectively as “special-status” species. Prior to field surveys, a target list of special-status species that might be affected by the Project was developed (Table 1) based on review of available literature and databases (e.g., California Native Plant Society, California Natural Diversity Database [CNDDDB], see Figures in Appendix B), and consulting with the agencies (O’Rourke 2007, Massar 2007, Massar pers. comm. 2011, Englehard, pers. comm., 2011a, 2011b, Rodriguez, pers. comm., 2011), and local experts. Additional target species were added according to the NECO Plan (BLM and CDFG 2002) for which surveys must be completed where a project intersects the species’ ranges, as mapped in the NECO Plan. Managed game species, burros (protected by the Wild, Free-Roaming Horse and Burro Act), and desert kit fox (*Vulpes macrotis*), a protected furbearer (CDFG Code 4000), were also included in the target list.

Table 1. Plant and Wildlife Species Observed and Potentially Occurring within the McCoy Solar Energy Project Vicinity.

Species	Status ¹				Habitat	Likelihood of Occurrence on the Project Area ⁴
	Federal	State	CNDDB Rank ²	CNPS ³ / Other		
Plants						
Abrams's Spurge (<i>Chamaesyce abramsiana</i>)	---	---	G4/S1.2	2	Sandy sites in Mojavean and Sonoran Desert scrubs in eastern California; 0 to 3,000 feet	Possible; pending fall surveys ⁴
Algodones Dunes Sunflower (<i>Helianthus niveus tephrodes</i>)	---	E	G4T2/S1.2	1B	Desert dunes, especially Algodones Dunes	Unlikely; not observed
Angel Trumpets (<i>Acleisanthes longiflora</i>)	---	---	G5/S1	2	Sonoran Desert Scrub (limestone); mountains or base of mountains, 0-8,202 feet	Highly unlikely due to lack of limestone and rocky habitat in Project Area; not observed
Darlington's Blazing Star (<i>Mentzelia puberula</i>)	---	---	G4/S2	2.2	Rocky, generally mountainous sites from the Ord Mts. to northern Baja California	Highly unlikely due to lack of habitat; not observed
Arizona Cottontop (<i>Digitaria californica</i>)	---	---	G5/S1.3	2	Rocky Sonoran and Mojavean Desert Scrubs; three consortium records in California; 950 to 4,900 feet	Unlikely due to rocky association; not observed
Arizona Spurge (<i>Chamaesyce arizonica</i>)	---	---	G5/S1.3	2	Sandy flats in Sonoran Desert Scrub, below ~1,000 feet	Possible; pending fall surveys ⁴
Ayenia (<i>Ayenia compacta</i>)	---	---	G4/S3?	2	Sandy and gravelly washes and canyons in desert scrubs, 450 to 6,000 feet	Possible; not observed
Bitter Hymenoxys (<i>Hymenoxys odorata</i>)	---	---	G5/S2	2	Riparian scrub and Sonoran Desert Scrub, sandy flats near Colorado River, known only from the Colorado River alluvial plain, 150- 495 feet	Unlikely because of species association with the Colorado River floodplain; not observed
California Ditaxis (<i>Ditaxis serrata</i> var. <i>californica</i>)	---	---	G5T2T3/S2	3	Sonoran Creosote Bush Scrub from 100 to 3,000 feet	Possible; not observed
California Satintail (<i>Imperata brevifolia</i>)	---	---	G2/S2.1	2	Wet springs, meadows, and flood plains in Chaparral, Coastal Scrub, Mojavean Desert Scrub; 0 – 1,650 feet	Highly unlikely due to lack of habitat; not observed
Chaparral Sand Verbena (<i>Abronia villosa</i> var. <i>aurita</i>)	---	---	G5T3T4/S2	1B	Loose to aeolian sands; chaparral and coastal sage scrub; below 2,000 feet	Highly unlikely; not observed
Cove's Cassia (<i>Senna covesii</i>)	---	---	G5?/S1	2	Dry washes and slopes in Sonoran Desert Scrub, 1,600 to 1,900 feet	Not present; not observed
Crown of Thorns (<i>Koeberlinia spinosa tenuispina</i>)	---	---	G4T4/S2.2	2	Creosote Bush Scrub in Sonoran Desert; 500 to 1,700 feet	Not present; not observed
Crucifixion Thorn (<i>Castela emoryi</i>)	---	---	G2G3/S2S3	2	Mojavean and Sonoran Desert Scrubs; typically associated with drainages	Not present; not observed
Desert Portulaca (<i>Portulaca halimoides</i>)	---	---	G5/S3	4	Sandy areas and flats in Joshua tree woodland and desert mountains; 3,280-3,937 feet	Highly unlikely due to lack of habitat and elevational constraints; not observed
Desert Sand-parsley (<i>Ammoselinum giganteum</i>)	---	---	G2G3/SH	2	Sonoran Desert Scrub; known from one site near Hayfield Dry Lake at 1,200 feet	Highly unlikely; not observed
Desert Spike Moss (<i>Selaginella eremophila</i>)	---	---	G4/S2.2?	2	Shaded rocky habitats in the Sonoran Desert, to Arizona and northern Mexico; below 3,600 feet	Unlikely due to lack of habitat; not observed

Species	Status ¹				Habitat	Likelihood of Occurrence on the Project Area ⁴
	Federal	State	CNDDDB Rank ²	CNPS ³ / Other		
Desert Unicorn Plant (<i>Proboscidea althaeifolia</i>)	---	---	G5/S3.3	4	Sandy areas in Sonoran Desert Scrub throughout southeastern California, below 3,300 feet.	Observed Fall 2010 and Spring 2011
Dwarf Germander (<i>Teucrium cubense depressum</i>)	---	---	G4G5T3T4/S2	2	Sandy soils, washes, fields; below 1,300 feet	Possible; not observed
Flat-seeded Spurge (<i>Chamaesyce platysperma</i>)	BLM Sensitive	---	G3/S1.2?	1B	Sandy flats and dunes in Sonoran Desert Scrub; below 350 feet	Possible; not observed
Foxtail Cactus (<i>Coryphantha alversonii</i>)	---	---	G3/S3.2	4	Primarily rocky substrates between 250 and 4,000 feet in Creosote Bush Scrub	Unlikely; not observed
Glandular Ditaxis (<i>Ditaxis claryana</i>)	---	---	G4G5/S1	2	Sandy flats in Mojavean and Sonoran Creosote Bush Scrubs in Imperial, San Bernardino, and Riverside counties; below 1,500 feet	Possible; not observed
Graham's fishhook cactus (<i>Mammillaria grahamii</i> var. <i>grahamii</i>)	---	---	G4T4/S2	2	Sandy or rocky canyons, washes in creosote bush scrub; 1,000-2,970 feet	Possible; not observed
Harwood's Milkvetch (<i>Astragalus insularis</i> var. <i>harwoodii</i>)	---	---	G5T3/S2.2?	2	Dunes and windblown sands below 1,200 feet, east and south of approximately Desert Center	Observed Spring 2011
Harwood's Phlox (<i>Eriastrum harwoodii</i>)	---	---	G2/S2	1B	Desert dunes below 7,000 feet., eastern Riverside, San Bernardino and San Diego Counties	Observed Spring 2011
Jackass Clover (<i>Wislizenia refracta</i> var. <i>refracta</i>)	---	---	G5T5?/S1.2?	2	Sandy washes, roadsides, flats; 1,900 to 2,700 feet	Possible; not observed
Las Animas Colubrina (<i>Colubrina californica</i>)	---	---	G4/S2S3.3	2	Sonoran Desert Creosote Bush Scrub, < 3,300 feet	Observed Fall 2010 and Spring 2011
Lobed Ground Cherry (<i>Physalis lobata</i>)	---	---	G5/S1.3?	2	Mojave Desert Scrub, playas, granitic soils, 1,640-2,625 feet	Unlikely. All known locations well to north of Project and at higher elevations. Not observed.
Mesquite Nest Straw (<i>Stylocline sonorensis</i>)	---	---	G3G5/SX	1A	Open sandy drainages; known from one site near Hayfields Dry Lake	Highly unlikely; not observed
Mojave Fishhook Cactus (<i>Sclerocactus polyancistrus</i>)	---	---	G4/S3.2	4	Mojavean Desert Scrub (Creosote Bush Scrub and Pinyon-Juniper Woodland, and Great Basin Scrub. Kern, San Bernardino, and Inyo Counties to Nevada; 2,100 to 7,650 feet	Unlikely; not observed
Newberry's Velvet-mallow (<i>Horsfordia newberryi</i>)	---	---	G4/S3.3	4	Mostly rocky canyons and toeslopes in Sonoran Desert Scrub; 10 – 2,650 feet	Possible; not observed
Orocopia Sage (<i>Salvia greatae</i>)	BLM Sensitive	---	G2/S2	1B	Mojavean and Sonoran Desert Scrubs; gravelly/ rocky bajadas, mostly near washes; below 3,000 feet	Not present; not observed
Palmer's Jackass Clover (<i>Wislizenia refracta palmeri</i>)	---	---	G5T2T4/S2?	2	Sandy washes and dunes in Sonoran Desert Scrub, to northwestern Mexico; potentially Mojave Desert (unverified); <430 feet	Possible; not observed
Parish's Club Cholla (<i>Grusonia parishii</i>)	---	---	G3G4/S2	2	Joshua Tree Woodland in Mojavean and Sonoran Desert Scrubs; 1,000 -5,000 feet	Not present; not observed
Parry's Spurge (<i>Chamaesyce parryi</i>)	---	---	G5/S1.3	2	Dunes an Aeolian soils in Mojavean Desert Scrub; in California, known only from Kelso; 1,300-2,400 feet	Unlikely due to limited range; not observed

Species	Status ¹				Habitat	Likelihood of Occurrence on the Project Area ⁴
	Federal	State	CNDDB Rank ²	CNPS ³ / Other		
Pink Fairy Duster (<i>Calliandra eriophylla</i>)	---	---	G5/S2S3	2	Sonoran Desert Scrub; washes; 393-4,920 feet	Not present; not observed
Pink Velvet Mallow (<i>Horsfordia alata</i>)	---	---	G4/S3.3	4	Rocky areas in Sonoran Desert Scrub, 328-1,640 feet	Possible; not observed
Pointed Dodder (<i>Cuscuta californica</i> var. <i>apiculata</i>)	---	---	G5T3?/S2S3	3	Sonoran and Mojavean Desert Scrubs in San Bernardino County (one record in western Riverside County), to Nevada and Baja, California; 0 – 1,650 feet	Possible; not observed
Ribbed Cryptantha (<i>Cryptantha costata</i>)	---	---	G4G5/S3.3	4	Dunes in Mojavean and Sonoran Desert Scrub, 197-1,640 feet	Observed Spring 2011
Sand Evening Primrose (<i>Camissonia arenaria</i>)	---	---	G4?/S2	2	Sandy washes and rocky slopes below 1,300 feet	Possible; not observed
Slender Woolly-heads (<i>Nemacaulis denudata</i> var. <i>gracilis</i>)	---	---	G3G4T3?/S2	2	Dunes in coastal and Sonoran Desert Scrubs, primarily in the Coachella Valley; below 1,500 feet	Possible; not observed
Spearleaf (<i>Matelea parvifolia</i>)	---	---	G5?/S2.2	2	Rocky ledges and slopes, 1,000 to 6,000 feet, in Mojave and Sonoran Desert Scrubs	Unlikely due to lack of habitat and elevational constraints; not observed
Spiny Abrojo (<i>Condalia globosa</i> var. <i>pubescens</i>)	---	---	G5T3T4/S3.2	4	Sonoran Creosote Bush Scrub; 500 to 3,300 feet	Not present; not observed
Thorny Milkwort (<i>Polygala acanthoclada</i>)	---	---	G4/S1	2	Pinyon-Juniper and Joshua Tree Woodlands, Chenopod Scrub; 2,500-7,550 feet	Not present; not observed
Utah Cynanchum (<i>Funastrum utahense</i>)	---	---	G4/S3.2	4	Sandy and gravelly areas in Mojavean and Sonoran Creosote Bush Scrub; 490 – 4,700 feet	Observed Spring 2011
Winged Cryptantha (<i>Cryptantha holoptera</i>)	--	--	G3G4/S3?	4	330-5,500 feet in Mojave and Sonoran Desert Scrubs; often sandy habitats	Possible; not observed
Amphibians						
Couch's Spadefoot (<i>Scaphiopus couchii</i>)	BLM Sensitive	SSC	G5/S2S3	–	Various arid communities in extreme southeastern California and east, south	Possible; potential breeding habitat was observed Spring 2011
Reptiles						
Colorado Desert Fringe-toed Lizard (<i>Uma notata</i>)	BLM Sensitive	SSC	G3/S2?	–	Restricted to aeolian sandy habitats in the southeastern Sonoran Desert	Unlikely due to geographic range; not observed
Desert Rosy Boa (<i>Charina trivirgata gracia</i>)	---	---	G4G5/ S3S4	---	Rocky uplands and canyons; often near stream courses	Unlikely due to lack of habitat; not observed
Mojave Fringe-toed Lizard (<i>Uma scoparia</i>)	BLM Sensitive	SSC	G3G4/ S3S4	---	Restricted to aeolian sandy habitats in the Mojave and northern Sonoran deserts	Observed during Spring 2011 surveys
Desert Tortoise (<i>Gopherus agassizii</i>)	T	T	G4/S2	---	Most desert habitats below approximately 5,000 feet in elevation	Carcass fragments and potential burrows observed Fall 2010 in ROW; burrow and carcass fragments observed on Linear Corridor. Tortoises and other sign observed Spring 2011.

Species	Status ¹				Habitat	Likelihood of Occurrence on the Project Area ⁴
	Federal	State	CNDDB Rank ²	CNPS ³ / Other		
Invertebrates						
California McCoy Snail <i>(Eremarionta rowelli mccoiana)</i>	---	---	G1/T1/S1	---	Talus slope; potentially endemic to McCoy Mts	Unlikely; possible in McCoy Mts outside of the Project Area
Riverside Cuckoo Wasp <i>(Hedychridium argenteum)</i>	---	---	G1/?S1?	---	Dunes; one CNDDB record 18 mi west of Blythe along I-10; no other distribution information available, although may be endemic to Colorado Desert	Possible; not observed
Bradley's Cuckoo Wasp <i>(Ceratochrysis bradleyi)</i>	---	---	G1/S1	---	Dunes; one CNDDB record 6 mi north of Blythe, although may be endemic to Colorado Desert	Possible; not observed
Birds						
American Peregrine Falcon <i>(Falco peregrinus anatum)</i>	Delisted BCC	Delisted Fully Protected	G4T3/S2	---	Dry, open country, including arid woodlands; nests in cliffs	Possible forager on site may nest in adjacent mountains. Observed off-site Spring 2011.
Bendire's Thrasher <i>(Toxostoma bendire)</i>	BCC BLM Sensitive	SSC	G4G5/S3	---	Arid to semi-arid brushy habitats, usually with yuccas, cholla, and trees	Unlikely; not observed
Brewer's Sparrow <i>(Spizella breweri)</i>	BCC	-- (nesting)	G5/S3	---	Open meadows and flats	Observed Spring 2011
Burrowing Owl <i>(Athene cunicularia)</i>	BCC BLM Sensitive	SSC	G4/S2	---	Open, arid habitats	Observed Spring 2011
Crissal Thrasher <i>(Toxostoma crissale)</i>	BCC	SSC	G5/S3	---	Dense mesquite and willows along desert streams and washes	Highly unlikely due to lack of habitat; not observed
Ferruginous Hawk <i>(Buteo regalis)</i>	BCC	(wintering)	G4/S3S4	---	Arid, open country	Possible; not observed
Gila Woodpecker <i>(Melanerpes uropygialis)</i>	BCC	E	G5/S1S2	---	Requires woodlands containing large trees or columnar cactus for nesting	Unlikely nester/possible transient; not observed
Gilded Flicker <i>(Colaptes chrysoides)</i>	BCC	E	G5/S1	---	Large cactus forests of southwestern deserts. Requires woodlands containing large trees or columnar cactus for nesting.	Unlikely nester/possible transient; not observed
Golden Eagle <i>(Aquila chrysaetos)</i>	BCC	Fully Protected	G5/S3	---	Open country; nests in large trees in open areas or cliffs	Unlikely nester on site, possible forager on site. Inactive nests in McCoy Mountains and individuals observed Spring 2011
Le Conte's Thrasher <i>(Toxostoma lecontei)</i>	BCC	---	G3S3	---	Open desert with scattered shrubs	Observed Spring 2011
Loggerhead Shrike <i>(Lanius ludovicianus)</i>	BCC	SSC (nesting)	G4/S4	---	Arid habitats with perches	Observed Fall 2010 and Spring 2011
Mountain Plover <i>(Charadrius montanus)</i>	BCC BLM Sensitive	SSC (wintering)	G2/S2?	---	Dry upland habitats, plains, bare fields	Highly unlikely; not observed

Species	Status ¹				Habitat	Likelihood of Occurrence on the Project Area ⁴
	Federal	State	CNDDDB Rank ²	CNPS ³ / Other		
Northern Harrier (<i>Circus cyaneus</i>)	---	SSC (nesting)	G5/S3	---	Open habitats; nests in shrubby pen land and marshes	Observed Spring 2011
Prairie Falcon (<i>Falco mexicanus</i>)	BCC	(nesting)	G5/S3	---	Dry, open country, including arid woodlands; nests in cliffs	Observed Spring 2011
Short-eared Owl (<i>Asio flammeus</i>)	---	SSC (nesting)	G5/S3	---	Open habitats: marshes, fields; nests on ground and roosts on ground, low poles	Possible; not observed
Swainson's Hawk (<i>Buteo swainsoni</i>)	BCC	T	G5/S2	---	Forages in open stands of grass-dominated vegetation, sparse shrublands, and small, open woodlands	Unlikely nester, possible migrant. Observed Spring 2011
Yellow-breasted Chat (<i>Icteria virens</i>)	---	SSC (nesting)	G5/S3	---	Dense streamside thickets, willows; brushy hillsides and canyons	Highly unlikely due to lack of habitat, but possible transient; not observed
Mammals						
American Badger (<i>Taxidea taxus</i>)	---	SSC	G5/S4	---	Many habitats	Possible; observed outside of Project Area Spring 2011; digs observed within Solar Plant Site
Arizona Myotis (<i>Myotis occultus</i>)	---	SSC	G3G4/S2S3	WBWG:M	Lowlands of the Colorado River and adjacent mountain ranges, up to ponderosa pine habitat; mines, buildings, bridges, riparian woodlands, often near water	Unlikely; not observed ⁵
Big Free-tailed Bat (<i>Nyctinomops macrotis</i>)	---	SSC	G5/S2	WBWG:M	Cliffs and rugged rocky habitats in arid, country, also riparian woodlands	Possible forager on site, especially near mountains; not observed ⁵
Burro (<i>Equus asinus</i>)	---	---	---	Protected	Various habitats near water	Possible; tracks observed 2007 in western ROW and scat observed Fall 2010 and Spring 2011
Burro Deer (<i>Odocoileus hemionus eremicus</i>)	---	Game Species	---	---	Arboreal and densely vegetated drainages	Possible; hide observed in Spring 2011; no scat or deer observed
California Leaf-nosed Bat (<i>Macrotus californicus</i>)	BLM Sensitive	SSC	G4/S2S3	WBWG:MH	Lowland desert associate, found in caves, mines, tunnels and old buildings	Possible forager on site; not observed ⁵
Colorado Valley Woodrat (<i>Neotoma albigula venusta</i>)	---	---	---	---	Under mesquite in Creosote Bush Scrub; southeastern California	Possible; not observed or captured during trapping
Desert Kit Fox (<i>Vulpes macrotis</i>)	---	Protected furbearer	---	---	In open desert scrub and dunes	Sign observed Fall 2010 and Spring 2011; foxes observed off site
Mountain Lion (<i>Felis concolor browni</i>)	---	SSC	G5T1T2Q S1	---	Colorado River bottomlands	Unlikely; possible forager on site; scat observed off-site near McCoy Mts Spring 2011
Nelson's Bighorn Sheep (<i>Ovis canadensis nelsoni</i>)	BLM Sensitive	---	---	---	In mountains and adjacent valleys in desert scrub	Unlikely; possible in McCoy Mountains; may forage at base of mountains
Pallid Bat (<i>Antrozous pallidus</i>)	BLM Sensitive	SSC	G5/S3	WBWG:H	Several desert habitats	Possible; not observed ⁵
Pocketed Free-tailed Bat (<i>Nyctinomops femorosaccus</i>)	---	SSC	G4/S2S3	WBWG:M	Variety of arid areas in pinyon-juniper woodland, desert scrubs, palm oases, drainages, rocky areas	Unlikely; Possible in the McCoy Mountains; not observed ⁵

Species	Status ¹				Habitat	Likelihood of Occurrence on the Project Area ⁴
	Federal	State	CNDDB Rank ²	CNPS ³ / Other		
Southwestern Cave Myotis (<i>Myotis vellifer brevis</i>)	BLM Sensitive	SSC	G5/S1	WBWG:M	Caves, mines and buildings in lower desert scrub habitats; also near streams and in woodlands, old ag fields	Unlikely; not observed ⁵
Spotted Bat (<i>Euderma maculatum</i>)	BLM Sensitive	SSC	G4 /S2S3	WBWG:H	Arid scrub and grasslands, to coniferous forests, roosts in cliffs, Forages along waterways	Unlikely; not observed ⁵
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	BLM Sensitive	SSC	G4/S2S3	WBWG:H	Broad habitat associations. Roosts in caves and manmade structures; feeds in trees	Possible; not observed ⁵
Western Mastiff Bat (<i>Eumops perotis californicus</i>)	BLM Sensitive	SSC	G5T4/S3?	WBWG:H	Cliffs, trees, tunnels, buildings in desert scrub	Possible; not observed ⁵
Yuma Myotis (<i>Myotis yumanensis yumanensis</i>)	BLM Sensitive	---	G5/S4?	WBWG:LM	Several habitat associations, but typically near open water; often roosts in manmade structures	Unlikely; not observed ⁵

Sources: Unless noted, information is from *The Jepson Manual* (Baldwin et al. 2002), California Native Plant Society (CNPS) Online Inventory (CNPS 2011), and Jepson Flora Project (<http://ucjeps.berkeley.edu/>)

¹ CDFG and Habitat Data Analysis Branch, Biogeographic Data Branch 2009, <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf>

- E Endangered
- T Threatened
- BCC FWS Bird of Conservation Concern
- State SSC CDFG Species of Special Concern (species that appear to be vulnerable to extinction)
- Fully Protected Species that cannot be taken without authorization from the Fish and Game Commission
- Status in parentheses (e.g., nesting, wintering) CNDDB tracks only the identified (e.g., nesting, wintering) locations of these species
- BLM Sensitive Species under review, rare, with limited geographic range or habitat associations, or declining. BLM policy is to provide the same level of protection as FWS candidate species
- WBWG = Western Bat Working Group (<http://wbwg.org>)
 - H – High Priority – These species should be considered the highest priority for funding, planning, and conservation actions.
 - M – Medium Priority – These species warrant closer evaluation, more research, and conservation actions of both the species and the threats
 - L – Low Priority – Most of the existing data support stable populations of the species and that the potential for major changes in status is unlikely

² CNDDB 2011: CDFG, CNDDB, Special Animals, January 2011 (www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf) and CDFG Special Vascular Plants, Bryophytes, and Lichens List, January 2011 (www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf).

Global Rank State Rank Subspecies or Variety Rank and Other Symbols

- G1 = Critically Imperiled S1 = Critically Imperiled T1-T5: same definition as global and state ranks, except that rank only applies to the particular variety or subspecies.
- G2 = Imperiled S2 = Imperiled X: species is considered extirpated
- G3 = Vulnerable S3 = Vulnerable
- G4 = Apparently Secure S4 = Apparently Secure
- G5 = Secure S5 = Secure
- SX= All California sites are extirpated

³ CNPS. 2011:

- List 1A - Plants presumed extinct in California
- List 1B - Plants rare and endangered in California and elsewhere
- List 2 - Plants rare and endangered in California but more common elsewhere
- List 3 - Plants about which CNPS needs more information
- List 4 - Plants of limited distribution (Watch List)
- (Note: CNPS lists 1 and 2 require CEQA consideration. List 4 plants that must be surveyed per the Northern and Eastern Colorado Desert Management Plan (BLM and CDFG 2002) were also included for surveying)
- Threat Ranks: 0.1-Seriously threatened in California (high degree/immediacy of threat)
- 0.2-Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

⁴ Species that are woody or large and were not observed during any surveys are noted as "Not Present"; others that are unlikely or were not observed but are herbaceous and may not have germinated or had aboveground growth, were noted as "Not Observed", but were not excluded from possibly being on the site. Summer annuals (a.k.a "fall-blooming annuals") are not annotated as they have yet to be surveyed during a period of adequate rainfall.

⁵ Not observed; however, no nocturnal surveys were conducted.

4.2 Field Surveys

4.2.1 Preliminary Surveys

Two preliminary surveys were conducted prior to the focused, comprehensive surveys completed in Spring 2011. In December 2007, preliminary reconnaissance surveys were conducted of the MSEP to identify and map vegetation communities as well as refine the species that might be present, subsequently establishing the appropriate search methods for focused surveys. In October 2010, McCoy Solar intended to conduct rare plant surveys for late summer and fall blooming annual plant species (i.e., late-season annual plants) according to protocols that were approved by the BLM, CDFG, and the FWS prior to field surveys (Tetra Tech EC and Karl 2010a). However, due to lack of rainfall, a reconnaissance-level survey of areas where fall-blooming rare plants would be most likely to occur revealed there was no germination of late-season annual plants, which precluded conducting a complete fall annual plant surveys. Instead, the surveys were conducted of the 7,700 acre requested ROW to map vegetation communities and land forms to determine development constraints. During the survey, observations of special-status species were documented, although this was not a comprehensive survey for special-status species because the site was sampled, not completely censused. The comprehensive surveys conducted in Spring 2011 supersede the Fall 2010 survey results.

4.2.2 Rare Plant and Vegetation Surveys, Spring 2011

4.2.2.1 Special-status Plant Species

Special-status plant surveys were conducted in the entire Project Area according to protocols that were approved by the BLM, CDFG, and the FWS prior to field surveys (Tetra Tech EC and Karl 2010a). These protocols were consistent with the CDFG Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009) and BLM's Survey Protocols Required for NEPA and ESA Compliance for BLM Special Status Plant Species (BLM 2009). Surveys were consistent with BLM (2009) guidelines for an intuitive controlled survey, wherein a full survey is completed (i.e., 100 percent visual examination) in habitats with the highest potential for rare plants, with sampling in the remaining areas. To this end, surveys focused on swales, washes, runnels, rocky outcrops, and dunes because of the affinity of the herbaceous species in Table 1 for those habitats and because areas where rainfall collects have the greatest potential for germination of most species. To achieve this focus, the Project Area was divided into three survey categories:

- Full coverage (transects spaced no farther than 10 meters apart, covering 100 percent of the possible habitat) in the areas where the interdigitating mosaic of washes and runnels was too complex to survey at <100 percent. This comprised approximately three-fifths of the Solar Plant Site and 100 percent of the Linear Corridor.
- Full coverage in all vegetated drainages, from small runnels to larger washes. This occurred in the broad desert pavement plain in the west.
- Sampling in broad interfluvial spaces.

The Project Area was divided into smaller sampling units (Cells and Segments) to optimize sampling (see Appendix C).

A highly qualified botanical team (Appendix D) conducted the botany surveys separately from the wildlife surveys to maximize results of both surveys. Surveys for spring-blooming and perennial special-status plants were conducted when plants were in optimum condition for identification (generally with blooms, fruits, and leaves). For the species in Table 1, surveys are necessary in early spring or late summer and/or fall when herbaceous species are blooming. (Woody and succulent perennials in Table 1 are easily identified when not blooming.) Prior to starting the surveys, the biological lead examined plant phenology almost weekly in the Project Area to optimize the survey timing. Because Spring 2011 was unusually cool, flowering was a little delayed, so plant surveys were similarly delayed, and began on 22 March. Surveys were then further chronologically prioritized to insure that the areas/habitats that could host special-status plants were surveyed at the appropriate phenological time, when those species were available for identification. Only one species, angel trumpets (*Acleisanthes longiflora*) blooms at another time – May. However, no limestone habitat to which it is restricted was identified during the spring surveys and therefore focused surveys in May were not necessary.

The Project Area received average to below-average precipitation in the months preceding spring, especially in the previous October and November, resulting in below-average germination and lower biomass of annual forbs (Table 2). Although the Project Vicinity received above-average precipitation for December 2010 and February 2011, precipitation in March was negligible, contributing to below-average plant germination and growth. However, despite the reduced germination and growth, many species were present. Perennials responded well to the above-average winter precipitation.

Table 2. 2008, 2009, 2010, 2011 Monthly Precipitation Data (in inches), Blythe, CA Airport

YEAR	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual
2008	0.77	0.02	0.00	0.00	0.18	0.00	0.27	0.15	0.06	0.00	0.24	0.65	2.34
2009	0.02	0.43	0.00	0.00	0.03	0.01	0.07	0.02	0.03	0.00	0.00	0.85	1.46
2010	2.12	0.90	0.67	0.01	0.00	0.00	0.00	0.03	0.00	0.26	0.00	0.54	4.53
2011	0.00	1.17	0.06	0.00	0.00	TBD							
Average 1948-2010	0.49	0.44	0.36	0.15	0.02	0.02	0.23	0.62	0.35	0.26	0.19	0.41	3.54

Source: Western Regional Climate Center (WRCC) (2011); J. Ashby, pers. comm. (2011)

TBD: To Be Determined – Data not currently available for these months

Prior to conducting surveys, surveyors reviewed the target species (descriptions, photographs of live or herbarium specimens, microhabitat associations) and inventory of all species observed on the site in previous surveys. Reference populations of target species were visited, where practical, to enhance search images of plants and microhabitats, as well as identify current phenology and plant vigor. Because of the high level of experience in the botany crew, different sites were visited by individual botanists to maximize the opportunity to observe more reference populations. Reference populations of shrubs that were visited by this same crew the previous fall were not visited again, as all surveyors were confident of their ability to identify these species.

Although plant surveys were conducted separately from wildlife surveys, the biologists also noted special-status plant species observed during the wildlife surveys. However, since the site is elevationally low, many annual plants had already bloomed by the time the wildlife surveys were conducted. Nevertheless, a plant inventory was made during the general biological survey.

Some special-status plant species, referred to as summer annuals, grow only in late summer or early fall, in response to summer rains. At least one fall-blooming species (Abram's spurge) has fairly high potential to occur on the MSEP, and several others are possible. Accordingly, a

second attempt to conduct rare plant surveys is planned for 2011 at the appropriate time in the late summer or early fall to detect these and other summer annuals. Surveys will be conducted according to protocol previously approved by the BLM, FWS, and CDFG for MSEP fall plant surveys (Tetra Tech and Karl 2010a).

4.2.2.2 Species Protected by the California Desert Native Plants Act

Certain desert plant species are protected under the CDNPA. The purpose of the CDNPA is to prevent the unlawful harvesting of native desert trees and cacti. Regulated species include: trees, cacti, ocotillo (*Fouquieria splendens*) and yucca, as well as fan palms (*Washingtonia filifera*). On MSEP, only several cacti species, ironwood, palo verde, honey mesquite, smoke tree, ocotillo, and catclaw acacia were present. All individuals of all species were counted, except in the catclaw-dense washes. There, two, 100-meter-long samples were taken in small washes and two in large washes, and the totals were extrapolated to the total length of both washes in each survey cell.

4.2.2.3 Vegetation Communities and Habitats

Surveyors described and mapped vegetation communities throughout the Survey Area. Vegetation communities were described based on biotic and abiotic features, including but not limited to species composition, species density and dominance, shrub cover percent, shrub height, common understory species, soils, substrates, hydrology, and topography. Mapping included communities determined by the BLM to be sensitive (e.g., Desert Dry Wash Woodland, Sand Dunes) or otherwise special, such as groundwater dependent vegetation.

4.2.2.4 Non-native Plants

Surveyors inventoried all invasive plant species and recorded the location of concentrations. Special attention was given to the highly invasive and noxious Sahara mustard, Russian thistle, and Tamarisk (*Tamarix* sp.). The nearly ubiquitous exotic annual, Mediterranean grass (*Schismus arabicus*), was identified but not evaluated for concentrations.

Invasive plants are defined as any non-native plant species that are injurious to the public health, agriculture, recreation, wildlife habitat, or the biodiversity of native habitats. The California Invasive Plant Council (Cal-IPC) categorizes invasive plants as high, moderate, or limited according to the severity of their ecological impact (Cal-IPC 2006). Invasive plants classified as high consist of species that have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure, and have a moderate to high rate of dispersal and establishment. Those classified as moderate consist of species that have substantial and apparent (but not severe) ecological impacts, and have a moderate to high rate of dispersal and establishment; however, establishment is generally dependent upon a disturbance regime such as soil disruption or fire. Those classified as limited consist of species that are invasive, but whose ecological impacts are minor on a state-wide level. Dispersal and establishment of species classified as limited are generally low to moderate.

4.2.3 Wildlife Surveys, Spring 2011

Based on the results of the literature review, results of the field surveys conducted to-date, and agency letters, surveys were completed for the species in Table 1 in the entire Project Area and buffer. Survey methods were reviewed and approved by BLM, FWS, and CDFG prior to commencing field work (Tetra Tech and Karl 2011) and were conducted in accordance with standardized protocols for all relevant species for which there are protocols, and used biologically sound approaches for the remaining species. Surveys incorporated the NECO Plan

requirements. The NECO Plan has specifically identified situations for which surveys must be completed for projects in the NECO planning area. Those that are relevant to MSEP include the following:

- Special-status plants – Survey in all mapped ranges
- Special-status wildlife – Survey at all known locations
- Bats – Identify all significant roosts within one mile
- Prairie falcon and golden eagle - Identify all eyries within 0.25 miles
- Burrowing owl – Identify presence and locations
- Crissal thrasher - Identify presence
- Couch's spadefoot – Identify all ephemeral impoundment areas
- Natural and artificial water sources – Identify presence within 0.25 miles

Due to the Project's sparse vegetation, relatively flat topography, and highly experienced field crew, surveyors searched for burrowing owl, Mojave fringe-toed lizard, and other special-status species listed in Table 1 concurrently with desert tortoise surveys, unless species-specific survey methods are otherwise outlined below. Rare plants were surveyed separately from the wildlife survey (see Section 4.2.2.1 Special-status Plant Species, above). Survey methods for each taxon or taxa group are described below.

4.2.3.1 Desert Tortoise

Qualified Biologists (Appendix D) conducted presence-absence desert tortoise surveys from April 7 through April 21, 2011. Biologists followed the timing and temperature requirements in the FWS (2010) survey protocols. The protocol requires that surveys be conducted during the tortoise's most active period, typically April through May, and September through October when air temperatures are below 40 degrees Celsius (104 degrees F).

Surveys were conducted according to direction provided by FWS for surveying projects in California that was applied to the MSEP (T. Engelhard pers. comm. to Tetra Tech 2011), and were designed to ensure that adequate desert tortoise surveys were conducted for the entire Project "Action Area". This included surveying the Solar Plant Site using 30-foot-wide, contiguous transects to achieve 100 percent visual coverage. In addition, a single, 30-foot-wide buffer transect was walked at 655 feet (200 meters), 1,310 feet (400 meters), and 1,970 feet (600 meters) from the Solar Plant Site boundary, except south into Solar Millennium's BSPP (where protocol surveys have already been completed and construction is already underway in some areas) and west into the potential tortoise translocation area (which was surveyed at 100 percent coverage, see below) (Figures 5A and 5B). (Note: the transect at 655 feet was replaced by the burrowing owl transect at 500 feet; see Section 4.2.3.4 Burrowing Owl, below.) Transects were pre-programmed into Global Positioning System (GPS) units to ensure accurate and complete site coverage. Survey teams were generally limited to three people, including an experienced navigator who could simultaneously look for special species, to minimize the searching and focus inefficiencies that are common with larger teams.

¹ "Action Area" is a term used by FWS to denote all areas in which a listed species may be directly and indirectly affected by project activities.

The Linear Corridor was surveyed to achieve 100 percent coverage. Although the final Linear ROW width will be approximately 100 feet, surveys covered at least a 240-foot-wide corridor to allow for flexibility in siting the Linear Facilities. Biologists walked transects spaced approximately 30 feet apart within this corridor. In addition, biologists walked a single 30-foot-wide buffer transect at 655 feet (200 meters), 1,310 feet (400 meters), and 1,970 feet (600 meters) parallel to the boundary of the 240-foot-wide Linear Corridor. (Note: the transect at 655 feet was replaced by the burrowing owl transect at 500 feet; see Section 4.2.3.4 Burrowing Owl, below.)

The potential tortoise translocation area also was surveyed in Spring 2011 (Figure 5A) to determine tortoise habitat and density and to evaluate the suitability of this area for translocation. Surveys were conducted at 30-foot intervals throughout the 1,733-acre area, except in densely vegetated washes, where they were narrowed. In the highly marginal habitat along the talus slopes at the potential translocation area's outer, western edge, the most likely habitats (drainages) were all searched for tortoise sign, and the surrounding area was sampled.

On all transects, including buffer transects for burrowing owls, all tortoise sign (tortoise signs, burrows, shells, scat, tracks, drinking depressions) observed was measured, mapped, and described relative to condition, age (using a key to sign classes [Appendix E]) and, if possible, gender; coversite locations were additionally described relative to location and associated sign. No tortoises were touched. Tortoises were photographed only if it could be achieved without touching or otherwise harassing the tortoise. Tortoise location (e.g., aboveground, visible in burrow, not visible in burrow) was recorded. Shells and shell parts were evaluated relative to the cause of death, if possible. Current and recent weather conditions were recorded and the topography, drainage patterns, soils, substrates, plant cover, and aspect-dominant, common and occasional plant species described and mapped. All incidental sightings of common ravens, other known tortoise predators, and other site features (e.g., anthropogenic influences) that could assist in the analysis of tortoise population impacts were recorded and mapped. Mapping was achieved using a GPS unit. All transect data was recorded on specially-designed data forms (Appendix C) and representative areas photographed.

4.2.3.2 Mojave Fringe-toed Lizard

There are no formal survey protocols for Mojave fringe-toed lizards; therefore, surveys were conducted concurrently with desert tortoise surveys from April 7 through April 21, 2011. Desert tortoise surveys achieved 100 percent visual coverage (approx. 30 foot transects) of the ground surface of the Solar Plant Site and Linear Corridor; therefore, this survey intensity was sufficient to determine presence or absence of Mojave fringe-toed lizards, as well as mapping the boundaries of Mojave fringe-toed lizard habitat. Surveys were conducted when temperatures were sufficiently warm that lizards were active (many fringe-toed lizards were observed).

4.2.3.3 Couch's Spadefoot

During desert tortoise and wildlife surveys, including buffer transects (see desert tortoise survey methods, above), biologists recorded and mapped any artificial or temporary water catchments that could serve as potential breeding pools for Couch's spadefoot, based on evidence of ponding, vegetation, soil composition, and evidence of inundation. In order to be considered breeding habitat, pools must be present for at least eight days. Therefore, any potential breeding habitat detected during spring surveys will be revisited in Summer 2011 during monsoons to verify if toads are present. If toads are present during summer monsoons, biologists will collect data according to the protocol previously approved by the BLM and CDFG for the MSEP (Tetra Tech and Karl 2010a). Surveys were attempted in Fall 2010 but were not completed due to lack of rainfall.

4.2.3.4 Burrowing Owl

The burrowing owl is a California Species of Special Concern and although it is not listed by the federal or state ESA, its potentially compromised status prompted a previous proposal for state listing. Even though the listing proposal was rejected, the burrowing owl remains a high-profile species with the resource agencies. It is also legally protected under other the MBTA and CDFG Codes 3503, 3513.

CDFG generally requires protocol surveys for burrowing owls that are consistent with the California Burrowing Owl Consortium (CBOC) Guidelines (CBOC 1993). The guidelines project a set of consecutive surveys, each following the previous based on the latter's results:

- Phase I: Habitat Assessment – This “first step in the survey process is to assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 feet) buffer zone around the project boundary...”
“The Phase II burrow survey is required if burrowing owl habitat occurs on the site. If burrowing owl habitat is not present on the project site and buffer zone, the Phase II burrow survey is not necessary.”
- Phase II: Burrow Survey – “A survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx. 500 feet) of the project impact zone. This 150-meter buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area.”
- Phase III: Owl Presence – “If the project site contains burrows that could be used by burrowing owls, then...surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.” The survey methodology requires four site visits, each on a separate day. Birds are observed from two hours before sunset to one hour after sunset, or from one hour before sunrise to two hours after sunrise. The four visits are initially conducted during the nesting season, February 1 to August 31, although it is preferable to survey at the height of the breeding season, between April 15 and July 15. If no owls are observed during the nesting season, then “winter surveys should be conducted between December 1 and January 31... (to) count and map all owl sightings, occupied burrows, and burrows with owl sign.”

The Phase I survey was completed in December 2007 during the reconnaissance field visit. Burrowing owl habitat is present throughout the Project Area. Phase II surveys were completed from April 7 through April 21, 2011 during the desert tortoise protocol surveys. Additionally, per CBOC Phase II survey guidelines, surveys were conducted within 500 feet of the Project boundary with transects spaced every 100 feet – i.e., surveyors walked a buffer transect 100, 200, 300, 400, and 500 feet from the Project Area boundary. During these buffer transects, all observations and sign of all special-status animals, in addition to burrowing owls, were recorded.

Because burrowing owl sign was found during the Phase II burrow surveys, biologists conducted Phase III nesting-season surveys. Phase III surveys were conducted in two parts, the first in April and the second in June to allow for owls to move into the area. From April 18 through April 21, biologists surveyed the areas where burrowing owls or their sign were found during the Phase II surveys. A biologist visited and monitored these areas at least twice, generally once during three hours around sunset (two hours before and one hour after) and

once during sunrise hours (one hour before and three after). Additionally, biologists conducted walking and driving surveys of suitable burrowing owl habitat during sunrise and sunset hours to detect burrowing owl activity in other areas of the Project Area. Two biologists returned on June 14 through June 16 to complete the remaining two visits. They re-visited the locations where active or recent owl burrows had been identified in April, then walked and drove other locations on the Project Area that had not been surveyed during Phase III surveys in April.

4.2.3.5 Golden Eagle

During Spring 2010, Wildlife Research Institute (WRI) conducted helicopter surveys to detect golden eagle nesting activity, in accordance with the FWS Interim Golden Eagle Inventory and Monitoring Protocols (Pagel et al. 2010). The 2010 helicopter survey was a collaborative effort among three solar developers for four proposed projects located north of I-10 between the town of Desert Center and Blythe, CA. The survey coverage included an approximate 10-mile survey buffer from each project's ROW boundary. One of the projects was Solar Millennium's BSPP directly south of the MSEP, and therefore, surveys also covered the entire MSEP and portions of its 10-mile buffer (Figure 6).

At the request of the FWS and to provide a second consecutive year of golden eagle nest data within 10 mi of the Solar Plant Site ROW Application Boundary, aerial surveys were conducted on March 23 and 24 (Phase 1), and May 5, 6, and 7, 2011 (Phase 2) of the MSEP. These survey periods coincided with the most appropriate time to observe nesting activity and productivity, and focused on areas containing suitable nesting habitat within the search area. WRI conducted the surveys following the FWS protocols (Pagel et al. 2010), and covered approximately 314 square miles.

WRI considered a nest inactive if they did not find evidence of an adult at or in close proximity of a nest or the nest did not contain eggs, young, or fresh nesting material. Assigning an inactive stick nest to a species is challenging because a nest might be used by different species in each year and the characteristics of nests overlap for some species. However, golden eagle nests can often be distinguished from hawk, falcon, and raven nests by size and placement. Golden eagle nests are constructed of sticks and the bowl of the nest can be lined with a wide variety of vegetation types, including shredded yucca (*Yucca* spp.), grasses, dry yucca leaves (Slevin 1929, Dixon 1937), strips of inner bark, dead and green leaves, soft mosses, and lichens (Gabrielson and Lincoln 1959). Golden eagle nests are large, and the adults often add material to the nest prior to use each year. Thus, inactive nests were conservatively considered golden eagle nests based on the nest characteristics, the experience of the lead observer, and nest placement on the landscape.

Golden eagles often have more than one nest in a territory, and two or three alternative nests sites is most common (Kochert et al. 2002). The spacing between nests within a territory varies with terrain features and the proximity to other eagle pairs and can range from <3.3 feet (1 meter) to >3.1 miles (5 kilometers) (McGahan 1968, Boeker and Ray 1971). Pairs may investigate multiple nests before choosing a nest for laying, with some pairs using the same nest every year and some switching nests sites between years, regardless of reproductive success the previous year (Boeker and Ray 1971). Therefore, the total number of nests should not be construed as representative of the number of locally breeding golden eagles because (1) there is no simple correlation between the number of alternative nests and eagle pairs; (2) the tally of nests was conservative and may have included nests of other species; and (3) eagle nests can last for decades. However, WRI categorized the nests into territories based on the proximity of the nests to each other and the arrangement of the nests within the landscape. The number of territories is equivalent to the number of breeding eagle pairs that could be active within the 10-mi survey area and should be considered an estimate.

In addition to the helicopter surveys, biologists conducted modified Avian Point Count (APC) surveys to gain an understanding of golden eagle and other raptor use of the site. The APC Plots (see Section 4.2.3.6, Avian Point Count Surveys, below) were modified once weekly during spring point count surveys, specifically to examine raptor behavior (e.g., foraging, migrating) over the Project Area, particularly by golden eagles. At each plot on the Solar Plant Site and Linear Corridor, one of the points was randomly chosen for a 10-minute-long survey during midday, when raptors are foraging following thermal lift and prey are still active (i.e., before temperatures are too high for diminished activity). Each point count had an unlimited distance in all directions, which allowed for tracking the movements of large birds such as golden eagles over a large area. In addition to surveying for foraging golden eagles for 120 minutes each week during early spring, an additional set of surveys was completed midday on June 15 and 16. Thirty-minute surveys, with unlimited distance, were conducted at APC Plot (12 locations) on the Solar Plant Site and the Linear Corridor.

4.2.3.6 Other Avian Surveys

Avian Point Count Surveys

To inventory avian species and identify use of the site by special-status bird species, biologists conducted APC surveys of the Solar Plant Site and Linear Corridor on April 12-13, 16-17, 23-24, 30, and May 1. APC surveys were conducted one day per week per plot for four consecutive weeks. A minimum of two point count plots were conducted per habitat type for a total of 12 plots covering the Project Area (Figure 7, Table 3). There were five plots within the Solar Plant Site, one per 2 square miles (5.2 square kilometers) and seven plots along the Linear Corridor, one per two linear miles (3.2 kilometers). Specific locations within each of these 12 areas were chosen randomly, but within each location, sampling was refined to focus on areas where the highest abundance of birds was likely to occur (e.g., drainages, trees). Each plot consisted of at least four points spaced 660 feet (200 meters) apart. Each point count had a 660 foot (200 meter) radius for non-raptors and an unlimited radius for raptors and common ravens. Point counts were 10 minutes long (i.e., 40 minutes per plot) and were conducted between sunrise and four hours after sunrise, with an extension to approximately 1100 h when temperatures did not preclude bird activity.

Table 3. Habitat Types of Avian Point Count Plots¹

Point Count Plot	Habitat Type
1	Desert Pavement Plain; 3-10 meters Incised Washes
2	Desert Pavement Plain; 3-10 meters Incised Washes
3	Well-Developed Desert Pavement/Desert Pavement Plain; 3-10 meters Incised Washes
4	Well-Developed Desert Pavement
5	McCoy Wash/Well-Developed Desert Pavement
6	Well-Developed Desert Pavement/Pebble Plain
7	Well-Developed Desert Pavement/Agriculture
8	Well-Developed Desert Pavement/Pebble Plain
9	McCoy Mountains Toeslopes and Mid-Bajada; Arboreal Washes
10	Lower Bajada; Few Drainages and Intermittent Low Sand Dunes and Swales
11	Sand Dunes
12	Lower Sand Dunes and Sandy Lower Bajada; Sheet Flow, Swales, and Percolation

¹ See Figure 7 for Project Area habitats and locations of APC plots.

The APC survey results were analyzed by dividing birds into species groups and calculating mean use and frequency. Avian mean use was derived by calculating the average number of birds observed per 10-minute survey at each plot. In addition, the number of observations is presented, where an observation can be either an individual bird or a discrete flock of birds. This information helps evaluate whether or not high mean use is driven by a single event (e.g. flock of birds). Because individual birds are not uniquely marked and identified, actual population size or abundance cannot be determined. One individual may be counted multiple times during a survey period or across survey periods. Therefore, avian use does not directly equate to abundance; nor does it reveal information on bird behavior.

Gila Woodpecker and Gilded Flicker Surveys

Focused surveys for Gila woodpecker and gilded flicker were conducted in any possible, even marginal, habitat identified during surveys within the Survey Area. The closest potentially suitable habitat near the Project is within McCoy Wash to the east of the Solar Plant Site. Therefore, a biologist monitored 7-10 locations, separated by 1,650 to 2,475 feet, in McCoy Wash on April 11 and April 15 between 9:00 am and 2:30 pm. All sightings of woodpeckers and their signs, as well as behavior if birds were observed, were recorded. All other birds detected were tallied as well. At each sampling point, the nearest 10 trees were identified to species and visually measured for height and crown width; diameter at breast height was attempted but abandoned because of the multistemmed growth habit of palo verde and ironwood. The quality of potentially suitable habitat was evaluated.

4.2.3.7 Bats

NECO requires surveys to locate significant bat roosts within one mile of the Project to identify potential impacts from loss of foraging habitat to core population units. However, the MSEP is proposed for flat areas of the desert with few trees, minimal relief, and no nearby reliable water sources, and whereas the Project Area may serve as a foraging area for some species of bats, no bats are known to roost or hibernate in the sparse creosote bush scrub that typifies this area. Some species may, however, roost in trees or rock crevices. Although the amount of area to be dedicated to the Project may permanently reduce bat foraging opportunities, no surveys are required to come to this conclusion, and bat surveys in nearby mountains and McCoy Wash woodland would not contribute to an understanding of the impact of the Project on sensitive bat species. Therefore, no focused bat surveys were conducted. However, during desert tortoise surveys, including buffer transects (see desert tortoise survey protocol, above), biologists searched for and recorded any potential bat roosts and hibernacula such as abandoned mines and caves. If a significant bat roost were identified on the site, then a bat expert would be contacted to identify the species and potential impacts of the Project on the species. If significant roosts or hibernacula were confirmed, additional focused bat survey requirements would be discussed and approved with the agencies.

4.2.3.8 Other Special-status Wildlife

Other special-status wildlife surveys and wildlife inventories were conducted concurrently with desert tortoise surveys. All incidental observations of special-status wildlife species listed in Table 1, or their signs (e.g., scat, tracks, bones, feathers) or habitats (including water sources and apparent trails), were included when compiling and mapping survey results. All deer and desert big horn sheep scat were collected for later analysis to determine species. Although desert kit fox is not a special-status species, no take is permitted by CDFG. Therefore, in addition to recording foxes, surveyors recorded and mapped all kit fox natal dens or other burrow complexes. All signs of all special-status species was qualified relative to age, size, and other factors that could illuminate the potential use of the site by the species.

4.2.3.9 Small Mammals

Biologists conducted trapping for small mammals on six trap-nights (100 traps per night) to inventory nocturnal rodents for determining the burrowing owl prey base and to determine if Colorado Valley woodrat is present. Two locations representative of the two major habitats on the plant site were trapped (Figure 5A). Trapping was split into two sessions, April 16-18 and June 19-23, to observe reproductive output. Each site was trapped for 300 trap-nights using 100, 15-inch Sherman live-traps, set in a 4 by 25 configuration (four lines of 25 traps each), with lines spaced 25 meters apart and traps spaced at 15 meters. Lines were set across the slope to capture the mosaic of the habitat and interfluvial habitats. Traps were opened approximately one hour before dark and baited with a mixture of crimped oats, rolled oats, bird seed, and peanut butter. Traps were checked near dawn the following morning. Data gathered included: species, age, gender, reproductive condition, mass, if a recapture (pelage clipping), the number of sprung traps, weather (ambient temperature, wind speed, cloud cover) and moon phase the previous night, and presence of ants.

4.2.3.10 Invertebrates

The three invertebrates in Table 1 are not state or federally listed; nor have they been identified by the resource agencies as special-status; therefore, surveys were not specifically conducted for them. Dr. David Faulkner (Forensic Entomology Services and the San Diego Natural History Museum, San Diego, CA) reviewed available literature to determine if any pollinators might be specific to the Project Area or to plants in the area, but was unable to find any special associations.

5.0 SURVEY RESULTS AND DISCUSSION

This section describes the results of the Spring 2011 surveys and focuses on special-status species observations. A complete inventory of plants and wildlife observed during surveys can be found in Appendix F.

5.1 Rare Plants and Vegetation

5.1.1 Special-status Plant Species

Botanists did not find any federally or state-threatened, endangered, or candidate plant species during surveys. However, botanists did observe six CNPS-ranked plants within the Project Area: Harwood's phlox, Las Animas colubrina, Harwood's milkvetch, Utah cyananthus, ribbed cryptantha, and desert unicorn plant (Figure 8A and 8B). Each is described below. Detailed results are in Appendix G.

Harwood's Phlox (CNPS 1B; Rank S2/G2)

This member of the Polemoniaceae family is an annual herb native to California dunes and sand sheets, at elevations ranging between 630 and 3000 feet (CNPS 2011). The species pale yellow flowers, which appear from March to June, conspicuous wooliness, location in creosote bush scrub, and loose-sand association distinguish it from other *Eriastrum* spp. (Gowen 2008). Prior to 2009, it was only known from the eastern Mojave Desert in San



Photo: Tim Thomas

Harwood's phlox growing on the MSEP Linear Corridor.

Bernardino and far northern Riverside County, and two locations in the far western Coachella Valley and northeastern San Diego County (CNPS 2009). Surveys for several solar projects in 2009 and 2010 established range extensions into the I-10 corridor (CNPS 2011). Harwood's phlox was found on Solar Millennium's BSPP (AECOM 2010a) and Palen Solar Power Project (PSPP: AECOM 2010b), and a single, likely plant (past flowering) was found on a Genesis Solar Power Project buffer transect. On MSEP, Harwood's phlox is distributed in the sand dunes and sheets of the switchyard and Linear Corridor. The total population size in the Survey Area was approximately 386+ individuals.

Las Animas Colubrina (CNPS 2; Rank S2S3/G4)

This 6-10-foot-tall, deciduous shrub in the family Rhamnaceae is native to southeastern California, Arizona, Baja California and northern Sonora, Mexico (CNPS 2011). It is commonly found in the drainages and runoff areas of rocks in the creosote bush scrub plant community of the Sonoran Desert at elevations below 3,300 feet (Baldwin et al. 2002). The species usually blooms in April and May, depending on the timing of winter storms (Sawyer 1993, CalFlora 2011); the fruit is a dry capsule. The species is common in the drainages of the western portion of the Solar Plant Site, although never abundant. The total approximate population size is 267+ individuals.



Photo: <http://www.worldbotanical.com/colubrina.htm>

Las Animas colubrina

Harwood's Milkvetch (CNPS 2; Rank S2.2?/G5T3)

This annual herb in the Fabaceae family grows in sand-based soils of the Sonoran creosote bush scrub community, at elevations of 300 to 1,200 feet (Munz and Keck 1968, Baldwin et al. 2002). Blooming occurs from February to May, depending on ambient temperatures and rainfall. In most years, the species is present within its range in low numbers, often in graded areas such as otherwise denuded road shoulders, probably a response to scarification of the seed coat by machinery. In high rainfall years, it is very abundant, especially in old road berms (A. Karl, personal observation). It is easily distinguished from the generally more common and widespread, sympatric *Astragalus aridus* by its nearly glabrous, spreading to reflexed, inflated pods; more subtle differences include leaflet separation and shape.



Photo: E. Mix

Harwood's milkvetch seed pod and bud.

Harwood's milkvetch was previously known in California from a few scattered locations in Blythe and west. Surveys for several energy-related projects have expanded the known locations substantially to the west through Desert Center and north, to the Anza Borrego Desert and near the Salton Sea, and to Yuma (CNPS 2011). Harwood's milkvetch was present in relatively low numbers on the Genesis and Solar Millennium I-10 projects and the Devers-Palo Verde II corridor surveys (Karl and Tetra Tech EC 2005).

Harwood's milkvetch was found on MSEP in swales of the eastern portion of the Solar Plant Site, and scattered on the Linear Corridor and switchyard. The population size in the entire Survey Area is estimated to be 465+ individuals.



Photo: Alice Karl

Abundant Harwood's milkvetch growing in a dirt road in Spring 2005, following a high-rainfall winter.

Utah cynanchum (CNPS 4; Rank S3.2/G4)

This perennial herb in the milkweed family (Asclepiadaceae) is found mostly on dry, sandy or gravelly desert areas, at elevations below 3300 feet (Baldwin et al. 2002). It was previously considered uncommon in California (Baldwin et al. 2002, CNPS 2011), and known only from the Mojave Desert, extending to Utah and Arizona (Hoffman 1993, CalFlora 2011). The Consortium of California Herbaria (Consortium) has California records only in San Bernardino County (Consortium 2011). The large energy-related surveys in the I-10 corridor in 2009 through 2010 documented a far more common species. Utah cynanchum was found on both the of the Solar Millennium projects. On the MSEP, it is common to patchily abundant in many drainages, including small runnels. Plants most frequently grew through other plants, using the latter for structure, but also grew independently on the ground. Population size within the Survey Area is estimated at 5180 + plants.



Photo: Alice Karl

Utah cynanchum vining onto big galleta grass for support.



Photo: Rachel Woodard

Utah cynanchum in flower and bud.

Ribbed Cryptantha (CNPS 4; Rank S3.3/G4G5)

This annual herbaceous species in the Boraginaceae is found in sandy locations below 1500 feet in the eastern Mojave and Sonoran Deserts to Arizona and Baja California (Baldwin et al. 2002). The blooming period is February to May (Calflora 2011). Like many other species, surveys for the large solar projects in the I-10 corridor in 2009 and 2010 documented several additional populations of the species. Both the Genesis and Palen Solar Energy Projects found tens of thousands of individuals; BSPP found fewer (Tetra Tech and Karl 2010b; AECOM 2010a). On the Genesis Solar Energy Project most sand sheets were found to host ribbed cryptantha. Similarly, on the MSEP 2011 survey, this species was found on the sand sheets of the Linear Corridor south of I-10. Populations were scattered but large; the total number of plants was estimated at 1715+.



Photo: T. Thomas

Ribbed Cryptantha

Desert Unicorn Plant (CNPS 4; Rank S3.3/G5)

This perennial herb grows on deep, alluvial sands in Sonoran Desert Scrub habitat (Reiser 1994), at elevations below 3,300 feet. While thought to be uncommon in California (Baldwin et al. 2002), we found it to be quite common on the MSEP Solar Plant Site, primarily in swales that held water for a short time. This is consistent with observations on the Genesis Solar Energy Project in 2008 and 2009.

Desert unicorn plant has a fleshy root system that can remain dormant in dry years. It typically grows and flowers between July and September after substantial summer rains. However, some individuals have above ground growth in spring, and fruits (seed pods) from the previous year are large and moderately visible, so presence of this species is fairly easily established.

This species is distributed throughout the central part of the Solar Plant Site and in portions of the Linear Corridor. We observed locations for 55+ plants within the Survey Area, mostly based on seed pods.



Desert unicorn plant in flower

5.1.2 CDNPA Species

Biologist observed and tallied 11 species protected by the CDNPA during Spring 2011 surveys (Table 4). The most numerous cactus species in the Project Area was silver cholla (*Cylindropuntia echinocarpa*) and the most numerous small tree was catclaw acacia.

Table 4. CDNPA Species found during Spring 2011 Surveys within the Project Area

Species	Solar Plant Site ¹	Linear Corridor	Switchyard	Total
Palo verde (<i>Cercidium floridum</i>)	778 294		0	1072
Ironwood (<i>Olneya tesota</i>)	20	807	0	827
Honey mesquite (<i>Prosopis glandulosa</i>)	0	21	0	21
Catclaw acacia (<i>Senegalia [Acacia] greggii</i>)	Abundant ² 0		0	Abundant
Silver cholla (<i>Cylindropuntia echinocarpa</i>)	3828	150	0	3978
Pencil cholla (<i>Cylindropuntia ramosissima</i>)	1000	7	0	1007
Fish-hook cactus (<i>Mammillaria tetrancistra</i>)	63	1	0	64
Cottontop cactus (<i>Echinocactus polycephalus</i>)	99	4	0	103
Beavertail cactus (<i>Opuntia basilaris</i>)	65 0		0	65
Barrel cactus (<i>Ferocactus cylindraceus</i>)	75 0		0	75
Ocotillo (<i>Fouquieria splendens</i>)	17 0		0	17

¹ Number of individuals is estimated due to the reduction of the Solar Plant Site after surveys were complete.

² Catclaw acacia was generally abundant (approx. 200 – 500 plants) to very abundant (> 500 plants) in the washes and runnels in the western half of the Solar Plant Site.

5.1.3 Sensitive Plant Communities

No BLM Sensitive plant communities occur within Solar Plant Site. A Palo Verde-Ironwood Woodland Alliance (equivalent in this location to NECO's Desert Dry Wash Woodland) characterizes McCoy Wash, east of the Project Area but is not present within the Project Area. South of I-10, well-developed, low sand dunes (equivalent to NECO's Stabilized and Partially Stabilized Sand Dunes) are characteristic of the Linear Corridor along the east-west leg and in most of the switchyard.

An artificially created honey mesquite-palo verde bosque-ironwood bosque grows in a borrow pit north of I-10 (Figure 3). Generally, mesquite is considered a phreatophyte, one of a group of plants that obtain at least some of their water from shallow groundwater (Cooper et al. 2006). But the borrow pit is a periodically flooded basin that holds water for varying amounts of time (depending upon frequency and intensity of rainfall). The plants that grow in this basin are probably primarily dependent upon this periodic flooding rather than near-surface groundwater. Surveyors did not observe any other locations in which groundwater-dependent plants grew, with the exception of two introduced tamarisk in a small swale along the southwestern border of the Solar Plant Site.

5.1.4 Non-Native Plants

Surveyors detected 10 non-native species during Spring 2011 surveys: Sahara mustard, tamarisk, Russian thistle, London rocket (*Sisymbrium irio*), puncture vine (*Tribulus terrestris*), blue panicgrass (*Panicum antidotale*), cheeseweed (*Malva parviflora*), pigweed (*Chenopodium album*), goosefoot (*C. murale*), and Mediterranean grass. Most were rare. Sahara mustard and, often, Russian thistle are dense throughout much of the sand dunes south of I-10. Elsewhere south of I-10 on the Linear Corridor, Sahara mustard is abundant, and grows under most creosote bushes. On the Linear Corridor north of I-10 and on the Solar Plant Site, Sahara mustard is generally intermittently and sparsely present and confined to washes and runnels. The major exception is the agricultural operation east of the Project Area, where both Sahara mustard and Russian thistle are dense in the swales, and common along both the field edges and in tilled fields. Surveyors recorded 20 tamarisk along an unnatural swale north of and paralleling I-10 and two in the southwestern corner of the Solar Plant Site.

5.2 **Wildlife**

5.2.1 Listed Species

5.2.1.1 Desert Tortoise (FWS: *Threatened*; CDFG: *Threatened*)

Solar Plant Site

One tortoise, an adult male, was observed on the Solar Plant Site, in the northwestern corner (Figure 9A, Table 5). All of the observed scat and freshly used burrows were also in the vicinity of that tortoise, and the few other burrows (which had not been used since winter) were almost exclusively located in the northwestern corner of the Solar Plant Site, continuing west into the proposed translocation area. Current tortoise usage of the remainder of the Solar Plant Site, which would be indicated by burrows, scat, and tortoises, was almost negligible and probably transient. There were no concentrations of sign or well-used burrows that would suggest continued use. However two relatively recent burrows found in the eastern half of the Solar Plant Site support the observation of minor transient use across portions of the site. Although the entire Solar Plant Site could be considered tortoise habitat, few tortoises would be expected in most of the site because of the poor cover both in and out of the washes and the suggestion from such low species richness and stature that the forage base may be similarly depauperate. Instead, tortoises are associated with incised drainages and/or sheet flow, which offer cover via the relatively dense shrub and grass vegetation, as well as natural cavities in the banks. Forage potential is also somewhat higher here than in the flatter portions of the site because of water flow. The drainages, then, are the best habitat that this site has to offer tortoises, but are not high quality habitat in and of themselves. Coversites are prone to flooding and forage, while higher there than in the interfluves, is still limited.

Although tortoises are associated with the more richly vegetated, incised drainages in the west, there is ample similar habitat elsewhere on the Solar Plant Site that is not occupied (i.e., no scat, burrows, or tortoises) (Figures 3 and 9A) supporting the observation that tortoise densities are simply very low on the Solar Plant Site and in the immediately adjacent area and not all suitable habitat is occupied. Two methods are used to estimate density on the Solar Plant Site. The first is from the FWS (2010) protocols. This method calculates density using live tortoises observed as the metric for that estimate. Table 3 of the protocols provides a spreadsheet wherein visible tortoises seen per transect and the number of kilometers of transects walked are used to calculate a point estimate for density and 95 percent confidence interval. The following variables are also taken into account:

P_a – The probability that a tortoise will be aboveground is based on precipitation levels the previous October through March. If total precipitation equals or exceeds 40 mm (approx. 1.5 in), FWS has determined that the P_a=0.8. For Blythe, the rainfall from October 2010 through March 2011 was 2.03 in (Table 2).

Action Area – The Action Area is that area within which a project will affect the listed species. This generally extends beyond a project footprint and includes all indirect impacts. For MSEP, the final footprint is unknown, but will be less than the Solar Plant Site surveyed in Spring 2011. Furthermore, FWS specifically directed us to survey the current Solar Plant Site footprint at 100 percent coverage, with three buffer transects (T. Engelhard, Carlsbad Field Office, pers. comm. to Tetra Tech 2011). FWS (2010) protocols require identical coverage throughout the Action Area, not 100 percent in some parts and sampling in others. By default, then, the Carlsbad Field Office designated the MSEP Solar Plant Site footprint as the Action Area. The surveyed MSEP Solar Plant Site was 5,738 acres.

Transect Length and Number – Sixty, 30-foot-wide, 0.5 mile-long transects were completed in each survey cell. There were approximately 54 survey cells in the surveyed Solar Plant Site. (This is a conservative estimate, because the survey cells were rectangular and the Solar Plant Site edges were angled. Also, the southern edge of the Solar Plant Site did not extend quite to the edge of the survey cells along that border.) So, there were 3,240, half-mile long transects walked in the Solar Plant Site.

Using the above values, the FWS method calculates that 1.8 adult tortoises (range: 0.33-9.65) occupy the Solar Plant Site. This translates into a point density estimate of 0.2 adult tortoises per square mile.

An alternative method for estimating density uses the type and distribution of sign, plus home range sizes. Recent tortoise sign (scat and burrows) on the site is grouped into two areas of relatively low concentrations in the northwestern portion of the Solar Plant Site. One group is obviously associated with the observed tortoise; the second concentration, which consists of adult-sized burrows, may be this tortoise's as well or a second adult tortoise's. If a 1,980-foot (600-meter) home range radius² is assumed, then one of the tortoises observed in the proposed translocation area might also occupy the Solar Plant Site. Assuming two tortoises in the Solar Plant Site yields an estimated density of approximately 0.2 adult tortoises per square mile.

These very low densities and uneven use of the Solar Plant Site, with nearly all use concentrated in the western portion of the Solar Plant Site and west to the mountains, are consistent with the results from the Blythe Solar Power Project surveys in 2009 and 2010 (AECOM 2010a). Those surveys found only three adult tortoises in one year of surveys and four in the next year. Tortoise sign indicating use (i.e., burrows, scat, tortoises) was all in the western portion of the project and further west to the McCoy Mountains. This western strip between the

² Using Minimum Convex Polygon techniques, home ranges were calculated as 43.5 acres (range: 4.7 to 143.3 acres) for adult females and 111.6 acres (range: 10.4 to 487.8 acres) for males, in a 3-year study when tortoises were recaptured at least 50 times per year (TRW 1999). Home ranges were substantially smaller in studies with sample sizes of <21 tortoises and/or short study length (Burge 1977; Barrett 1990; O'Connor et al. 1994; Duda et al. 1999). Using the longer-term study as a conservative estimate, the mean radius of a male's home range would be 1980 feet.

projects' western borders and the McCoy Mountains comprises a continuous corridor of occupied habitat linking tortoises north of MSEP to those south of BSPP.

Table 5. Summary of Desert Tortoise Sign Observed Spring 2011

Tortoise Sign Type	Number of Observations				
	Solar Plant Site	Linear Corridor	Within 600 Meters of Plant Site and Linear Corridor	Potential Translocation Area	Total
Individual 1		1	0	3	5
Burrow	8	2	0	13	23
Potential Burrow	14	0	1	5	20
Scat (not associated with burrow)	7	0	0	9	16
Carcass <4 years old	4	0	1	5	10
Carcass >4 years old	26		0*	14*	40
Shell Fragment < 4 years old	4	1	0	0	5
Shell Fragment > 4 years old	170 2		11	8	191
Permineralized Shell Fragment	36 7		7	0	50

*Three carcasses in the potential translocation area are within 600 m of the Solar Plant Site.

Although the many shell fragments found on the Solar Plant Site certainly indicate that tortoises inhabit(ed) the area, they do not suggest a prior density nor indicate that tortoises lived where the fragments currently are. Predators move carcasses and shells disarticulate into over 35 small bones, which can subsequently (or prior to disarticulation) be broken. The small, disarticulated fragments are easily transported by monsoonal water flows. A total of 36 permineralized shell fragments also were observed on the Solar Plant Site (Table 5, Figure 6). Similar fragments were found on the Genesis Solar Energy Project, west of the McCoy Mountains, in 2009 and 2010 (Tetra Tech EC and Karl 2009, 2010b) and are estimated to be between 3,000 and 5,000 years old (William Orr, pers. comm.). They show evidence of permineralization, a process in which minerals are deposited into cells of organisms, usually by way of water. These fragments can be easily distinguished from the recent bone fragments because they are heavier, more solid, and most have a slight orange/brown color as opposed to the younger fragments, which are whiter and light.

Carcasses are sometimes used to evaluate past tortoise density, although this is very difficult for shells that are over about 4 years in age. It is simply too difficult to age those shells accurately, and many have disarticulated to the point that an accurate count of dead tortoises is not possible. Even more recent shells may be accompanied by factors that render a recent mortality rate difficult. For the MSEP survey, for example, we called a group of shell fragments a carcass (i.e., equivalent to one tortoise) based on the presence of at least approximately 20 to 30 percent of the shell or a large proportion of the plastron and/or carapace. Gender, size, condition and age of the bones was further compared to nearby partial carcasses and shell fragment groups to help refine the actual number of dead tortoises. Even so, this conservative approach probably overestimated the number of dead tortoises on the MSEP. Without actually collecting all carcass parts across the site and comparing them, it is impossible to know how many actually represented separate tortoises. Furthermore, many shells could come from or be taken off the site by predators. Although tortoise mortality was not the objective of the MSEP

survey, we nonetheless present these data, with the caveat that mortality rate cannot be calculated accurately.

On the Solar Plant Site, four tortoise carcasses represented tortoises dying within the last four years (Table 5). All were adults and one was identifiable as a male. None was sufficiently intact to evaluate a cause of death. Of the 26 carcasses representing tortoises that died at least four years ago, at least 20 were adults, with at least nine males and two females. Two were relatively intact (Map Nos. 96 and 279; see Appendix H), but there was no obvious cause of death in either. One adult male along the southwestern border (No. 343, see Appendix H) may have been depredated by a large carnivore (mountain lion or coyote), based on the shell breakage.

Linear Corridor

Little tortoise sign was observed on the Linear Corridor (Table 5). Burrows were found in one small group, with a tortoise, at the southern end of the McCoy Mountains (Figure 9A). Although the occupied burrow was on an open hillside, the habitat in this area is consistent with the values found elsewhere where tortoises are present in the MSEP – i.e., undulating topographical relief and incised washes (conducive for burrowing), and higher volumes of flow in the washes, which translate into cover and forage. There were also a few shell fragments elsewhere on the Linear Corridor north of I-10, especially near the pebble plain. BSPP surveys had similar results, relative to type of sign found and location. They also found a few fragments, mostly near the pebble plain, and a tortoise with burrows at the south end of the McCoy Mountains (AECOM 2010a).

Most of the remainder of the Linear Corridor north of I-10 has habitat similar to that in the eastern Solar Plant Site, so tortoises are possible, but not expected. There is also a low possibility that tortoises may be associated with the agricultural berm because of the adjoined habitat, but the berm offers very poor, degraded habitat that is choked with Russian thistle.

South of I-10, there is poor habitat near the freeway, but it gradually diminishes to non-habitat as the Linear Corridor travels south to and through the dunes. The switchyard is poor habitat as well. Intersecting washes offer low-quality habitat near the freeway and in the bend west of the First Solar-NRG Blythe solar facility. Only six shell fragments, three in the Linear Corridor and switchyard and three on buffer transects, were observed south of the freeway during MSEP surveys (Figure 9A). Surveys for BSPP found similar results south of I-10 – a few, mostly permineralized shell fragments were found near the freeway (AECOM 2010a).

Estimating tortoise density on a linear facility may not be particularly meaningful relative to tortoise protection. This is because a linear facility is a narrow strip that travels a long distance, often through a variety of habitat types and therefore likely a variety of tortoise densities. Therefore, a single tortoise density estimated for an entire linear facility does not illuminate strategies for conservation planning. By contrast, determining which stretches of line may have better habitat and higher relative tortoise numbers will assist in determining impacts and planning construction monitoring, translocation and other protection measures.

Because project activities, impacts, and species protection measures are different on linear portions of a solar facility than on the plant site of a solar project, tortoise density on the MSEP Linear Corridor was calculated separately from the Solar Plant Site. It was then calculated together with the Solar Plant Site because both are part of the same project and a single take estimate will be requested from and permitted from FWS and CDFG. The FWS (2010) method was used to calculate density, based on the following values:

Area – The Linear Corridor was approximately 14.7 mi long, from the edge of the Solar Plant Site through the switchyard. The width was a minimum of 240 feet, but it varied throughout its length (Figures 5A and 5B). Because of this variability, a conservative width of 240 feet was used to estimate acreage within the surveyed route.

Transect Length and Number – Transects were 30 feet wide, so there was a minimum of eight transects in the 240-foot Linear Corridor width.

P_a remains the same as for the Solar Plant Site, so the final FWS estimate for the surveyed Linear Corridor alone would be 1.8 adult tortoises (range: 0.34 – 9.90). For the combined Solar Plant Site and Linear Corridor, it would be 3.6 tortoises (range: 0.4 - 31.36).

Potential Translocation Area

Three adult tortoises, eight fresh and five recent (<1 year old) burrows, and nine scat were found in the potential translocation area (Table 4, Appendix H). Although sign was found throughout the area, the greatest amount was in the northern half (Figure 9A). This makes sense because much of the southern area and base of the mountains was dominated by a dense boulder field that would constrict tortoise mobility (Figure 3).

While tortoise sign was found in the entire potential translocation area, the habitat in the boulder field (Figure 3) is sufficiently poor that translocation to that area is not recommended. The area outside this field is approximately 763 acres and is where all three tortoises and most of the sign indicating occupation was observed (Figure 9A). Using that acreage, the FWS (2010) calculation would yield 5.5 adult tortoises (range: 1.68 - 17.82), a reasonable estimate in light of the sign observed. This translates into a point density of 4.95 tortoises per square mile.

In the potential translocation area, five carcasses were found that represented tortoise mortalities within the past four years. Two were juveniles found in coyote scat and the remaining three were adults (two males, one female) that had shell breakage suggestive of depredation by a large carnivore. Of the remaining 14 carcasses in the translocation area, all were adults and at least four were males and five were females.

5.2.1.2 Swainson's hawk (FWS: *Bird of Conservation Concern*; CDFG: *Threatened*)

Biologists observed four Swainson's hawks flying during APC surveys and one during raptor point count surveys. The Project Vicinity is in a known migratory route for Swainson's hawk and migrating Swainson's hawks are commonly seen in this area (P. Bloom, pers. comm.). Swainson's hawks breed throughout North America, and typically winter in South America, Central California, and parts of Florida (Dunn and Alderfer 2006). The Project Area is located outside of this species' breeding range (England 1997; Table 6), with the closest breeding range located just east of the Sierra Nevada Range (Woodbridge 1998, Bloom pers. comm.). Therefore, no focused Swainson's hawk nesting surveys were warranted. However, during golden eagle helicopter surveys conducted within a 10-mile radius of the Solar Plant Site ROW Application Boundary, Swainson's hawks were sought, but none was observed (WRI 2011).

Table 6. Seasonal Geographic Distribution (from Poole 2005) in the Project Vicinity for Bird Species Observed during Surveys

Species	Year-round Resident/Breeding	Migrant	Wintering	Other
American kestrel	x			
ash-throated flycatcher	x			
barn swallow	x			
black-headed grosbeak	x			
black-tailed gnatcatcher	x			
black-throated sparrow	x			
blue-gray gnatcatcher			x	
Brewer's blackbird			x	
Brewer's sparrow			x	
burrowing owl	x		x	
cactus wren	x			
California horned lark	x			
chipping sparrow (off site in McCoy Wash)		x		
cliff swallow	x			
common poorwill	x			
common raven	x			
Cooper's hawk	x			x (non-breeding)
Costa's hummingbird	x			
dusky flycatcher		x		
Eurasian collared dove	x			
European starling	x			
Gambel's quail	x			
golden eagle	x		x	
greater roadrunner	x			
great horned owl (off-site in McCoy Wash)	x			
great-tailed grackle	x			
house finch	x			
house sparrow	x			
ladder-backed woodpecker	x			
LeConte's thrasher	x			
lesser goldfinch	x		x	
lesser nighthawk	x (breeding)			
loggerhead shrike	x			
Lucy's warbler (off site in McCoy Wash)	x (breeding)			
mourning dove	x			
northern harrier			x	
northern mockingbird	x			
northern rough-winged swallow	x			
Osprey	x			
peregrine falcon	x			
phainopepla		x	x (breeding)	
prairie falcon	x	x		
red-tailed hawk	x			
red-winged blackbird	x			

Species	Year-round Resident/Breeding	Migrant	Wintering	Other
rock pigeon	x			
Say's phoebe	x			
Scott's oriole (off-site in McCoy Wash)		x		
Swainson's hawk	x			
tree swallow	x		x	
turkey vulture	x	x		
Vaux's swift	x			
verdin	x			
violet-green swallow	x	x		
western kingbird	x (breeding)	x		
western meadowlark	x			
western tanager		x		
white-crowned sparrow	x		x	
white-throated swift	x	x	x	
white-winged dove	x (breeding)	x		
Wilson's warbler		x		
yellow warbler	x			
yellow-rumped warbler	x		x	

(Poole 2005)

5.2.1.3 Gila Woodpecker and Gilded Flicker (FWS: *Bird of Conservation Concern*; CDFG: *Endangered*)

Biologists did not detect Gila Woodpecker or gilded flicker during Spring 2011 surveys. No nesting habitat for either species occurs on the Solar Plant Site or along most of the Linear Corridor. Potential habitat may occur in the larger trees of the arboreal washes that cross the Linear Corridor at the southern McCoy Mountains. Suitable nesting habitat occurs to the east of the Solar Plant Site in McCoy Wash. McCoy Wash contains a well-developed palo verde - ironwood woodland, with large trees suitable for nesting (Table 7). Holes made by an unknown species of woodpecker were observed in a large, old ironwood approximately one mile from the Solar Plant Site, but no woodpeckers were observed or heard. In five consecutive years from 2004 to 2008, no Gila woodpeckers or gilded flickers were observed in McCoy Wash during a focused breeding bird study by the Point Reyes Bird Observatory (PRBO) Conservation Science (McCreehy 2009).

Table 7. Average Tree Size at Twelve Locations within McCoy Wash

Sample Point within McCoy Wash ¹	Species	Average Height (ft)	Average Crown Width (ft)	Average DBH (in)
1	Palo verde	14.1	20.0	-
	Ironwood 17.7		15.1	-
2	Palo verde	17.1	20.3	-
	Ironwood 19.0		21.3	-
3	Palo verde	17.4	16.7	-
	Ironwood 26.9		28.2	-
4	Palo verde	18.4	18.4	-
	Ironwood 34.1		34.1	-
5	Palo verde	24.6	24.0	-
	Ironwood 32.5		32.8	-

Sample Point within McCoy Wash ¹	Species	Average Height (ft)	Average Crown Width (ft)	Average DBH (in)
6	Palo verde	7.9	11.8	-
	Ironwood 25.6		27.2	-
7	Palo verde	21.7	16.4	-
	Ironwood 14.4		16.4	-
8	Palo verde	-	-	-
	Ironwood 8.2		11.5	-
9	Palo verde	5.9	8.9	-
	Ironwood 10.2		13.1	-
10	Palo verde	13.1	21.7	-
	Ironwood 17.4		24.6	-
11	Palo verde	9.8	11.5	2.4
	Ironwood 14.4		15.7	6.7
12	Palo verde	17.4	17.4	2.5
	Ironwood 31.2		26.2	12.0
13	Palo verde	20.7	23.0	4.5
	Ironwood 28.9		24.0	11.5
14	Palo verde	18.4	22.6	3.3
	Ironwood 26.2		26.9	7.5
15	Palo verde	17.4	19.7	1.6
	Ironwood 28.2		31.5	17.2
16	Palo verde	21.3	22.3	4.4
	Ironwood 32.2		32.2	12.8
17	Palo verde	16.4	21.3	3.5
	Ironwood 27.9		27.2	8.6

¹ Each sample point represents 10 trees
² The average diameter was used for trees with more than one trunk.

5.2.2 Non-listed, Special-status Species

5.2.2.1 Reptiles and Amphibians

Biologists observed one special-status reptile species (other than desert tortoise) – Mojave fringe-toed lizard – and potential habitat for Couch's spadefoot toad during Spring 2011 surveys (Figure 10). Table 8 provides a summary of results with a discussion below.

Table 8. Summary Reptile and Amphibian Observations, Spring 2011

Species		Sign Type	Comments
Mojave fringe-toed lizard	<i>Uma scoparia</i>	Individuals	Common throughout sand sheets and dunes south of I-10 along Linear Corridor
Couch's spadefoot toad	<i>Scaphiopus couchii</i>	Potential Habitat	Nine areas where evidence of pooling indicates potential habitat: Five along Linear Corridor south of I-10 Two along Linear Corridor north of I-10 One within Solar Plant Site One east of Solar Plant Site

Mojave Fringe-toed Lizard (BLM: *Sensitive*; CDFG: *SSC*)

Biologists observed Mojave fringe-toed lizards throughout the sand dunes and sand sheets along the Linear Corridor south of I-10 during Spring 2011 surveys (Figure 10). Mojave fringe-toed lizards are loose-sand specialists, found only in aeolian sand dunes, sand fields, hummocks, and other areas with loose sand deposits, between 300 and 3,000 feet in elevation (Stebbins 2003). The sand dunes on the Linear Corridor south of I-10 are the only suitable Mojave fringe-toed lizard habitat on the Project Area; there is no suitable habitat within the Solar Plant Site.

Couch's Spadefoot (BLM: *Sensitive*; CDFG: *SSC*)

Biologists did not observe (nor expected to observe) any Couch's spadefoot toad during Spring 2011 surveys because the timing of the surveys fell outside of the species' greatest activity period (post summer monsoons). However, surveyors detected potential breeding habitat at a few localized locations along the Linear Corridor (Figure 10; Table 8), the most promising of which is the borrow pit and graded depression north of I-10. One potential breeding habitat swale was recorded in the southwestern Solar Plant Site. During sufficient rain events, these areas may collect water both from runoff from the McCoy Mountains and direct precipitation.

Habitat for the Couch's spadefoot toad consists of extremely xeric areas with sandy, well-drained soils, often associated with creosote bush and mesquite trees (Arizona-Sonora Desert Museum 2010). Friable soils are important, as adults bury themselves and dig burrows to avoid desiccation. Couch's spadefoot breed in temporary ponds that hold water for a sufficient amount of time to reproduce, typically at least eight or nine days. These ponds are created during seasonal rainstorms, especially during summer; thunder and/or very low levels of precipitation (< 0.5 mm) elicit emergence from subterranean burrows in summer (Dimmitt and Ruibal 1980).

Because breeding occurs primarily in response to summer storms, surveys have been scheduled for Summer or early Fall 2011, in association with storms of adequate intensity.

5.2.2.2 Birds

During Spring 2011, biologists surveyed for special-status birds during the desert tortoise surveys and plant surveys, both of which covered 100 percent of the Project Area. In addition to these surveys, biologists conducted focused Phase III burrowing owls surveys, APC surveys, raptor point count surveys, and contracted WRI to conduct helicopter surveys for golden eagles. Results of the surveys are summarized below.

Burrowing Owl (FWS: *Bird of Conservation Concern*; BLM: *Sensitive*; CDFG: *SSC*)

The field reconnaissance survey in December 2007 identified suitable burrowing owl habitat throughout the Solar Plant Site. During Phase II Burrow Surveys (concurrent with desert tortoise surveys) in April 2011, biologists observed two live birds and burrowing owl sign (burrows, whitewash, feathers, and pellets) at several locations within the Solar Plant Site and Linear Corridor north of I-10 (Figure 11, Table 9). Detailed Phase II results are in Appendix I.

Table 9. Phase II Burrowing Owl Survey Results within the Project Area

Species		Sign Type	Number of Sign
Burrowing owl	<i>Athene cunicularia</i>	Individuals	5
		Burrow	Active or recently used - 5
			Inactive - 5
			Unknown activity status - 8
White wash	1		

During Phase III Nesting Surveys, biologists observed owl pairs at three locations, one within the Solar Plant Site and two along the Linear Corridor, indicating that burrowing owls use the Project Area during the breeding season. Two of the pairs were likely breeding pairs with active nests; however, this could not be confirmed without disturbing the owls. In June, no new active burrows were detected. The two burrows with the probable breeding pairs were still occupied in June; however, one nest was depredated as evidenced by a pile of adult burrowing feathers and the remains of a downy chick (most likely burrowing owl) near the burrow entrance. Detailed results of the Phase III Nesting Surveys can be found in Appendix J.

Golden Eagle (FWS: *Bird of Conservation Concern*, BGEPA; CDFG: *Fully Protected*)

Two golden eagles were incidentally observed south of the Solar Plant Site on March 28, 2011; no golden eagles were observed during the raptor point count surveys or helicopter surveys. The two birds were observed soaring toward the western portion of the Solar Plant Site (Figure 11). The Project Area is within the breeding and wintering range of the golden eagle (Kochert et al 2002, Table 6).

The Spring 2010 helicopter surveys detected two golden eagle nests (one active, one inactive) within 10 miles of the MSEP (Figure 12A). The active eagle nest was located 9.2 miles northeast of the Project, and the inactive (and nearest) nest was 2.3 miles southwest of the MSEP. WRI determined that these nests represented two distinct breeding territories (WRI 2010).

The 2011 nest survey located five golden eagle nests within the 10-mile-radius search area (Figure 12B); no golden eagles were observed during the surveys. For ease of interpretation, the nests are sequentially numbered in this report (original nest numbers assigned by WRI can be found in WRI 2011). Four of these nests were inactive and one, the golden eagle nest that was active in 2010 (Nest 4), was occupied by red-tailed hawks in 2011. The inactive golden eagle nests were observed approximately 1.7 miles west (Nest 1), 3 miles southwest (Nest 7), 5.6 miles west-northwest (Nest 3), and 8.4 miles northwest (Nest 2) of the MSEP in the McCoy Mountains (Figure 12B). An additional 11 inactive golden eagle nests were detected outside the 10-mile search radius, at distances of 10.5 – 13.5 miles from the MSEP.

Based on the distribution and evaluation of nests, WRI concluded that nests observed in 2011 comprised eight inactive golden eagle territories, four of which were within and four of which were outside of the 10-mile search radius. Based on the location of the latter, WRI considered it likely that portions of the foraging areas of these peripheral territories overlapped the 10-mile search area (D. Bittner, pers. comm.). No successful breeding by golden eagles was detected within any of the territories within or outside the 10-mile search radius on either phase of the aerial survey.

Other Special-status Bird Observations

Nine other special-status bird species were observed during Spring 2011 avian surveys or during other species surveys, two of which were observed nesting in the Project Area (Le Conte's thrasher and loggerhead shrike). These special-status bird species are discussed below (Table 10) and their geographic distribution, as related to the Project Vicinity is presented in Table 6. Detailed results and corresponding figures of species detected during 100 percent coverage surveys are located in Appendix I. Species only seen incidentally to other surveys were not mapped if precise locational data were not recorded (Vaux's swift), especially for species observed off the Project Area (Lucy's warbler, peregrine falcon).

Table 10. Other Special-status Bird Species Observed during Spring 2011 Surveys

Species		Sign Type	Number of Sign
Brewer's sparrow	<i>Spizella breweri</i>	Individual	Three sightings of two to several individuals each
Le Conte's thrasher	<i>Toxostoma lecontei</i>	Individual 5 Nest with eggs	1
Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual 39	4
		Fledgling approx.	
		Nest with eggs or young	5
Lucy's Warbler (off-site)	<i>Vermivora luciae</i>	Individual 1	
Northern Harrier	<i>Circus cyaneus</i>	Individual 1	
Peregrine falcon (off-site)	<i>Falco peregrinus</i>	Individual 4	
Prairie falcon	<i>Falco mexicanus</i>	Individual 2	
Vaux's swift	<i>Chaetura vauxi</i>	Individual >1	
Yellow warbler	<i>Dendroica petechia</i>	Individual 1	

Brewer's sparrow (FWS: *Bird of Conservation Concern*)

Biologists observed flocks of Brewer's sparrows on both wildlife surveys and APCs. Flocks of two to several birds were observed on three occasions during wildlife surveys. Fourteen birds were seen during APC surveys, most frequently at APC Plot 6 (Table 11). Brewer's sparrows spend much of the year in sagebrush scrub vegetation and migrate to the open desert scrub of the southwestern U.S. during the winter (Rotenberry et. al 1999). This species is a wintering resident of the Project Area and the individuals observed were migrants.

Le Conte's thrasher (FWS: *Bird of Conservation Concern*)

Biologists observed Le Conte's thrashers within the Project Area during Spring 2011 surveys. Le Conte's thrashers are year-round residents of the Project Vicinity (Sheppard 1996) and were observed nesting in scrub vegetation. The entire Project Area is Le Conte's thrasher habitat, providing cholla and low shrubs for cover and dense, spiny wash vegetation for nesting.

Loggerhead shrike (FWS: *Bird of Conservation Concern*; CDFG: *Species of Special Concern*)

Biologists observed loggerhead shrikes throughout the Project Area during Spring 2011 surveys as well as during APC surveys (observed at eight of the 12 APC Plots). Loggerhead shrikes are year-round residents of the Project Area (Yosef 1996) and were observed nesting in ironwood and palo verde trees within the Project Area. The entire Project Area is loggerhead shrike

habitat because of the open and relatively low shrub vegetation that also contains taller structures that are used for nesting and as lookout posts to spot potential predators and prey.

Northern harrier (CDFG: *Species of Special Concern*)

Biologists observed one northern harrier during Spring 2011 APC surveys at Plot 6 (Figure 7); however, northern harriers are wintering occupants in the Project Vicinity and the observation was likely a migrant. Northern harriers prefer to nest in dense vegetation within upland and wetland areas, including marshes, wet meadow, old fields, upland prairies, mesic grasslands, drained marshlands, croplands, cold desert shrub-steppe, and riparian woodland (Macwhirter and Bildstein 1996). The entire Survey Area is considered wintering habitat for the northern harrier but there is no suitable nesting habitat within the Project Area. Although McCoy Wash and the adjacent agricultural fields may provide nesting habitat, this species is not known to nest in the Project Vicinity.

Prairie falcon (FWS: *Bird of Conservation Concern*)

Biologists observed two prairie falcons during wildlife surveys within the Solar Plant Site, one individual during APC surveys, and three individuals during raptor point count surveys (at Plots 5 and 8). A pair of prairie falcons was also observed nesting in the Big Maria Mountains during helicopter surveys (WRI 2011). Prairie falcons are year-round residents to the Project Vicinity. The prairie falcon is found in a variety of habitats, but is associated primarily with desert scrub and similar open habitats where it utilizes open ledges and cliffs for perching and nesting and forages over the open terrain (Steenhof 1998). Although the Project Area does not provide suitable nesting habitat, it does provide suitable foraging habitat, and is apparently sufficiently near nesting sites, since birds were seen over the Project.

Vaux's swift (CDFG: *Species of Special Concern*)

Biologists observed Vaux's swifts during Spring 2011 wildlife surveys. Vaux's swifts breed in the Pacific Northwest U.S. and winter in Mexico (Bull and Collins 2007); therefore, the individuals were likely migrating through the Project Area. The Project Area does not contain suitable nesting habitat for Vaux's swift as the swift is most frequently observed in coniferous forests where nests are built in hollow, large diameter trees.

Yellow warbler (FWS: *Bird of Conservation Concern*, CDFG: *Species of Special Concern*)

Biologists observed one yellow warbler, during APC surveys at Plot 10. Yellow warblers winter in Mexico and breed mostly in the northern U.S. and Canada, although they also breed in portions of Central Arizona, northern Baja, and the Southern California coast. Yellow warblers are most frequently observed breeding in wet, riparian areas in Arizona and California (Lowther et al 1999). The Project Area is not within their breeding range; therefore, the observation was most likely a migrant.

Lucy's warbler (FWS: *Bird of Conservation Concern*, CDFG: *Species of Special Concern*) (off site)

A biologist observed one Lucy's warbler outside of the Project Area incidentally during Gila woodpecker surveys in McCoy Wash; none was seen on-site. Lucy's warblers breed along the Colorado River and are most frequently observed in xeroriparian thickets of mesquites, tamarisk, palo verde, and similar riparian trees and shrubs (Johnson et al 1997). Breeding habitat within the Project Area is limited to those areas within washes, where Lucy's warblers

could utilize natural cavities, such as woodpecker holes, loose bark, abandoned verdin nests, and holes in banks for nesting cavities. No nests were detected during surveys.

Peregrine falcon (FWS: *Bird of Conservation Concern*, CDFG: *Fully Protected*) (off site)

Biologists observed one peregrine falcon outside of the Project Area incidentally during Spring 2011 burrowing owl surveys (south of I-10) and three were seen in the Big Maria Mountains north the Project Area during golden eagle helicopter surveys (WRI 2011); no observations were made within the Project Area. Peregrine falcons are widely distributed throughout North and Central America and nest in a variety of habitats, including cliffs and abandoned nests of other raptor species (White et al 2002). The Project Area is not considered peregrine falcon nesting habitat; however, they may nest in the surrounding mountain ranges.

Non-special-status Birds

During the APC surveys in Spring 2011, a total of 570 birds consisting of 45 identified and two unidentified species were recorded at the 192 points (Tables 10 and 11). The most commonly detected birds with the highest mean use were the tree swallow (*Tachycineta bicolor*, 13.2 percent of all birds observed), horned lark (*Eremophila alpestris*, 11.4 percent of all birds observed), northern rough-winged swallow (*Stelgidopteryx serripennis*, 10.5 percent of all birds observed), cliff swallow (*Hirundo pyrrhonota*, 8.9 percent of all birds observed), loggerhead shrike (6.5 percent of all birds observed), and common raven (5.3 percent of all birds observed). Each remaining species comprised five percent or less of the total number of birds observed. The horned lark was the most frequently detected bird as it was observed during 50 percent of all surveys.

The highest number of birds (133) and the greatest number of species (30) was detected at APC Plot 7 which was located on well-developed desert pavement and agricultural areas (Figure 7, Table 11). Ten species observed at this point count plot were specific to this plot (i.e., species were not seen at other APC Plots), including Brewer's blackbird, Eurasian collared-dove, greater roadrunner, greater-tailed grackle, northern mockingbird, orange-crowned warbler, red-winged blackbird, white-crowned sparrow, white-throated swift, and white-winged dove. The APC Plot with the second highest number of birds observed was Plot 6 (59 birds) and was located on well-developed desert pavement and pebble terrace.

Table 11a. Avian Species by Species Grouping, Observed during Spring 2011 Point Count Surveys at the McCoy Solar Project

Species Grouping	Overall Rank ¹	Number of Birds	Number of Observations	Mean Use (# birds per 10 min.)	Frequency (% of surveys detected)	Percent Composition	
						Group	Overall
Songbirds							
tree swallow	1	75	18	0.39	27.1	15.7%	13.2%
horned lark	2	65	43	0.34	50.0	13.6%	11.4%
northern rough-winged swallow	3	60	22	0.31	31.3	12.6%	10.5%
cliff swallow	4	51	16	0.27	20.8	10.7%	8.9%
loggerhead shrike	5	37	23	0.19	33.3	7.8%	6.5%
common raven	6	30	14	0.16	25.0	6.3%	5.3%
barn swallow	7	28	16	0.15	29.2	5.9%	4.9%
ash-throated flycatcher	10	20	20	0.10	22.9	4.2%	3.5%
house finch	11	15	14	0.08	27.1	3.1%	2.6%
Brewer's sparrow	12	14	6	0.07	10.4	2.9%	2.5%
cactus wren	13	13	9	0.07	8.3	2.7%	2.3%
black-throated sparrow	13	13	10	0.07	14.6	2.7%	2.3%
black-tailed gnatcatcher	15	12	11	0.06	16.7	2.5%	2.1%
yellow-rumped warbler	18	8	7	0.04	12.5	1.7%	1.4%
western kingbird	19	7	5	0.04	10.4	1.5%	1.2%
verdin	19	7	6	0.04	8.3	1.5%	1.2%
Wilson's warbler	22	5	2	0.03	4.2	1.0%	0.9%
blue-gray gnatcatcher	23	4	3	0.02	6.3	0.8%	0.7%
orange-crowned warbler	28	2	1	<0.01	2.1	0.4%	0.4%
white-crowned sparrow	30	1	1	<0.01	2.1	0.2%	0.2%
violet-green swallow	30	1	1	<0.01	2.1	0.2%	0.2%
yellow warbler	30	1	1	<0.01	2.1	0.2%	0.2%
Say's phoebe	30	1	1	<0.01	2.1	0.2%	0.2%
red-winged blackbird	30	1	1	<0.01	2.1	0.2%	0.2%
phainopepla	30	1	1	<0.01	2.1	0.2%	0.2%
northern mockingbird	30	1	1	<0.01	2.1	0.2%	0.2%
great-tailed grackle	30	1	1	<0.01	2.1	0.2%	0.2%
dusky flycatcher	30	1	1	<0.01	2.1	0.2%	0.2%
Brewer's blackbird	30	1	1	<0.01	2.1	0.2%	0.2%
black-headed grosbeak	30	1	1	<0.01	2.1	0.2%	0.2%

Table 11a (Continued). Avian Species by Species Grouping, Observed during Spring 2011 Point Count Surveys at the McCoy Solar Project

Species Grouping	Overall Rank ¹	Number of Birds	Number of Observations	Mean Use (# birds per 10 min.)	Frequency (% of surveys detected)	Percent Composition	
						Group	Overall
Raptors							
turkey vulture	8	23	16	0.12	27.1	41.1%	4.0%
red-tailed hawk	9	22	12	0.12	18.8	39.3%	3.9%
Swainson's hawk	23	4	4	0.02	6.3	7.1%	0.7%
American kestrel	23	4	4	0.02	8.3	7.1%	0.7%
unidentified falcon	30	1	1	<0.01	2.1	1.8%	0.2%
prairie falcon	30	1	1	<0.01	2.1	1.8%	0.2%
northern harrier	30	1	1	<0.01	2.1	1.8%	0.2%
Group Total		56	39	0.29	47.9		9.8%
Pigeons/Doves							
mourning dove	16	10	5	0.05	10.4	58.8%	1.8%
Eurasian collared-dove	21	6	3	0.03	2.1	35.3%	1.1%
white-winged dove	30	1	1	<0.01	2.1	5.9%	0.2%
Group Total		17	9	0.9	10.4		3.0%
Gamebirds							
Gambel's quail	17	9	9	0.05	12.5	100.0%	1.6%
Group Total		9	9	0.05	12.5		1.6%
Swifts/Hummingbirds							
white-throated swift	26	3	2	0.02	4.2	50.0%	0.5%
unidentified hummingbird	28	2	2	0.01	4.2	33.3%	0.4%
Costa's hummingbird	30	1	1	<0.01	2.1	16.7%	0.2%
Group Total		6	5	0.03	10.4		1.1%
Goatsuckers							
lesser nighthawk	26	3	3	0.02	6.3	75.0%	0.5%
common poorwill	30	1	1	<0.01	2.1	25.0%	0.2%
Group Total		4	4	0.02	8.3		0.7%
Other							
Greater roadrunner	30	1	1	<0.01	2.1	100.0%	0.2%
Group Total		1	1	<0.01	2.1		0.2%
Grand Total		570	324	2.97			

¹ A ranking of 1 indicates highest mean use

Table 11b. Avian Species Observed by Plot¹ during Spring 2011 Point Count Surveys at the McCoy Solar Project.

Species	Number of Birds	Number of Obs.	Plots											
			1	2	3	4	5	6	7	8	9	10	11	12
tree swallow	75	18	0	12	7	0	2	0	26	7	0	8	8	5
horned lark	65	43	2	11	3	8	1	11	6	10	4	1	2	6
northern rough-winged swallow	60	22	4	0	3	6	0	2	18	6	0	9	1	11
cliff swallow	51	16	0	0	5	0	12	20	4	1	2	3	0	4
loggerhead shrike	37	23	1	1	9	0	16	0	1	0	0	3	4	2
common raven	30	14	2	0	0	0	4	1	15	3	3	0	1	1
barn swallow	28	16	0	1	4	2	0	6	4	5	0	6	0	0
turkey vulture	23	16	6	0	0	0	5	2	2	5	2	0	0	1
red-tailed hawk	22	12	0	0	0	0	10	2	0	2	0	2	0	6
ash-throated flycatcher	20	20	0	0	2	1	0	4	4	2	6	1	0	0
house finch	15	14	1	1	2	0	1	0	1	1	4	2	1	1
Brewer's sparrow	14	6	1	1	0	0	0	7	4	0	0	1	0	0
cactus wren	13	9	0	0	2	0	0	0	0	0	0	11	0	0
black-throated sparrow	13	10	1	10	2	0	0	0	0	0	0	0	0	0
black-tailed gnatcatcher	12	11	0	0	3	0	2	0	4	0	3	0	0	0
mourning dove	10	5	0	0	0	0	0	0	9	0	1	0	0	0
Gambel's quail	9	9	1	2	2	0	0	2	0	0	0	2	0	0
yellow-rumped warbler	8	7	0	0	0	0	0	0	3	2	2	1	0	0
western kingbird	7	5	0	0	2	0	0	0	3	0	1	1	0	0
verdin	7	6	0	1	0	0	0	0	4	0	2	0	0	0
Eurasian collared-dove	6	3	0	0	0	0	0	0	6	0	0	0	0	0
Wilson's warbler	5	2	0	1	0	0	0	0	4	0	0	0	0	0
Swainson's hawk	4	4	0	0	0	0	0	0	1	2	0	0	0	1
blue-gray gnatcatcher	4	3	0	0	0	0	2	0	0	1	1	0	0	0
American kestrel	4	4	0	1	0	0	1	0	1	0	0	1	0	0
white-throated swift	3	2	0	0	0	0	0	0	3	0	0	0	0	0
lesser nighthawk	3	3	1	0	0	0	0	0	1	0	0	1	0	0
unidentified hummingbird	2	2	0	0	0	0	2	0	0	0	0	0	0	0
orange-crowned warbler	2	1	0	0	0	0	0	0	2	0	0	0	0	0
white-winged dove	1	1	0	0	0	0	0	0	1	0	0	0	0	0
white-crowned sparrow	1	1	0	0	0	0	0	0	1	0	0	0	0	0
violet-green swallow	1	1	0	1	0	0	0	0	0	0	0	0	0	0
yellow warbler	1	1	0	0	0	0	0	0	0	0	0	1	0	0
unidentified falcon	1	1	0	0	0	0	0	0	0	0	1	0	0	0
Say's phoebe	1	1	0	1	0	0	0	0	0	0	0	0	0	0
red-winged blackbird	1	1	0	0	0	0	0	0	1	0	0	0	0	0
prairie falcon	1	1	0	0	0	0	0	0	0	0	1	0	0	0
phainopepla	1	1	0	0	0	0	0	1	0	0	0	0	0	0
northern mockingbird	1	1	0	0	0	0	0	0	1	0	0	0	0	0
northern harrier	1	1	0	0	0	0	0	1	0	0	0	0	0	0
great-tailed grackle	1	1	0	0	0	0	0	0	1	0	0	0	0	0
greater roadrunner	1	1	0	0	0	0	0	0	1	0	0	0	0	0
dusky flycatcher	1	1	0	1	0	0	0	0	0	0	0	0	0	0
common poorwill	1	1	0	0	0	0	0	0	0	0	1	0	0	0
Costa's hummingbird	1	1	0	0	0	0	0	0	0	1	0	0	0	0
Brewer's blackbird	1	1	0	0	0	0	0	0	1	0	0	0	0	0
black-headed grosbeak	1	1	0	0	0	0	0	0	0	0	1	0	0	0
Grand Total	570	324	20	45	46	17	58	59	133	47	36	54	17	38

¹See Figure 7 for locations of point count plots

Four raptor species were observed during raptor point count surveys, including turkey vulture, red-tailed hawk, prairie falcon, and Swainson's hawk (Table 12a,b and 13 a,b). Turkey vultures were the most common species detected during raptor point count surveys, followed by the red-tailed hawk. Both of these species occur year-round in the Project Vicinity; neither have special-status.

Table 12a. Raptor Species Observed during April 2011 Raptor Surveys (10 Minute Surveys)

Species	Number of Birds	Number of Observations	Mean Use (# birds per 10 min.)	Frequency (% of surveys detected)	Percent Composition Group
turkey vulture	22	12	0.46	25.0	57.9%
red-tailed hawk	12	12	0.25	25.0	31.6%
prairie falcon	3	2	0.06	4.2	7.9%
Swainson's hawk	1	1	0.02	2.1	2.6%
Grand Total	38	27	0.79		

Table 12b. Raptor Species Observed during June 2011 Raptor Surveys (30 Minute Surveys)

Species	Number of Birds	Number of Observations	Mean Use (# birds per 10 min.)	Frequency (% of surveys detected)	Percent Composition Group
turkey vulture	5	4	0.42	25.0	55.6%
red-tailed hawk	4	1	0.33	8.3	44.4%
Grand Total	9	5	0.75		

Table 13a. Raptor Species Observed by Plot¹ during April 2011 Raptor Surveys (10 Minute Surveys)

Species	Number of Birds	Number of Obs.	Plots											
			1	2	3	4	5	6	7	8	9	10	11	12
turkey vulture	22	12	1	1	1	0	0	0	5	6	3	5	0	0
red-tailed hawk	12	12	1	1	1	0	0	0	1	1	1	2	1	3
prairie falcon	3	2	0	0	0	0	1	0	0	2	0	0	0	0
Swainson's hawk	1	1	0	0	0	0	0	0	1	1	0	0	0	0
Grand Total	38	27	2	2	2	0	1	0	7	9	4	7	1	3

¹ See Figure 7 for locations of point count plots.

Table 13b. Raptor Species Observed by Plot¹ during June 2011 Raptor Surveys (30 Minute Surveys)

Species	Number of Birds	Number of Obs.	Plots											
			1	2	3	4	5	6	7	8	9	10	11	12
turkey vulture	5	4	0	0	0	0	2	0	2	0	1	0	0	0
red-tailed hawk	4	1	0	0	0	0	0	4	0	0	0	0	0	0
Grand Total	9	5	0	0	0	0	2	4	2	0	1	0	0	0

¹ See Figure 7 for locations of point count plots.

5.2.2.3 Special-status Mammals

Five special-status mammals were detected within the Project Area and Vicinity during Spring 2011 surveys (Figure 13). Table 14 provides a summary of the observations and each species is discussed below; Appendix K provides detailed data and a corresponding figure.

Table 14. Summary of Mammal Observations within the Project Area (unless otherwise noted) during Spring 2011 Surveys

Species		Sign Type	Number of Sign
American badger	<i>Taxidea taxus</i>	Individual	1 (off site)
		Digs 6	
Bat	Unknown	Roost	1
Burro deer	<i>Odocoileus hemionus eremicus</i>	Hide 1	
Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active - 15 Inactive - 27
		Individual	Active den with pups (off site) - 1
Mountain lion	<i>Felis concolor</i>	Scat	2 (off site)
Wild burro	<i>Equus asinus</i>	Teeth 1	
		Scats	9

American Badger (CDFG: Species of Special Concern)

Biologists observed one American badger approximately 600 meters west of the Linear Corridor in the McCoy Mountains and six badger digs within the Solar Plant Site; one badger dig was observed south of the ring bus. The badger is a resident of a wide variety of habitats, including level, open areas in grasslands, agricultural areas, and open shrub habitats. Suitable habitat for the American badger occurs throughout the Project Area.

Bighorn Sheep (BLM: Sensitive; CDFG: Managed Game Species)

No sign or evidence of Nelson's bighorn sheep were found within the Survey Area during field surveys. NECO shows the McCoy Mountains and the Little Maria Mountains as unoccupied ranges; however, three ewes were observed more than 10 miles north of the Solar Plant Site in the Little Maria Mountains during golden eagle helicopter surveys. No bighorn sheep were observed in the McCoy Mountains during helicopter surveys. The Project Area is not within a known bighorn sheep corridor as identified in the NECO Plan.

Burro Deer (CDFG: Managed Game Species)

Biologists found a partial hide of a burro deer within the Solar Plant Site, indicating that burro deer are in the area. No other sign was observed. Burro deer is a subspecies of mule deer found in the Colorado region of the Sonoran Desert both near the Colorado River and substantially away from the river, especially associated with arboreal washes. There is marginal habitat for the burro deer on the Solar Plant Site, and suitable habitat within the larger washes that cross the Linear Corridor (north of I-10). Suitable habitat is also present to the east in McCoy Wash and near the Colorado River. Burro deer are a big game species managed by CDFG.

Desert Kit Fox (Protected by CDFG)

Desert kit fox inhabits many desert habitats, typically with less than 20 percent cover (NPS 2006). Suitable habitat for the desert kit fox occurs throughout the Project Area. Kit fox mostly inhabit the eastern half of the Solar Plant Site and the length of the Linear Corridor (Figure 13). Biologists detected 57 kit fox natal dens during Spring 2011 surveys, 34 within the Solar Plant Site and eight along the Linear Corridor; the remainder were observed outside of the Project Area. Of the 42 natal dens in the Project Area, 15 were active, 12 of which were on the Solar Plant Site (Figure 13). Desert kit fox families occupy several natal dens during any given year, changing dens frequently when puppies are being fed (McGrew 1979). The number of dens used per year is dependent on several variables, potentially including, at a minimum, prey availability, predation pressure, ectoparasite loads, and quality of denning substrates. The number of dens used by a family therefore likely varies geographically. Two projects near MSEP, the Genesis Solar Energy Project (GSEP) and the Blythe Solar Power Project (BSPP), had active natal den densities of 2.8 and 2.9 per mi², respectively (GSEP: unpublished data from 2011 site clearance; BSPP: AECOM 2010a: Page 98 and Table 13). These natal den densities are slightly higher than at MSEP - 1.2 active natal dens per mi² - so MSEP appears to host normal to slightly low kit fox densities for the area.

Mountain Lion (CDFG: Species of Special Concern)

Biologists found mountain lion scat to the west of the Solar Plant Site, within the potential desert tortoise translocation area. Mountain lions are found throughout the western United States in a wide range of habitats where there is adequate cover and prey. The Solar Plant Site is not a mountain lion habitat; however, the McCoy Mountains and McCoy Wash provide suitable denning habitat.

Wild Burro (Managed by BLM)

Biologists found wild burro scat within the Solar Plant Site and along the Linear Corridor north of I-10. Wild burros were introduced in the 1500s and now can be found throughout the southwest deserts (Desert USA 2011). This species is managed by the BLM to maintain populations at levels that will not injure healthy native desert ecosystems. The entire Project Area is wild burro habitat, although they require standing water, so would be precluded, in most seasons, from occupying the site.

Bats

A natural cavity with a small amount of bat guano, but no current use by bats, was found within the southwest corner of the Solar Plant Site (Figure 13). Based on the small amount of guano, it would not be considered a biologically significant roost. The cave also contained a few insect parts, burrowing owl pellets, substantial whitewash (likely burrowing owl), rodent droppings, and desert tortoise scat. The cave was 2 ft wide, 4 ft tall, and 6.3 ft deep to a small ledge where a smaller hole continued for another 6 ft. There was no vegetation or obstructions at the cave entrance, which was located in a sheer rock wall in a 20-ft-deep, 50-ft-wide wash. The wash is moderately densely vegetated with shrubs, dominated by catclaw acacia and desert lavender; common species are creosote bush, white rhatany, brittle bush, and sweet bush. Wash substrates are gravels, coarse sand and cobbles.

The bat species using the cave cannot be determined; however, the two most likely species that occupied this roost, based on surrounding habitat, proximity to water, and the size and position of the roost, are the pallid bat (*Antrozous pallidus*) or the California leaf-nosed bat (*Macrotus californicus*). Pallid bats inhabit arid regions and prefer to roost in rocky substrates, and they

most likely would have used this cavity as a daytime roost. They roost in groups of at least 20 bats and have daytime roosts and feeding roosts, changing roosts often (BLM 2011). Pallid bats are known to cull insect parts, although those found in and near the cavity cannot be distinguished from burrowing owl prey. California leaf-nosed bats also inhabit arid regions and will take larger insect prey back to the roost to eat. This cavity would most likely have been used as a nighttime roost, as they typically use buildings, mines, bridges, rock shelters, or other sites with overhead protection. They roost singly or in groups up to several hundred individuals, depending on the season (WBWG 2005). Pallid bats and California leaf-nosed bats are CDFG SSC and BLM Sensitive.

No other bat sign, roosts, or hibernacula were found during surveys.

5.2.2.4 Small Mammals

Five species of rodents were captured during six trap nights at two locations on the Solar Plant Site (Table 15), none of which are special-status. All species, except desert woodrat (*Neotoma lepida*), are small and can be prey for burrowing owl. No Colorado Valley woodrats were observed or captured during trapping.

Table 15. Summary of Small Mammal Trapping Results, April and June 2011

Species		Trap Line								Total New
		1		2		3		4		
		N	R	N	R	N	R	N	R	
Session 1: Solar Plant Site (South Central) April 16, 17, 18, 2011										
Merriam's Kangaroo Rat (<i>Dipodomys merriami</i>)	Night 1	9	0	10	0	8	0	4	0	
	Night 2	5	2	7	3	4	7	9	2	
	Night 3	10	4	8	1	5	6	5	5	
	Total	24	6	25	4	17	13	18	7	84
Desert Pocket Mouse (<i>Chaetodipus penicillatus</i>)	Night 1	0	0	1	0	1	0	1	0	
	Night 2	2	0	2	0	2	0	0	0	
	Night 3	2	0	2	1	1	1	0	0	
	Total	4	0	5	1	4	1	1	0	14
Long-tailed Pocket Mouse (<i>Chaetodipus formosus</i>)	Night 1	0	0	0	0	0	0	0	0	
	Night 2	2	0	0	0	0	0	0	0	
	Night 3	0	0	0	0	0	0	0	0	
	Total	2	0	0	0	0	0	0	0	2
Total		30	6	30	5	21	14	19	7	100
Session 2: Solar Plant Site (West) June 20, 21, 23, 2011										
Merriam's Kangaroo Rat (<i>Dipodomys merriami</i>)	Night 1	3	0	4	0	0	0	0	0	
	Night 2	0	3	2	3	0	0	5	0	
	Night 3	2	2	1	2	2	2	0	0	
	Total	5	5	7	5	2	2	5	0	19
Desert Pocket Mouse (<i>Chaetodipus penicillatus</i>)	Night 1	7	0	5	0	2	0	4	0	
	Night 2	2	5	2	2	1	1	4	2	
	Night 3	2	4	2	1	2	1	4	3	
	Total	11	9	9	3	5	2	12	5	37
Long-tailed Pocket Mouse (<i>Chaetodipus formosus</i>)	Night 1	0	0	1	0	1	0	2	0	
	Night 2	3	0	0	3	4	1	1	1	
	Night 3	2	1	3	1	2	1	3	1	
	Total	5	1	4	4	7	2	6	2	22
Spiny Pocket Mouse (<i>Chaetodipus spinatus</i>)	Night 1	0	0	1	0	0	0	0	0	
	Night 2	0	0	0	0	0	0	0	0	
	Night 3	0	0	0	0	0	0	0	0	
	Total	0	0	1	0	0	0	0	0	1
Desert Woodrat (<i>Neotoma lepida</i>)	Night 1	1	0	0	0	0	0	0	0	
	Night 2	1	0	0	0	0	0	0	0	
	Night 3	0	1	0	0	0	0	0	0	
	Total	2	1	0	0	0	0	0	0	2
Total		23	16	21	12	14	6	23	7	81

¹ N=New Capture, R=Recapture² Lost individuals were counted as new captures

5.2.2.5 Invertebrates

Several snail shells were found under a small rock crevice in the McCoy Mountains, at the western edge of the potential transect location area. The species was identified to the genus *Eremarionta* (R. Cerutti, paleontological specialist, San Diego Natural History Museum, pers. comm. to D. Faulkner). While the California McCoy snail is *E. rowelli mccoiana*, there are

several other species of *Eremarionta* that may occur in the Blythe area (D. Faulkner, pers. comm.). The actual snail would need to be examined for other diagnostic characters to isolate it to species.

5.3 Potential for Other Special-status Species to Occur

5.3.1 Special-status Wildlife and Plant Species Not Observed, but Which May Occur on the Project Area

In addition to the special-status species observed during surveys, it is possible that some of the remaining special-status species from Table 1 could inhabit the Project Area and immediately adjacent areas. These are noted in Table 1 and include species that may not have been observed during surveys because of their rarity, behavior, season of surveys (e. g., wintering birds or summer annuals), or lack of germination or above ground growth due to reduced rainfall.

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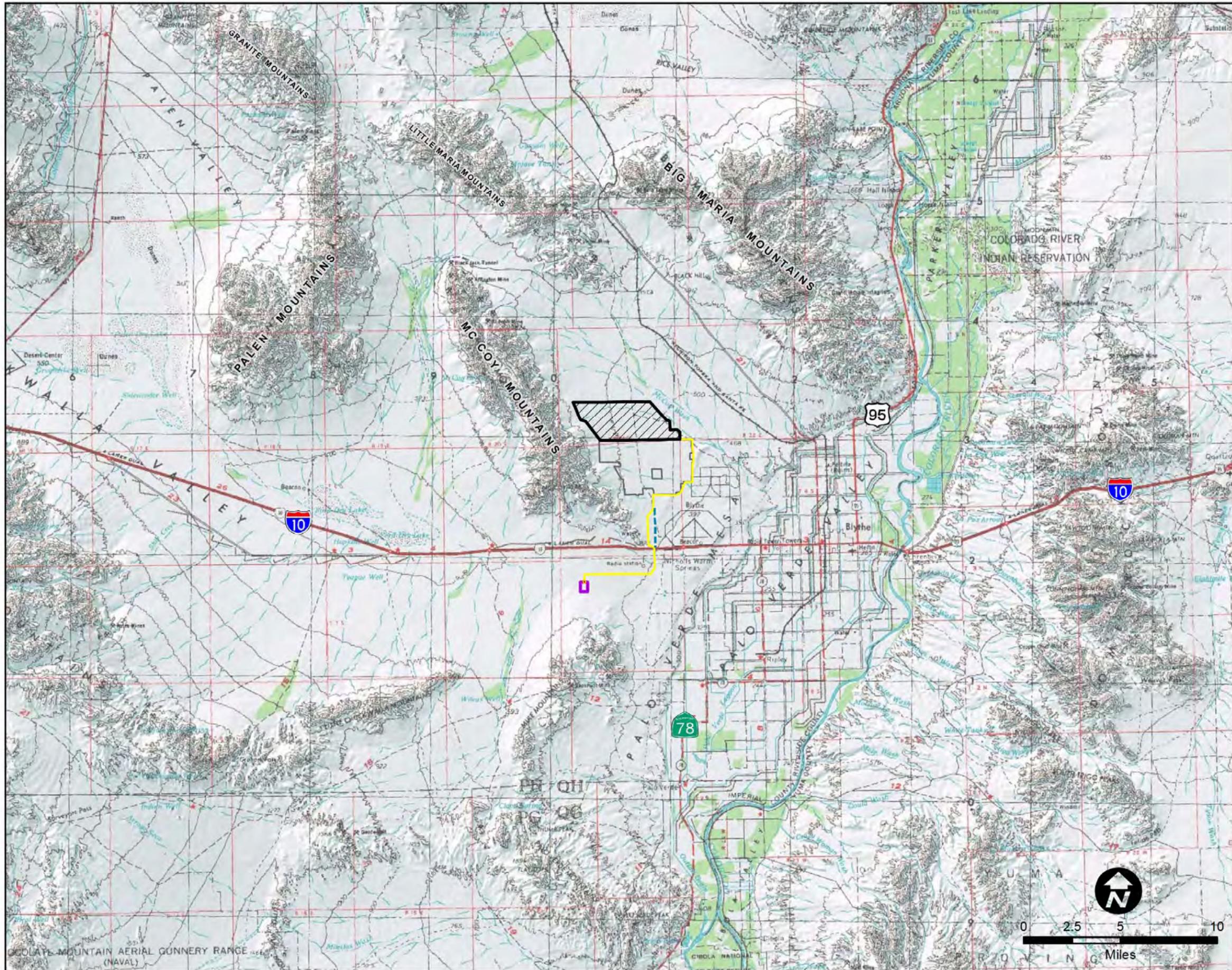
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<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0927>. Accessed June 6, 2011.

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FIGURES

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McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



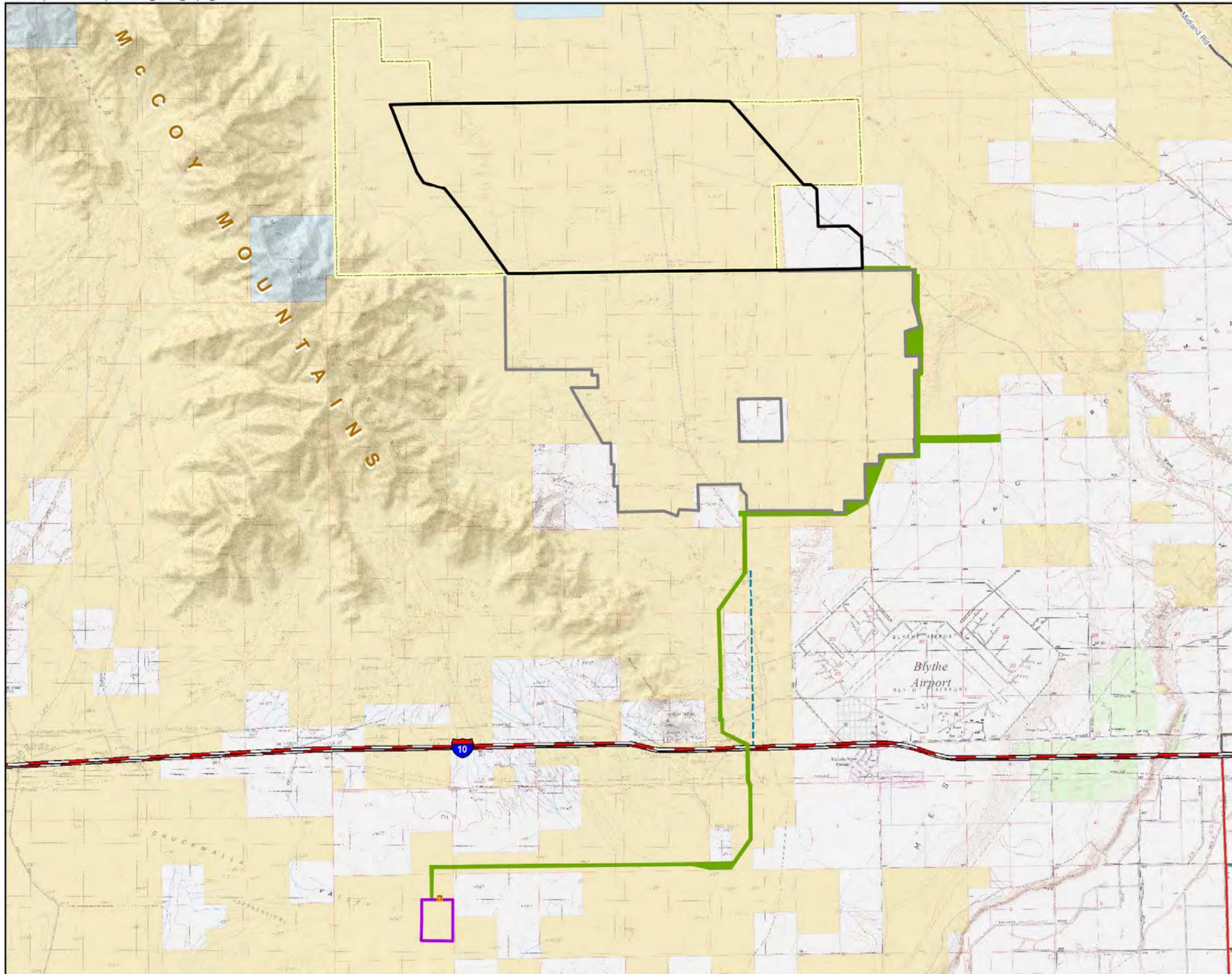
Legend

-  MSEP Solar Plant Site Boundary
-  Blythe Solar Power Project (BSPP)
-  Linear Corridor
-  Proposed Shared Access Road with BSPP
-  Switchyard
-  Proposed Colorado River Substation (SCE)

Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS, TTEC

FIGURE 1
REGIONAL VICINITY MAP





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Project Features

- MSEP BLM ROW Grant Application Boundary
- MSEP Solar Plant Site Boundary
- Blythe Solar Power Project (BSPP)
- Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard
- Proposed Shared Access Road with BSPP

Jurisdiction

AGENCY

- Bureau of Land Management
- State
- Private

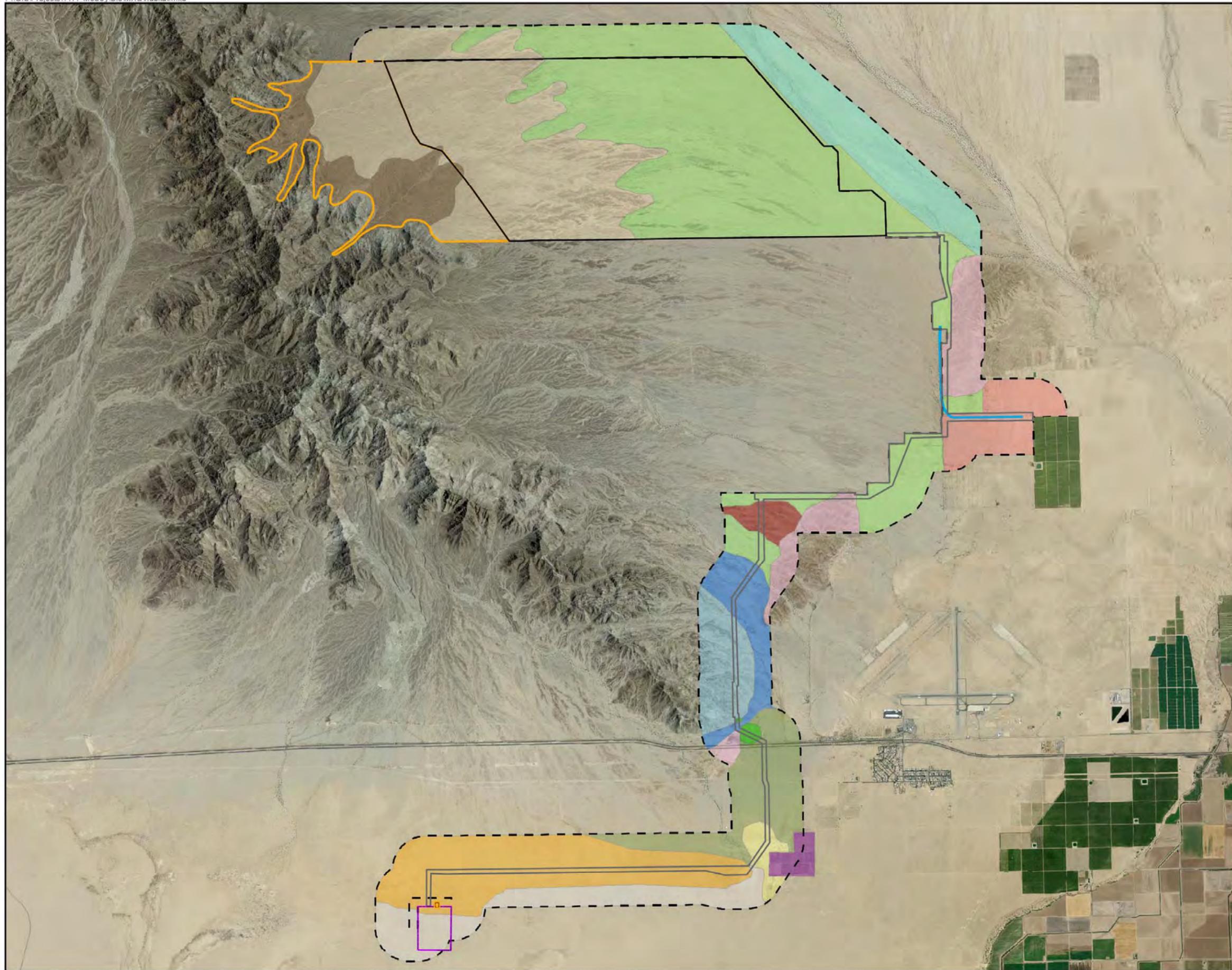


Notes:

- (a) UTM Zone 11, NAD 1983 Projection.
- (b) Source data: ESRI, BLM, USGS 7.5' DRGs, TTEC

FIGURE 2
OVERALL PROJECT LOCATION MAP

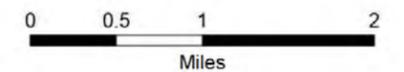




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

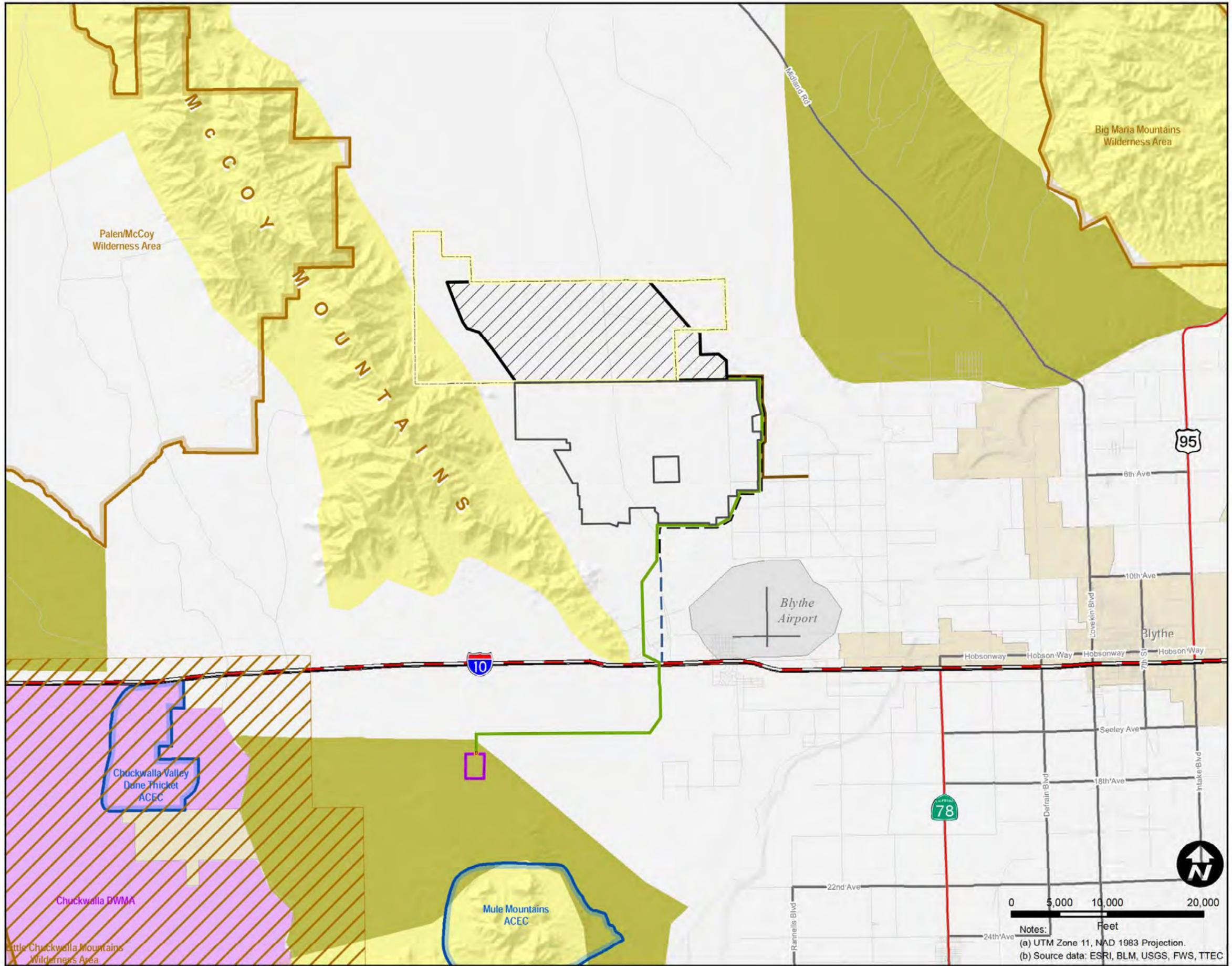
- MSEP Solar Plant Site Boundary
 - Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - Switchyard
 - Extent of Area Surveyed
 - Potential Primary Recipient Area
- Habitat**
- Arboreal Wash
 - Agriculture
 - Borrow Pit and Depression
 - Boulder Outflow
 - Desert Pavement Plain; 3-10 m Incised Washes
 - Intermittent Low Sand Dunes and Swales
 - Lower Bajada; Few Drainages
 - Lower Bajada; Shallow Runnels and Swales
 - McCoy Mountains Toeslopes; Arboreal Washes
 - McCoy Wash
 - Mid-Bajada; Arboreal Washes
 - PV Solar Facility
 - Pebble Plain
 - Sand Dunes
 - Sandy Lower Bajada; Sheet Flow, Swales and Percolation
 - Well-Developed Desert Pavement



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: A. Karl, USDA.

**FIGURE 3
PROJECT AREA HABITATS**





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Special Management Areas

- FWS Desert Tortoise Critical Habitat
- BLM Multi Species Wildlife Habitat Management Area (WHMA)
- BLM Big Horn Sheep WHMA
- BLM Area of Critical Environmental Concern (ACEC)
- BLM Desert Wildlife Management Area (DWMA)
- BLM Wilderness Area

Project Features

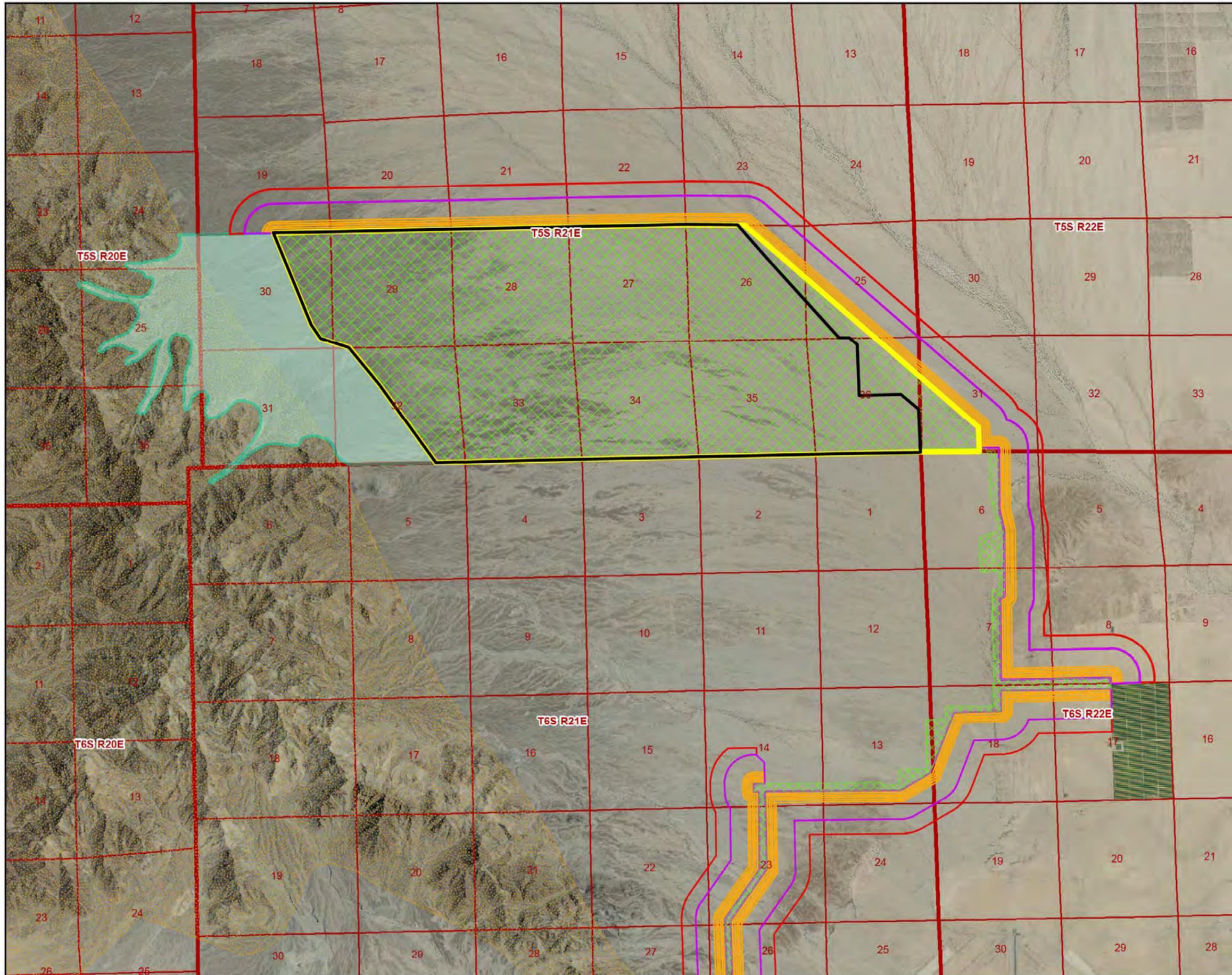
- MSEP BLM ROW Grant Application Boundary
- MSEP Solar Plant Site Boundary
- Proposed Distribution Line
- Proposed Linear Corridor
- Proposed Shared Access Road with BSPP
- Proposed Access Road
- Proposed Colorado River Substation (SCE)
- Switchyard
- Blythe Solar Power Project ROW

**FIGURE 4
SPECIAL MANAGEMENT AREAS
WITHIN PROJECT VICINITY**

TETRA TECH EC, INC.

0 5,000 10,000 20,000
Feet

Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, BLM, USGS, FWS, TTEC

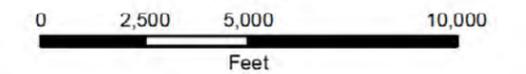


McCOY SOLAR ENERGY PROJECT

RIVERSIDE COUNTY, CA

Legend

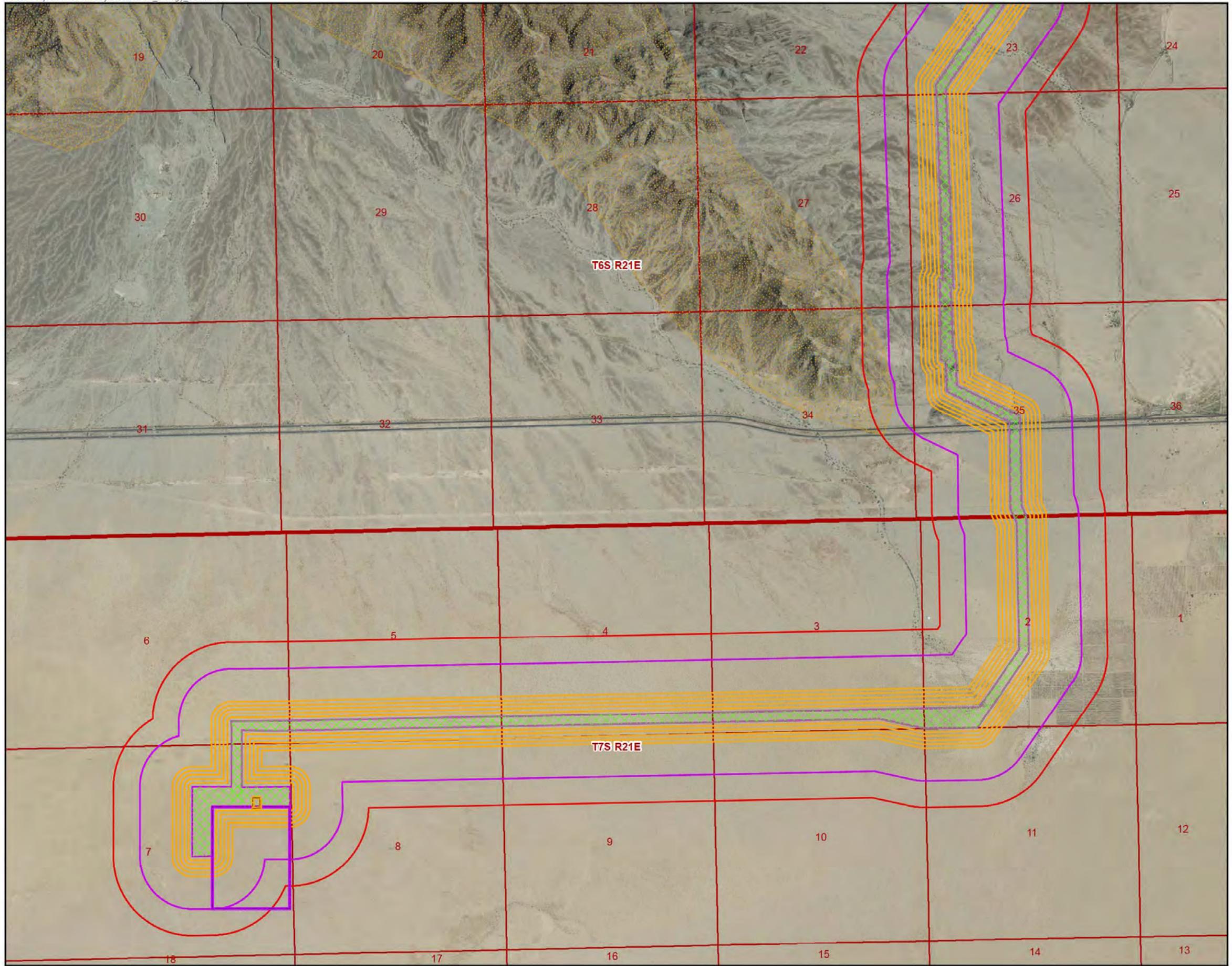
- Solar Plant Site Survey Area
- MSEP Solar Plant Site Boundary
- 100% Survey Coverage
- 100 to 500 ft Buffer and Burrowing Owl Transects
- 1,312 ft (400 m) Buffer Transect
- 1,969 ft (600 m) Buffer Transect
- Big Horn Sheep WHMA
- Potential Primary Tortoise Recipient (Translocation) Area (100% coverage)
- Township/Range
- Sections



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS 7.5' DRGs, TTEC

FIGURE 5A
 2011 BIOLOGICAL RESOURCES SURVEY AREA



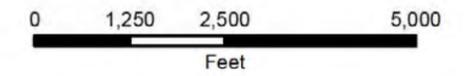


McCOY SOLAR ENERGY PROJECT

RIVERSIDE COUNTY, CA

Legend

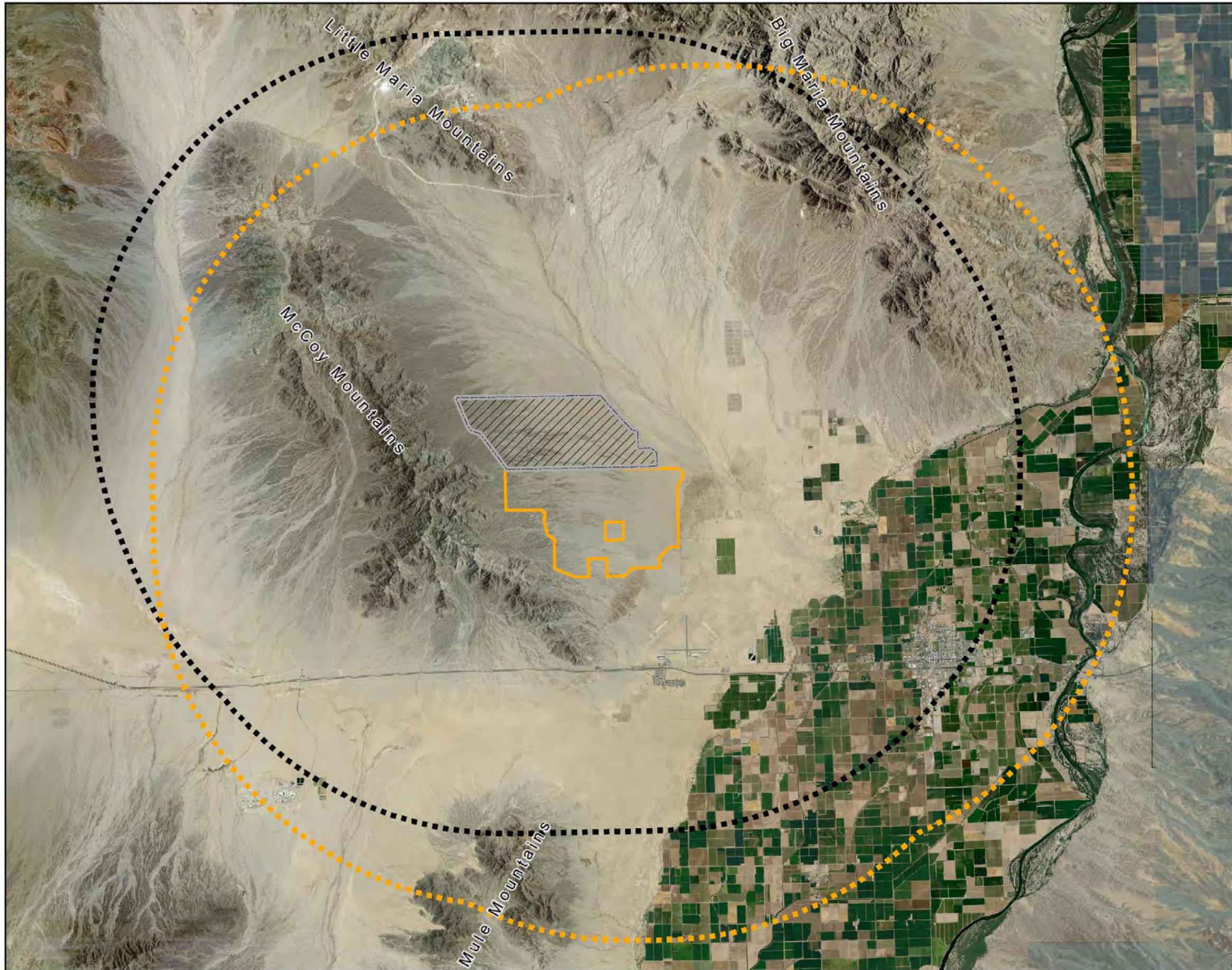
- Proposed Colorado River Substation (SCE)
- Switchyard
- 100% Coverage Survey Area
- 100 to 500 ft Buffer and Burrowing Owl Transects
- 1,312 ft (400 m) Buffer Transect
- 1,969 ft (600 m) Buffer Transect
- Big Horn Sheep WHMA
- Township/Range
- Sections



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS 7.5' DRGs, TTEC

FIGURE 5B
 2011 BIOLOGICAL RESOURCES SURVEY AREA



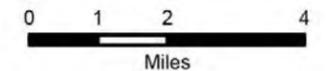


McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

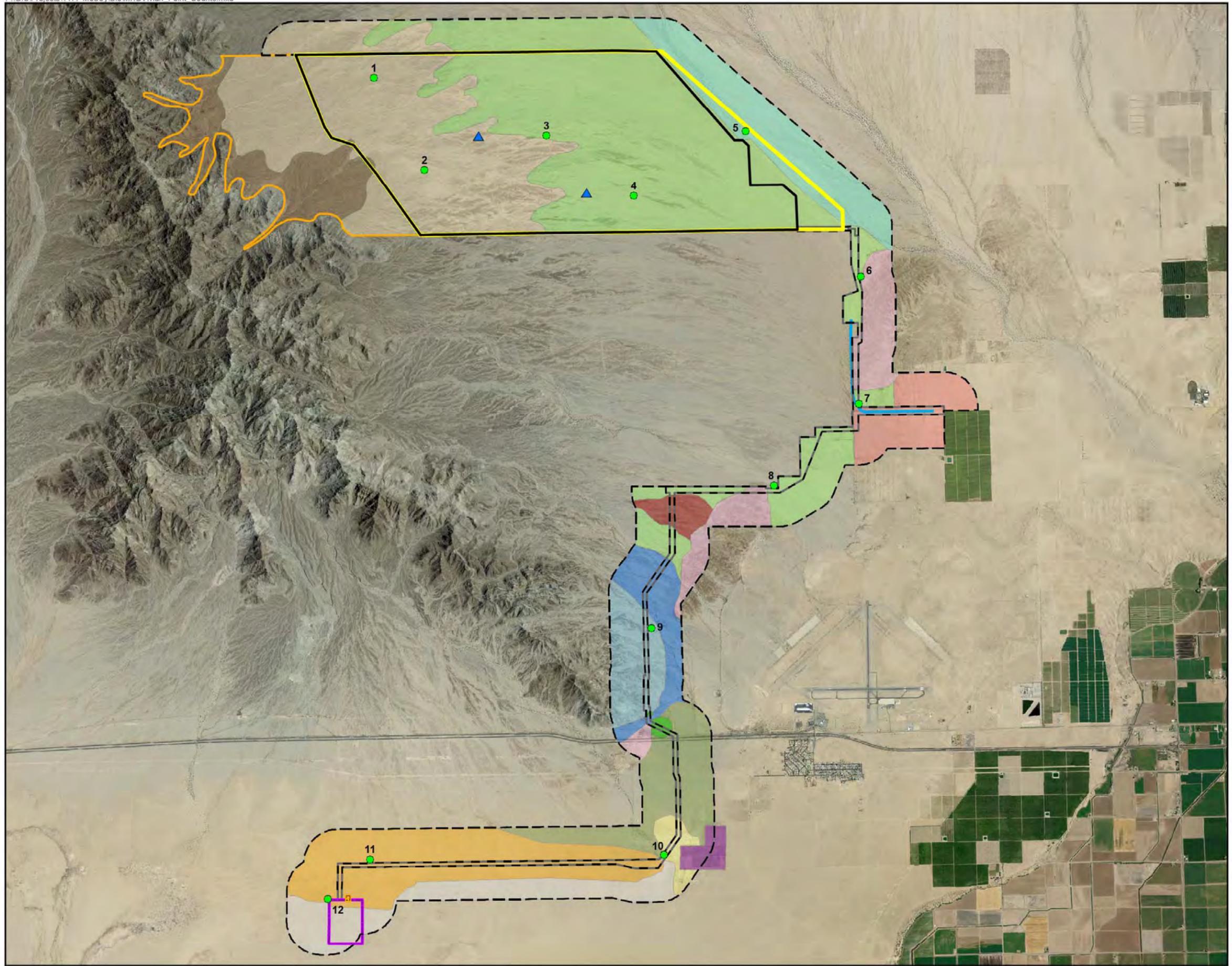
- MSEP Solar Plant Site Boundary
- 10-Mile Buffer from MSEP Plant Site
- Blythe Solar Power Project
- 2010 Blythe Solar Power Project Helicopter Survey Area



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, BLM, USGS, TTEC
(c) Eagle Data (WRI 2010)

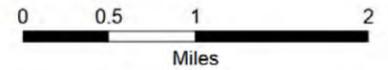
FIGURE 6
SURVEY AREA, 2010 AND 2011
GOLDEN EAGLE HELICOPTER SURVEYS





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

- Legend**
- Avian Point Count Plot
 - ▲ Small-Mammal Trap Line
 - MSEP Solar Plant Site Boundary
 - Solar Plant Site Survey Area
 - Proposed Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - Switchyard
 - Extent of Area Surveyed
 - Potential Primary Recipient Area
- Habitat**
- Arboreal Wash
 - Agriculture
 - Borrow Pit and Depression
 - Boulder Outflow
 - Desert Pavement Plain; 3-10 m Incised Washes
 - Intermittent Low Sand Dunes and Swales
 - Lower Bajada; Few Drainages
 - Lower Bajada; Shallow Runnels and Swales
 - McCoy Mountains Toeslopes; Arboreal Washes
 - McCoy Wash
 - Mid-Bajada; Arboreal Washes
 - PV Solar Facility
 - Pebble Plain
 - Sand Dunes
 - Sandy Lower Bajada; Sheet Flow, Swales and Percolation
 - Well-Developed Desert Pavement

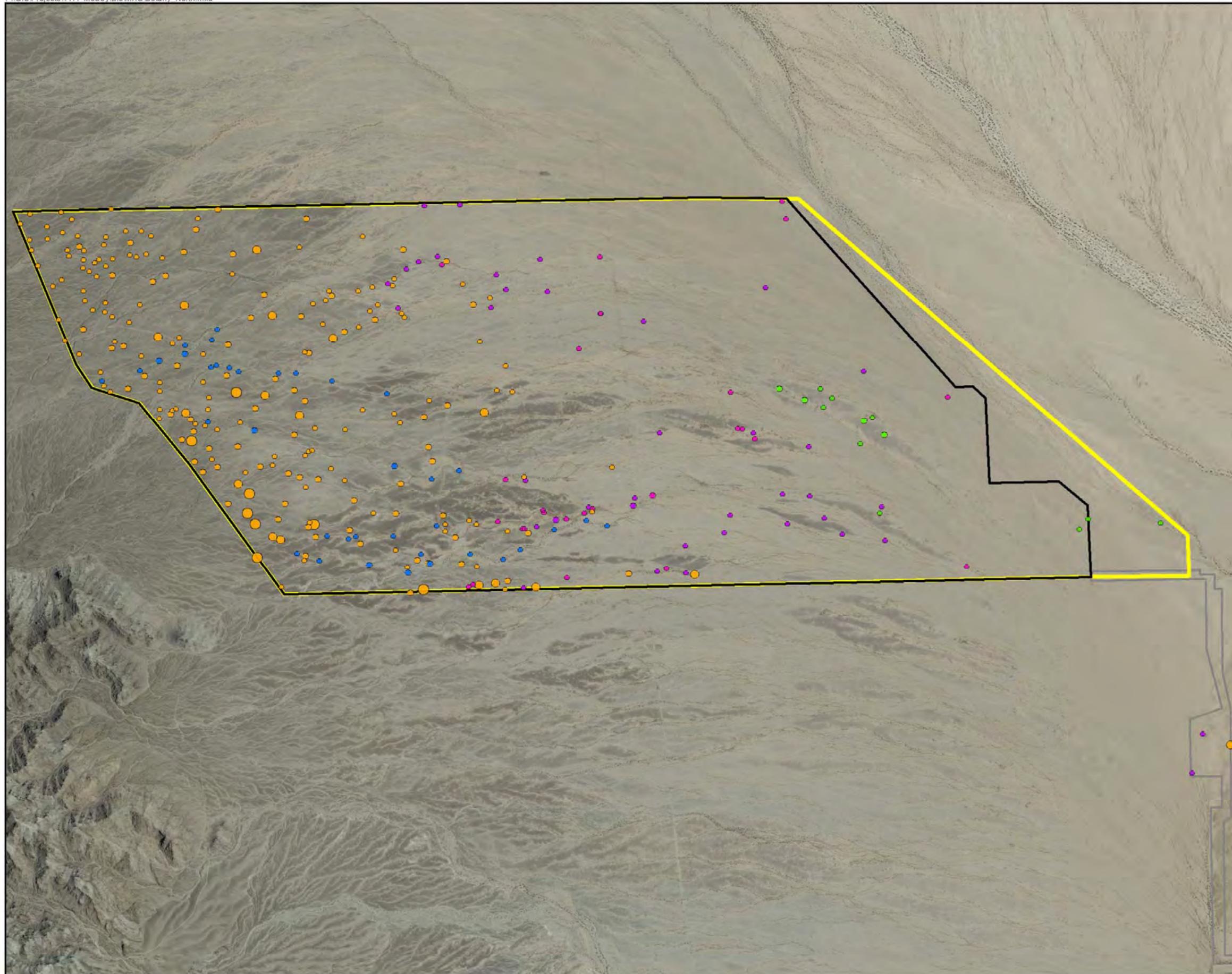


Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: A. Karl, ESRI, CNDDB, USDA.

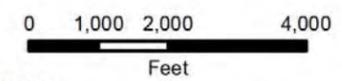
**FIGURE 7
 AVIAN POINT COUNT AND
 SMALL-MAMMAL TRAPPING PLOTS**



McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



- Legend**
- Common Name**
- Harwood's phlox
 - Harwood's milkvetch
 - Las Animas colubrina
 - Utah cynanchum
 - Desert unicorn plant
 - Desert unicorn plant seed pods
 - Ribbed cryptantha
- Population Size**
- 1-10 plants
 - 11-50 plants
 - 51-100 plants
 - 101-500 plants
 - >1000 plants
- MSEP Solar Plant Site Boundary
 - Proposed Linear Corridor
 - Solar Plant Site Survey Area



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, TTEC

**FIGURE 8A
SPECIAL-STATUS PLANT OBSERVATIONS**





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Common Name

- Harwood's phlox
- Harwood's milkvetch
- Las Animas colubrina
- Utah cynanchum
- Desert unicorn plant
- Desert unicorn plant seed pods
- Ribbed cryptantha

Population Size

- 1-10 plants
- 11-50 plants
- 51-100 plants
- 101-500 plants
- >1000 plants

MSEP Solar Plant Site Boundary
 Proposed Linear Corridor
 Proposed Colorado River Substation (SCE)
 Switchyard

0 2,000 4,000 8,000
 Feet

Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, TTEC

**FIGURE 8B
SPECIAL-STATUS PLANT OBSERVATIONS**

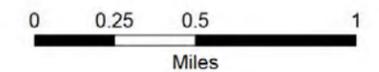
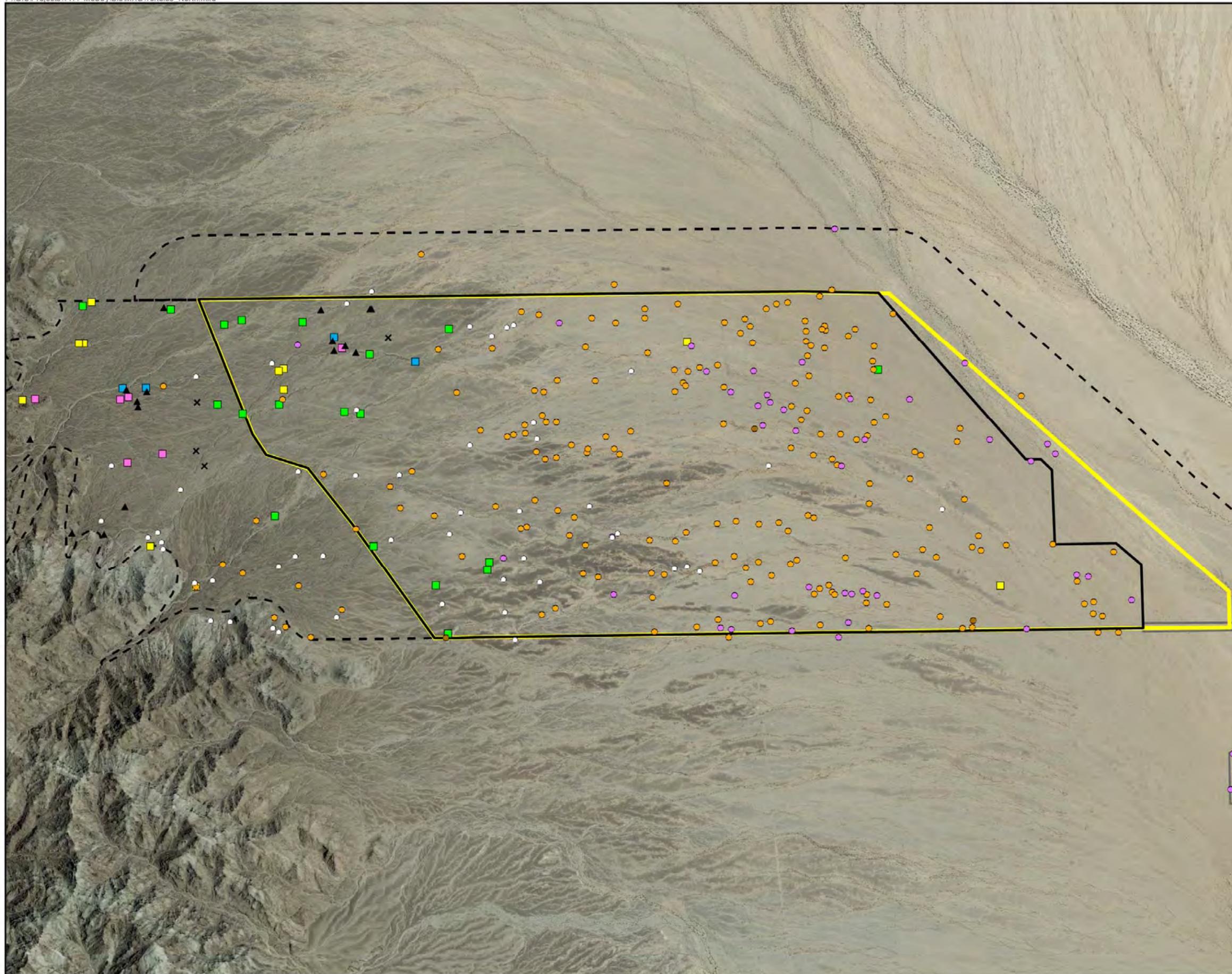


McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

Tortoise Sign

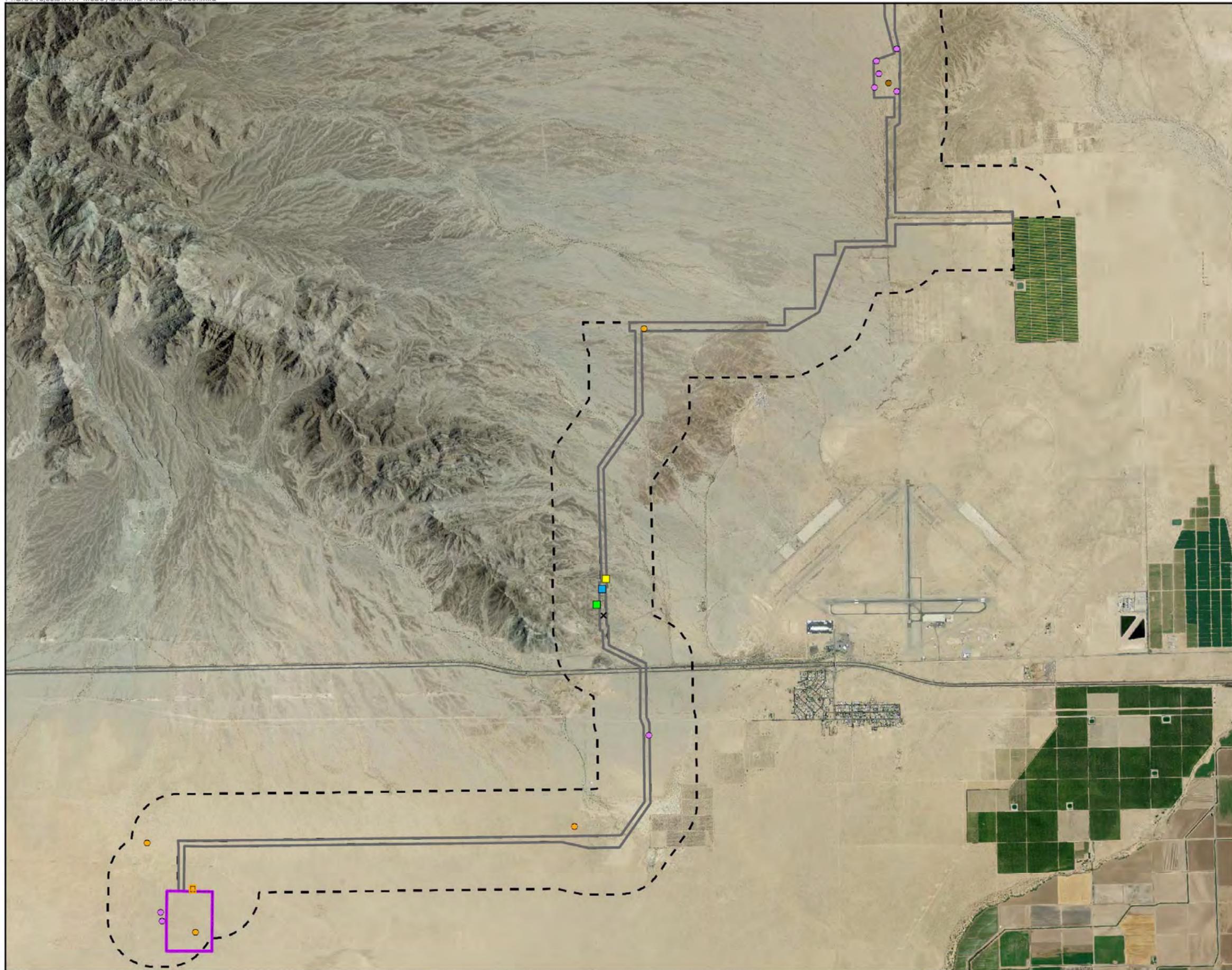
- ✕ Tortoise
- Burrow - Class 1
- Burrow - Class 2
- Burrow - Class 3
- Burrow - Class 4
- ▲ Scat
- Carcass
- ◇ Egg Shells
- Shell fragment < 4 years old
- Shell fragment > 4 years old
- Shell fragment (permineralized)
- ▭ MSEP Solar Plant Site Boundary
- ▭ Solar Plant Site Survey Area
- ▭ Proposed Linear Corridor
- ▭ Proposed Colorado River Substation (SCE)
- ▭ Extent of Area Surveyed



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

FIGURE 9-A
 DESERT TORTOISE
 OBSERVATIONS IN SPRING 2011



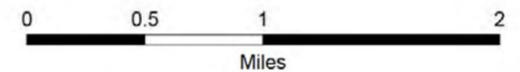


McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

Tortoise Sign

- x Tortoise
- Burrow - Class 1
- Burrow - Class 2
- Burrow - Class 3
- Burrow - Class 4
- ▲ Scat
- Carcass
- ◆ Egg Shells
- Shell fragment < 4 years old
- Shell fragment > 4 years old
- Shell fragment (permineralized)
- MSEP Solar Plant Site Boundary
- Solar Plant Site Survey Area
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard
- Extent of Area Surveyed

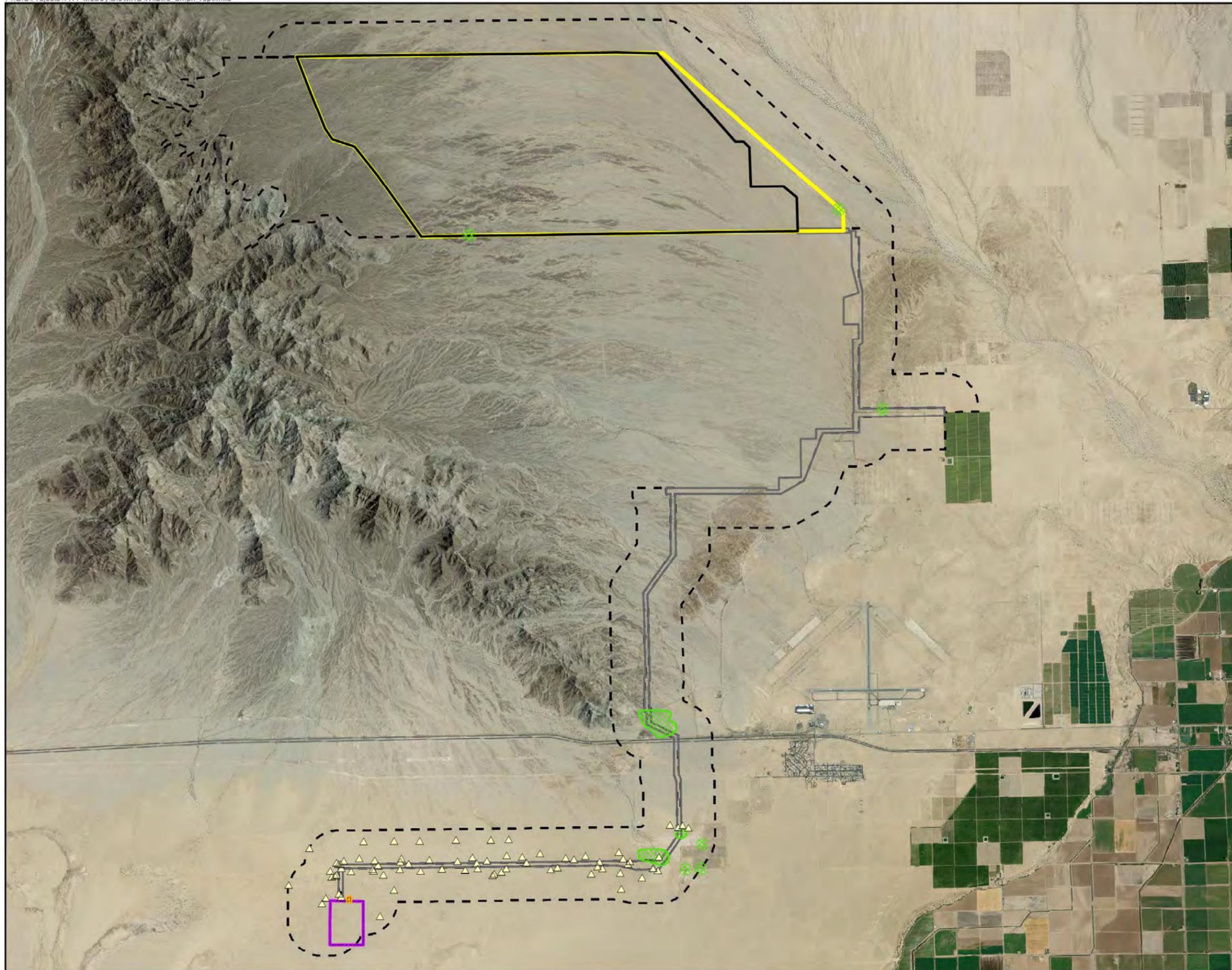


Notes:

- (a) UTM Zone 11, NAD 1983 Projection.
- (b) Source data: ESRI, USDA, TTEC.

**FIGURE 9-B
DESERT TORTOISE
OBSERVATIONS IN SPRING 2011**



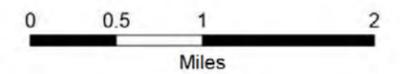


McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

Species

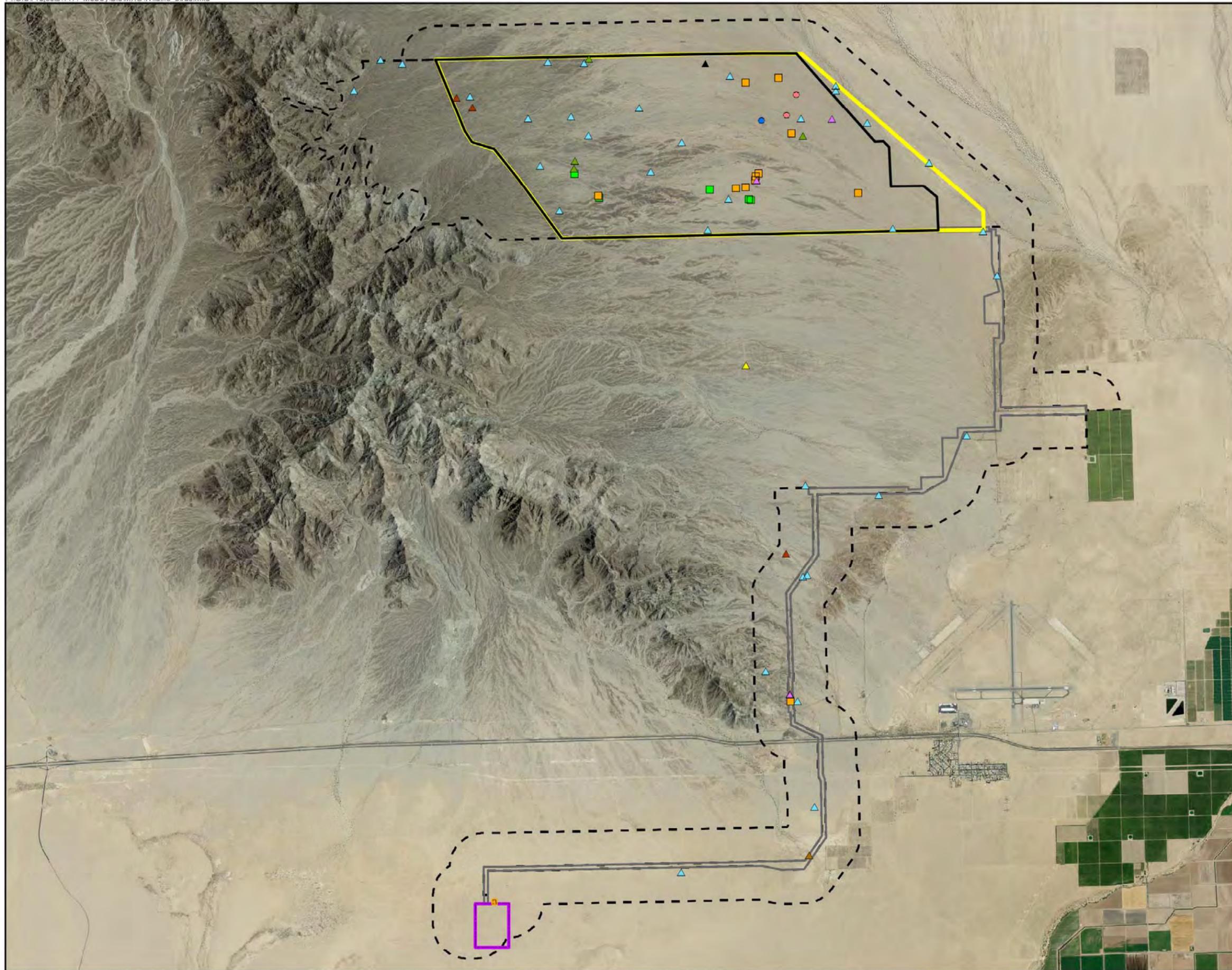
-  Mojave fringe-toed lizard
-  Potential Couch's Spadefoot Toad Breeding Habitat
-  MSEP Solar Plant Site Boundary
-  Solar Plant Site Survey Area
-  Proposed Linear Corridor
-  Proposed Colorado River Substation (SCE)
-  Switchyard
-  Extent of Area Surveyed



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, USDA, TTEC.

FIGURE 10
OTHER SPECIAL-STATUS REPTILES
AND AMPHIBIANS
OBSERVATIONS IN SPRING 2011





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

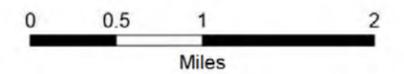
Species

- ▲ Brewer's sparrow
- ▲ Golden eagle
- ▲ Le Conte's thrasher
- ▲ Loggerhead shrike
- ▲ Prairie falcon
- ▲ Yellow Warbler

Phase II Burrowing Owl Survey Observations

- ▲ Bird
- Burrow
- Burrow (Inactive)
- White Wash
- White Wash and Pellets

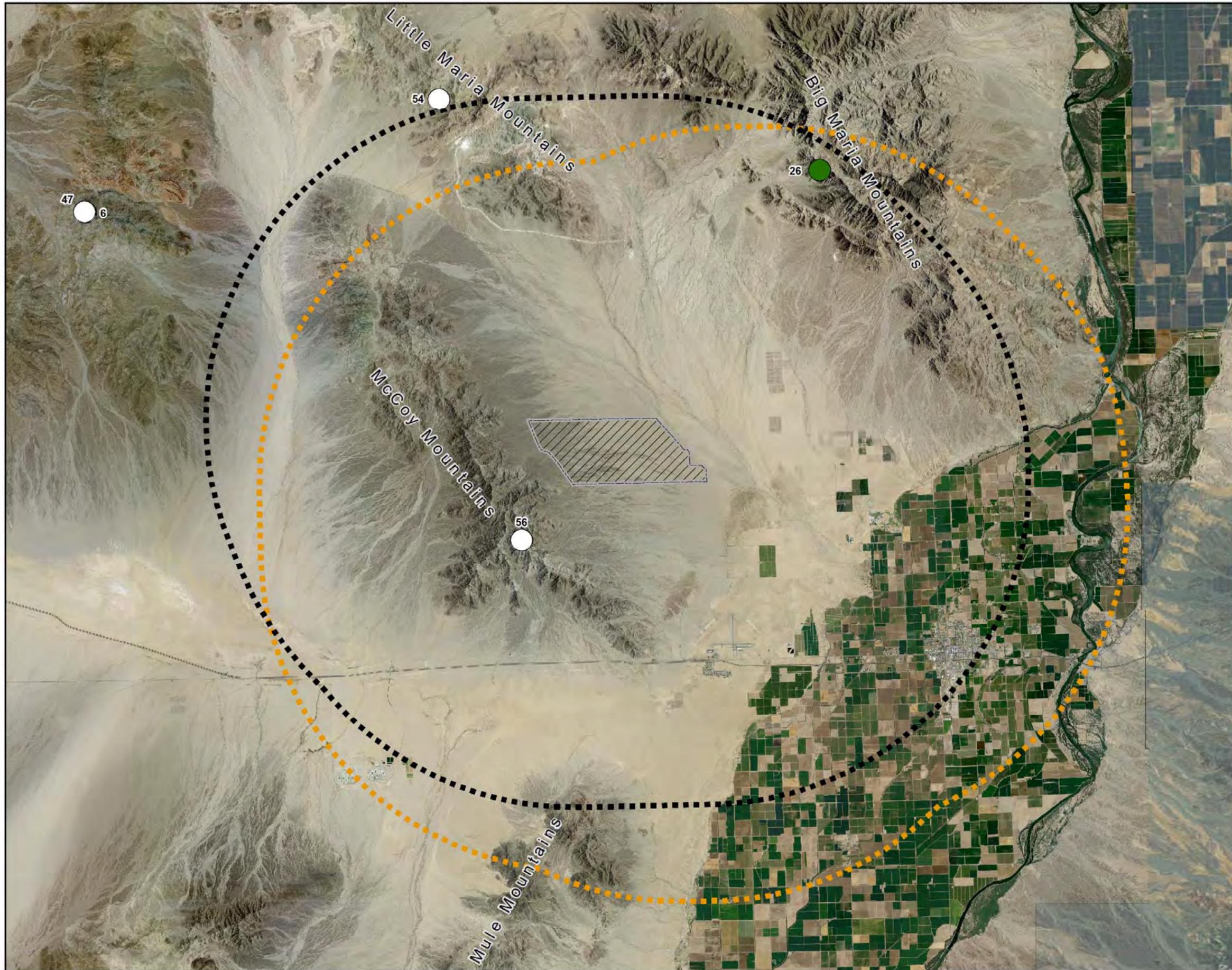
- MSEP Solar Plant Site Boundary
- Solar Plant Site Survey Area
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard
- Extent of Area Surveyed



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

FIGURE 11
SPECIAL-STATUS BIRDS
OBSERVATIONS IN SPRING 2011





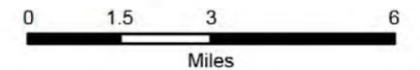
McCOY SOLAR ENERGY PROJECT

RIVERSIDE COUNTY, CA



Legend

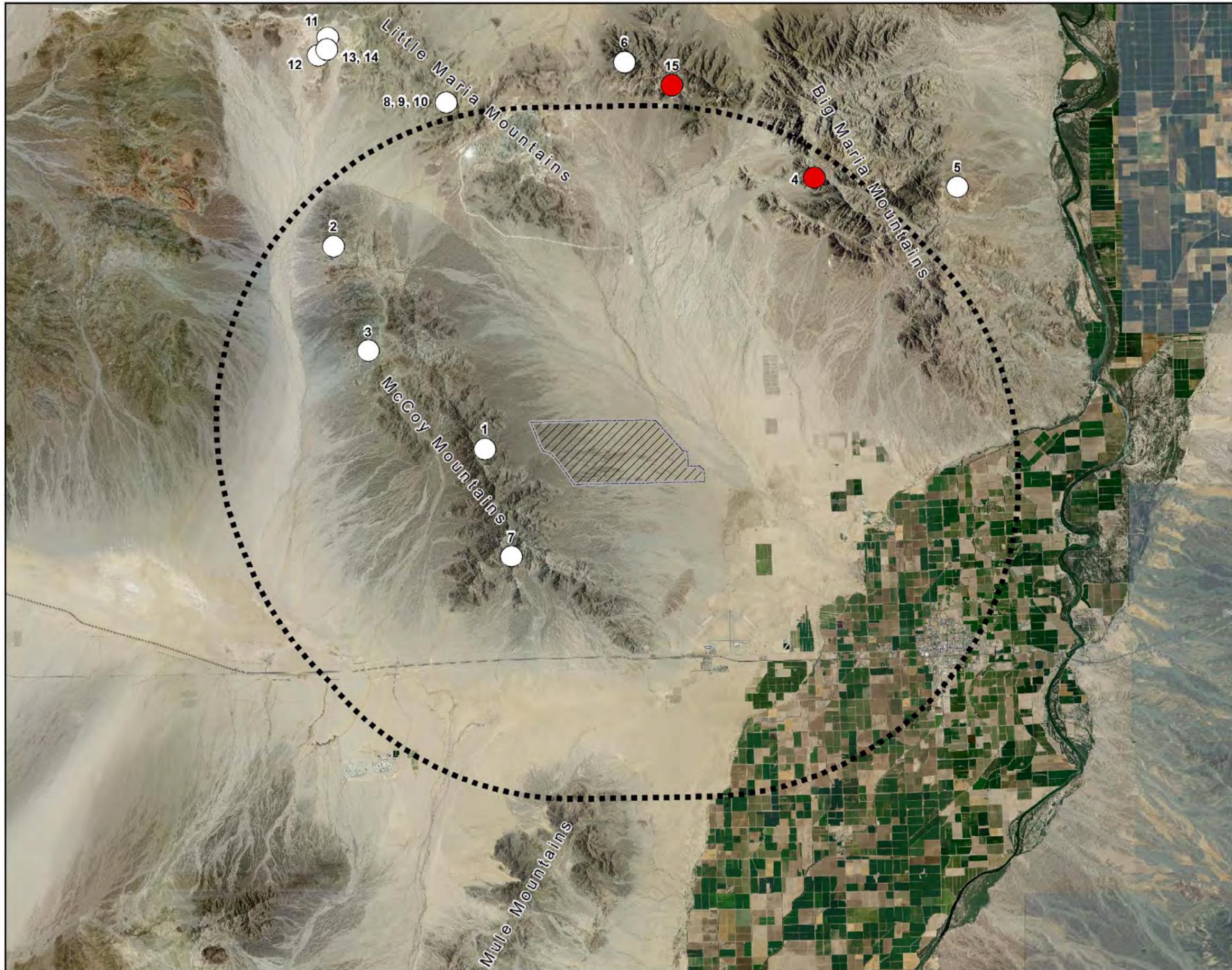
- MSEP Solar Plant Site Boundary
- 10-mile-radius Around Project Area
- 2010 Survey Boundary
- Inactive Golden Eagle Nest
- Active Golden Eagle Nest



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS, TTEC
 (c) Eagle data (WRI 2010)

FIGURE 12A
 APPROXIMATE GOLDEN EAGLE NEST LOCATIONS
 2010 WILDLIFE RESEARCH INSTITUTE
 HELICOPTER SURVEYS

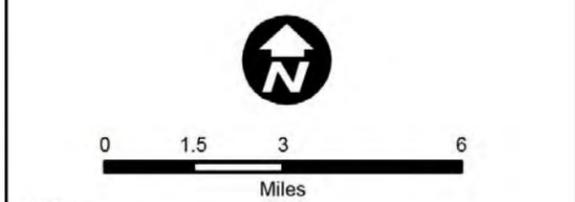




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



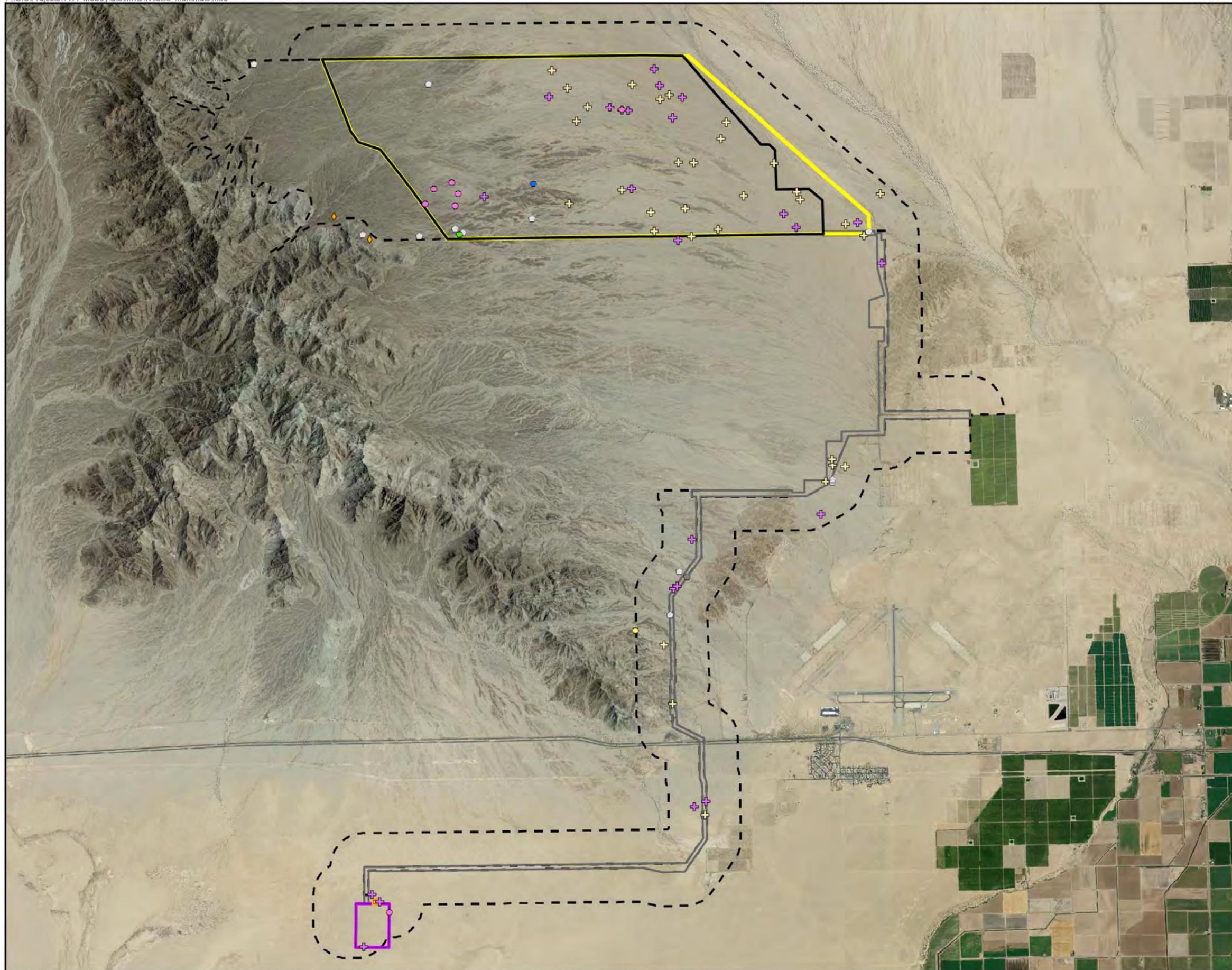
- Legend**
- MSEP Solar Plant Site Boundary
 - 2011 McCoy Solar Energy Project
 - 10-mile-radius Helicopter Survey Area
 - Inactive Golden Eagle Nest
 - Inactive Golden Eagle Nest In use by Another Species



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS, TTEC
 (c) Eagle data (WRI 2011)

FIGURE 12B
 APPROXIMATE GOLDEN EAGLE NEST LOCATIONS
 2011 WILDLIFE RESEARCH INSTITUTE
 HELICOPTER SURVEYS

TETRA TECH EC, INC.



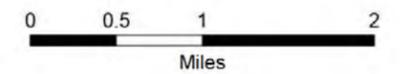
**McCOY SOLAR
ENERGY PROJECT
RIVERSIDE COUNTY, CA**

Legend

Species

- American badger
- American badger digs
- Burro deer hide
- + Desert kit fox natal den (Active)
- + Desert kit fox natal den (Inactive)
- Potential bat roost
- ◆ Mountain lion scat
- Wild burro scat
- Wild burro teeth

- MSEP Solar Plant Site Boundary
- Solar Plant Site Survey Area
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard
- Extent of Area Surveyed



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

**FIGURE 13
SPECIAL-STATUS MAMMALS
OBSERVATIONS IN SPRING 2011**



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APPENDIX A
REPRESENTATIVE PROJECT AREA PHOTOGRAPHS

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APPENDIX A

REPRESENTATIVE PROJECT AREA PHOTOGRAPHS

The following set of photographs shows representative habitats on the Project Area. The procession is from west to east on the Solar Plant Site, then south along the Linear Corridor.



Broad patches of well-developed desert pavement with small intersecting runnels in the western portion of the Solar Plant Site. Photo is taken from Survey Cell 80 in the southwestern Solar Plant Site, facing west toward the McCoy Mountains.



Another view of the western Solar Plant Site, taken from the northwestern area (Survey Cell 06). Note the small stature and rarity of trees in most washes.



One of a few small areas in the northwestern portion of the Solar Plant Site with more drainages. Facing North.



The most well-developed wash on the Solar Plant Site, located in the western portion of the site, approximately midway north to south. This section of the wash is about 3000 feet long and dominated by relatively large palo verde, along with the common wash-shrub species.



Typical habitat in the eastern portion of the Solar Plant Site, taken in Cell 41 along the eastern edge of the Solar Plant Site.



Another view of habitat on the eastern portion of the Solar Plant Site, taken from Survey Cell 39 near the center of the eastern half of the Solar Plant Site.



Typical runnels and swales on the eastern portion of the Solar Plant Site, dominated by typically upland species.



Another view of typical runnels in the Solar Plant Site. Note the common presence of big galleta grass and common upland shrubs and the small, occasional palo verde in the upper drainage. Photo is taken from Survey Cell 67, west of midway in the Solar Plant Site. The McCoy Mountains are in the background.



Eastern border of Solar Plant Site, showing sheeting hydrology. A small branch of McCoy Wash travels along the eastern border of the Solar Plant Site. Photo is from northwest corner of Survey Cell 41, facing east.



The main channel of McCoy Wash, about one mile east of the Solar Plant Site, dominated by large palo verde and ironwood.



Open habitat where the Linear Corridor exits the Solar Plant Site. Photo taken in Survey Segment 1.



Typical lower bajadas habitat with shallow runnels and swales in most of the Li near Corridor north of I-10. Note the elevated pebble terrace in the background.



View from the pebble terrace, facing southwest, in the northern Linear Corridor. This is a point where several small channels coalesce to form an arbooreal wash that travels adjacent to the Linear Corridor, crossing it near the farmed fields to the south (see Figure 3). Photo taken in Survey Segment 8.



Linear Corridor north of I-10 near southern end of McCoy Mountains. The habitat is open, with little plant cover, but also with several arbooreal washes that cross the Linear Corridor. Photo taken in Survey Segment 19.



Borrow pit just north of I-10 with a dense honey mesquite-palo verde bosque-ironwood bosque.



Aeolian sand sheets along the long east-west portion of the Linear Corridor south of I-10. Note abundant Sahara mustard. Photo taken in Survey Segment 32.

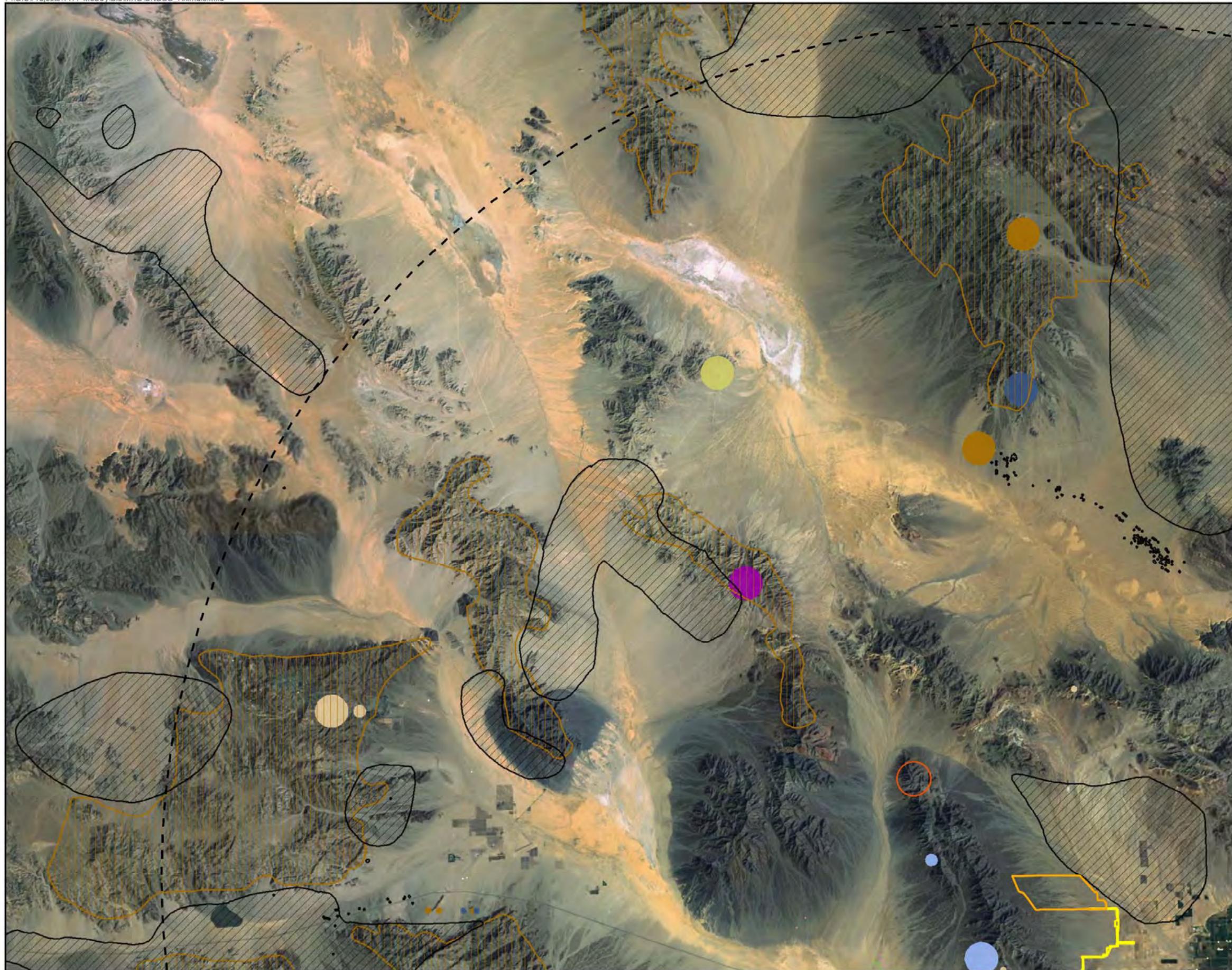


Potential Translocation Site: boulder outflow in the southwestern and far western portion. Photo taken facing and near the McCoy Mountains.

APPENDIX B

**CALIFORNIA NATURAL DIVERSITY DATABASE
RESULTS WITHIN 50 MILES OF THE PROJECT AREA**

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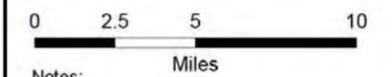
McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

- MSEP Solar Plant Site Boundary
- Switchyard
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- 50-Mile Site Buffer

CNDDDB Common Name

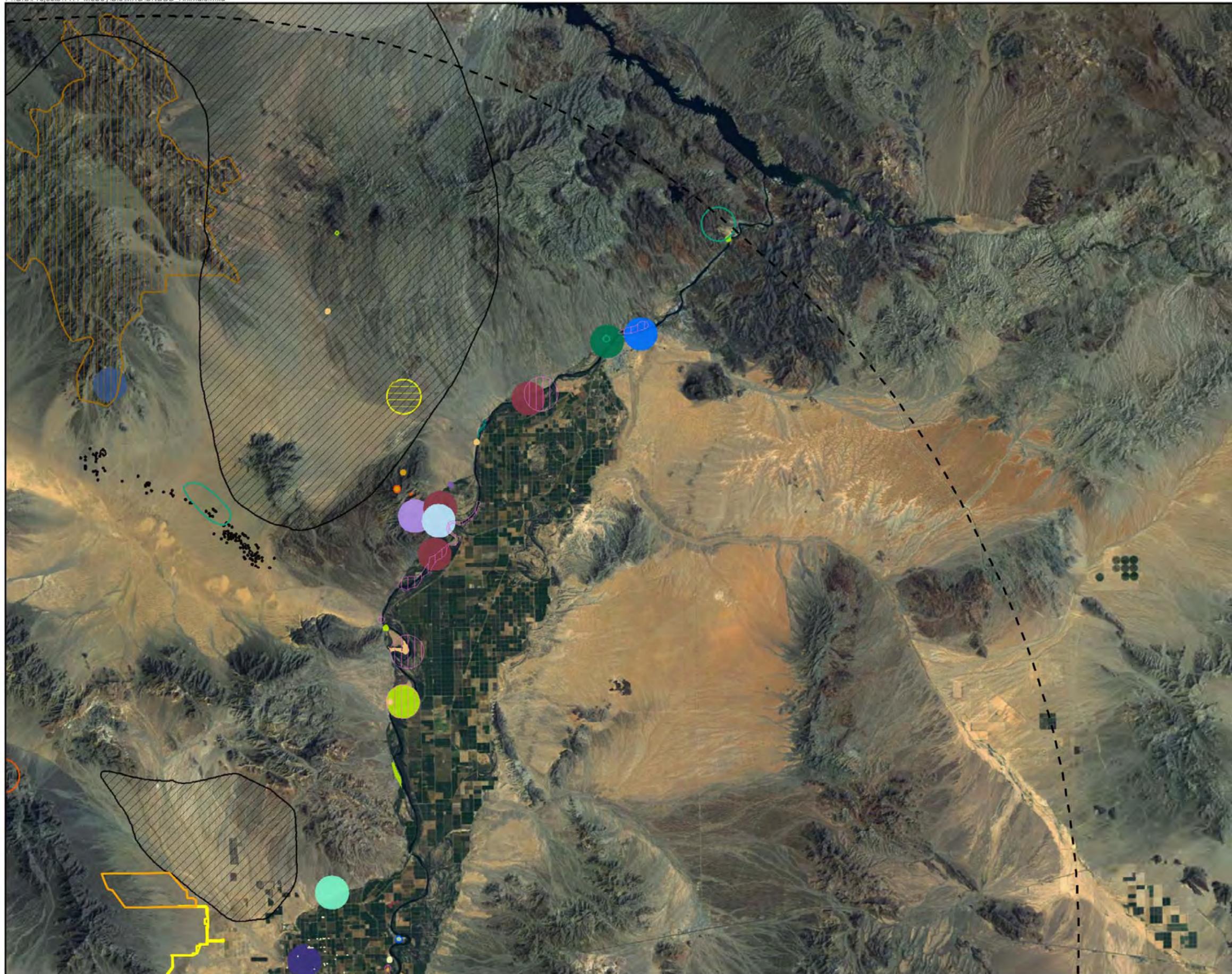
- Bendire's thrasher
- California McCoy snail
- California leaf-nosed bat
- Le Conte's thrasher
- Mojave fringe-toed lizard
- Nelson's bighorn sheep
- banded gila monster
- burrowing owl
- desert tortoise
- hepatic tanager
- loggerhead shrike
- pallid bat



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDDB, USDA.

APPENDIX B CNDDDB SPECIAL STATUS SPECIES OCCURRENCES WITHIN 25 MILES OF THE PROJECT

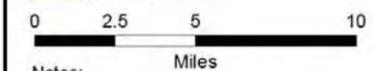




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

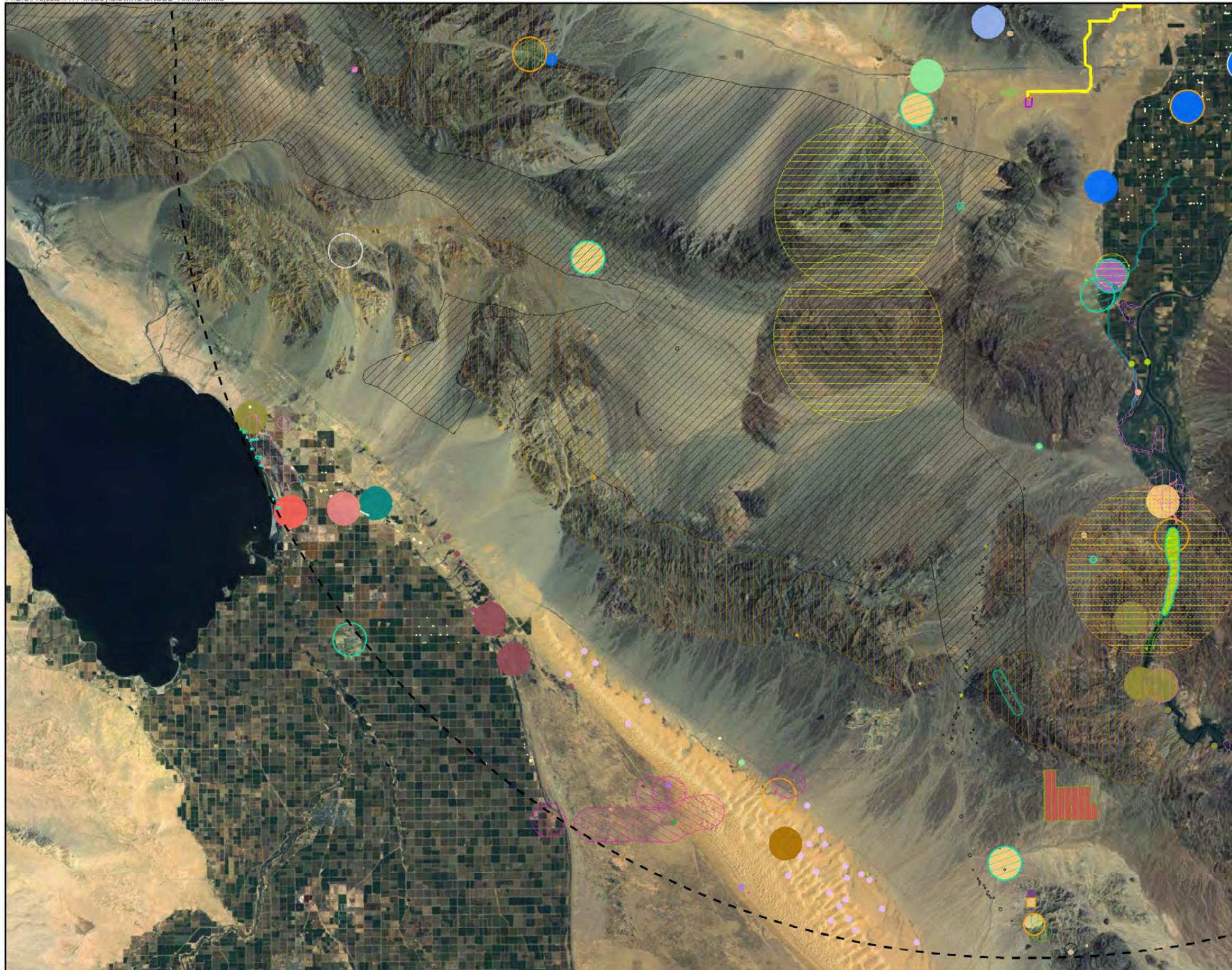
- MSEP Solar Plant Site Boundary
- Switchyard
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- 50-Mile Site Buffer
- CNDDDB Common Name**
- American badger
- Arizona bell's vireo
- Bendire's thrasher
- Bradley's cuckoo wasp
- California black rail
- Colorado River cotton rat
- Colorado Valley woodrat
- Crissal thrasher
- Gila woodpecker
- Nelson's bighorn sheep
- Townsend's big-eared bat
- Yuma clapper rail
- Yuma myotis
- brown-crested flycatcher
- burrowing owl
- cave myotis
- cheeseweed owl (cheeseweed moth lacewing)
- desert tortoise
- elf owl
- gilded flicker
- great blue heron
- great egret
- loggerhead shrike
- lowland (=Yavapai, San Sebastian & San Felipe) leopard frog
- northern cardinal
- pallid bat
- razorback sucker
- summer tanager
- vermilion flycatcher
- western yellow-billed cuckoo
- white desert snail
- yellow-breasted chat



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDDB, USDA.

APPENDIX B CNDDDB SPECIAL STATUS SPECIES OCCURRENCES WITHIN 25 MILES OF THE PROJECT

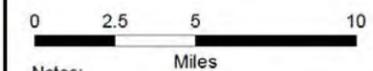




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

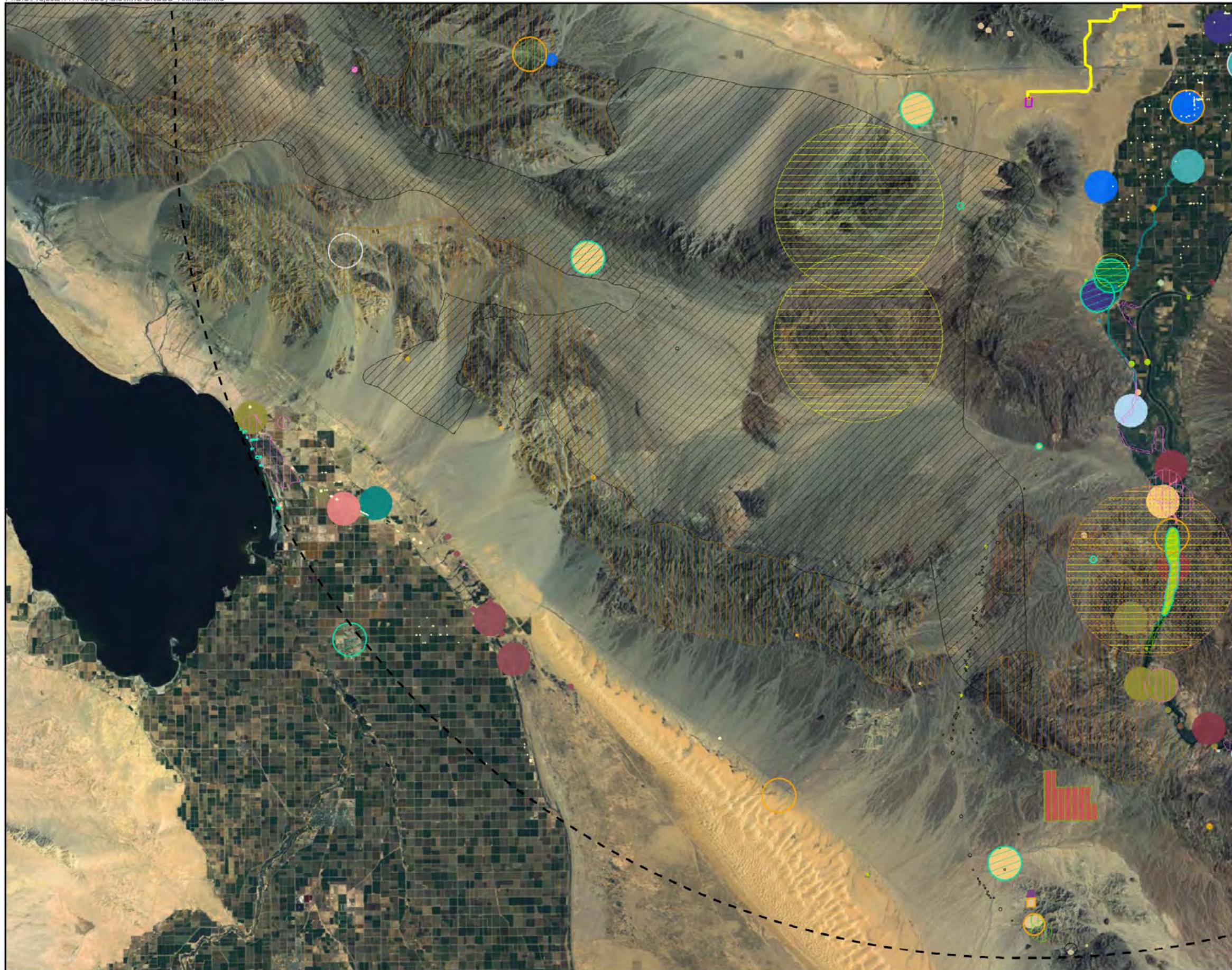
- MSEP Solar Plant Site Boundary
 - Switchyard
 - Proposed Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - 50-Mile Site Buffer
- CNDDB Common Name
- | | |
|---|-----------------------------|
| A mellitid bee | merlin |
| Algodones sand jewel beetle | pallid bat |
| American badger | pocketed free-tailed bat |
| Andrew's dune scarab beetle | razorback sucker |
| California McCoy snail | western mastiff bat |
| California black rail | western small-footed myotis |
| California leaf-nosed bat | western yellow bat |
| Carlson's dune beetle | yellow warbler |
| Colorado Valley woodrat | yellow-breasted chat |
| Couch's spadefoot | |
| Crissal thrasher | |
| Gila woodpecker | |
| Hardy's dune beetle | |
| Le Conte's thrasher | |
| Mojave fringe-toed lizard | |
| Nelson's bighorn sheep | |
| Riverside cuckoo wasp | |
| Sonoran desert toad | |
| Yuma clapper rail | |
| Yuma hispid cotton rat | |
| Yuma mountain lion | |
| black-tailed gnatcatcher | |
| burrowing owl | |
| cave myotis | |
| cheeseweed owlfly (cheeseweed moth lacewing) | |
| desert pupfish | |
| desert tortoise | |
| flat-tailed horned lizard | |
| hoary bat | |
| loggerhead shrike | |
| lowland (=Yavapai, San Sebastian & San Felipe) leopard frog | |



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDB, USDA.

APPENDIX B CNDDB SPECIAL STATUS SPECIES OCCURRENCES WITHIN 25 MILES OF THE PROJECT

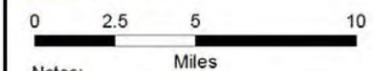




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

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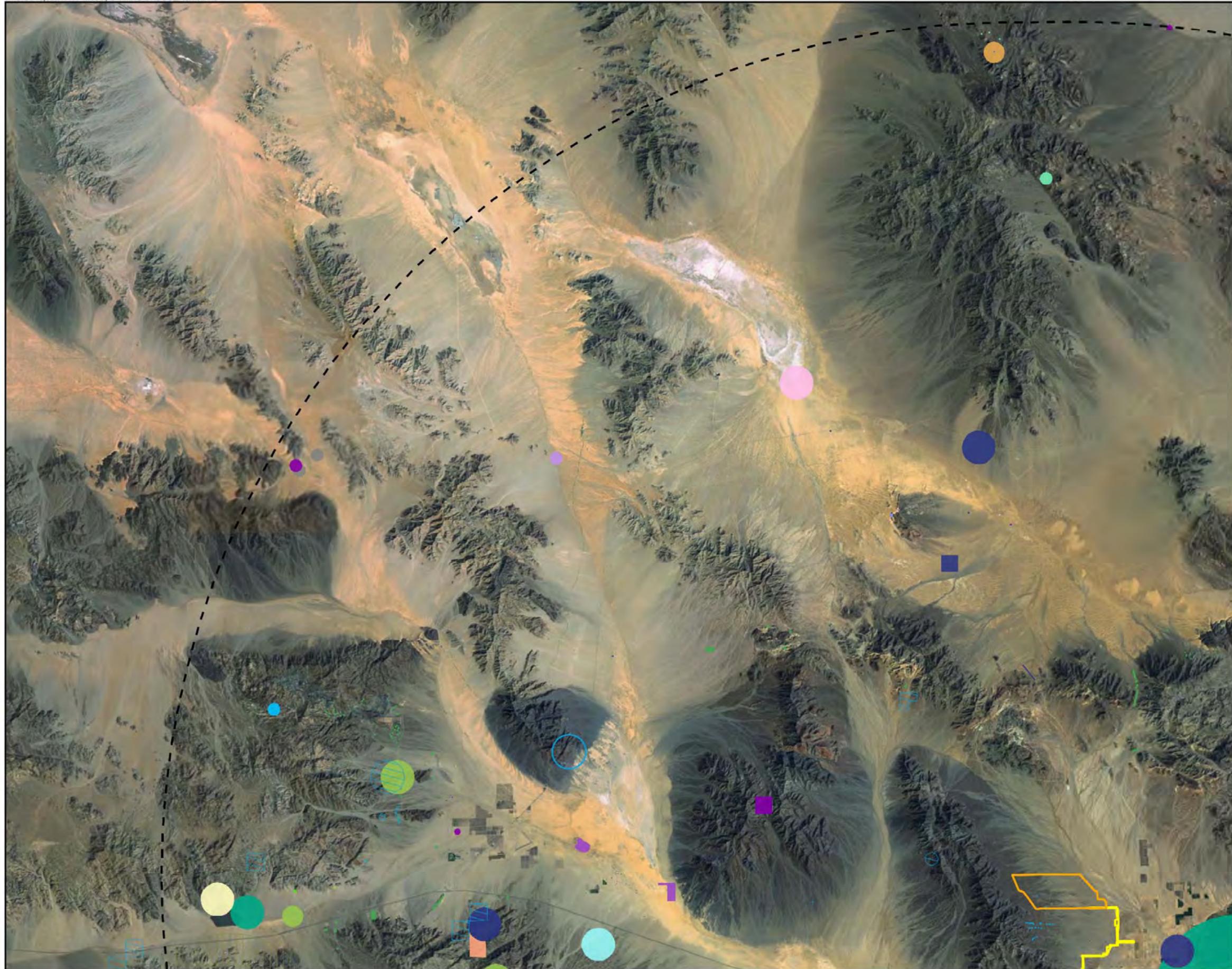
- MSEP Solar Plant Site Boundary
 - Switchyard
 - Proposed Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - 50-Mile Site Buffer
-
- CNDDB Common Name
- | | |
|--|--|
| <ul style="list-style-type: none"> American badger Arizona Myotis Arizona bell's vireo California black rail California leaf-nosed bat Colorado River cotton rat Colorado Valley woodrat Colorado pikeminnow Couch's spadefoot Crissal thrasher Gila woodpecker Lucy's warbler Nelson's bighorn sheep Sonoran desert toad Sonoran yellow warbler Townsend's big-eared bat Yuma clapper rail Yuma mountain lion Yuma myotis black-tailed gnatcatcher brown-crested flycatcher burrowing owl cave myotis desert pupfish desert tortoise elf owl great blue heron great egret hoary bat least bittern | <ul style="list-style-type: none"> loggerhead shrike lowland (=Yavapai, San Sebastian & San Felipe) leopard frog pallid bat pocketed free-tailed bat razorback sucker southwestern willow flycatcher summer tanager vermilion flycatcher western mastiff bat western yellow bat western yellow-billed cuckoo yellow-breasted chat |
|--|--|



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDB, USDA.

APPENDIX B CNDDB SPECIAL STATUS SPECIES OCCURRENCES WITHIN 25 MILES OF THE PROJECT

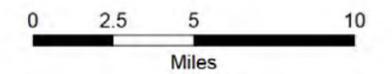




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

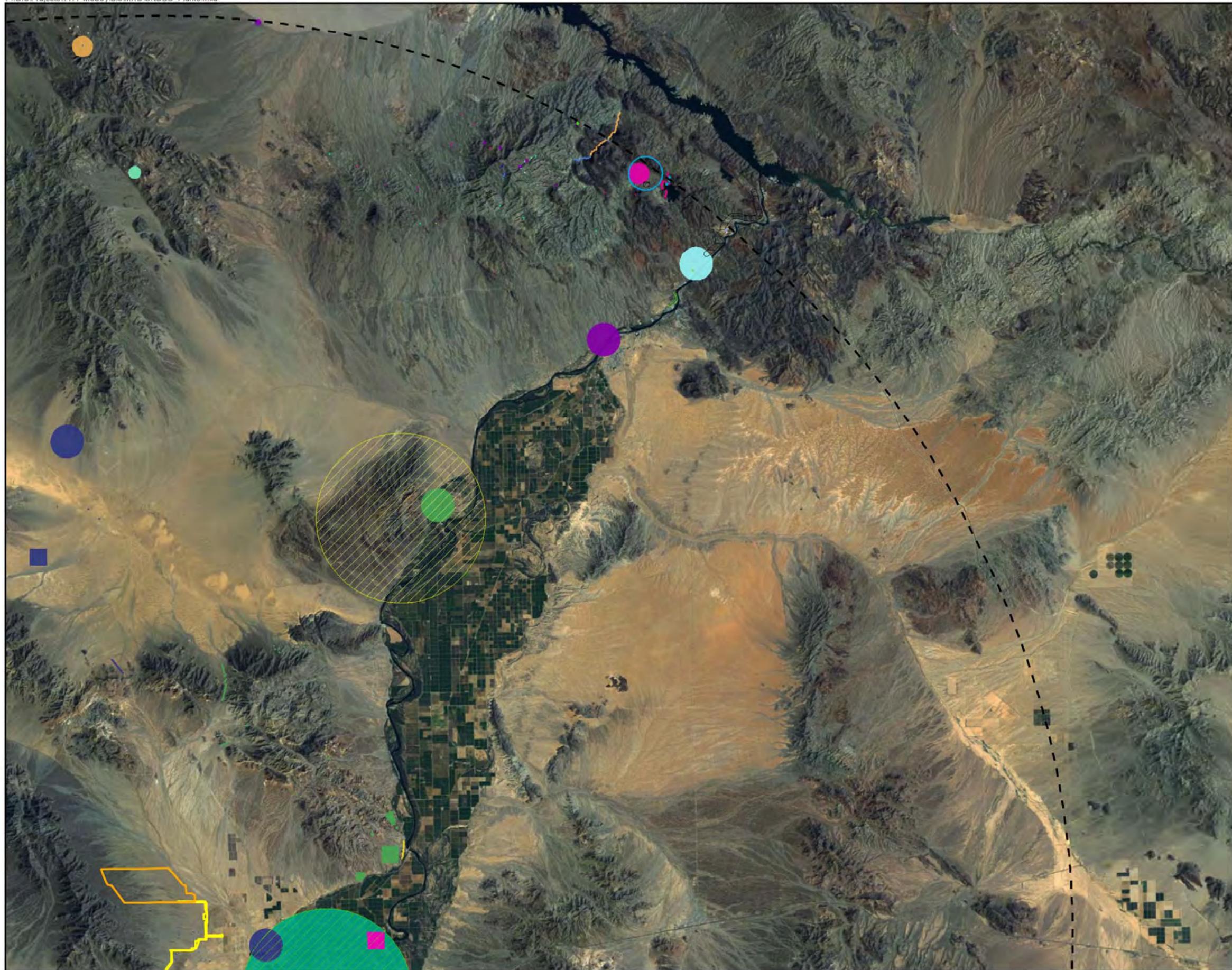
- MSEP Solar Plant Site Boundary
- Switchyard
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- 50-Mile Site Buffer
- CNDDB Common Name
- Abrams' spurge
- Alverson's foxtail cactus
- Arizona pholistoma
- California ditaxis
- Cove's cassia
- Darlington's blazing star
- Emory's crucifixion-thorn
- Harwood's eriastrum
- Harwood's milk-vetch
- Las Animas colubrina
- Orocopia sage
- Palmer's jackass clover
- Parish's club-cholla
- Robison's monardella
- desert sand-parsley
- desert spike-moss
- dwarf germander
- glandular ditaxis
- lobed ground-cherry
- mesquite neststraw
- slender cottonheads
- slender-spined all-thorn
- small-flowered androstephium
- spear-leaf matelea
- three-awned grama



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDB, USDA.

APPENDIX B CNDDB SPECIAL STATUS PLANT OCCURRENCES WITHIN 25 MILES OF THE PROJECT

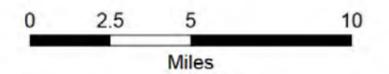




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

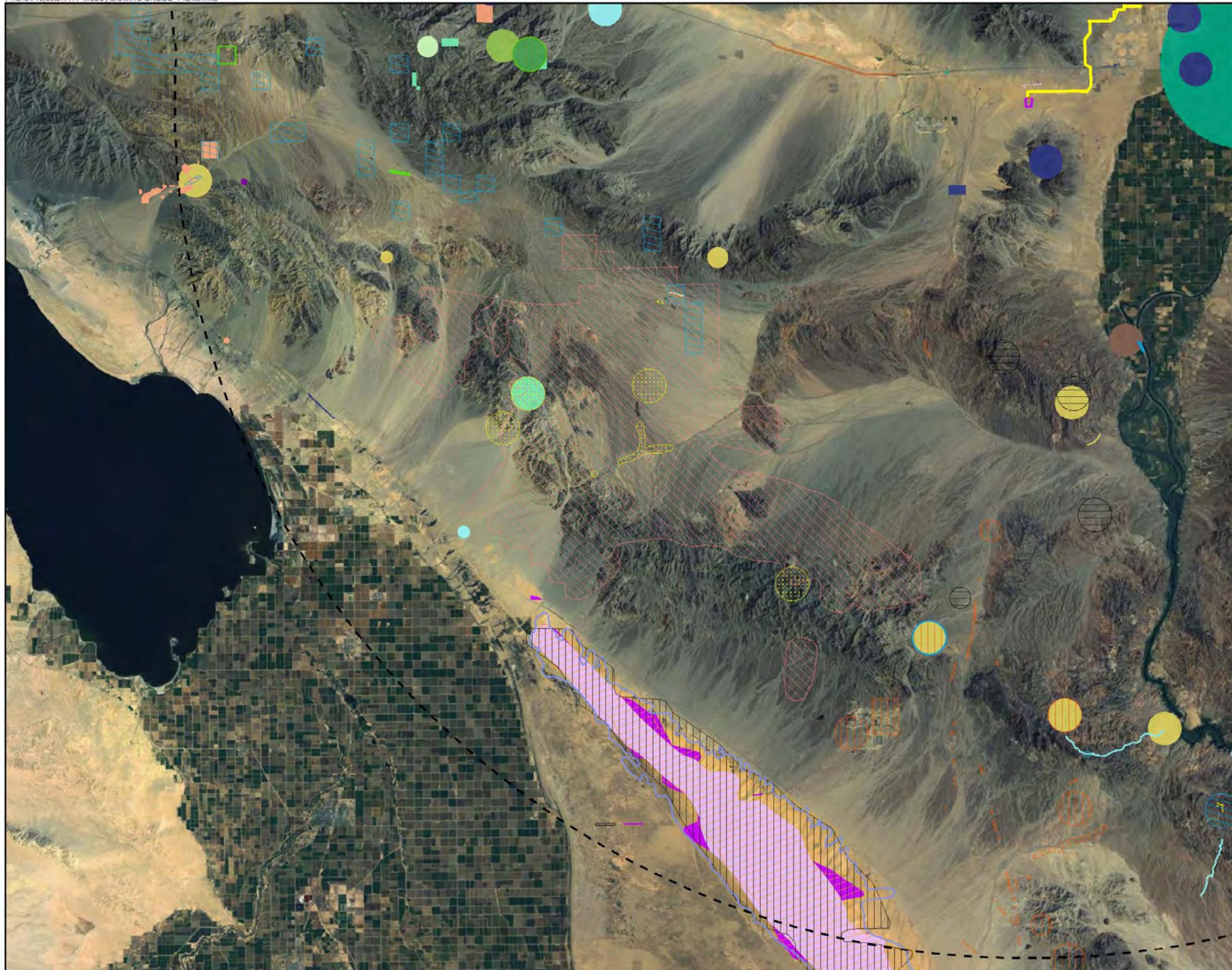
- MSEP Solar Plant Site Boundary
- Switchyard
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- 50-Mile Site Buffer
- CNDDDB Common Name**
- Alverson's foxtail cactus
- Arizona pholistoma
- California satintail
- Cove's cassia
- Darlington's blazing star
- Emory's crucifixion-thorn
- Graham fishhook cactus
- Harwood's milk-vetch
- Kofa barberry
- Wiggins' cholla
- angel trumpets
- bare-stem larkspur
- bitter hymenoxys
- chaparral sand-verbena
- desert germander
- desert pincushion
- dwarf germander
- glandular ditaxis
- narrow-leaved psorothamnus
- saguaro
- slender cottonheads
- small-flowered androstephium
- spear-leaf matelea
- three-awned grama
- wand-like fleabane daisy



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDDB, USDA.

APPENDIX B CNDDDB SPECIAL STATUS PLANT OCCURRENCES WITHIN 25 MILES OF THE PROJECT

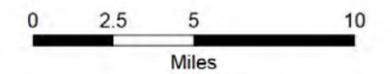




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

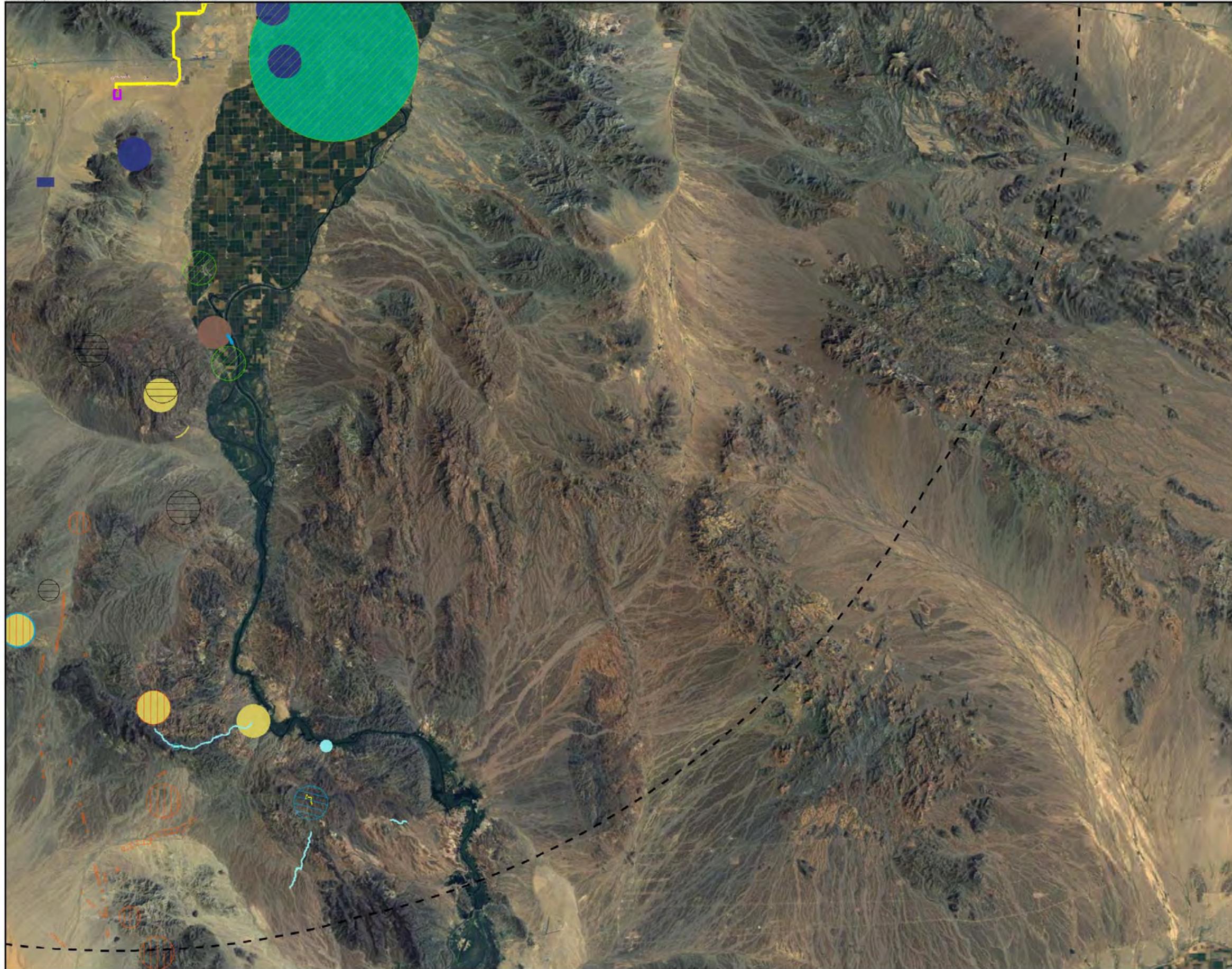
- MSEP Solar Plant Site Boundary
- Switchyard
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- 50-Mile Site Buffer
- CNDDB Common Name**
- Abrams' spurge
- Algodones Dunes sunflower
- Alverson's foxtail cactus
- Arizona pholistoma
- California ayenia
- California ditaxis
- Cove's cassia
- Darlington's blazing star
- Emory's crucifixion-thorn
- Graham fishhook cactus
- Harwood's eriastrum
- Harwood's milk-vetch
- Las Animas colubrina
- Munz's cholla
- Orocopia sage
- Peirson's milk-vetch
- Wiggins' cholla
- desert spike-moss
- dwarf germander
- giant spanish-needle
- glandular ditaxis
- pink fairy-duster
- saguaro
- sand evening-primrose
- sand food
- slender cottonheads
- slender-spined all-thorn
- spear-leaf matelea



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDB, USDA.

APPENDIX B CNDDB SPECIAL STATUS PLANT OCCURRENCES WITHIN 25 MILES OF THE PROJECT

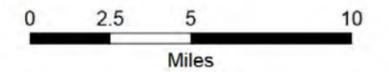




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

- MSEP Solar Plant Site Boundary
- Switchyard
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- 50-Mile Site Buffer
- CNDDB Common Name**
- Darlington's blazing star
- Harwood's eriastrum
- Harwood's milk-vetch
- Las Animas colubrina
- Wiggins' cholla
- bitter hymenoxys
- dwarf germander
- glandular ditaxis
- pink fairy-duster
- saguaro
- sand evening-primrose
- slender-spined all-thorn



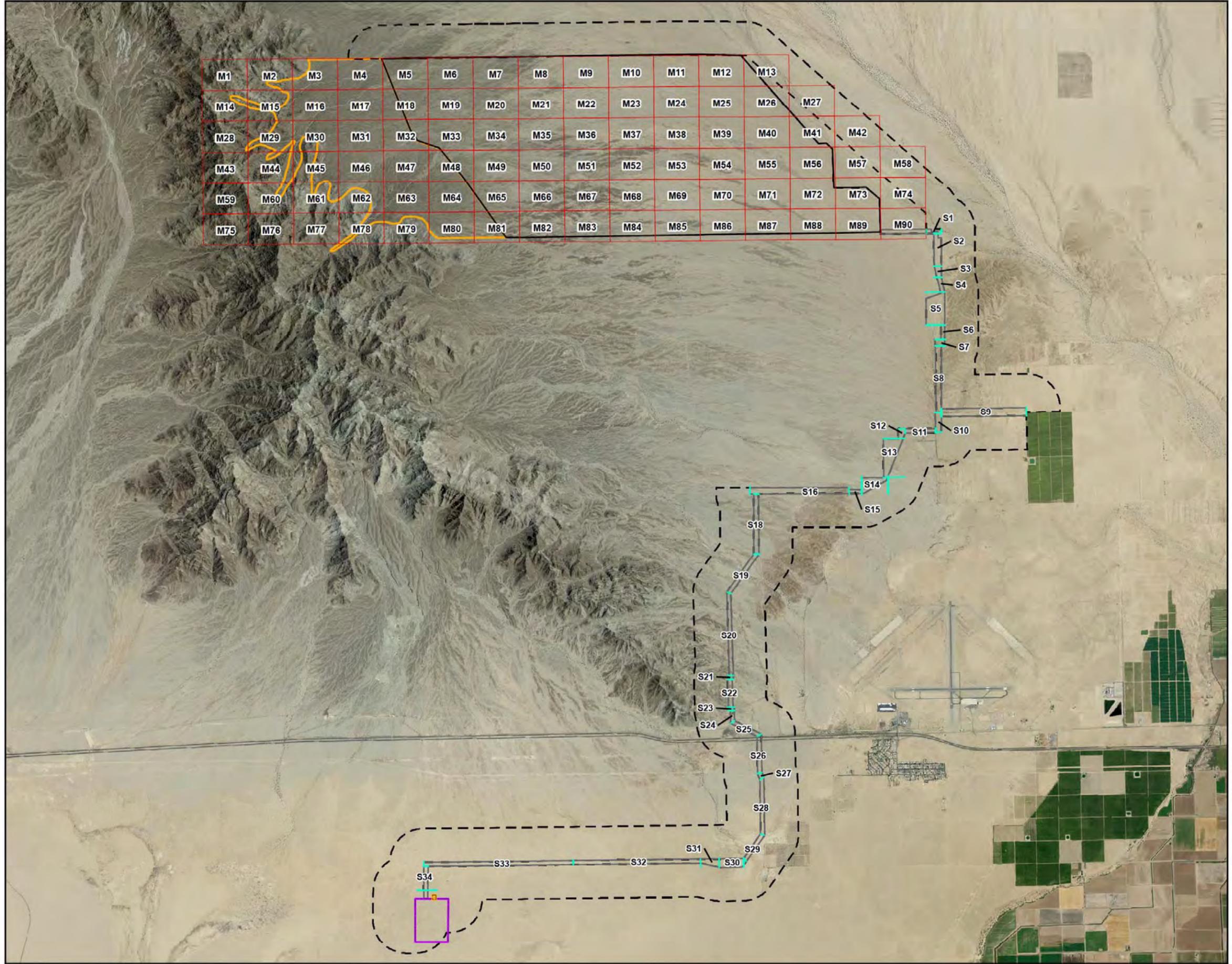
Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, CNDDB, USDA.

APPENDIX B CNDDB SPECIAL STATUS PLANT OCCURRENCES WITHIN 25 MILES OF THE PROJECT



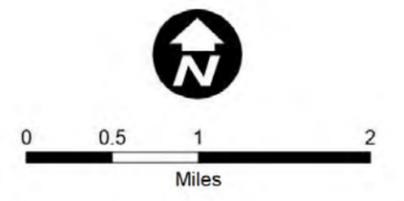
APPENDIX C
SURVEY MAP AND EXAMPLE OF SURVEY DATA SHEETS

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McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

- Legend**
- MSEP Solar Plant Site Boundary
 - Proposed Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - Switchyard
 - Extent of Area Surveyed
 - Potential Primary Recipient Area
 - Survey Grid
 - Survey Segment Boundaries



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, CNDDDB, USDA.

APPENDIX C PROJECT SURVEY AREAS



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M 8

PROJECT McCoy Solar Energy Project
2011 SPECIAL-STATUS SPECIES SURVEYS

DATE 14 APR 2011
TIME: Start 0815
End 1630

SURVEYORS: Navigator ART SCHAUB
GPS Note MUDRY
Data LAURA PAVLISCAK

WEATHER:

	Ta	T _{5cm}	Tg	Cloud Cover	Wind
Start	17.8	18.0	18.6	0	7-12 N
End	26.8	29.0	35.4	15% CIRRUS HAZY	3-7 N

CELL ID. M 8
or ZOTROW Description
TRANSECT NOS COMPLETED 1-60 (All)
STARTING UTM 704002 E 3733152N
ENDING UTM 704823 E 3732625N
(NAD 83)
TOTAL TRANSECT WIDTH (30') 4 FT or M

GENERAL SITE DESCRIPTION:

VEGETATION SHRUB LAYER AND BUNCH GRASSES)

Aspect Dominants

LARTRI, ENCFAR, AMBDUM

Common Species

CERFLO, CYLRAM, KRAGRA, ACAGRE, PLM RIG, CYLECH

Occasional Species

LYCAND, HIBDEU, EROINF, HYPEMO, BEBJUN

% Cover PAVEMENT: ~1% / WASHES: 85% / RUNNELS: 60%

Avg. Height of Dominant Shrub Species

PAVEMENT: ~3cm / WASHES: 1.5m / RUNNELS: 0.75m

UNDERSTORY

Abundant Species

CHAPOL, CHORIG, PLAQVA, CHASTE CHACAR

Exotics (Map concentrations and describe here relative to population size and geographic breadth.)

BRATUR - concentrated in RUNNELS AND WASHES

TOPOGRAPHY

Landform

MID-BAJADA - DESERT PAVEMENT INTERWOVEN BY SURFICIAL, DENSELY VEGETATED WA RUNNELS/WASHES

Drainage Type

SLIGHTLY INCISED WASHES (^{DENSELY VEGETATED} <1m Deep, ~5-15m wide), RUNNELS

DENSELY VEGETATED

Elevation (state meters or feet)

628 ft.

SUBSTRATE

Color PAVEMENT: DARK BROWN TO GREY WASHES, RUNNELS, ^{EXPOSED} SOIL (IN E cell): LIGHT TAN

Coarse Particles (Type, % Cover)

PAVEMENT: 90% (25% FINE, 65% COARSE, 10% COBBLE) / WASH: 30% (15% FINE, 60% COARSE, 25% COBBLE)

Soil Texture and Consistence

PAVEMENT: FIRM SANDY SILT / WASHES: LOOSE TO FIRM SILTY SAND

PRESENCE OF PREDATORS: Ravens - # Detected 0

Coyotes - # Detected 0

Scat? Yes

Scat Piles # 2

Nests 0

HUMAN-RELATED DISTURBANCES (Onsite and Adjacent)

WWII ERA DEBRIS AND TANK TRACKS COMMON ACROSS DESERT PAVEMENT

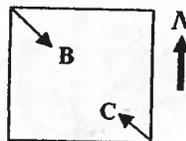
SITE PICTURE: Photographer L. PAVLISCAK

A - Form M 8

B - SE from NW Corner

C - NW from SE Corner

D - Other



COMMENTS

D. SERT. TORTOISE									
Sign #	Waypoint I.D.	UTM (NAD 83)	Sign Type	Class	Size Width (sc, bur, tr) MCL (shell, tort)	Burrow Location	In/Out Burrow? Visible?	Live Tortoise Evidence of Disease?	Photo (check)
3	MO8TC3	704610 3733014	Bone FRAG.	>4	UNK.	XXXXXXXXXX			
4	MO8TC4	704774 3732988	Bone FRAG	>4	ADULT				
5	MO8TC5	704486 3732915	Bone FRAG	74	ADULT				
6	MO8TC6	704476 3732868	Bone FRAGS AND 1/2 PLASTRON	>4	ADULT	SCATTERED ~30m RADIUS GULAR HAD BEEN CHEWED (WHEN ALIVE)			
7	MO8TC7	704334 3732786	PRIMAL PLASTRON AND FRAGS	>4	ADULT	HALF PLASTRON AND GULAR ALSO CHEWED WHEN ALIVE (SCATTERED ~30)			

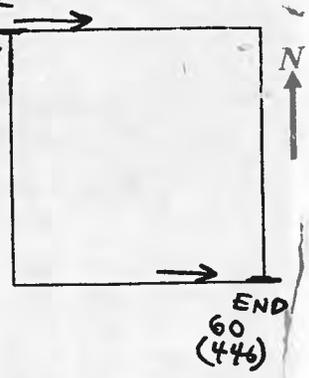
OTHER SPECIES									
Sign #	Waypoint I.D.	UTM (NAD 83)	Species	Type	Sign Condition	Ungulate Scat Collected (Check)	Comments		
1	MO8AA1	704293 3733122	LeConte's THRASHER	INDIVIDUALS (3)	Live		OBSERVED IN DENSE VEGETATION OF BUNNOL		
2	MO8AA2	704206 3733045	SHRIKE	INDIVIDUAL w/NEST	Live, Active		FLUSHED SHRIKE FROM CEFLU AND FOUND NEST WITH 2 EGGS		

DATE 14 APR 2011

CELL ID. M 8

LEGEND:

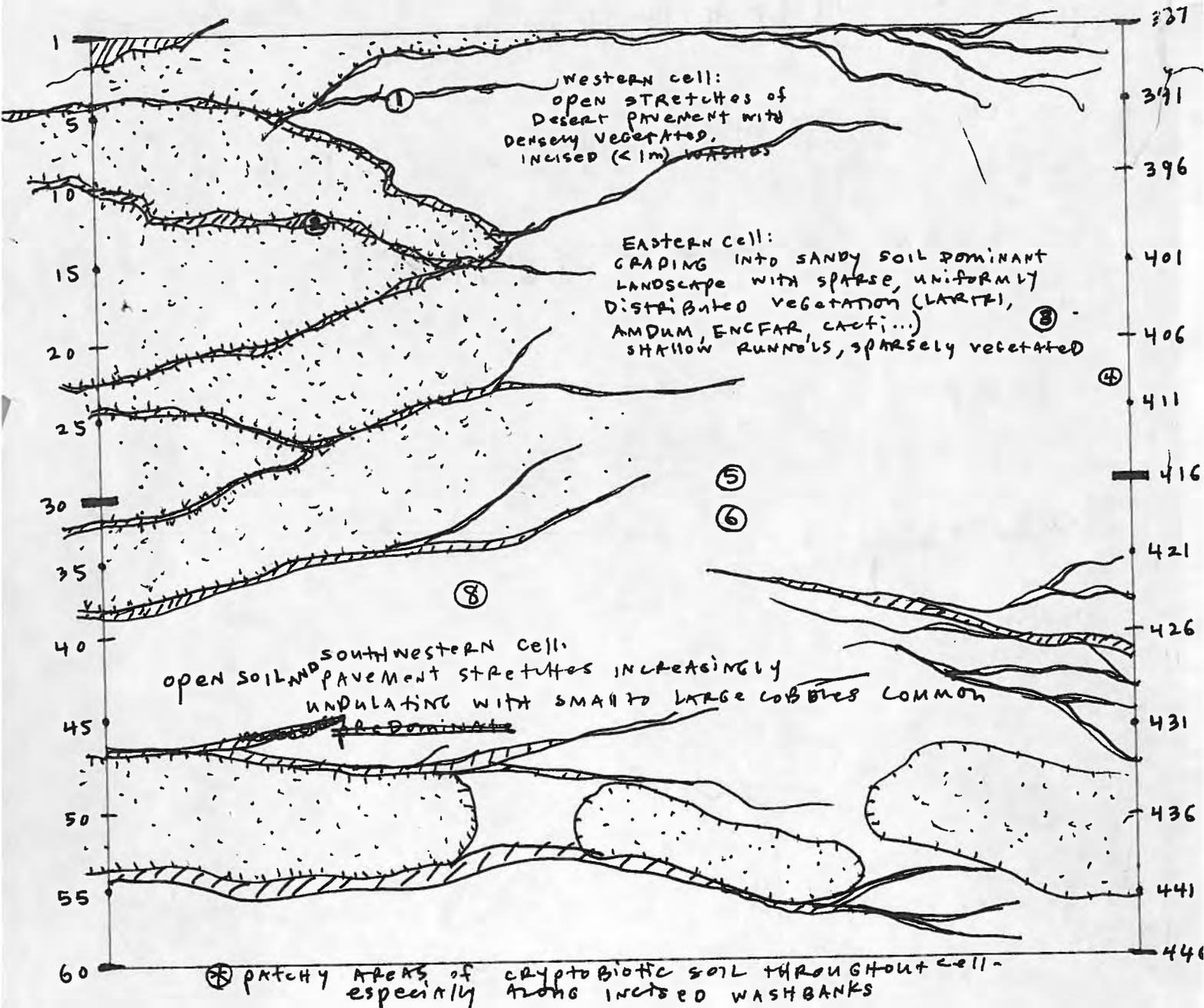
Transects: show start, and end by direction and transect number.



 SHALLOWLY INCISED, DENSELY VEGETATED WASHES

 VEGETATED RUNNELS

 INTACT TRACT OF DESERT PAVEMENT



Counted ALL

→ ACAGRE 400
 CERFLO 43
 CYLECH 69

CYLRAM 41
 ECHPOL 1
 MAMTET 1

OPUBAS 1

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APPENDIX D
LIST OF FIELD BIOLOGISTS

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APPENDIX D

LIST OF FIELD BIOLOGISTS

Field Biologists	October 2010 Surveys	Spring 2011			
		Wildlife Surveys	Plant Surveys	Burrowing Owl Surveys	Avian/Raptor Point Count Surveys
Alexis Watts		X			
Alice Karl, Ph.D.*	X	X	X		
Art Schaub	X	X	X	X	X
Bill Hasskamp		X		X	
Bret Blosser, Ph.D.		X			
Brian Sandstrom		X			
Carrie Warman		X			
Corey Mitchell		X		X	
Dave Focardi		X			
Emily Mix *	X	X			
Glenn Rink	X		X		
Jake Mohlmann	X	X			X
Jennifer Weidensee		X			
Jim Toney		X			
Joel Cospers		X			
Kent Hughes	X		X		
Kevin Walsh		X			
Laura Pavliscak		X			
Liz (Jacqueline) Smith		X			
Lehong Chow	X	X			
Marc Baker	X		X		
Mark Bagsley			X		
Mary Ann Hasskamp		X			
Michael Honer	X	X	X		
Nathan Mudry (eGIS)	X	X		X	X
Paul Frank	X	X			
Rachael Woodard		X	X		
Shawn Lindey		X		X	
Tim Thomas	X	X	X		
Tina Poole		X			
Tsegaye Mengistu		X			

* Report Preparers

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APPENDIX E
KEY TO DESERT TORTOISE SIGN CLASSES

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APPENDIX E

KEY TO SIGN CLASSES

BURROWS

- 1 – DEFINITELY TORTOISE – FRESH (TRACKS, TORTOISE INSIDE, FRESHLY DISTURBED SOIL ON MOUND/RUNWAY)
- 2 – DEFINITELY TORTOISE – USED THIS SEASON (CLEARED OF ANNUALS, BUT NO FRESHLY DISTURBED SOIL)
- 3 – DEFINITELY TORTOISE – NOT USED THIS SEASON (PROBABLY HAS ANNUALS GROWING IN RUNWAY)
- 4 – POSSIBLY TORTOISE – IN GOOD CONDITION BUT UNSURE OF SPECIES USING BURROW
- 5 – DEFINITELY TORTOISE – DETERIORATED SUCH THAT IT WOULD REQUIRE SUBSTANTIAL REMODELING TO BE USABLE
- 6 – POSSIBLY TORTOISE – DETERIORATED

SCAT

- TY1 – WET OR FRESH DARK, ODORIFEROUS
- TY2 – DRIED, POSSIBLE GLAZE ON PART; UNEXPOSED SURFACES DARK BROWN; SLIGHT ODOR
- TY3 – DRIED, NO GLAZE; AT LEAST PARTIALLY FADED ON EXTERIOR; VERY SLIGHT ODOR
- NTY3 – DRIED, NO GLAZE; AT LEAST PARTIALLY FADED ON EXTERIOR; NO ODOR (DISTINGUISHES FROM TY3)
- NTY4 – DRIED, LOOSENING, PALE OR BLEACHED

CARCASSES – GENERAL INDICATORS FOR TIME SINCE DEATH

- <1 YR – UNEXPOSED SCUTES NORMAL COLOR AND SHEEN, ADHERE TIGHTLY. EXPOSED SCUTES PALING AND MAY BE LIFTING OR OFF. UNEXPOSED BONE WAXY AND SOLID.
- 1–2 YRS – UNEXPOSED SCUTES NORMAL COLOR WITH SLIGHT SHEEN, MOSTLY TIGHTLY ATTACHED. EXPOSED SCUTES SLIGHTLY PALE WITH NO SHEEN AND NO TO SLIGHT GROWTH RING PEELING. NO ODOR. UNEXPOSED BONE SILKY.
- 2–3 YRS – UNEXPOSED SCUTES PALE AND WITHOUT SHEEN BUT NO GROWTH RING PEELING. EXPOSED SCUTES PALE WITH SLIGHT PEELING, SCUTES LOOSE, OFF AND/OR TIGHT. BONE SUTURES GENERALLY TIGHT.
- 4 YRS – UNEXPOSED SCUTES NORMAL COLOR TO SLIGHTLY PALE, NO SHEEN, NO PEELING. EXPOSED SCUTES LOOSE, PALE, DULL, WITH MODERATE PEELING. SUTURES SEPARATING AND BONE SURFACE IS FISSURED, EDGES ARE ROUGHENED (FISSURED UNDER HAND LENS) AND CHIP FAIRLY EASILY.
- >>4 YRS – DISARTICULATED AND DISARTICULATING. BONE EDGES CHIP AND CRUMBLE EASILY. SCUTES ARE PEELING AND CURLED.

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APPENDIX F
LIST OF ALL SPECIES OBSERVED DURING FIELD SURVEYS

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APPENDIX F

LIST OF ALL SPECIES OBSERVED DURING FIELD SURVEYS

Wildlife and Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring 2011 Surveys	
INVERTEBRATES	
<i>Lytta morrisoni</i>	Blister beetle
<i>Pepsis sp.</i>	Tarantula hawk
REPTILES	
<i>Callisaurus draconoides</i>	zebra-tail lizard
<i>Cnemidophorus (=Aspidoscelis) tigris</i>	western whiptail
<i>Crotalus atrox</i>	western diamond-backed rattlesnake
<i>Crotalus cerastes</i>	sidewinder
<i>Crotalus mitchelli</i>	speckled rattlesnake
<i>Crotalus scutulatus</i>	Mojave green rattlesnake
<i>Crotaphytus collaris</i>	collared lizard
<i>Dipsosaurus dorsalis</i>	desert iguana
<i>Gambelia wislizenii</i>	leopard lizard
<i>Gopherus agassizii</i>	desert tortoise
<i>Phyllorhynchus decurtatus</i>	spotted leaf-nosed snake
<i>Phrynosoma platyrhinos</i>	desert horned lizard
<i>Salvadora hexalepis hexalepis</i>	desert patch-nosed snake
<i>Sauromalus ater (=obesus)</i>	common chuckwalla
<i>Uma scoparia</i>	Mojave fringe-toed lizard
<i>Urosaurus graciosus</i>	brush lizard
<i>Uta stansburiana</i>	side-blotched lizard
BIRDS	
<i>Aeronautes saxatalis</i>	white-throated swift
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Agelaius phoeniceus</i>	red-winged blackbird
<i>Amphispiza bilineata</i>	black-throated sparrow
<i>Aquila chrysaetos</i>	golden eagle
<i>Auriparus flaviceps</i>	verdin
<i>Athene cunicularia</i>	burrowing owl
<i>Bubo virginianus</i>	great-horned owl (off-site in McCoy Wash)
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Buteo swainsoni</i>	Swainson's hawk
<i>Callipepla gambelii</i>	Gambel's quail
<i>Calypte costae</i>	Costa's hummingbird
<i>Campylorhynchus brunneicapillus</i>	cactus wren
<i>Carpodacus mexicanus</i>	house finch
<i>Cathartes aura</i>	turkey vulture
<i>Chaetura vauxi</i>	Vaux's swift
<i>Chordeiles acutipennis</i>	lesser nighthawk
<i>Circus cyaneus</i>	northern harrier
<i>Columba livia</i>	rock pigeon
<i>Corvus corax</i>	common raven
<i>Dendroica coronata</i>	yellow-rumped warbler
<i>Dendroica petechia</i>	yellow warbler
<i>Empidonax oberholseri</i>	dusky flycatcher
<i>Eremophila alpestris</i>	California horned lark
<i>Falco mexicanus</i>	prairie falcon
<i>Falco peregrinus</i>	peregrine falcon
<i>Falco sparverius</i>	American kestrel
<i>Geococcyx californianus</i>	greater roadrunner
<i>Hirundo rustica</i>	barn swallow
<i>Hirundo pyrrhonota</i>	cliff swallow

Wildlife and Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring 2011 Surveys	
<i>Icterus parisorum</i>	Scott's oriole (off-site in McCoy Wash)
<i>Lanius ludovicianus</i>	loggerhead shrike
<i>Mimus polyglottos</i>	northern mockingbird
<i>Myiarchus cinerascens</i>	ash-throated flycatcher
<i>Pandion haliaetus</i>	osprey
<i>Passer domesticus</i>	house sparrow
<i>Phainopepla nitens</i>	phainopepla
<i>Phalaenoptilus nuttallii</i>	common poor-will
<i>Pheucticus melanocephalus</i>	black-headed grosbeak
<i>Picoides scalaris</i>	ladder-backed woodpecker
<i>Piranga ludoviciana</i>	western tanager
<i>Polioptila melanura</i>	black-tailed gnatcatcher
<i>Quiscalus mexicanus</i>	great-tailed grackle
<i>Sayornis saya</i>	Say's phoebe
<i>Spinus psaltria</i>	lesser goldfinch
<i>Spizella breweri</i>	Brewer's sparrow
<i>Spizella passerina</i>	chipping sparrow (off site in McCoy Wash)
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow
<i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Sturnella neglecta</i>	western meadowlark
<i>Sturnus vulgaris</i>	European starling
<i>Tachycineta bicolor</i>	tree swallow
<i>Tachycineta thalassina</i>	violet-green swallow
<i>Toxostoma lecontei</i>	LeConte's thrasher
<i>Tyrannus verticalis</i>	western kingbird
<i>Vermivora luciae</i>	Lucy's warbler (off site in McCoy Wash)
<i>Wilsonia pusilla</i>	Wilson's warbler
<i>Zenaida asiatica</i>	white-winged dove
<i>Zenaida macroura</i>	mourning dove
<i>Zonotrichia albicollis</i>	white-crowned sparrow
MAMMALS	
<i>Ammospermophilus leucurus</i>	antelope ground squirrel
<i>Canis latrans</i>	coyote (scat)
<i>Chaetodipus formosus</i>	long-tailed pocket mouse
<i>Chaetodipus penicillatus</i>	desert pocket mouse
<i>Dipodomys deserti</i>	desert kangaroo rat
<i>Dipodomys merriami</i>	Merriam's kangaroo rat
<i>Equus asinus</i>	wild burro (scat; tracks on previous survey)
<i>Felis concolor</i>	mountain lion (tracks and scat in translocation area)
<i>Lepus californicus</i>	black-tailed hare
<i>Neotoma lepida</i>	desert woodrat (middens)
<i>Taxidea taxus</i>	American badger (digs, claw marks; individual seen off-site)
<i>Spermophilus tereticaudus</i>	round-tailed ground squirrel
<i>Sylvilagus audubonii</i>	desert cottontail
<i>Vulpes macrotis</i>	desert kit fox (individuals, natal dens)
PLANTS	
<i>Abronia villosa</i> var. <i>villosa</i>	sand verbena
<i>Adenophyllum porophylloides</i>	adenophyllum
<i>Allionia incarnata</i>	windmills
<i>A. dumosa</i>	white bursage
<i>A. (=Hymenoclea) salsola</i>	cheesebush
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	fiddleneck
<i>Aristida adscensionis</i>	three-awn
<i>A. purpurea</i>	purple three-awn
<i>Asclepias albicans</i>	buggywhip milkweed
<i>A. subulata</i>	rush milkweed

Wildlife and Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring 2011 Surveys	
<i>Abronia villosa</i> var. <i>villosa</i>	sand verbena
<i>Achyronychia cooperi</i>	frost-mat
<i>Adenophyllum porophylloides</i>	adenophyllum
<i>Allionia incarnata</i>	windmills, trailing four o'clock
<i>A. dumosa</i>	white burr sage
<i>A. (=Hymenoclea) salsola</i>	cheesebush
<i>Amsinckia menziesii</i>	fiddleneck
<i>Aristida adscencionis</i>	three-awn
<i>A. purpurea</i> var. <i>nealleyi</i>	purple three-awn
<i>Asclepias albicans</i>	buggywhip milkweed
<i>A. subulata</i>	rush milkweed
<i>Astragalus acutirostris</i>	keel-beak
<i>Astragalus aridus</i>	astragalus
<i>A. insularis</i> var. <i>harwoodii</i>	Harwood's milkvetch
<i>A. nuttallianus</i>	Nuttall locoweed
<i>Atrichoseris platyphylla</i>	gravel-ghost
<i>Atriplex elegans</i>	wheelscale
<i>Baileya pauciradiata</i>	desert marigold
<i>Baccharis brachyphylla</i>	short-leaved baccharis
<i>Bahiopsis (= Viguiera) parishii</i>	viguiera
<i>Bebbia juncea</i>	chuckwalla bush
<i>Brandegea bigelovii</i>	desert starvine
* <i>Brassica tournefortii</i>	Sahara mustard
<i>Bromus madritensis</i> var. <i>rubescens</i>	red brome
<i>Calycoseris wrightii</i>	white tackstem
<i>Camissonia boothii</i> ssp. <i>condensata</i>	bottlebrush primrose
<i>C. boothii</i> ssp. <i>desertorum</i>	bottlebrush primrose
<i>C. brevipes</i>	yellow-cups
<i>C. cardiophylla</i>	heart-leaved primrose
<i>C. claviformis</i> ssp. <i>aurantiaca</i>	brown-eyed primrose
<i>C. refracta</i>	narrow-leaved primrose
<i>Cercidium floridum (=Parkinsonia florida)</i>	blue paloverde
<i>Chaenactis carphoclinia</i>	pebble pincushion
<i>C. stevioides</i>	desert pincushion
<i>Chamaesyce polycarpa</i>	spurge
* <i>Chenopodium album</i>	pigweed
* <i>C. murale</i>	goosefoot
<i>Chorizanthe brevicornu</i>	brittle spine-flower
<i>C. corrugata</i>	spineflower
<i>C. rigida</i>	rigid spinyherb
<i>Colubrina californica</i>	Las Animas colubrina
<i>Cryptantha angustifolia</i>	narrow-leaved forget-me-not
<i>C. barbiger</i>	bearded cryptantha
<i>C. costata</i>	ribbed cryptantha
<i>C. dumetorum</i>	flexuous forget-me-not
<i>C. maritima</i>	white-haired forget-me-not
<i>C. micrantha</i>	purple-rooted forget-me-not
<i>C. nevadensis</i>	Nevada forget-me-not
<i>C. pterocarya</i>	wing-nut forget-me-not
<i>C. (=Opuntia) echinocarpa</i>	silver cholla
<i>C. (=Opuntia) ramosissima</i>	pencil cholla
<i>Dalea mollis</i>	silk dalea
<i>D. mollissima</i>	silk dalea
<i>Dicoria canescens</i>	desert dicoria
<i>Ditaxis lanceolata</i>	lance-leaved ditaxis
<i>D. neomexicana</i>	ditaxis
<i>Dithyrea californica</i>	spectacle-pod

Wildlife and Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring 2011 Surveys	
<i>Echinocactus polycephalus</i>	cottontop cactus
<i>Encelia farinosa</i> var. <i>farinosa</i>	brittlebush
<i>E. farinosa</i> var. <i>phenicodonta</i>	brittlebush
<i>E. frutescens</i>	rayless encelia
<i>Ephedra aspera</i>	joint fir
<i>E. californica</i>	California joint fir
<i>Eremalche rotundifolia</i>	desert five-spot
<i>Eriastrum diffusum</i>	phlox
<i>E. harwoodii</i>	Harwood's phlox
<i>Eriogonum deflexum</i>	skeleton-weed
<i>E. inflatum</i>	desert trumpet
<i>E. reniforme</i>	kidney-leaved buckwheat
<i>E. thomasi</i>	Thomas' buckwheat
<i>E. trichopes</i>	little trumpet
<i>Erodium texanum</i>	storksbill
<i>Erioneuron pulchellum</i>	fluff grass
<i>Eschscholtzia glyptosperma</i>	gold-poppy
<i>E. minutiflora</i>	small-flowered gold-poppy
<i>Eucrypta micrantha</i>	small-flowered eucrypta
<i>Euphorbia eriantha</i>	beetle spurge
<i>Fagonia laevis</i>	California fagonbush
<i>Ferocactus cylindraceus</i>	barrel cactus
<i>Funastrum (=Sarcostemma) hirtellum</i>	hairy milkweed
<i>F. (=S.) cyanoides hartwegii</i>	climbing milkweed
<i>F. (=Cynanchum) utahense</i>	Utah cynanchum
<i>Fouquieria splendens</i>	ocotillo
<i>Geraea canescens</i>	desert sunflower
<i>Gilia latifolia</i>	broad-leaved gilia
<i>G. stellata</i>	star gilia
<i>Grayia spinosa</i>	spiny hopsage
<i>Guillenia (=Thelypodium) lasiophylla</i>	California mustard
<i>Hesperocallis undulata</i>	desert lily
<i>Hibiscus denudatus</i>	rock hibiscus
<i>Hyptis emoryi</i>	desert lavender
<i>Krameria erecta</i>	little-leaf rhatany
<i>K. grayi</i>	white rhatany
<i>Lactuca serriola</i>	prickly lettuce
<i>Langloisia setosissima</i> ssp. <i>setosissima</i>	bristly langloisia
<i>Larrea tridentata</i>	creosote bush
<i>Lepidium lasiocarpum</i>	pepper grass
<i>Linanthus jonesii</i>	Jones' linanthus
<i>Loeseliastrum mathewsii</i>	desert calico
<i>L. schottii</i>	Schott gilia
<i>Logfia (= Filago) arizonica</i>	Arizona filago
<i>L. depressa</i>	dwarf filago
<i>Lotus strigosus</i>	hairy lotus
<i>Lupinus arizonicus</i>	Arizona lupine
<i>Lycium andersonii</i>	Anderson boxthorn
<i>L. pallidum</i> var. <i>oligospermum</i>	boxthorn
<i>Malacothrix glabrata</i>	desert dandelion
* <i>Malva parviflora</i>	cheeseweed
<i>Mammillaria tetrancistra</i>	fish-hook cactus
<i>Marina parryi</i>	parry dalea
<i>Mentzelia affinis</i>	blazing star
<i>M. albicaulis</i>	white-stemmed blazing star
<i>M. involucrata</i>	sand blazing star
<i>M. multiflora</i> var. <i>longiloba</i>	blazing star

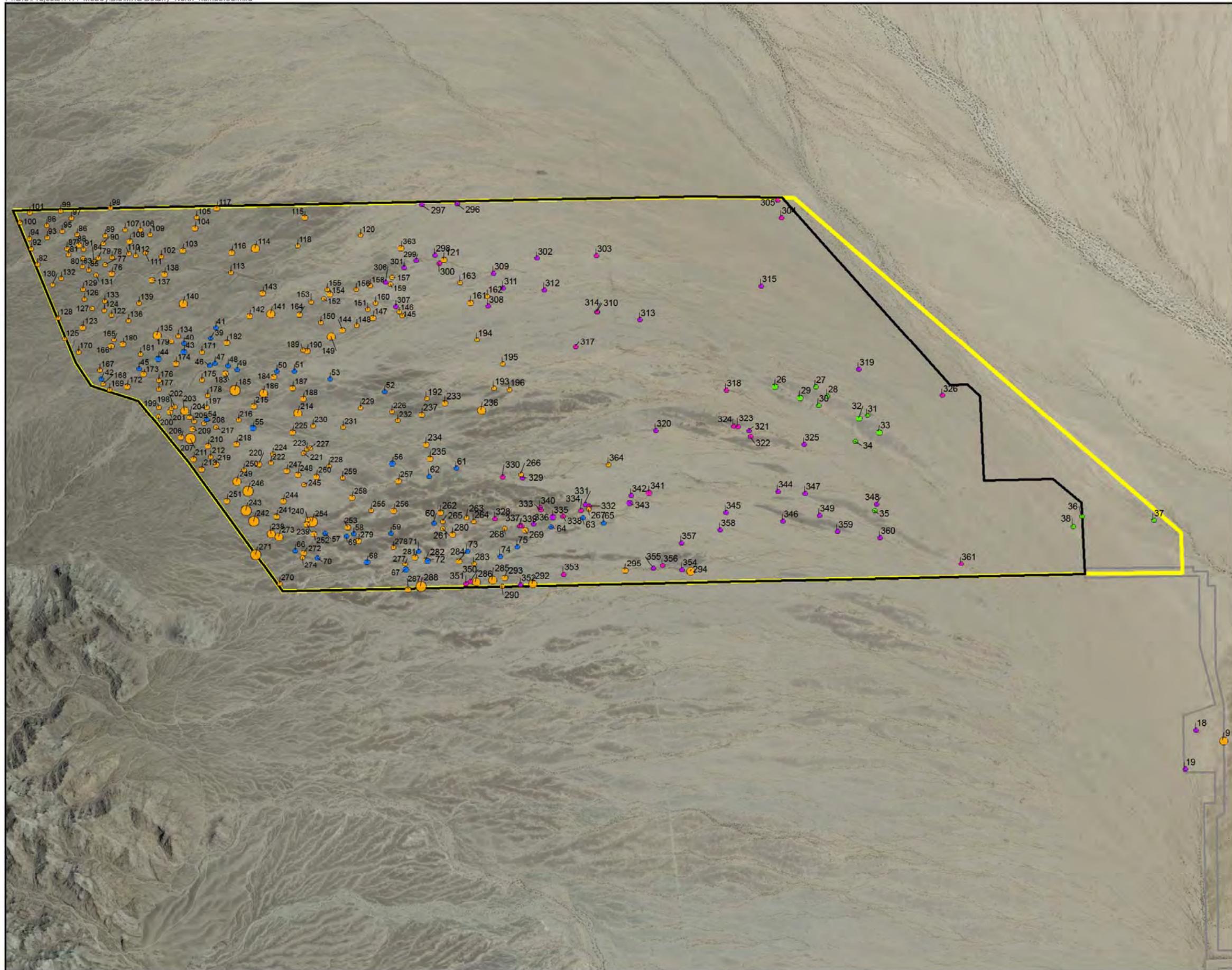
Wildlife and Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring 2011 Surveys	
<i>Mirabilis bigelovii</i> var. <i>retrorsa</i>	four-o'clock
<i>Mohavea confertifolia</i>	ghost flower
<i>Monoptilon bellioides</i>	Mojave desert-star
<i>Nama demissum</i>	purple mat
<i>N. hispidum</i> var. <i>spathulatum</i>	hispid nama
<i>Nicotiana obtusifolia</i>	tobacco
<i>Oenothera deltoides</i>	dune primrose
<i>O. primiveris</i>	yellow desert primrose
<i>Oligomeris linifolia</i>	mignonette
<i>Olneya tesota</i>	ironwood
<i>Opuntia basilaris</i>	beavertail cactus
<i>Orobanche cooperi</i>	broom-rape
<i>Palafoxia arida</i> (= <i>linearis</i>)	Spanish needle
* <i>Panicum antidotale</i>	blue panicgrass
<i>Pectis papposa</i>	chinchweed
<i>Pectocarya heterocarpa</i>	hairy-leaved comb-bur
<i>P. platycarpa</i>	broad-nutted comb-bur
<i>P. recurvata</i>	arch-nutted comb-bur
<i>Perityle emoryi</i>	Emory rock daisy
<i>Peucephyllum schottii</i>	desert fir
<i>Phacelia crenulata</i> var. <i>ambigua</i>	notchleaf phacelia
<i>P.crenulata</i> var. <i>minutiflora</i>	notchleaf phacelia
<i>P. neglecta</i>	alkali phacelia
<i>Phoradendron californicum</i>	mistletoe
<i>Physalis crassifolia</i>	ground cherry
<i>Plagiobothrys jonesii</i>	Jones' popcornflower
<i>Plantago ovata</i>	plantain
<i>Pleuraphis</i> (= <i>Hilaria</i>) <i>rigida</i>	big galleta grass
<i>Pleurocoronis pluriseta</i>	arrow-leaf
<i>Pluchea sericea</i>	arrow weed
<i>Porophyllum gracile</i>	odora
<i>Prenanthes</i> (= <i>Lygodesmia</i>) <i>exigua</i>	brightwhite
<i>Proboscidea althaeifolia</i>	desert unicorn plant
<i>Prosopis glandulosa</i>	honey mesquite
<i>Psathyrotes ramosissima</i>	turtleback
<i>Psoralea emoryi</i>	Emory dalea
<i>P. spinosus</i>	smoke tree (immediately adjacent to plant site)
<i>Rafinesquia neomexicana</i>	desert chicory
* <i>Salsola tragus</i>	Russian thistle, tumbleweed
* <i>Schismus arabicus</i>	Mediterranean grass
<i>Senecio mohavensis</i>	Mojave ragwort
<i>Senegalia</i> (= <i>Acacia</i>) <i>greggii</i>	catclaw acacia
* <i>Sisymbrium irio</i>	London rocket
<i>Sonchus oleraceus</i>	sow thistle
<i>Sphaeralcea ambigua</i>	globe mallow
<i>S. emoryi</i>	Emory globe mallow
<i>Stephanomeria exigua</i>	annual mitra
<i>S. parryi</i>	Parry rock-pink
<i>S. pauciflora</i>	Wire-lettuce
<i>Stillingia spinulosa</i>	broad-leaved stillingia
<i>Streptanthella longirostris</i>	mustard
* <i>Tamarix aphylla</i>	tamarisk
<i>Tidestromia oblongifolia</i>	Arizona honeysweet
<i>Tiquilia plicata</i>	pligate coldenia
* <i>Tribulus terrestris</i>	caltrops, puncture vine
<i>Trichoptilium incisum</i>	yellow-head
<i>Trixis californica</i>	trixis

Wildlife and Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring 2011 Surveys	
<i>Vulpia octoflora</i>	vulpia
<i>Ziziphus obtusifolia</i> var. <i>canescens</i>	graythorn

* Non-native

APPENDIX G
FIGURE OF SPECIAL-STATUS PLANT OBSERVATIONS AND
CORRESPONDING TABLE

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McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Common Name

- Harwood's phlox
- Harwood's milkvetch
- Las Animas colubrina
- Utah cynanchum
- Desert unicorn plant
- Desert unicorn plant seed pods
- Ribbed cryptantha

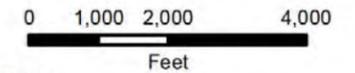
Population Size

- 1-10 plants
- 11-50 plants
- 51-100 plants
- 101-500 plants
- >1000 plants

MSEP Solar Plant Site Boundary

Proposed Linear Corridor

Solar Plant Site Survey Area



Notes:

- (a) UTM Zone 11, NAD 1983 Projection.
- (b) Source data: ESRI, TTEC

APPENDIX G SPECIAL-STATUS PLANT OBSERVATIONS





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Common Name

- Harwood's phlox
- Harwood's milkvetch
- Las Animas colubrina
- Utah cynanchum
- Desert unicorn plant
- Desert unicorn plant seed pods
- Ribbed cryptantha

Population Size

- 1-10 plants
- 11-50 plants
- 51-100 plants
- 101-500 plants
- >1000 plants

Site Features

- MSEP Solar Plant Site Boundary
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard

Scale and Orientation

0 2,000 4,000 8,000
Feet

Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, TTEC

**APPENDIX G
SPECIAL-STATUS PLANT OBSERVATIONS**

 **TETRA TECH EC, INC.**

APPENDIX G

SPECIAL-STATUS PLANT OBSERVATIONS AND CORRESPONDING TABLE

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
18	711414	3728796	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
19	711323	3728472	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
20	711491	3726535	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	13 seed pods	4,000
21	711309	3726520	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.001
23	708795	3725460	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	0.7
296	705266	3733167	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
297	704972	3733156	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	2 seed pods	150
298	705080	3732740	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
299	704924	3732694	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	10 seed pods	2
300	705117	3732671	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.5
301	704821	3732634	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	1
302	705927	3732714	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	5 seed pods	10
303	706423	3732736	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.005
304	707962	3733051	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
305	707930	3733195	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
306	704668	3732514	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
307	704756	3732313	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	2 seed pods	<1
308	705522	3732317	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	0.01
309	705566	3732589	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	0.04
310	706429	3732270	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.2
311	705645	3732465	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
312	705989	3732451	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
313	706784	3732204	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	2 seed pods	<1
314	706428	3732271	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	<1
315	707795	3732483	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
317	706251	3731975	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	<1
318	707502	3731617	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	<1
319	708607	3731791	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	4 seed pods	100
320	706919	3731281	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
321	707694	3731280	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	4 seed pods	<1
322	707707	3731231	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	<1

Map Number	UTM NAD(83)		Species	Population Size (Number of Plants or Abundance) ¹	Area (square meters)	
323	707602	3731311	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
324	707565	3731316	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
325	708151	3731169	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
326	709302	3731576	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.003
328	705579	3730554	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
329	705806	3730892	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	3 seed pods	100
330	705641	3730899	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.01
331	706332	3730668	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	8 seed pods	100
332	706361	3730656	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.005
333	705959	3730625	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.02
334	706295	3730619	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.1
335	706059	3730567	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	20 - 30 seed pods	100
336	705902	3730509	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	30
337	705784	3730494	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	50
338	706147	3730574	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	2	
339	705800	3730494	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	2	
340	705954	3730644	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
341	706860	3730768	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	>19	In approx. 170 meter segment of runnel
342	706711	3730746	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	0.01
343	706702	3730686	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	15 seed pods	200
344	707933	3730777	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
345	707499	3730603	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	2 seed pods	40
346	707975	3730532	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
347	708161	3730763	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
348	708756	3730672	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
349	708279	3730579	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
350	705375	3730029	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	<0.1
351	705339	3730008	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	3	55
352	705793	3730001	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
353	706148	3730088	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	3
354	707135	3730128	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	6 seed pods	1
355	706897	3730139	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	3 seed pods	<1
356	706973	3730164	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	0.25
357	707129	3730352	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1

Map Number	UTM NAD(83)		Species	Population Size (Number of Plants or Abundance) ¹	Area (square meters)	
358	707452	3730459	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
359	708430	3730447	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
360	708784	3730394	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1 seed pod	<1
361	709458	3730177	Desert unicorn plant	<i>Proboscidea althaeifolia</i>	1	
1	711296	3726514	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	1	0.001
2	709820	3725527	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	>300	50
3	707870	3721937	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	6	10
26 7079	12	3731651	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	50 1,500	
27 7082	47	3731645	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	5	15
28 7083	45	3731570	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	4	5
29 7081	18	3731559	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	27 2	
30 7082	71	3731492	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	4	2
31 7086	77	3731408	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	1	0.05
32 7086	11	3731386	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	20 10	
33 7087	78	3731270	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	>30 10	
34 7085	79	3731191	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	10 10	
35 7087	37	3730621	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	1	<1
36 7104	64	3730574	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	1	300
37 7110	61	3730542	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	3	5
38 7103	90	3730487	Harwood's milkvetch	<i>Astragalus insularis var. harwoodii</i>	2	3
13 7082	14	3719053	Harwood's phlox	<i>Eriastrum harwoodii</i>	>100 See	comments
14 7079	76	3718830	Harwood's phlox	<i>Eriastrum harwoodii</i>	>200 See	comments
15 7076	30	3718920	Harwood's phlox	<i>Eriastrum harwoodii</i>	20 See	comments

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
16 7058	62	3718841	Harwood's phlox	<i>Eriastrum harwoodii</i>	1	0.001
17 7024	84	3718368	Harwood's phlox	<i>Eriastrum harwoodii</i>	20 Not	noted
24 7021	77	3718304	Harwood's phlox	<i>Eriastrum harwoodii</i>	5	<1
25 7028	15	3718240	Harwood's phlox	<i>Eriastrum harwoodii</i>	40 See	comments
39 7032	15	3732047	Las Animas colubrina	<i>Colubrina californica</i>	5	30
40 7029	93	3732005	Las Animas colubrina	<i>Colubrina californica</i>	4	20
41 7032	57	3732138	Las Animas colubrina	<i>Colubrina californica</i>	3	20
42 7023	05	3731712	Las Animas colubrina	<i>Colubrina californica</i>	8	60
43 7029	94	3731936	Las Animas colubrina	<i>Colubrina californica</i>	>20 300	
44 7027	81	3731881	Las Animas colubrina	<i>Colubrina californica</i>	15 300	
45 7026	18	3731797	Las Animas colubrina	<i>Colubrina californica</i>	10 60	
46 7032	07	3731824	Las Animas colubrina	<i>Colubrina californica</i>	3	25
47 7032	51	3731841	Las Animas colubrina	<i>Colubrina californica</i>	2	12
48 7033	60	3731818	Las Animas colubrina	<i>Colubrina californica</i>	6	32
49 7034	34	3731788	Las Animas colubrina	<i>Colubrina californica</i>	10 28	
50 7037	66	3731773	Las Animas colubrina	<i>Colubrina californica</i>	1	4
51 7039	08	3731774	Las Animas colubrina	<i>Colubrina californica</i>	1	2
52 7046	61	3731605	Las Animas colubrina	<i>Colubrina californica</i>	3	20
53 7042	08	3731712	Las Animas colubrina	<i>Colubrina californica</i>	1	5
54 7031	83	3731371	Las Animas colubrina	<i>Colubrina californica</i>	1	2
55 7035	67	3731303	Las Animas colubrina	<i>Colubrina californica</i>	43 30,000	
56 7047	28	3731012	Las Animas colubrina	<i>Colubrina californica</i>	35 10	
57 7041	69	3730431	Las Animas colubrina	<i>Colubrina californica</i>	2	20
58 7044	05	3730428	Las Animas colubrina	<i>Colubrina californica</i>	1	4
59 7047	13	3730433	Las Animas colubrina	<i>Colubrina californica</i>	3	150
60 7050	71	3730518	Las Animas colubrina	<i>Colubrina californica</i>	5 - 6	15
61 7052	56	3730971	Las Animas colubrina	<i>Colubrina californica</i>	3	45
62 7050	32	3730904	Las Animas colubrina	<i>Colubrina californica</i>	2	8
63 7063	09	3730561	Las Animas colubrina	<i>Colubrina californica</i>	1	15
64 7060	46	3730486	Las Animas colubrina	<i>Colubrina californica</i>	1	10
65 7064	85	3730518	Las Animas colubrina	<i>Colubrina californica</i>	1	5
66 7039	18	3730287	Las Animas colubrina	<i>Colubrina californica</i>	3	380
67 7048	40	3730130	Las Animas colubrina	<i>Colubrina californica</i>	9-15 1,500	
68 7045	19	3730194	Las Animas colubrina	<i>Colubrina californica</i>	10-15 400	
69 7043	45	3730407	Las Animas colubrina	<i>Colubrina californica</i>	Not noted	Not noted

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
70 7041	01	3730226	Las Animas colubrina	<i>Colubrina californica</i>	Not noted	Not noted
71 7049	44	3730284	Las Animas colubrina	<i>Colubrina californica</i>	3	200
72 7050	18	3730206	Las Animas colubrina	<i>Colubrina californica</i>	30 - 40	3,000
73 7053	49	3730282	Las Animas colubrina	<i>Colubrina californica</i>	1	4
74 7056	23	3730239	Las Animas colubrina	<i>Colubrina californica</i>	1	8
75 7057	65	3730320	Las Animas colubrina	<i>Colubrina californica</i>	2	50
4	708197	3718942	Ribbed cryptantha	<i>Cryptantha costata</i>	>75 See	comments
5	708005	3718801	Ribbed cryptantha	<i>Cryptantha costata</i>	>200 See	comments
6	704853	3718807	Ribbed cryptantha	<i>Cryptantha costata</i>	> 1,000	See comments
7	705412	3718859	Ribbed cryptantha	<i>Cryptantha costata</i>	Several 100	See comments
8	702430	3718403	Ribbed cryptantha	<i>Cryptantha costata</i>	>40 See	comments
9	711641	3728707	Utah cynanchum	<i>Funastrum utahense</i>	>50 plants	1.5
10 7098	36	3725532	Utah cynanchum	<i>Funastrum utahense</i>	100 1,000	
11 7083	15	3725119	Utah cynanchum	<i>Funastrum utahense</i>	>50	300 - 500
12 7078	44	3722857	Utah cynanchum	<i>Funastrum utahense</i>	6	5
76 7023	95	3732588	Utah cynanchum	<i>Funastrum utahense</i>	12 60	
77 7023	36	3732661	Utah cynanchum	<i>Funastrum utahense</i>	3	10
78 7023	95	3732718	Utah cynanchum	<i>Funastrum utahense</i>	10 80	
79 7022	81	3732716	Utah cynanchum	<i>Funastrum utahense</i>	10 100	
80 7021	51	3732712	Utah cynanchum	<i>Funastrum utahense</i>	8	100
81 7020	34	3732744	Utah cynanchum	<i>Funastrum utahense</i>	1	<1
82 7017	76	3732665	Utah cynanchum	<i>Funastrum utahense</i>	3	4
83 7021	49	3732642	Utah cynanchum	<i>Funastrum utahense</i>	8	75
84 7022	47	3732687	Utah cynanchum	<i>Funastrum utahense</i>	7	50
85 7022	02	3732614	Utah cynanchum	<i>Funastrum utahense</i>	8	85
86 7021	05	3732910	Utah cynanchum	<i>Funastrum utahense</i>	8	10
87 7020	20	3732794	Utah cynanchum	<i>Funastrum utahense</i>	4	10
88 7021	20	3732824	Utah cynanchum	<i>Funastrum utahense</i>	20 25	
89 7023	36	3732901	Utah cynanchum	<i>Funastrum utahense</i>	8	150
90 7023	23	3732838	Utah cynanchum	<i>Funastrum utahense</i>	4	<1
91 7021	57	3732790	Utah cynanchum	<i>Funastrum utahense</i>	8	40
92 7017	23	3732793	Utah cynanchum	<i>Funastrum utahense</i>	5	7
93 7018	54	3732884	Utah cynanchum	<i>Funastrum utahense</i>	6	20
94 7017	07	3732878	Utah cynanchum	<i>Funastrum utahense</i>	6	50
95 7019	80	3732937	Utah cynanchum	<i>Funastrum utahense</i>	1	1

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
96 7018	50	3732985	Utah cynanchum	<i>Funastrum utahense</i>	1	1
97 7020	57	3733045	Utah cynanchum	<i>Funastrum utahense</i>	2	1
98 7023	81	3733128	Utah cynanchum	<i>Funastrum utahense</i>	10 4	
99 7019	69	3733107	Utah cynanchum	<i>Funastrum utahense</i>	2	2
100 7016	29	3733011	Utah cynanchum	<i>Funastrum utahense</i>	5	8
101 7017	11	3733091	Utah cynanchum	<i>Funastrum utahense</i>	4	15
102 7028	05	3732728	Utah cynanchum	<i>Funastrum utahense</i>	10 10	
103 7029	86	3732781	Utah cynanchum	<i>Funastrum utahense</i>	30 75	
104 7030	87	3732966	Utah cynanchum	<i>Funastrum utahense</i>	35 5,000	
105 7030	98	3733052	Utah cynanchum	<i>Funastrum utahense</i>	10 Not	noted
106 7026	32	3732949	Utah cynanchum	<i>Funastrum utahense</i>	8	70
107 7025	02	3732949	Utah cynanchum	<i>Funastrum utahense</i>	1	1
108 7025	42	3732857	Utah cynanchum	<i>Funastrum utahense</i>	49	Along 250 m stretch of wash
109 7027	13	3732909	Utah cynanchum	<i>Funastrum utahense</i>	3	1
110 7025	34	3732752	Utah cynanchum	<i>Funastrum utahense</i>	10 4	
111 7026	73	3732758	Utah cynanchum	<i>Funastrum utahense</i>	1	0.3
112 7025	93	3732735	Utah cynanchum	<i>Funastrum utahense</i>	10 10	
113 7033	82	3732597	Utah cynanchum	<i>Funastrum utahense</i>	8	170
114 7035	85	3732795	Utah cynanchum	<i>Funastrum utahense</i>	53 800	
115 7039	97	3733054	Utah cynanchum	<i>Funastrum utahense</i>	18 500	
116 7033	92	3732764	Utah cynanchum	<i>Funastrum utahense</i>	19 300	
117 7032	67	3733128	Utah cynanchum	<i>Funastrum utahense</i>	12 200	
118 7039	37	3732815	Utah cynanchum	<i>Funastrum utahense</i>	8	200
120 7044	62	3732903	Utah cynanchum	<i>Funastrum utahense</i>	5	10
121 7051	57	3732704	Utah cynanchum	<i>Funastrum utahense</i>	30 660	
122 7023	89	3732241	Utah cynanchum	<i>Funastrum utahense</i>	10 4	
123 7021	52	3732141	Utah cynanchum	<i>Funastrum utahense</i>	14 500	
124 7023	30	3732283	Utah cynanchum	<i>Funastrum utahense</i>	3	10
125 7019	99	3732043	Utah cynanchum	<i>Funastrum utahense</i>	3	4
126 7021	66	3732374	Utah cynanchum	<i>Funastrum utahense</i>	8	20,000
127 7022	29	3732299	Utah cynanchum	<i>Funastrum utahense</i>	3	9
128 7019	48	3732217	Utah cynanchum	<i>Funastrum utahense</i>	6	400
129 7021	55	3732456	Utah cynanchum	<i>Funastrum utahense</i>	4	2,000
130 7018	99	3732493	Utah cynanchum	<i>Funastrum utahense</i>	1	2.5
131 7022	63	3732577	Utah cynanchum	<i>Funastrum utahense</i>	1	1

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
132 7019	74	3732548	Utah cynanchum	<i>Funastrum utahense</i>	7	500
133 7023	34	3732357	Utah cynanchum	<i>Funastrum utahense</i>	2	0.5
134 7029	46	3732068	Utah cynanchum	<i>Funastrum utahense</i>	2	4
135 7027	68	3732078	Utah cynanchum	<i>Funastrum utahense</i>	50 - 60	1,287
136 7025	30	3732196	Utah cynanchum	<i>Funastrum utahense</i>	10 30	
137 7027	27	3732536	Utah cynanchum	<i>Funastrum utahense</i>	15 50	
138 7028	31	3732584	Utah cynanchum	<i>Funastrum utahense</i>	21 100	
139 7026	18	3732342	Utah cynanchum	<i>Funastrum utahense</i>	1	1
140 7029	86	3732339	Utah cynanchum	<i>Funastrum utahense</i>	70 100	
141 7037	12	3732253	Utah cynanchum	<i>Funastrum utahense</i>	50 - 100	200
142 7035	39	3732237	Utah cynanchum	<i>Funastrum utahense</i>	10 - 20	800
143 7036	47	3732426	Utah cynanchum	<i>Funastrum utahense</i>	30 50	
144 7043	14	3732119	Utah cynanchum	<i>Funastrum utahense</i>	30 50	
145 7048	05	3732239	Utah cynanchum	<i>Funastrum utahense</i>	2	2
146 7047	82	3732269	Utah cynanchum	<i>Funastrum utahense</i>	2	2
147 7045	64	3732223	Utah cynanchum	<i>Funastrum utahense</i>	20 20	
148 7044	29	3732155	Utah cynanchum	<i>Funastrum utahense</i>	10 20	
149 7042	14	3732065	Utah cynanchum	<i>Funastrum utahense</i>	>50 200	
150 7041	33	3732180	Utah cynanchum	<i>Funastrum utahense</i>	2	3
151 7045	21	3732290	Utah cynanchum	<i>Funastrum utahense</i>	1	1
152 7041	54	3732377	Utah cynanchum	<i>Funastrum utahense</i>	6	120
153 7040	50	3732348	Utah cynanchum	<i>Funastrum utahense</i>	3	20
154 7042	09	3732417	Utah cynanchum	<i>Funastrum utahense</i>	12 60	
155 7041	85	3732454	Utah cynanchum	<i>Funastrum utahense</i>	3	5
156 7044	23	3732453	Utah cynanchum	<i>Funastrum utahense</i>	8	10
157 7047	24	3732555	Utah cynanchum	<i>Funastrum utahense</i>	8	10
158 7045	41	3732485	Utah cynanchum	<i>Funastrum utahense</i>	1	1
159 7047	09	3732499	Utah cynanchum	<i>Funastrum utahense</i>	2	2
160 7045	86	3732342	Utah cynanchum	<i>Funastrum utahense</i>	3	5
161 7053	78	3732347	Utah cynanchum	<i>Funastrum utahense</i>	20 500	
162 7055	16	3732400	Utah cynanchum	<i>Funastrum utahense</i>	3	10
163 7052	91	3732511	Utah cynanchum	<i>Funastrum utahense</i>	Not noted	170
164 7039	55	3732248	Utah cynanchum	<i>Funastrum utahense</i>	12 600	
165 7024	11	3732038	Utah cynanchum	<i>Funastrum utahense</i>	2	2
166 7023	90	3731982	Utah cynanchum	<i>Funastrum utahense</i>	35 1,500	

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
167 7022	95	3731782	Utah cynanchum	<i>Funastrum utahense</i>	8	80
168 7023	23	3731669	Utah cynanchum	<i>Funastrum utahense</i>	1	0.25
169 7023	75	3731621	Utah cynanchum	<i>Funastrum utahense</i>	3	1.5
170 7021	15	3731931	Utah cynanchum	<i>Funastrum utahense</i>	7	40
171 7031	44	3731933	Utah cynanchum	<i>Funastrum utahense</i>	4	150
172 7025	24	3731651	Utah cynanchum	<i>Funastrum utahense</i>	15 5	
173 7026	59	3731753	Utah cynanchum	<i>Funastrum utahense</i>	14 150	
174 7029	27	3731840	Utah cynanchum	<i>Funastrum utahense</i>	30 300	
175 7031	42	3731702	Utah cynanchum	<i>Funastrum utahense</i>	2	1
176 7027	85	3731700	Utah cynanchum	<i>Funastrum utahense</i>	6	180
177 7027	85	3731627	Utah cynanchum	<i>Funastrum utahense</i>	Not noted	Not noted
178 7031	90	3731575	Utah cynanchum	<i>Funastrum utahense</i>	3	40
179 7028	90	3732022	Utah cynanchum	<i>Funastrum utahense</i>	3	10
180 7024	85	3731999	Utah cynanchum	<i>Funastrum utahense</i>	12 30	
181 7026	30	3731915	Utah cynanchum	<i>Funastrum utahense</i>	5	20
182 7033	52	3732014	Utah cynanchum	<i>Funastrum utahense</i>	40 2,402	
183 7033	39	3731757	Utah cynanchum	<i>Funastrum utahense</i>	15 15	
184 7037	40	3731732	Utah cynanchum	<i>Funastrum utahense</i>	25 20	
185 7034	16	3731620	Utah cynanchum	<i>Funastrum utahense</i>	154 144	
186 7036	51	3731594	Utah cynanchum	<i>Funastrum utahense</i>	73 70	
187 7038	98	3731638	Utah cynanchum	<i>Funastrum utahense</i>	15 - 20	20
188 7039	85	3731548	Utah cynanchum	<i>Funastrum utahense</i>	13 10	
189 7039	82	3731946	Utah cynanchum	<i>Funastrum utahense</i>	8	6
190 7040	20	3731942	Utah cynanchum	<i>Funastrum utahense</i>	18 200	
192 7050	12	3731548	Utah cynanchum	<i>Funastrum utahense</i>	8	10
193 7055	70	3731635	Utah cynanchum	<i>Funastrum utahense</i>	Not noted	Not noted
194 7054	28	3732038	Utah cynanchum	<i>Funastrum utahense</i>	2	1
195 7056	41	3731836	Utah cynanchum	<i>Funastrum utahense</i>	2	10
196 7056	99	3731624	Utah cynanchum	<i>Funastrum utahense</i>	4	4
197 7031	81	3731477	Utah cynanchum	<i>Funastrum utahense</i>	1	0.25
198 7028	89	3731470	Utah cynanchum	<i>Funastrum utahense</i>	3	0.5-1
199 7027	84	3731478	Utah cynanchum	<i>Funastrum utahense</i>	1 - 3	0.5
200 7027	80	3731400	Utah cynanchum	<i>Funastrum utahense</i>	10 5	
201 7028	78	3731440	Utah cynanchum	<i>Funastrum utahense</i>	15 5	
202 7029	16	3731482	Utah cynanchum	<i>Funastrum utahense</i>	3 - 8	2

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
203 7029	96	3731450	Utah cynanchum	<i>Funastrum utahense</i>	75 - 100	In approx. 200 meter segment of wash
204 7030	42	3731396	Utah cynanchum	<i>Funastrum utahense</i>	11	In approx. 60 meter segment of wash
205 7030	79	3731357	Utah cynanchum	<i>Funastrum utahense</i>	5	1
206 7029	68	3731230	Utah cynanchum	<i>Funastrum utahense</i>	40	In approx. 60 meter segment of wash
207 7030	46	3731218	Utah cynanchum	<i>Funastrum utahense</i>	125 - 150	In approx. 270 meter of 3 connected drainages
208 7031	59	3731341	Utah cynanchum	<i>Funastrum utahense</i>	1	<1
209 7030	64	3731298	Utah cynanchum	<i>Funastrum utahense</i>	30 - 50	In 165 meter segment of wash
210 7031	94	3731156	Utah cynanchum	<i>Funastrum utahense</i>	10 - 15	In approx. 25 meter segment of wash
211 7030	72	3731048	Utah cynanchum	<i>Funastrum utahense</i>	15 - 20	In approx. 110 meter segment of wash
212 7032	14	3731063	Utah cynanchum	<i>Funastrum utahense</i>	5	2
213 7031	44	3730963	Utah cynanchum	<i>Funastrum utahense</i>	15 - 20	In approx. 90 meter segment of wash
214 7039	40	3731428	Utah cynanchum	<i>Funastrum utahense</i>	56 1,500	
215 7035	75	3731488	Utah cynanchum	<i>Funastrum utahense</i>	33 30,000	
216 7034	46	3731369	Utah cynanchum	<i>Funastrum utahense</i>	3	8
217 7032	57	3731310	Utah cynanchum	<i>Funastrum utahense</i>	9	800
218 7034	33	3731170	Utah cynanchum	<i>Funastrum utahense</i>	39 2000	
219 7032	61	3731002	Utah cynanchum	<i>Funastrum utahense</i>	20 20,000	
220 7036	18	3731006	Utah cynanchum	<i>Funastrum utahense</i>	13 15,000	
221 7039	86	3731096	Utah cynanchum	<i>Funastrum utahense</i>	3	500
222 7037	18	3731013	Utah cynanchum	<i>Funastrum utahense</i>	1	Not noted
223 7040	13	3731129	Utah cynanchum	<i>Funastrum utahense</i>	7	2,000
224 7037	32	3731088	Utah cynanchum	<i>Funastrum utahense</i>	6	22,500
225 7038	98	3731269	Utah cynanchum	<i>Funastrum utahense</i>	36 40,000	
226 7047	23	3731441	Utah cynanchum	<i>Funastrum utahense</i>	2	2
227 7040	44	3731136	Utah cynanchum	<i>Funastrum utahense</i>	5	10
228 7041	98	3730987	Utah cynanchum	<i>Funastrum utahense</i>	7	20
229 7044	59	3731474	Utah cynanchum	<i>Funastrum utahense</i>	3	2
230 7040	66	3731320	Utah cynanchum	<i>Funastrum utahense</i>	6	20
231 7043	15	3731307	Utah cynanchum	<i>Funastrum utahense</i>	2	1
232 7047	72	3731365	Utah cynanchum	<i>Funastrum utahense</i>	1	1

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
233 7051	64	3731514	Utah cynanchum	<i>Funastrum utahense</i>	18 100	
234 7050	07	3731167	Utah cynanchum	<i>Funastrum utahense</i>	33 300	
235 7050	41	3731053	Utah cynanchum	<i>Funastrum utahense</i>	13 75	
236 7054	66	3731452	Utah cynanchum	<i>Funastrum utahense</i>	82 450	
237 7049	73	3731418	Utah cynanchum	<i>Funastrum utahense</i>	11 150	
238 7037	16	3730429	Utah cynanchum	<i>Funastrum utahense</i>	80	In approx. 460 meter segment of wash and associated runnels
239 7040	14	3730509	Utah cynanchum	<i>Funastrum utahense</i>	20 30	
240 7040	22	3730546	Utah cynanchum	<i>Funastrum utahense</i>	10 10	
241 7037	65	3730573	Utah cynanchum	<i>Funastrum utahense</i>	23	In approx. 120 meter segment of wash
242 7035	71	3730531	Utah cynanchum	<i>Funastrum utahense</i>	110	In approx. 130 meter segment of wash and associated drainages
243 7035	06	3730619	Utah cynanchum	<i>Funastrum utahense</i>	116	In approx. 310 meter segment of wash and connected drainages
244 7038	22	3730700	Utah cynanchum	<i>Funastrum utahense</i>	30	In approx. 200 meter segment of wash and connected drainages
245 7039	89	3730835	Utah cynanchum	<i>Funastrum utahense</i>	10 1	
246 7035	25	3730780	Utah cynanchum	<i>Funastrum utahense</i>	136	In approx. 260 meter segment of wash
247 7038	51	3730949	Utah cynanchum	<i>Funastrum utahense</i>	35 20	
248 7039	41	3730919	Utah cynanchum	<i>Funastrum utahense</i>	20 2	
249 7034	32	3730864	Utah cynanchum	<i>Funastrum utahense</i>	78	In approx. 310 meter segment of wash and connected drainages
250 7034	93	3730956	Utah cynanchum	<i>Funastrum utahense</i>	10 1	
251 7033	52	3730703	Utah cynanchum	<i>Funastrum utahense</i>	45 40	
252 7040	75	3730429	Utah cynanchum	<i>Funastrum utahense</i>	47 1,000	
253 7043	58	3730485	Utah cynanchum	<i>Funastrum utahense</i>	33 40	
254 7040	58	3730527	Utah cynanchum	<i>Funastrum utahense</i>	101	In 280 meter segment of wash and 30 meters of connected runnel
255 7045	49	3730621	Utah cynanchum	<i>Funastrum utahense</i>	1	1
256 7047	39	3730622	Utah cynanchum	<i>Funastrum utahense</i>	12 10	
257 7047	77	3730868	Utah cynanchum	<i>Funastrum utahense</i>	17 220	
258 7043	92	3730729	Utah cynanchum	<i>Funastrum utahense</i>	35 - 40	250
259 7043	14	3730892	Utah cynanchum	<i>Funastrum utahense</i>	9	40
260 7040	94	3730902	Utah cynanchum	<i>Funastrum utahense</i>	31 - 40	200
261 7051	43	3730474	Utah cynanchum	<i>Funastrum utahense</i>	10 4	

Map Number	UTM NAD(83)		Species		Population Size (Number of Plants or Abundance) ¹	Area (square meters)
262 7051	28	3730605	Utah cynanchum	<i>Funastrum utahense</i>	41 300	
263 7053	43	3730561	Utah cynanchum	<i>Funastrum utahense</i>	6	30
264 7054	01	3730530	Utah cynanchum	<i>Funastrum utahense</i>	2	0.5
265 7051	46	3730530	Utah cynanchum	<i>Funastrum utahense</i>	1	1
266 7057	94	3730920	Utah cynanchum	<i>Funastrum utahense</i>	1	0.5
267 7063	59	3730632	Utah cynanchum	<i>Funastrum utahense</i>	several 5	
268 7056	58	3730472	Utah cynanchum	<i>Funastrum utahense</i>	10 30	
269 7058	31	3730460	Utah cynanchum	<i>Funastrum utahense</i>	20 50	
270 7037	88	3730009	Utah cynanchum	<i>Funastrum utahense</i>	6	10
271 7035	88	3730254	Utah cynanchum	<i>Funastrum utahense</i>	200	In 265 m segment of wash
272 7039	89	3730270	Utah cynanchum	<i>Funastrum utahense</i>	25 240	
273 7037	83	3730402	Utah cynanchum	<i>Funastrum utahense</i>	80 - 100	6,450
274 7039	78	3730229	Utah cynanchum	<i>Funastrum utahense</i>	1	<1
277 7048	30	3730174	Utah cynanchum	<i>Funastrum utahense</i>	Not noted	Not noted
278 7047	35	3730314	Utah cynanchum	<i>Funastrum utahense</i>	5-10 20	
279 7044	45	3730371	Utah cynanchum	<i>Funastrum utahense</i>	20 50	
280 7052	28	3730425	Utah cynanchum	<i>Funastrum utahense</i>	20 - 25	90
281 7049	16	3730235	Utah cynanchum	<i>Funastrum utahense</i>	20 - 30	45
282 7050	08	3730209	Utah cynanchum	<i>Funastrum utahense</i>	15 - 25	30
283 7054	04	3730178	Utah cynanchum	<i>Funastrum utahense</i>	10 12	
284 7052	81	3730202	Utah cynanchum	<i>Funastrum utahense</i>	30 - 50	20
285 7055	59	3730042	Utah cynanchum	<i>Funastrum utahense</i>	50 - 75	400
286 7054	20	3730025	Utah cynanchum	<i>Funastrum utahense</i>	50 - 75	35
287 7048	57	3729964	Utah cynanchum	<i>Funastrum utahense</i>	30 - 50	60
288 7049	64	3729989	Utah cynanchum	<i>Funastrum utahense</i>	300 - 400	3,150
290 7056	38	3729991	Utah cynanchum	<i>Funastrum utahense</i>	5	3
292 7058	91	3730009	Utah cynanchum	<i>Funastrum utahense</i>	75 - 100	400
293 7056	64	3730062	Utah cynanchum	<i>Funastrum utahense</i>	14 1,550	
294 7072	07	3730113	Utah cynanchum	<i>Funastrum utahense</i>	81 4,400	
295 7066	63	3730121	Utah cynanchum	<i>Funastrum utahense</i>	50 8,000	
363 7047	99	3732802	Utah cynanchum	<i>Funastrum utahense</i>	40 150	
364 7065	22	3731000	Utah cynanchum	<i>Funastrum utahense</i>	1	1

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APPENDIX H
FIGURE OF DESERT TORTOISE OBSERVATIONS SPRING 2011 AND
CORRESPONDING TABLE

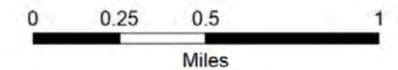
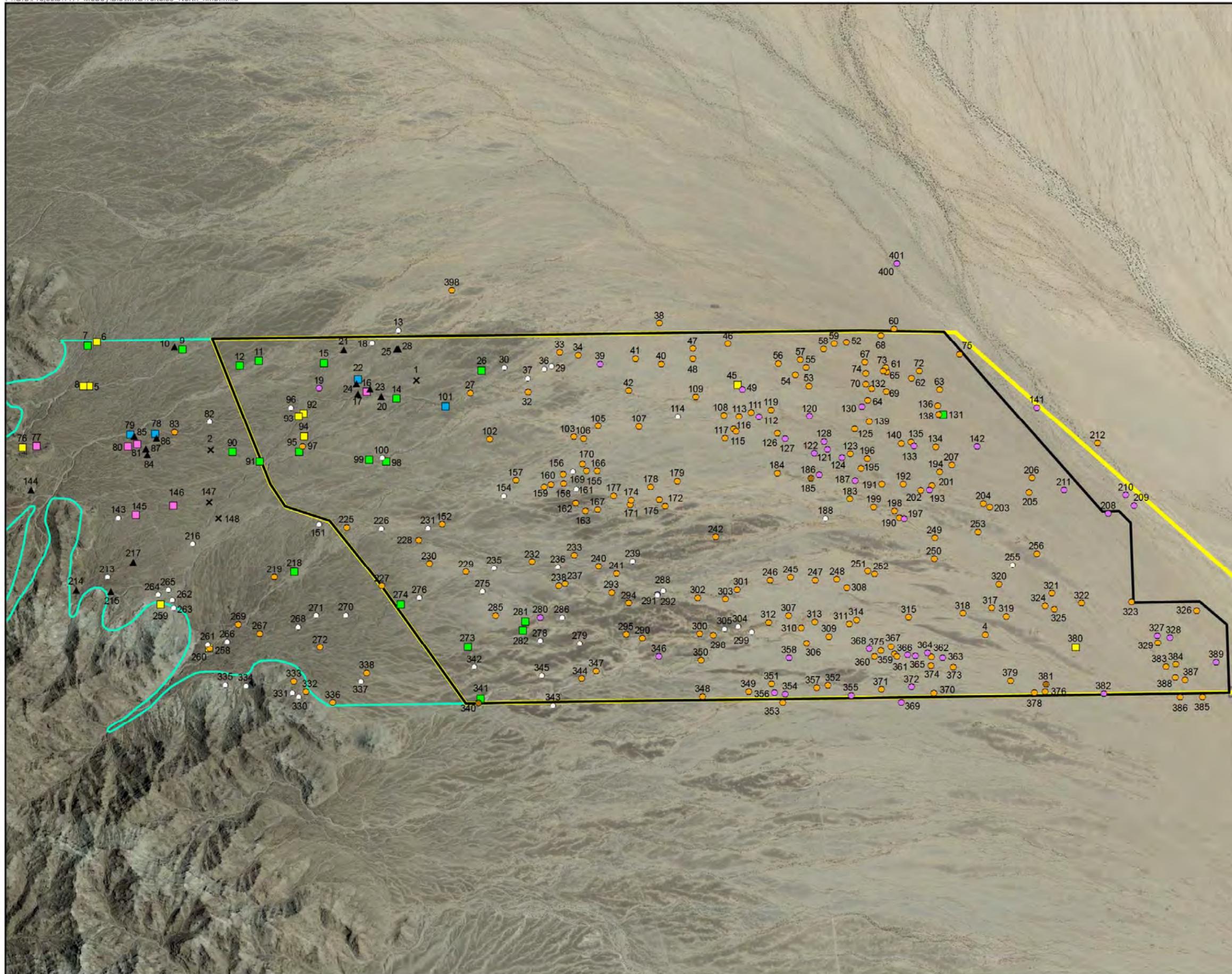
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McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

Tortoise Sign

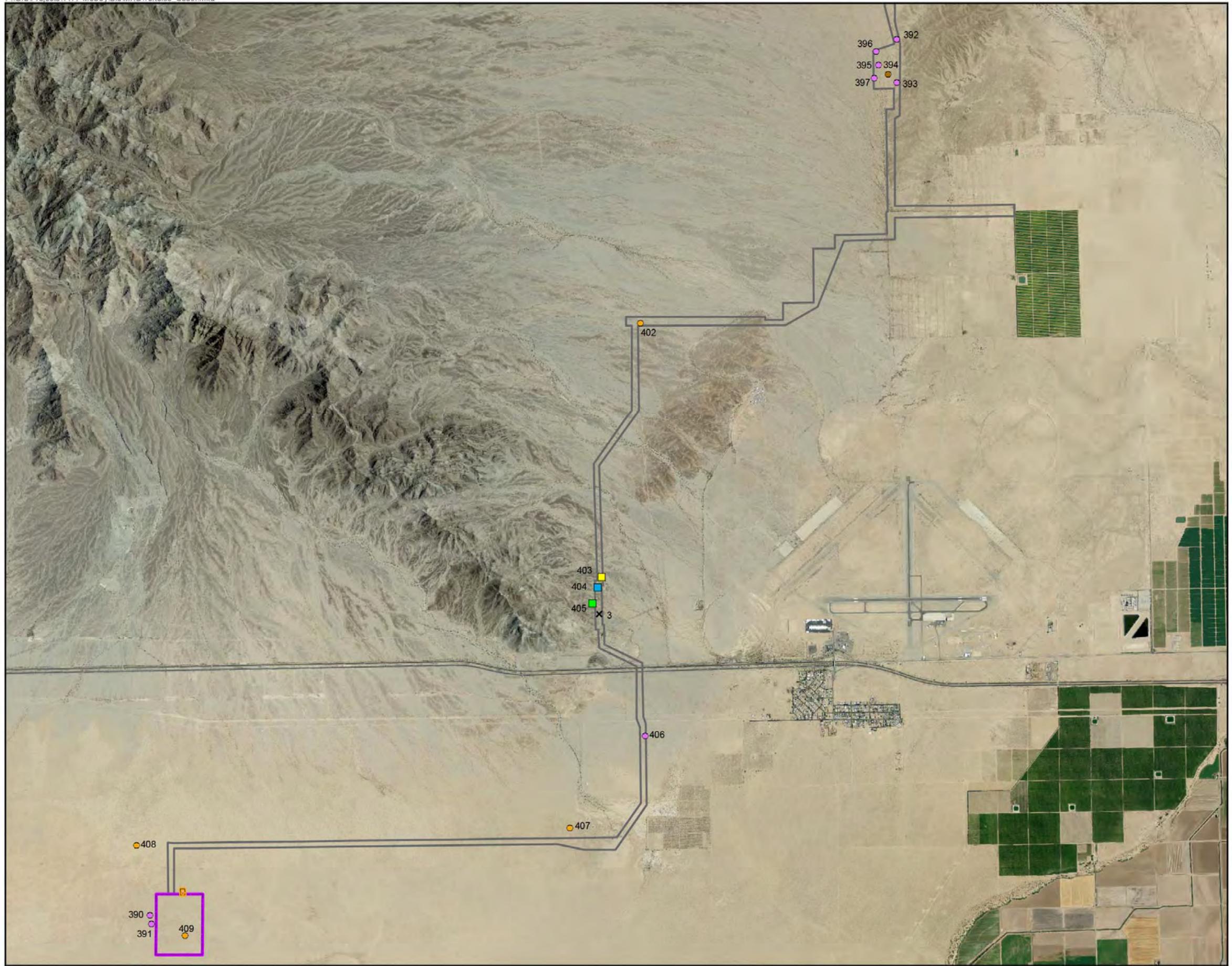
- ✕ Tortoise
- Burrow - Class 1
- Burrow - Class 2
- Burrow - Class 3
- Burrow - Class 4
- ▲ Scat
- Carcass
- ◇ Egg Shells
- Shell fragment < 4 years old
- Shell fragment > 4 years old
- Shell fragment (permineralized)
- ▭ MSEP Solar Plant Site Boundary
- ▭ Solar Plant Site Survey Area
- ▭ Proposed Linear Corridor
- ▭ Proposed Colorado River Substation (SCE)
- ▭ Potential Primary Tortoise Recipient (Translocation) Area



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

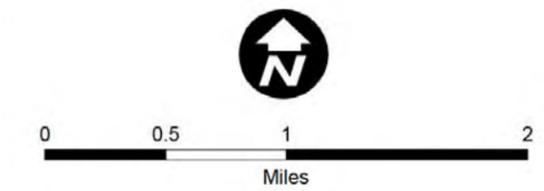
APPENDIX H DESERT TORTOISE SURVEY OBSERVATIONS SPRING 2011





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

- Legend**
- Tortoise Sign**
- ✕ Tortoise
 - Burrow - Class 1
 - Burrow - Class 2
 - Burrow - Class 3
 - Burrow - Class 4
 - ▲ Scat
 - Carcass
 - ◇ Egg Shells
 - Shell fragment < 4 years old
 - Shell fragment > 4 years old
 - Shell fragment (permineralized)
 - ▭ MSEP Solar Plant Site Boundary
 - ▭ Solar Plant Site Survey Area
 - ▭ Proposed Linear Corridor
 - ▭ Proposed Colorado River Substation (SCE)
 - ▭ Switchyard



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

APPENDIX H DESERT TORTOISE SURVEY OBSERVATIONS SPRING 2011



APPENDIX H

DESERT TORTOISE SIGN FOUND DURING SPRING 2011 FIELD SURVEYS

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
1	703357	3732758	Tortoise		Adult male located outside of burrow. Looks healthy, no evidence of disease.
2	701562	3732138	Tortoise		Tortoise inside caliche burrow, in wash bank. Burrow is <1 m deep.
3	707872	3721761	Tortoise		Tortoise in burrow found at sunset during Phase III burrowing owl surveys. Same burrow as Sign MS22B4.
147 7015	55	3731682	Tortoise	See comments	250 mm tortoise, 2 m inside 280 mm caliche cave (Class 1) in 2 m wash wall. Two other good caves nearby with no sign.
148	701634	3731540	Tortoise	Adult	245 mm male walking out in open, face looks good.
5	700500	3732689	Burrow	Class 3	370 mm; > 3 m deep (can't see back); in caliche edge of incised wash (5 m). Flat plastron mark on burrow floor, three scat (NTY 3).
6	700568	3733077	Burrow	Class 3	Class 3 caliche cave, 1 m wide (narrows inside) by 1.5 m deep; at edge of incised wash. One scat (25 mm).
7	700487	3733042	Burrow	Class 4	400 mm; > 1.5 m deep; caliche, very clean, flat floor; in wall of incised wash.
8	700452	3732687	Burrow	Class 3	Two burrows. Class 3 caliche caves, 300 mm. Tracked up by rodents. One burrow 1.5 m deep with two scats (NTY, 22 mm and 23 mm), other burrow 1 m deep.
9	701313	3733012	Burrow	Class 4	360 mm. Located in incised wash. 1.2 m deep. Clean. No other tortoise sign.
11	701982	3732921	Burrow	Class 4	300 mm. Caliche cave. No scat, clean.
12	701818	3732876	Burrow	Class 4	500 mm. Caliche cave. Good soil apron. Flat and clean. No scat. Five nice caves within 30 m.
14	703189	3732601	Burrow	Class 4	600 mm. High on caliche cutback. >2.5 m deep. Pack rat midden excavated. No tracks or scat.
15	702552	3732905	Burrow	Class 4	200-300 mm. Burrow located in deeply incised wash with two nice caliche caves.
16	702851	3732766	Burrow	Class 1	260 mm wide burrow. Dirt burrow in soil under <i>Larrea tridentata</i> near desert pavement; > three m in length. Very large mound. Scat TY1 (still moist) 2 m from entrance.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
17	702927	3732660	Burrow	Class 2	490 mm. Large caliche cave near top edge of 5 m deep, large incised wash. No scat but clear footprints inside/near entrance. Distinct trail from rim down to burrow entrance. Burrow is 2.5 m deep.
26	703930	3732852	Burrow	Class 4	Side of shallow wash under <i>Bebbia juncea</i> .
45	706170	3732743	Burrow	Class 3	Located under <i>Encelia farinosa</i> . Nice shape, less than 0.5 m deep.
76	699924	3732151	Burrow	Class 3	Class 3, 280 mm-wide burrow; northwest facing on hillside. Two scat (NTY 3).
77	700044	3732164	Burrow	Class 2	Class 2 burrow (400 mm, 1 m deep). Seven scat: four are (NTY 3), three (NTY 2), average 23 cm.
78	701084	3732275	Burrow	Class 1	390 mm. Wash bank caliche cave. > 1 m deep (back not seen). Very recent tracks - 200 mm wide.
79	700867	3732269	Burrow	Class 1	410 mm. Wash bank caliche cave. >1 m deep (back not seen). Two scat (TY2). Floor entrance flat.
80	700924	3732187	Burrow	Class 2	Class 2 burrow; 510 mm; > 1 m deep; located in wash bank upper. Also second caliche burrow 5 m away with good cover; >10 scat on burrow and bib (19-22 mm wide). Possible tracks but substrate not good for tracks.
81	700846	3732163	Burrow	Class 2	Class 2 burrow 450 mm wide, 2 m deep (back seen). Caliche burrow with 7 scat (NTY and TY 2).
90	701758	3732124	Burrow	Class 4	360 mm. by 1.5 m deep. Caliche, clean, tortoise shaped.
91	701998	3732040	Burrow	Class 4	Two burrows. 310 mm. One burrow 1400 mm deep, other burrow 900 mm deep. Caliche, clean, tortoise shaped.
92	702378	3732464	Burrow	Class 3	340 mm wide by 360 mm deep; in incised wash.
93	702335	3732440	Burrow	Class 3	340 mm by > 800mm deep. Located under <i>Lycium sp.</i> in deep, incised wash.
94	702381	3732267	Burrow	Class 3	1 m caliche burrow in incised wash, one scat in burrow. Pack rat midden inside.
95	702342	3732130	Burrow	Class 4	360 mm. by 1.5 m deep. Caliche, clean, tortoise shaped.
98	703104	3732049	Burrow	Class 4	39 cm, caliche cave. No tracks or scat.
99	702951	3732064	Burrow	Class 4	35 cm, caliche cave. No tracks or scat.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
101	703616	3732539	Burrow	Class 1	55 cm. Caliche cave in incised vegetated wash. 80 cm deep. Distinct, fresh, plastron track at back. Freshly scuffed soil of appropriate size for an adult tortoise as well as a few divots which might be tortoise tracks near front. An active Class 4 caliche cave is 3 m away.
131	707969	3732497	Burrow	Class 4	280 mm. In kit fox natal den.
145	700916	3731570	Burrow	Class 2	Class 2 burrow, 600 mm by > 1 m deep. Caliche wall 2 m tall above wash. One scat.
146	701245	3731653	Burrow	Class 2	270 mm pallet located in soil on side of runnel.
218	702306	3731083	Burrow	Class 4	290 mm. In incised, bouldery wash. Nice looking caliche cave, flat bottom. No scat.
258	701569	3730411	Burrow	Class 3	Class 3 burrow with two entrances, larger is 750 mm, 3.5 m deep in caliche, broad overhang. Obvious rodent use. Two scat on mound, four inside (largest scat 23 mm, NTY 3). 10 m west, more caliche complexes on wash wall.
259	701138	3730789	Burrow	Class 3	Class 3 burrow, 0.5 m by 1.5 m deep in caliche. Two scat on apron (NTY3), dark scat.
273	703826	3730439	Burrow	Class 4	340 mm. Burrow located in wash bank, caliche gravel, north-facing. Depth >1 m, cannot see end. Classic tortoise shape. Only rodent scat inside. No recent activity.
274	703238	3730806	Burrow	Class 4	340 mm. Burrow located in wash bank, caliche, north-facing. Depth 0.5 m. No tortoise sign.
281	704325	3730664	Burrow	Class 4	280 mm. Burrow located in wash bank. 400 mm deep. Perfect tortoise shape but rodent tracks inside.
282	704308	3730588	Burrow	Class 4	380 mm. Burrow located in incipient wash. Round bottom trench at mouth of burrow may suggest nest. Deeper within the tunnel the bottom flattens out; much more tortoise shaped.
340	703943	3729993	Burrow	Class 4	270 mm., 1 m deep. In north bank of small wash connecting to larger wash. Caliche cave very tortoise shaped, flat floor. No other tortoise sign. (Inactive).
380	709140	3730475	Burrow	Class 3	230 mm. Located under <i>Pleuraphis rigida</i> .
403	707903	3722230	Burrow	Class 3	Two burrows: 316 mm, 350 mm. Under <i>Olneya tesota</i> ; no scat, small amount of debris from <i>O. tesota</i> .
404	707858	3722103	Burrow	Class 1	294 mm; in gentle slope; no vegetation. Fresh tracks and digging.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
405	707790	3721901	Burrow	Class 4	410 mm; in north bank of small wash; gravelly substrate; 0.8 m deep. Excellent form and clean but no recent use and no other sign.
13	703201	3733199	Carcass	2-3	275 mm, male.
18	702970	3733081	Carcass	>4	Adult. Evidence of cutaneous dyskeratosis. Plastron bone mostly intact. Several scutes, other fragments within 50 m.
29	704540	3732891	Carcass	>4	85 percent of plastron intact. >25 bones disarticulated.
30	704127	3732877	Carcass	>4	50 percent of plastron intact. >20 bones disarticulated.
36	704476	3732868	Carcass	>4	Adult. Scattered shell fragments, 1/2 plastron, and 1/4 carapace within a 30 m radius. Gular chewed when alive.
37	704333	3732787	Carcass	>4	Adult. Half plastron and disarticulated shell fragments and scutes. Gular chewed when alive.
82	701557	3732387	Carcass	>4	Adult male. 265 mm. 75 percent of carcass. Bullet hole in shell.
96	702268	3732515	Carcass	>4	240 mm. Female, 80 percent of shell intact.
100	703067	3732083	Carcass	2-3	Large adult male. Several large fragments, about 40 percent.
114	705648	3732464	Carcass	>4	Adult. Significant portion of disarticulated plastron.
143	700766	3731544	Carcass	>4	Adult. 65 percent of plastron.
151	702521	3731502	Carcass	>4	Adult. Male, 85 percent of shell, plastron intact, carapace partially disarticulated.
154	704134	3731761	Carcass	>4	Adult. Very large, just off road.
155	704732	3731976	Carcass	>4	Adult. Large plastron piece 70 m to west.
161	704765	3731823	Carcass	2-4	Adult. Half plastron, one scute. Remaining carcass disarticulated within approximately 20 m.
188	706947	3731586	Carcass	>4	Adult. 30 percent disarticulated.
213	700673	3731025	Carcass	>4	230 mm female. 60 percent disarticulated carcass in boulder field.
216	701417	3731322	Carcass	>4	Adult female, disarticulated. In runnel bottom.
226	703064	3731467	Carcass	>4	Adult. One half of carcass. Fragments scattered over approximately 40 meters.
231	703473	3731476	Carcass	>4	Adult; half tortoise.
235	704054	3731129	Carcass	>4	Adult. Disarticulated carcass.
236	704608	3731144	Carcass	>4	Adult. 75 percent of plastron.
239	705263	3731197	Carcass	>4	Adult male. Disarticulated.
255	708586	3731191	Carcass	>4	Adult. Most likely male. Old shell and plastron and old scutes (50 percent of carcass).

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
261	701556	3730445	Carcass	>4	Adult female; nearly 100 percent of shell present but disarticulated, scutes present.
262	701257	3730763	Carcass	>4	Adult female; 70 percent of shell remains, disarticulated.
263	701241	3730828	Carcass	>4	Adult; 30 percent of shell remains.
264	701116	3730873	Carcass	>4	Adult; 50 percent of plastron intact.
265	701205	3730917	Carcass	>4	Adult; 50 percent; disarticulated.
266	701724	3730470	Carcass	>4	Adult male; 30 percent of carcass on desert pavement.
268	702344	3730605	Carcass	>4	Adult male; 50 percent of carcass in wash/cobble.
270	702761	3730711	Carcass	>4	Adult; 15-20 percent of carcass. In runnel/wash.
271	702501	3730706	Carcass	>4	Adult female; 15-20 percent of carcass. In cobble outflow.
275	703951	3730924	Carcass	>4	Adult male; < 5 percent of carcass. Fragments also found up wash.
276	703400	3730865	Carcass	>4	Adult male; 60 percent of carcass. Fragment also found 70 m down wash.
278	704458	3730499	Carcass	>4	Adult, female. Disarticulated and scattered shell, most of plastron, many other bones.
279	704804	3730479	Carcass	>4	300 mm male. No obvious cause of death: intact, right side up, slight chewing on anterior right marginals and nuchal.
286	704649	3730702	Carcass	>4	Adult; 20 percent present; three scutes and fragments scattered over approximately 30 m.
291	705531	3730943	Carcass	>4	Adult male; 20 percent of carcass present. Three to four other pieces found in a 20 m radius. Gular present.
292	705481	3730903	Carcass	>4	Adult; 20 percent of carcass present. Gular present.
299	706308	3730589	Carcass	>4	Adult male. Approximately 30 fragments, 20 percent of shell. Fragments in runnel within 40 m.
304	706186	3730636	Carcass	>4	Adult. 25 percent of entire shell and two attached scutes. On desert pavement, scattered over 20 m.
305	706069	3730616	Carcass	>4	Small adult. 35 fragments, 20 percent of shell.
330	702352	3729996	Carcass	>1	Several juvenile scutes in coyote scat.
331	702297	3730029	Carcass	4	PLN 250 mm. Partially disarticulated male; shell broken in several pieces. Likely depredated.
334	701892	3730087	Carcass	4	230 MCL. Mostly intact carcass. Female, plastron intact. Carapace disarticulating. Carapace broken - likely cause of death depredation.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
335	701712	3730093	Carcass	2-4	Probably male. Five plates disarticulated or broken.
337	702895	3730134	Carcass	>1	Hatchling scutes in >1 yr. old kit fox scat (or small coyote).
342	703886	3730265	Carcass	2-4	Plastron. PLN = 190 mm in wash bottom.
343	704574	3729938	Carcass	>4	Adult. Likely male. 60 percent shell bones, 40 percent scutes. Possible depredation (possibly mountain lion) or shell broken apart and spread around.
345	704475	3730194	Carcass	2-4	Adult. Six scutes, seven bones scattered over 20 m in wash bottom.
179	705646	3731899	Scute	>4	Several fragments spread over 60 m
19 7025	10	3732685	Shell fragment	>>4 One	fragment.
33 7046	11	3733014	Shell fragment	>4 One	fragment.
34 7047	74	3732989	Shell fragment	>4	One adult fragment.
38 7054	80	3733277	Shell fragment	>4	One adult fragment.
39 7049	66	3732914	Shell fragment	>>4	One adult fragment.
40 7054	98	3732918	Shell fragment	>4	One immature fragment.
41 7052	76	3732963	Shell fragment	>4 One	fragment.
42 7052	18	3732684	Shell fragment	>4 One	fragment.
46 7060	82	3733100	Shell fragment	>4 One	fragment.
47 7057	73	3733054	Shell fragment	>4 One	fragment.
48 7057	74	3732965	Shell fragment	>4 One	fragment.
49 7062	12	3732704	Shell fragment	>>4	One adult fragment.
50 7071	24	3233342	Shell fragment	<4 One	fragment.
52 7071	15	3733120	Shell fragment	>4	One disarticulated piece.
54 7066	73	3732831	Shell fragment	>4	One disarticulated piece.
55 7067	65	3732896	Shell fragment	>4	One disarticulated piece.
56 7065	25	3732931	Shell fragment	>4	One disarticulated piece.
58 7069	16	3733061	Shell fragment	>4	One disarticulated piece.
59 7070	12	3733107	Shell fragment	>4	One disarticulated piece.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
60 7075	32	3733242	Shell fragment	>4	Subadult, one small fragment.
63 7079	34	3732716	Shell fragment	>4	Subadult, one plastron fragment.
64 7074	67	3732693	Shell fragment	>4	One disarticulated piece.
67 7072	82	3732947	Shell fragment	>4	One disarticulated piece.
68 7074	17	3733181	Shell fragment	>4	One disarticulated piece.
70 7072	91	3732756	Shell fragment	>4	Disarticulated piece; probably part of Sign 69.
72 7077	55	3732873	Shell fragment	>4	One disarticulated piece.
73 7074	42	3732870	Shell fragment	>4	One disarticulated piece; probably part of Sign 61.
74 7072	90	3732851	Shell fragment	>4	One disarticulated piece.
75 7081	08	3733023	Shell fragment	>4	One disarticulated piece.
97 7023	72	3732176	Shell fragment	>4	Adult. One marginal found in incised wash.
103 7047	38	3732277	Shell fragment	>4 One	fragment.
105 7049	53	3732372	Shell fragment	>4	One adult fragment.
106 7048	24	3732263	Shell fragment	>4	One adult fragment.
107 7053	09	3732372	Shell fragment	>4 One	fragment.
109 7058	04	3732634	Shell fragment	>4	One adult fragment.
111 7062	91	3732501	Shell fragment	>4 One	fragment.
113 7061	84	3732467	Shell fragment	>4 One	fragment.
115 7061	38	3732358	Shell fragment	>4	Juvenile; one fragment.
116 7061	60	3732334	Shell fragment	>4	Adult; one fragment.
117 7060	61	3732275	Shell fragment	>4	Adult; one fragment.
120 7067	99	3732475	Shell fragment	>>4	Subadult or greater; one fragment.
121 7069	58	3732183	Shell fragment	>>4	Adult; one fragment.
122 7068	46	3732148	Shell fragment	>>4 One	fragment.
124 7070	87	3732114	Shell fragment	>>4 One	fragment.
127 7065	87	3732275	Shell fragment	>>4	Probably adult; one fragment.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
128 7069	28	3732252	Shell fragment	>>4	Adult; one fragment.
130 7072	59	3732562	Shell fragment	>>4	Adult; one fragment. Probable plastron fragment - may not be tortoise.
133 7076	90	3732252	Shell fragment	>4 One	fragment.
134 7079	04	3732215	Shell fragment	>4	Adult; one fragment.
135 7077	13	3732218	Shell fragment	>>4	Adult; one fragment.
136 7079	21	3732575	Shell fragment	>4 One	fragment.
139 7073	22	3732431	Shell fragment	>4 One	fragment.
140 7076	04	3732242	Shell fragment	>4 One	fragment.
141 7087	88	3732563	Shell fragment	>>4 One	fragment.
142 7082	68	3732218	Shell fragment	>>4	Adult; one fragment.
157 7042	36	3731896	Shell fragment	>4	Adult; one fragment.
160 7044	86	3731841	Shell fragment	>4	Adult; one fragment.
163 7048	45	3731633	Shell fragment	>4	Adult. Many fragments in a tight cluster.
166 7049	47	3731981	Shell fragment	>4	Adult. Single plastron fragment.
167 7049	52	3731646	Shell fragment	>4	Adult. One fragment n shallow wash.
169 7048	51	3731980	Shell fragment	>4	Adult; one fragment.
170 7048	16	3732041	Shell fragment	>4	Adult; one fragment; may be from same tortoise as Sign 169.
171 7052	37	3731693	Shell fragment	>4	Adult; one fragment in shallow wash.
174 7052	47	3731730	Shell fragment	>4	Adult; two fragments in shallow runnel. Probably part of Sign 171.
177 7050	92	3731767	Shell fragment	>4	Adult; one fragment in shallow runnel.
178 7054	16	3731846	Shell fragment	>4	Adult; one fragment in shallow runnel.
184 7065	20	3731975	Shell fragment	>4	Small adult; one fragment.
186 7068	89	3731961	Shell fragment	>>4	Adult; one fragment.
187 7072	03	3731915	Shell fragment	>>4	Adult; one fragment.
190 7075	93	3731595	Shell fragment	>4 One	fragment.
192 7076	23	3731888	Shell fragment	>4 One	fragment.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
195 7072	52	3732019	Shell fragment	>4 One	fragment.
196 7073	07	3732107	Shell fragment	>4 One	fragment.
201 7078	54	3731838	Shell fragment	>>4 One	fragment.
204 7083	25	3731724	Shell fragment	>4	Adult; one fragment.
205 7087	23	3731824	Shell fragment	>4	Immature; one fragment.
206 7087	47	3731949	Shell fragment	>4	Adult; one fragment.
207 7080	46	3732058	Shell fragment	>4	Adult; one fragment.
208 7094	20	3731645	Shell fragment	>>4	Adult; one fragment.
209 7096	44	3731715	Shell fragment	>>4	Adult; one fragment.
210 7095	70	3731807	Shell fragment	>>4	Adult; one fragment.
211 7090	29	3731848	Shell fragment	>>4	Adult; one fragment.
212 7093	20	3732258	Shell fragment	>4	Adult; one fragment.
225 7027	61	3731473	Shell fragment	>4	Adult; one fragment.
227 7030	72	3730964	Shell fragment	>4	Adult; one fragment.
229 7038	07	3731094	Shell fragment	>4	Adult; one fragment.
230 7034	85	3731164	Shell fragment	>4	Adult; one fragment.
233 7047	53	3731247	Shell fragment	>4 One	fragment.
237 7046	74	3730997	Shell fragment	>4	Small piece of plastron; likely part of Sign 238.
238 7046	20	3730979	Shell fragment	>4	Adult. Large piece plastron bridge.
241 7051	25	3731088	Shell fragment	>4	Adult; one fragment.
242 7059	89	3731416	Shell fragment	>4	One vertebral shell piece.
247 7068	60	3731040	Shell fragment	>4	Adult; one fragment.
250 7078	98	3731238	Shell fragment	>4	Subadult; one fragment.
252 7073	78	3731100	Shell fragment	>4 One	fragment.
260 7015	73	3730406	Shell fragment	>4	Adult; one fragment.
267 7020	09	3730542	Shell fragment	>4	Adult; one fragment in cobble outflow.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
269 7018	23	3730622	Shell fragment	>4	Adult; one fragment on ledge of wash.
272 7025	37	3730427	Shell fragment	>4	Adult; one fragment in wash.
285 7040	68	3730716	Shell fragment	>4	Adult; one fragment.
290 7053	53	3730530	Shell fragment	>4	Adult; one fragment.
293 7050	80	3730922	Shell fragment	>4	Adult; one fragment.
294 7052	32	3730831	Shell fragment	>4	Adult; one fragment.
295 7052	11	3730560	Shell fragment	>4 One	fragment.
300 7058	53	3730569	Shell fragment	>4	Adult; one fragment.
301 7061	76	3730955	Shell fragment	>4	Adult; three fragments over 60m.
302 7058	36	3730882	Shell fragment	>4	Adult; several broken and buried fragments. Very old.
306 7067	89	3730493	Shell fragment	>4	Adult; one fragment.
307 7066	29	3730735	Shell fragment	>4	Adult; one fragment.
308 7071	38	3730978	Shell fragment	>4	Adult; one fragment.
309 7069	84	3730554	Shell fragment	>4 One	fragment.
312 7064	54	3730672	Shell fragment	>4	Adult; one fragment.
313 7068	58	3730681	Shell fragment	>4	Adult; three fragments.
315 7076	78	3730727	Shell fragment	>4	Small adult; one fragment.
317 7084	04	3730813	Shell fragment	>4 One	fragment.
318 7081	53	3730764	Shell fragment	>4 One	fragment.
319 7085	32	3730741	Shell fragment	>4	Adult; one fragment.
321 7089	29	3730945	Shell fragment	>4	Adult; one fragment.
322 7091	89	3730861	Shell fragment	>4	Adult; one fragment.
323 7096	27	3730873	Shell fragment	>4	Adult; one fragment.
324 7088	71	3730837	Shell fragment	>4	Adult; one fragment.
325 7089	53	3730805	Shell fragment	>4	Adult; one fragment.
326 7101	99	3730801	Shell fragment	>4 One	fragment.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
327 7098	53	3730583	Shell fragment	>>4	Adult; one fragment.
328 7099	65	3730569	Shell fragment	>>4	Adult; one fragment.
336 7026	52	3729946	Shell fragment	>4	Adult; one fragment.
338 7029	45	3730206	Shell fragment	>4	One vertebral bone fragment.
341 7039	23	3729952	Shell fragment	>1	Adult, probably male. One pygal scute.
347 7049	50	3730235	Shell fragment	>4	One fragment on edge of wash.
348 7058	85	3730023	Shell fragment	>4	Adult; one fragment.
350 7058	67	3730338	Shell fragment	>4	Adult; one fragment.
351 7064	86	3730138	Shell fragment	>4	Immature; one fragment.
353 7065	86	3729976	Shell fragment	>4	Adult; one fragment; may be part of Sign 56.
354 7066	06	3730051	Shell fragment	>>4	Adult; one fragment.
355 7071	81	3730041	Shell fragment	>>4	Adult; one fragment.
356 7065	09	3730063	Shell fragment	>>4	Adult; one fragment.
357 7068	82	3730105	Shell fragment	>4	Adult; one fragment.
358 7066	36	3730364	Shell fragment	>>4	Adult; one fragment.
359 7075	56	3730404	Shell fragment	>4	Adult; one fragment.
360 7075	81	3730382	Shell fragment	>4	Adult; one fragment.
361 7077	40	3730387	Shell fragment	>>4	Adult; one fragment.
362 7078	81	3730381	Shell fragment	>4	Adult; one fragment.
364 7078	45	3730415	Shell fragment	>>4	Adult; one fragment.
365 7076	74	3730397	Shell fragment	>>4 One	fragment.
368 7073	36	3730449	Shell fragment	>>4	Adult; one fragment.
369 7076	20	3729983	Shell fragment	>>4	Adult; one fragment.
370 7079	04	3730067	Shell fragment	>4	Immature; one fragment.
373 7080	72	3730295	Shell fragment	>4 One	fragment.
374 7078	78	3730306	Shell fragment	>4	One very old fragment.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
375 7073	86	3730383	Shell fragment	>4	One very old fragment
378 7088	77	3730085	Shell fragment	>4	Immature; one small plastron fragment (anal area) 3 x 4 cm.
381 7088	85	3730150	Shell fragment	3	Subadult / immature; one fragment. Part of gular.
383 7099	32	3730311	Shell fragment	>4	Adult; one fragment.
384 7100	19	3730332	Shell fragment	>4	Adult; one fragment.
385 7102	52	3730050	Shell fragment	>4 One	fragment.
386 7100	59	3730048	Shell fragment	>4	Adult; one fragment.
388 7100	15	3730220	Shell fragment	>4 One	fragment.
389 7103	72	3730353	Shell fragment	>>4	Adult; one fragment.
390 7022	07	3717909	Shell fragment	>>4	Adult; one fragment.
391 7022	25	3717798	Shell fragment	>>4	Adult; one fragment.
392 7116	03	3729070	Shell fragment	>>4	Adult; one fragment.
393 7116	05	3728525	Shell fragment	>>4 One	fragment.
395 7113	73	3728748	Shell fragment	>>4 One	fragment.
396 7113	41	3728913	Shell fragment	>>4 One	fragment.
398 7036	65	3733550	Shell fragment	>4 One	fragment.
400 7075	54	3733813	Shell fragment	>>4	Adult; one fragment.
401 7075	54	3733813	Shell fragment	>>4	Adult; one fragment.
402 7083	73	3725453	Shell fragment	>4	Adult; one fragment.
406 7084	71	3720227	Shell fragment	>>4	Adult; one fragment.
408 7020	25	3718795	Shell fragment	>4 One	fragment.
4	708350	3730581	Shell fragments	>4	Adult; three fragments.
27 7038	33	3732654	Shell fragments	>4	Several fragments of adult tortoise.
32 7043	37	3732667	Shell fragments	>4 Three	fragments.
53 7067	91	3732737	Shell fragments	>4	Four disarticulated pieces.
57 7067	17	3732965	Shell fragments	>4	Adult; two disarticulated pieces.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
61 7074	73	3732865	Shell fragments	>4	Adult; two fragments.
62 7076	90	3732812	Shell fragments	>4	Adult, one plastron fragment and another fragment.
65 7074	63	3732903	Shell fragments	>4	Three disarticulated pieces over 30 m; may be part of Sign 61.
69 7073	40	3732717	Shell fragments	>4	Two disarticulated pieces.
83 7012	51	3732290	Shell fragments	>4	Adult. 10 pieces.
102 7040	07	3732251	Shell fragments	>4 >10	small fragments.
108 7060	53	3732476	Shell fragments	>4	Adult; five fragments.
112 7063	58	3732464	Shell fragments	>>4	Adult; two fragments.
119 7064	61	3732526	Shell fragments	>4	Adult; several fragments.
123 7071	60	3732147	Shell fragments	>4	Adult. > 10 small to medium fragments.
125 7071	94	3732363	Shell fragments	>4	Large adult female. Several pieces of bone, very thin (osteoporotic).
126 7065	22	3732322	Shell fragments	>4	Adult; several fragments.
132 7073	07	3732617	Shell fragments	>4 Two	fragments.
138 7079	28	3732496	Shell fragments	>4	Immature or subadult; five fragments over 40 m.
152 7035	94	3731508	Shell fragments	>4	Adult; three fragments scattered within 50 foot radius.
156 7046	51	3731952	Shell fragments	>4	Adult; four fragments spread over 30 m.
158 7046	55	3731871	Shell fragments	>4 Two	fragments.
159 7045	45	3731860	Shell fragments	>4 Two	fragments.
162 7047	61	3731702	Shell fragments	>4	Adult; three fragments.
172 7055	44	3731681	Shell fragments	>4	Adult; several fragments out of wash. Very possibly part of Sign 175.
175 7054	93	3731734	Shell fragments	>4	Adult; several fragments out of runnel. Probably same tortoise as Sign 175.
183 7071	58	3731755	Shell fragments	>4	Adult. >15 highly disarticulated pieces. One marginal.
185 7068	15	3731931	Shell fragments	4	Adult; seven fragments.
191 7074	37	3731886	Shell fragments	>4	> 1 fragment scattered down runnel.
193 7078	74	3731875	Shell fragments	>4	Large adult; more than 10 years old; >1 fragment.
194 7079	40	3731998	Shell fragments	>4 >1	fragment.

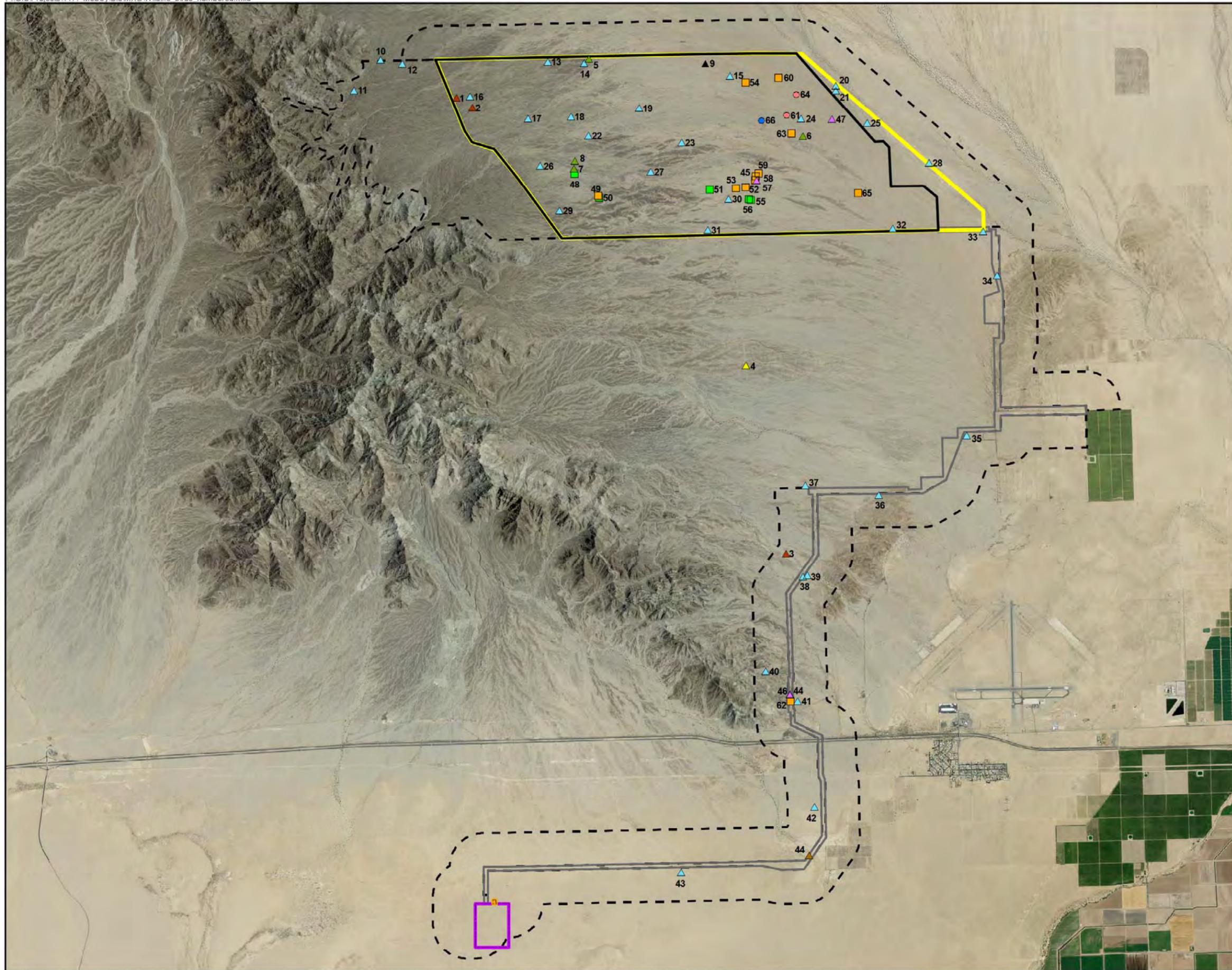
Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
197 7076	34	3731588	Shell fragments	>>4 >1	fragment.
198 7075	49	3731653	Shell fragments	>4	Several fragments within 20 m.
199 7073	66	3731688	Shell fragments	>4 >1	fragment.
202 7077	76	3731836	Shell fragments	>4	Adult; two fragments.
203 7083	80	3731695	Shell fragments	>4	Adult; approximately 20 fragments.
219 7021	32	3731035	Shell fragments	>4	Several fragments found in debris pile that had been pulled from caliche cave. Appears to be coyote excavation and fragments were brought in by pack rat.
228 7033	90	3731366	Shell fragments	>4	Several shell segments and fragments.
232 7043	82	3731187	Shell fragments	>4	Two fragments 10 m apart.
240 7049	67	3731151	Shell fragments	>4	Adult; two fragments.
245 7066	45	3731065	Shell fragments	>4	Adult; four fragments within 50 m.
246 7064	67	3731039	Shell fragments	>4	Adult. Three fragments within 20 m. One fragment was bridge piece.
248 7070	47	3731052	Shell fragments	>4 Three	fragments.
249 7079	02	3731424	Shell fragments	>4	Adult; eight fragments.
251 7073	21	3731123	Shell fragments	>4	Subadult; three fragments.
253 7082	82	3731476	Shell fragments	>4	Very old tortoise shell pieces; eight fragments (5 percent of carcass).
256 7087	95	3731288	Shell fragments	>4	Adult. Very old. Ten fragments (5 percent of carcass).
280 7044	58	3730700	Shell fragments	>>4	Several fragments at active kit fox natal den.
288 7054	79	3730909	Shell fragments	>>4	>1 fragment; 3-10 cm.
298 7059	72	3730558	Shell fragments	>4	Subadult; several fragments.
303 7060	76	3730873	Shell fragments	>4	Two fragments in runnel.
310 7067	40	3730627	Shell fragments	>4	Adult; three fragments.
311 7071	59	3730666	Shell fragments	>4 Four	fragments.
314 7072	22	3730701	Shell fragments	>4	Adult; three fragments
320 7084	68	3731020	Shell fragments	>4	Adult; two fragments, 30 m apart.
329 7098	60	3730521	Shell fragments	>4	Adult; two fragments.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
332 7024	16	3730040	Shell fragments	>4	Adult, probably female (shell is thin); several fragments.
333 7023	11	3730128	Shell fragments	>4	Adult; several fragments.
344 7048	23	3730171	Shell fragments	>4	Three fragments within 20 m.
346 7054	98	3730366	Shell fragments	>>4	Adult. Four pieces within 2 m, 5th piece 20 m west in shallow swale of desert pavement.
349 7062	84	3730067	Shell fragments	>4	Adult; two fragments in 30 m.
352 7069	80	3730127	Shell fragments	>4	Adult; ten fragments.
363 7079	78	3730373	Shell fragments	>>4	Adult; three fragments within 50 m.
366 7074	38	3730433	Shell fragments	>4	Two fragments within 50 m.
367 7075	26	3730468	Shell fragments	>4	Three fragments within 5 m.
371 7074	44	3730097	Shell fragments	>4	Several fragments.
372 7077	09	3730120	Shell fragments	>>4	Adult. Two pieces within 40 m.
376 7087	85	3730076	Shell fragments	>4	Adult; five small fragments.
379 7085	73	3730180	Shell fragments	>4	Two fragments, <5 cm.
382 7093	89	3730075	Shell fragments	>>4	Adult; two fragments.
387 7101	00	3730199	Shell fragments	>4	Adult; four fragments.
394 7114	97	3728632	Shell fragments	3-4	Juvenile; two fragments.
397 7113	21	3728578	Shell fragments	>>4	Two fragments.
407 7075	26	3719050	Shell fragments	>4	Several scattered fragments.
409 7026	52	3717658	Shell fragments	>4	Small immature tortoise, about 15 percent of plastron.
10	48	3733034	Scat	TY2	20 mm
20	703057	3732618	Scat	NTY3	Two dried scat; 22 mm.
21	702725	3733021	Scat	NTY4	20 mm. Large and mostly white.
22	702839	3732728	Scat	TY1	18 mm. Still moist.
23 7029	57	3732683	Scat	TY2	18 mm.
24	702852	3732638	Scat	NTY4	23 mm. Very old, almost white.
25 7032	00	3733032	Scat	NTY4	In open.
28	703187	3733032	Scat	NTY4	23 mm; located in runnel.
84	701016	3732096	Scat	NTY3	17 mm. One piece located on pavement. White, no odor.
85	700901	3732256	Scat	NTY2	22 mm; eight scat.
86	701094	3732239	Scat	TY2	19 mm; four scat.

Number Corresponding to Figure	UTM NAD 83		Sign Type	Age	Comments
	E	N			
87	701004	3732146	Scat	TY2	12 mm; one scat.
214	700402	3730910	Scat	TY2	18 mm. One scat in small runnel.
215	700704	3730897	Scat	TY1	17 mm. Two scat, still soft with sheen.
217	700899	3731160	Scat	NTY3	20 mm. In small runnel (<i>Chaenactis sp.</i> , <i>Plantago ovata</i>).
144	700001	3731782	Scat	NTY4	19 mm; one scat.

APPENDIX I
FIGURE OF SPECIAL-STATUS BIRD OBSERVATIONS AND
CORRESPONDING TABLE

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McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

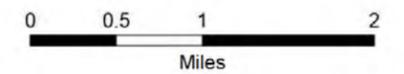
Legend

Species

- ▲ Brewer's sparrow
- ▲ Golden eagle
- ▲ Le Conte's thrasher
- ▲ Loggerhead shrike
- ▲ Prairie falcon
- ▲ Yellow Warbler

Phase II Burrowing Owl Survey Observations

- ▲ Bird
- Burrow
- Burrow (Inactive)
- White Wash
- White Wash and Pellets
- MSEP Solar Plant Site Boundary
- Solar Plant Site Survey Area
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard
- Extent of Area Surveyed



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

APPENDIX I SPECIAL-STATUS BIRDS OBSERVATIONS IN SPRING 2011



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APPENDIX I

SPECIAL-STATUS BIRD SPECIES OBSERVED DURING SPRING 2011 SURVEYS

Map Number	UTM NAD 83		Species		Sign Type	Comments
	E	N				
1	701944	3732434	Brewer's sparrow	<i>Spizella breweri</i>	Two individuals	Found feeding in <i>Acacia greggii</i> .
2	702227	3732262	Brewer's sparrow	<i>Spizella breweri</i>	Three individuals	Feeding in and out of <i>Acacia greggii</i> .
3	707793	3724371	Brewer's sparrow	<i>Spizella breweri</i>	Several individuals	Adults calling from <i>Cercidium floridum</i> .
44 7078	60	3721882	Burrowing owl	<i>Athene cunicularia</i>	Two individuals	Flushed to approx. 150 feet. Active burrow. Potential use by tortoise. Several holes possibly old kit fox.
45 7072	68	3730973	Burrowing owl	<i>Athene cunicularia</i>	One individual	Flying (landed nearby).
46 7078	58	3721876	Burrowing owl	<i>Athene cunicularia</i>	One individual	Eating mouse at entrance of burrow. Owl was flushed.
47 7086	09	3732056	Burrowing owl	<i>Athene cunicularia</i>	One individual	Flushed owl from roost site. It flew low and landed 50 m away - bobbed its head and left after a minute or so.
48 7040	38	3731093	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Inactive. Some old pellets and whitewash in front of caliche cave.
49 7044	58	3730700	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Whitewash at two entrances at an active kit fox natal den.
50 7044	72	3730665	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Inactive. Old pellets and whitewash.
51 7064	34	3730812	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Inactive. Kit fox den. whitewash.
52 7069	01	3730841	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Not recent. Old. Old kit fox natal den (inactive) with moderate whitewash and old pellet at three entrances.
53 7070	70	3730857	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Recent. Old kit fox natal den. Very recent burrowing owl sign (feathers, whitewash, pellets) abundant at six burrow entrances.
54 7070	70	3732708	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Whitewash at two openings in an inactive kit fox natal den.
55 7071	35	3730642	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Inactive. Less than 12 whitewash and one old pellet, not recent.
56 7071	62	3730628	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Inactive.
57 7072	38	3730981	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Not recent (?). Old kit fox natal den (inactive). Scant whitewash visible on five burrow entrances. No pellets observed.
58 7072	52	3731049	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Used this year. whitewash and pellets and egg fragments.
59 7072	99	3731105	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Used this year. Pellets and whitewash.
60 7076	55	3732789	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Not recent. A lot of whitewash, two pellets. Old kit fox scat present.

Map Number	UTM NAD 83		Species		Sign Type	Comments
	E	N				
61 7077	98	3732127	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Whitewash and pellets at one entrance of active kit fox natal den.
62 7078	72	3721761	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Active. Old kit fox natal den. Whitewash with pellet (NTY). Tortoise burrow present is 390 mm; current tortoise use evidenced by tracks in one burrow (during evening burrowing owl surveys, tortoise was found in burrow).
63 7078	85	3731809	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Recent whitewash and pellet.
64 7079	67	3732496	Burrowing owl	<i>Athene cunicularia</i>	Burrow	Whitewash and pellets present at three entrances of an active kit fox natal den.
65 7090	65	3730756	Burrowing owl (possible)	<i>Athene cunicularia</i>	Burrow	One speck of whitewash at one burrow at an inactive kit fox natal den.
66 7073	54	3732034	Burrowing owl	<i>Athene cunicularia</i>	Whitewash	Not this year.
4	707079	3727691	Golden eagle	<i>Aquila chrysaetos</i>	Two individuals	Observed soaring overhead along road (west side of Black Rock Rd.) above site at 0900 on March 28, 2011.
5	704292	3733122	Le Conte's thrasher	<i>Toxostoma lecontei</i>	Individual	Three individuals in dense vegetation of runnel.
6	708090	3731760	Le Conte's thrasher	<i>Toxostoma lecontei</i>	Individual	Adult walking and perching in low shrubs.
7	704024	3731181	Le Conte's thrasher	<i>Toxostoma lecontei</i>	Individual Adult.	
8	704047	3731319	Le Conte's thrasher	<i>Toxostoma lecontei</i>	Nest	Active nest with eggs.
10 7006	02	3733098	Loggerhead shrike	<i>Lanius ludovicianus</i>	Adult and nestlings	Adult flushed from nest in <i>Cercidium floridum</i> . Very small chicks in nest. Probably second clutch.
11 7001	32	3732566	Loggerhead shrike	<i>Lanius ludovicianus</i>	Fledgling	Recently fledged shrike flew across incised wash to <i>Cercidium floridum</i> .
12 7009	89	3733030	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Perched	in <i>Cercidium floridum</i> . Flying from tree to tree.
13 7035	62	3733071	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Perched and in flight.
14 7042	06	3733045	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual and eggs	Flushed from <i>Cercidium floridum</i> and found nest with two eggs.
15 7067	95	3732822	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult flew by and perched on <i>Larrea tridentata</i> .
16 7021	85	3732456	Loggerhead shrike	<i>Lanius ludovicianus</i>	Two individuals	Perched on <i>Cercidium floridum</i> 50 m from each other.
17 7032	14	3732068	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Adult;	heard calling.
18 7039	75	3732098	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Observed	perching.
19 7051	82	3732253	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Perched	on <i>Cercidium floridum</i> .
20 7086	75	3732644	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult; perched on <i>Olneya tesota</i> 30 m south.
21 7086	72	3732564	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individuals	Two or more young in nest in <i>Olneya tesota</i> . Parent nearby.
22 7042	81	3731762	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Perched	and flying.
23 7059	36	3731643	Loggerhead shrike	<i>Lanius ludovicianus</i>	Nest with young	Active nest with five young in <i>Cercidium floridum</i> .
24 7080	57	3732067	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult; perched on <i>Larrea tridentata</i> .
25 7092	31	3731988	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult; perched in <i>Olneya tesota</i> and flying.

Map Number	UTM NAD 83		Species		Sign Type	Comments
	E	N				
26 7034	28	3731234	Loggerhead shrike	<i>Lanius ludovicianus</i>	Two individuals	Adults.
27 7053	90	3731129	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult; perched and singing.
28 7103	25	3731281	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult; perched in <i>Olneya tesota</i> .
29 7037	71	3730433	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individuals	Nest with three nestlings in <i>Cercidium floridum</i> . One adult flying.
30 7067	74	3730641	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Flying up washlet.
31 7063	99	3730094	Loggerhead shrike	<i>Lanius ludovicianus</i>	Adult and nest	Perched in <i>Cercidium floridum</i> . Stick nest with no eggs or chicks in same tree.
32 7096	81	3730123	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Perched.	
33 7112	86	3730069	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual Flying.	
34 7115	39	3729290	Loggerhead shrike	<i>Lanius ludovicianus</i>	Two individuals	
35 7109	93	3726452	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Flying and perched in <i>Olneya tesota</i> .
36 7094	40	3725405	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individuals	Pair of adults feeding fledged (two or more) young in an <i>Olneya tesota</i> (50 feet north of waypoint).
37 7081	32	3725579	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Perched on top of <i>Olneya tesota</i> .
38 7081	72	3723983	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individuals	Perched in large <i>Olneya tesota</i> in wide wash; saw another adult and fledgling after.
39 7080	87	3723957	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	
40 7074	33	3722286	Loggerhead shrike	<i>Lanius ludovicianus</i>	Two individuals	Adults: perched in <i>Olneya tesota</i> .
41 7080	00	3721761	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	
42 7082	97	3719882	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual	Adult perched on <i>Olneya tesota</i> .
43 7059	30	3718729	Loggerhead shrike	<i>Lanius ludovicianus</i>	Individual In	<i>Larrea tridentata</i> .
9	706361	3733042	Prairie falcon	<i>Falco mexicanus</i>	Two individuals	Adults; in flight.
44 7082	04	3719027	Yellow warbler	<i>Dendroica petechia</i>	Individual	Observed during APC surveys

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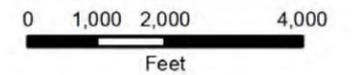
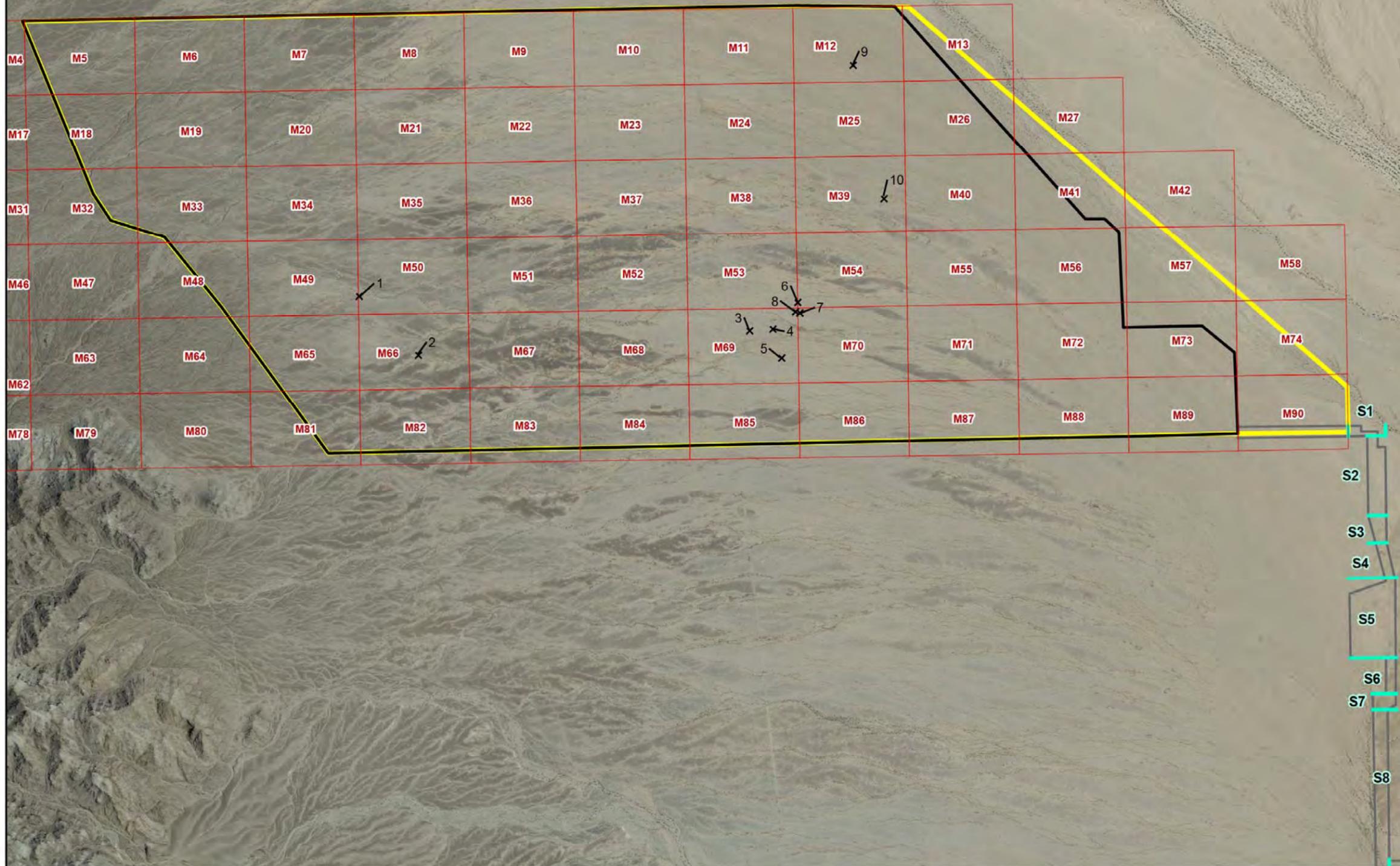
APPENDIX J
AREAS SEARCHED AND RESULTS FOR PHASE III
BURROWING OWL SURVEY OBSERVATIONS

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McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

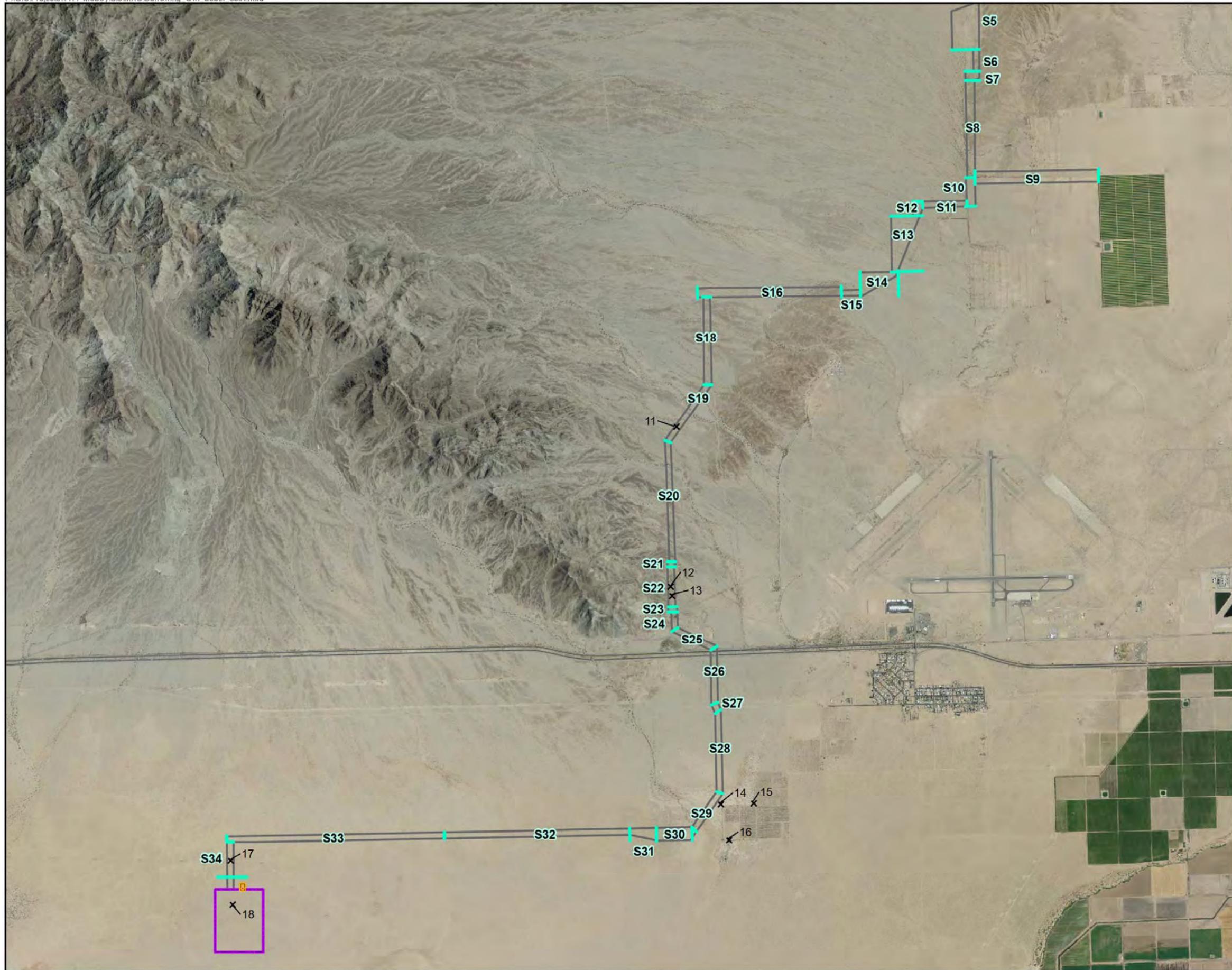
- × Burrows with Recent Burrowing Owl Sign
- ▭ MSEP Solar Plant Site Boundary
- ▭ Proposed Linear Corridor
- ▭ Solar Plant Site Survey Area
- ▭ Survey Grid
- ▭ Survey Segment Boundaries



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS 7.5' DRGs, TTEC

APPENDIX J PHASE III BURROWING OWL OBSERVATIONS SPRING 2011



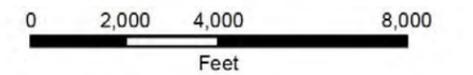


McCOY SOLAR ENERGY PROJECT

RIVERSIDE COUNTY, CA

Legend

- × Burrows with Recent Burrowing Owl Sign
- ▭ MSEP Solar Plant Site Boundary
- ▭ Proposed Linear Corridor
- ▭ Proposed Colorado River Substation (SCE)
- ▭ Switchyard
- Survey Segment Boundaries



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS 7.5' DRGs, TTEC

APPENDIX J

PHASE III BURROWING OWL OBSERVATIONS

SPRING 2011



APPENDIX J

AREAS SEARCHED AND RESULTS FOR PHASE III BURROWING OWL SURVEY OBSERVATIONS

Date	Observer	Time (Sunrise or Sunset)	Map Number	Areas Searched ¹	E	N	Phase III Observations / Comments
Part I April 18 - 21, 2011							
4/18/2011	Alexis Watts	Sunrise	4	M69 7070	70	3730856	Possible burrowing owl observed - unconfirmed. One bird flying low between <i>Larrea tridentata</i> approx. 75 meters beyond burrow complex to the east. Obscured by shrubs but size and flight would match burrowing owl.
			7	M69 7072	38	3730980	No activity. Very still and quiet.
			5	M69 7071	34	3730642	No activity. Very still and quiet.
			3	M69 7069	01	3730841	No activity. Very still and quiet.
			8	M70 7072	68	3730973	No activity. Very still and quiet.
4/18/2011	Alexis Watts	Sunset	9	M12 7076	60	3732786	Active. No activity at burrow. Eight pellets, old and new; twelve whitewash.
			10	M39 7078	86	3731808	Six old whitewash, few cobwebs on side of entrance. No pellets.
			6	M53 7072	52	3731049	No activity. Burrow has whitewash; no fresh pellets.
			5	M69 7071	34	3730642	Ten old whitewash. Cobwebs covering entrance.
			8	M70 7072	68	3730973	Old kit fox natal den with kit fox scat. Old whitewash, no new sign.
			3	M69 7069	01	3730841	Older burrow complex; whitewash visible. Too dark to see pellets.
			4	M69 7070	70	3730856	Active burrow complex. One owl flew from burrow complex. Not confirmed but probably owl due to flight and location.
4/18/2011	Shawn Lindey	Sunset	2	M66 7044	72	3730665	No burrowing owls observed old sign at burrow (whitewash and pellets). Burrow appears inactive.
			1	M49 7040	37	3731093	No burrowing owls observed old sign at burrow (whitewash and pellets). Burrow appears inactive.
4/19/2011	Shawn Lindey	Sunrise	2	M66 7044	72	3730665	No burrowing owls observed.
			1	M49 7040	37	3731093	No burrowing owls observed.
4/20/2011	Shawn Lindey Bill Hasskamp	Sunset	18	switchyard 7024	88	3717988	Sandy gravel flats, no burrowing owl sign observed.
			17	S34	702464	3718528	Dunes with no suitable burrowing owl habitat.
				Areas in and			No burrowing owls or sign observed.

Date	Observer	Time (Sunrise or Sunset)	Map Number	Areas Searched ¹	E	N	Phase III Observations / Comments
				adjacent to S26, S27, S28, S29			
			14	Berm adjacent to S29 near solar facility	708470	3719213	Too dark to see - listened for owls. No owls heard.
4/20/2011	Art Schaub	Sunset		S8 - S14 driving/walking surveys			No burrowing owls or sign observed.
4/20/2011	Corey Mitchell	Sunrise	12	S22	707858	3721875	Two adult burrowing owls present, perched near burrow.
			13	S22	707872	3721761	No activity, no recent sign. Tortoise facing out of one of the burrows.
				S19-S22 driving/walking surveys			No burrowing owls or sign observed.
			11	S19	707928	3723834	No activity observed.
4/21/2011	Corey Mitchell	Sunrise		S24-S26 driving/walking survey			No activity observed.
			12	S19	707858	3721875	Pair of burrowing owl adults on mound.
				S22-S22 driving/walking survey			No activity observed.
4/21/2011	Shawn Lindey, Bill Hasskamp, Jim Toney	Sunrise	15	Berm adjacent to S29 near solar facility	708874	3719229	No burrowing owls heard.
			16	7085	76	3718780	
				Walked in and adjacent to S29			No burrowing owls or sign observed.
				Walked area in and adjacent to S33			Dunes and sand, not much suitable habitat for burrowing owls. No burrowing owls or sign observed.
4/21/2011	Art Schaub, Carrie Warman	Sunrise		S9, S10, S13, S14, S16, S18 walking/driving surveys			No burrowing owls or sign observed.

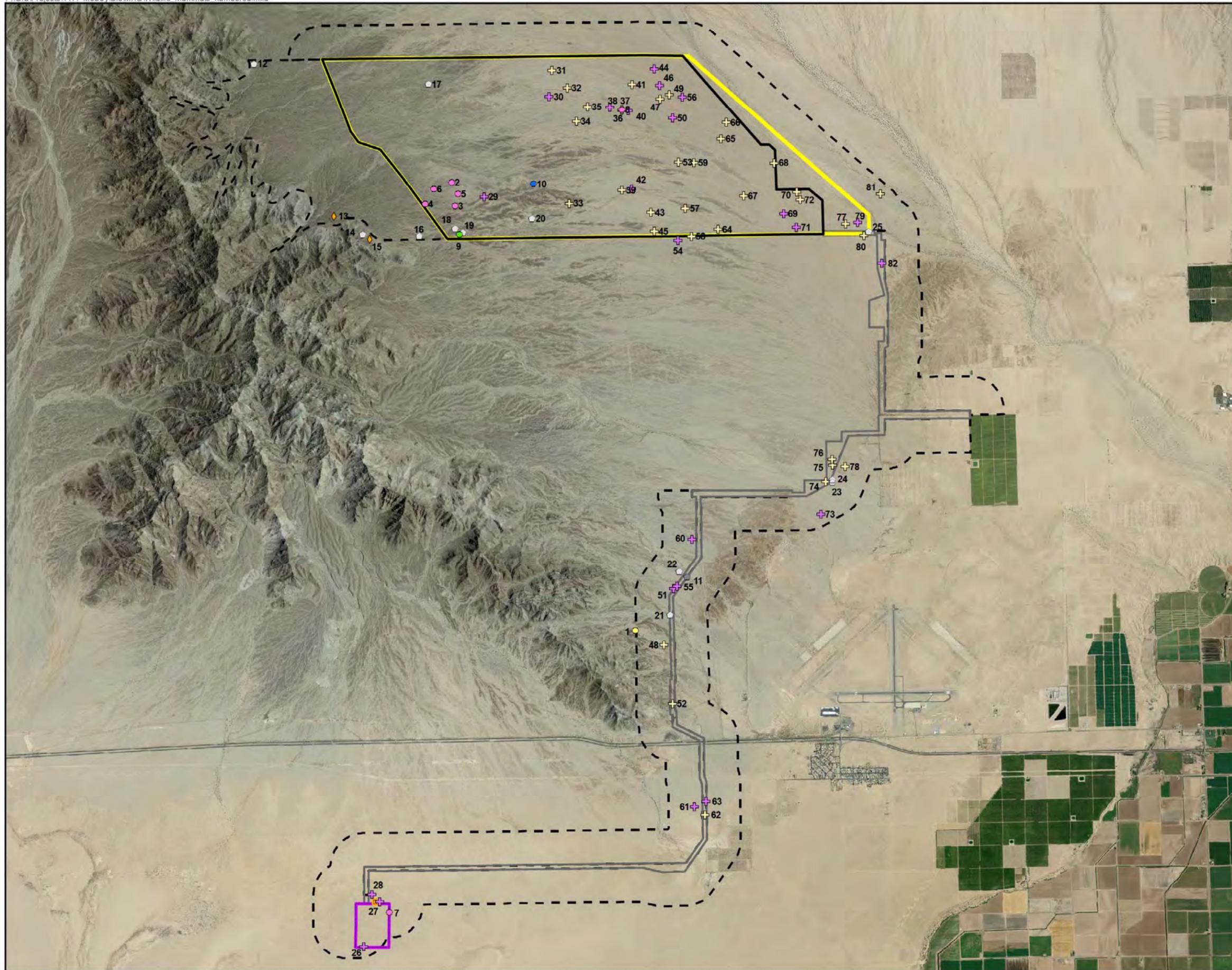
Date	Observer	Time (Sunrise or Sunset)	Map Number	Areas Searched ¹	E	N	Phase III Observations / Comments
Part II June 14-16, 2011							
6/14/2011	Art Schaub	Sunset		M6, M7, M8, M19, M20, M21 walking surveys			No burrowing owls or sign observed.
6/14/2011	Nathan Mudry	Sunset 4		M69 7070	70	3730856	Two burrowing owls observed, possibly more.
				M71, M72, M73, M82, M88, M89 walking surveys			No burrowing owls or sign observed.
6/15/2011	Art Schaub	Sunrise 9		M12 7076	60	3732786	Inactive burrow. A lot of white wash still remains - no fresh sign.
				M9, M10, M22, M23, M36, M37 walking surveys			No burrowing owls or sign observed.
6/15/2011	Nathan Mudry	Sunrise		M26, M27, M40, M41, M55, M56 walking surveys			No burrowing owls or sign observed.
6/15/2011	Nathan Mudry	Sunset		S1-S8 walking surveys			No burrowing owls or sign observed.
6/15/2011	Art Schaub	Sunset	12	S19	707858	3721875	Burrow no longer occupied - white wash and feather are still at burrow; cobwebs in front of hole; remains of a downy chick (likely burrowing owl) at front of burrow (dried and old); pile of adult burrowing owl feathers found four m from burrow - likely predated. When walking back through S22, one burrowing owl was observed flying low near this burrow, then disappeared. An adjacent hole was found with no burrowing owl sign but a clear entrance; could not see the back of this burrow. Returned to burrow after dusk; no sign observed.
				S22	707872	3721761	Inactive burrow - white wash and one pellet still present - no recent sign.
				S19	707928	3723834	Inactive burrow. No burrowing owl sign, but old kit fox scat present at entrance. Burrow located four m away has a lot of kit fox tracks and may be a natal den.
				S23, S24, S25 walking surveys			No burrowing owls or sign observed.

Date	Observer	Time (Sunrise or Sunset)	Map Number	Areas Searched ¹	E	N	Phase III Observations / Comments
6/16/2011	Art Schaub	Sunrise		S26, S27, S28, S29, S30, S31 walking surveys			No burrowing owls or sign observed.
6/16/2011	Nathan Mudry	Sunrise		S33, S34, switchyard			No burrowing owls or sign observed.

¹ "M" refer to cells on Solar Plant Site and S refers to segments on the Linear Corridor. See corresponding figure.

APPENDIX K
FIGURE OF SPECIAL-STATUS MAMMAL OBSERVATIONS AND
CORRESPONDING TABLE

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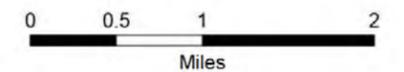


McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

Species

- American badger
- American badger digs
- Burro deer hide
- + Desert kit fox natal den (Active)
- + Desert kit fox natal den (Inactive)
- Potential bat roost
- ◆ Mountain lion scat
- Wild burro scat
- Wild burro teeth
- MSEP Solar Plant Site Boundary
- Solar Plant Site Survey Area
- Proposed Linear Corridor
- Proposed Colorado River Substation (SCE)
- Switchyard
- Extent of Area Surveyed



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, USDA, TTEC.

APPENDIX K SPECIAL-STATUS MAMMALS OBSERVATIONS IN SPRING 2011



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APPENDIX K

SPECIAL-STATUS MAMMAL SPECIES OR THEIR SIGN OBSERVED DURING SPRING 2011 SURVEYS

Map Number	UTM NAD 83		Species	Sign Type	Comments
	E	N			
1	707203	3723051	American badger <i>Taxidea taxus</i>	Individual	One adult in mouth of burrow in cut bank.
2	703882	3730956	American badger <i>Taxidea taxus</i>	Dig	Very fresh, 2 foot deep. Broken branches, claw marks. Under <i>Acacia greggii</i> .
3	703950	3730532	American badger <i>Taxidea taxus</i>	Dig	Fresh. Multiple short (< 1 foot deep) digs in sandy wash bank. Obvious, deep claw marks.
4	703417	3730566	American badger <i>Taxidea taxus</i>	Dig	Fresh. Rocks and cobbles moved from dig under <i>Krameria grayi</i> ; < 1 foot deep. Also multiple fresh digs in drainage.
5	703997	3730752	American badger <i>Taxidea taxus</i>	Dig	Fresh. Small (<1 foot x 1 foot) dig under <i>Encelia farinosa</i> . Another dig upstream in wash in pack rat nest under <i>Cercidium floridum</i> .
6	703565	3730833	American badger <i>Taxidea taxus</i>	Dig	Fresh. Very small (0.5 feet) but very fresh with claw marks in sand under <i>Pleuraphis rigida</i> .
7	702871	3718033	American badger <i>Taxidea taxus</i>	Dig	Recent badger dig.
8	706896	3732261	American badger <i>Taxidea taxus</i>	Claw marks	Probable badger claw marks in inactive kit fox natal den.
9	704025	3730033	Bat <i>Unknown</i>	Roost	Cave with guano. Cave in north caliche bank of large wash. One meter wide by 2 meter high with depth of > 2 m. Guano on walls and ledges. Owl pellets present.
10	705338	3730943	Burro deer <i>Odocoileus hemionus eremicus</i>	Hide	Pieces of deer hide possibly skinned by hunter.
26	702421	3717417	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Active. In good condition; only a few tracks.
27	702567	3718347	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Active.
28	702702	3718216	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Active. Two openings.
29	704458	3730700	Desert kit fox <i>Vulpes macrotis</i>	Natal den	One active fox entrance. Burrowing owl sign (whitewash) at two entrances plus permineralized tortoise shell - multiple fragments.
30	705601	3732488	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Active. Scat and tracks present. White bird shell fragments found at the entrance.
31	705648	3732946	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Inactive; approx. 8 entrances. Old scat.
32	705918	3732645	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Inactive; approx. 8 entrances. Old scat.
33	705971	3730597	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Inactive.
34	706087	3732049	Desert kit fox <i>Vulpes macrotis</i>	Natal den	Inactive relative to foxes. Some fresh dirt ut no tracks, very little fox scat (old, not fresh). Unsure of species using site.

Map Number	UTM NAD 83		Species		Sign Type	Comments
	E	N				
35 7062	85	3732310	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Good condition. Multiple openings.
36 7066	82	3732307	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Possibly active; approx. 10 entrances, one of which is fresh (not sure of species currently using).
37 7068	95	3732254	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Adult and puppy tracks. Five entrances.
38 7068	96	3732261	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Most entrances open and not collapsed, probable badger claw marks on one burrow.
39 7069	01	3730841	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
40 7070	06	3732247	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active with most entrances collapsed. One spot of whitewash.
41 7070	70	3732708	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Burrowing owl whitewash near two openings.
42 7070	77	3730867	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	One active, two inactive. Another inactive burrow east southeast.
43 7074	21	3730449	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Partially filled in and eroded, no recent use. Very old scat.
44 7074	65	3732985	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Scat, tracks.
45 7074	83	3730112	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Old scat.
46 7075	57	3732699	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Scat, tracks, fur.
47 7075	72	3732457	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
48 7077	08	3722794	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Multiple entrances in side of hill; old scat.
49 7077	35	3732534	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
50 7077	98	3732127	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Burrowing owl sign (whitewash, pellets) at one entrance.
51 7078	71	3723790	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Fresh tracks at several entrances. Many scat.
52 7078	72	3721761	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Current use by tortoise and burrowing owl.
53 7079	01	3731347	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
54 7079	08	3729960	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Tracks. Old and recent scat.
55 7079	30	3723835	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Old natal den with lots of old scat but currently active. Fresh digging and prints.
56 7079	67	3732496	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Burrowing owl sign (whitewash, pellets) at three entrances. Fresh kit fox tracks.
57 7080	31	3730521	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Two openings.
58 7081	42	3730030	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Four entrances.
59 7081	75	3731340	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Very old. whitewash on one entrance.
60 7081	93	3724671	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Coyote and kit fox sign. Kit fox tracks and recent activity at multiple entrances.
61 7082	68	3719938	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Old; one active entrance.
62 7084	60	3719789	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
63 7084	75	3720035	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active.
64 7086	13	3730155	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Three entrances.

Map Number	UTM NAD 83		Species	Sign Type	Comments	
	E	N				
65 7086	58	3731764	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Three entrances very deteriorated.
66 7087	45	3732057	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Very old, no scat. Four out of five entrances filled in.
67 7090	65	3730756	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. One burrow opening with one speck of burrowing owl whitewash.
68 7096	03	3731344	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Very old. Now occupied by rodents.
69 7097	75	3730444	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Some tracks and recent scat but no highly active trails emerging from burrows.
70 7100	06	3730826	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
71 7100	06	3730203	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Tracks, scat, and recent discarded dove wing.
72 7100	69	3730689	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Old natal den with fresh digging.
73 7104	75	3725129	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Excellent condition; six of 14 openings active with fresh tracks.
74 7105	61	3725704	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
75 7106	71	3726099	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
76 7106	75	3726003	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive.
77 7108	77	3730270	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. No recent sign. Deteriorated.
78 7109	02	3725978	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Six entrances, some old white fox scat, no owl whitewash detected.
79 7110	93	3730297	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active. Multiple entrances with fresh tracks and scat.
80 7112	00	3730070	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Giant complex, possibly coyote, in stretch of desert pavement (at least 10 large entrances).
81 7114	93	3730802	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Inactive. Poor condition.
82 7115	23	3729582	Desert kit fox	<i>Vulpes macrotis</i>	Natal den	Active.
11	708109	3724002	Wild burro	<i>Equus asinus</i>	Teeth Partially	disintegrated.
21	707814	3723325	Wild burro	<i>Equus asinus</i>	Scat	NTY; two small piles of old burro scat, one found 60 m from first pile.
25 7112	92	3730137	Wild burro	<i>Equus asinus</i>	Scat	Not recent. On desert pavement.
24 7106	81	3725746	Wild burro	<i>Equus asinus</i>	Scat	NTY; old scat near road.
23 7106	80	3725695	Wild burro	<i>Equus asinus</i>	Scat	Old and dry.
22 7079	75	3724090	Wild burro	<i>Equus asinus</i>	Scat	Not recent. Scattered pile of scat in shallow runnel between desert pavement sections.
20 7053	12	3730319	Wild burro	<i>Equus asinus</i>	Scat	Old. None collected. One piece only in wash.
19 7040	91	3730069	Wild burro	<i>Equus asinus</i>	Scat	NTY. One pile in wash bottom.
18 7039	54	3730132	Wild burro	<i>Equus asinus</i>	Scat	Old; 10 pieces (one pile).
17 7034	57	3732693	Wild burro	<i>Equus asinus</i>	Scat	One old pile in middle of desert pavement.
16 7033	16	3729998	Wild burro	<i>Equus asinus</i>	Scat	One old pile. Three pieces on desert pavement.
14 7023	14	3730018	Wild burro	<i>Equus asinus</i>	Scat	NTY. In woodrat midden in rocks.
12 7003	61	3733024	Wild burro	<i>Equus asinus</i>	Scat	One pile; old, white.

Map Number	UTM NAD 83		Species		Sign Type	Comments
	E	N				
13 7018	03	3730341	Mountain lion	<i>Felis concolor</i>	Scat	
15 7024	42	3729942	Mountain lion	<i>Felis concolor</i>	Scat	Old. In rocks at base of mountain.

APPENDIX C

Biological Resources (continued)

C-2. Fall 2011 Plants and Supplemental Wildlife Survey Report

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**Fall 2011
Plants and Supplemental Wildlife Survey Report**

**McCoy Solar Energy Project
Riverside County, CA**



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December 2011

EXECUTIVE SUMMARY

McCoy Solar LLC, a subsidiary of NextEra Energy Resources LLC, proposes to construct, operate, maintain, and decommission an up to 750 megawatt (MW) photovoltaic (PV) solar energy generating facility, the McCoy Solar Energy Project (MSEP or Project), in unincorporated Riverside County, California. The Project, including Linear Facilities, would disturb approximately 4,938 acres. The majority of the MSEP would be developed on public land administered by the Bureau of Land Management (BLM). Approximately 477 acres of privately owned land would be included in the proposed Solar Plant Site boundary.

Surveys were conducted in Fall 2011 to determine the presence, distribution, and approximate abundance of special-status summer annual plants (plants that germinate in late summer or early fall in response to summer rains). These surveys were conducted to complete the comprehensive surveys for all special-status biological resources and their habitats that were conducted of the Project and surrounding area in Spring 2011 (see *McCoy Solar Energy Project Biological Resources Technical Report* [Tetra Tech and Karl 2011]).

Surveyors did not find any federally or state-threatened, endangered, or candidate plant species during surveys. However, surveyors did observe multiple populations of two fall-blooming California Native Plant Society Ranked plants within the Project Area: Abram's spurge (*Chamaesyce ambramsiana*; California Rare Plant Rank 2) and desert unicorn plant (*Proboscidea althaeifolia*; California Rare Plant Rank 4). One California Rare Plant Rank 3 plant, California ditaxis (*Ditaxis serrata* var. *californica*) was found to the west of the Solar Plant Site.

Separate from plant surveys, surveyors conducted protocol desert tortoise surveys of an alternate gen-tie route south of Interstate 10 and an area north of the proposed Colorado River Substation to accommodate potential future shifts in the generation tie line alignment. Surveyors also mapped and recorded incidental observations of all special-status wildlife during plant surveys. No special-status wildlife was observed that had not been previously reported from spring surveys, although burrowing owls (*Athene cunicularia*; California Species of Special Concern) and recent desert tortoise (*Gopherus agassizii*; federally and state-Threatened) sign was observed. An insect survey focusing on two species of cuckoo wasps was also conducted. No cuckoo wasps were encountered during the surveys.

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1.0 INTRODUCTION

McCoy Solar LLC, a subsidiary of NextEra Energy Resources LLC, proposes to construct, operate, maintain, and decommission an up to 750 megawatt (MW) photovoltaic (PV) solar energy generating facility, the McCoy Solar Energy Project (MSEP or Project), in unincorporated Riverside County, California. The Project, including Linear Facilities, would disturb approximately 4,938 acres. The majority of the MSEP would be developed on public land administered by the Bureau of Land Management (BLM). Approximately 477 acres of privately owned land would be included in the proposed Solar Plant Site boundary.

Surveys were conducted in Fall 2011 primarily to determine the presence, distribution, and approximate abundance of special-status summer annual plants (plants that germinate in late summer or early fall in response to summer rains). These surveys were conducted to complete the comprehensive surveys for all special-status biological resources and their habitats that were conducted of the Project and surrounding area in Spring 2011 (see *McCoy Solar Energy Project Biological Resources Technical Report* [Tetra Tech and Karl 2011]). Surveyors also mapped and recorded incidental observations of special-status wildlife during plant surveys. Additionally, separate from plant surveys, an insect survey was conducted, as well as protocol desert tortoise surveys of an alternate generation-tie (gen-tie) line route south of Interstate-10 (I-10) and an area north of the proposed Colorado River Substation (CRS), to accommodate potential future shifts in the gen-tie alignment.

The following terms will be used throughout this document:

- “Project” refers to the MSEP.
- “Project Area” is the footprint of all Project components, which includes the Solar Plant Site and Linear Facilities.
- “Solar Plant Site” is the area that includes the Unit 1 and Unit 2 solar fields, two substations, evaporation ponds, access road, O&M building, and other support facilities, water storage tanks, auxiliary systems, and open areas.
- “Solar Plant Site ROW Application Boundary” is the approximately 7,700-acre area included in the Right-of-Way (ROW) grant requested from the BLM for the Solar Plant Site.
- “Linear Facilities” includes the gen-tie line, access road, primary and secondary telecommunication lines, and distribution line. With the exception of the switchyard and a portion of the access road, the Linear Facilities will be mostly co-located inside the Linear ROW. The switchyard will lie at the southern terminus of the Linear ROW; a portion of the access road north of I-10 will be shared with Solar Trust of America’s Blythe Solar Power Project (BSPP).
- “Linear ROW” is the legal designation of the area that BLM would define in the final ROW grant for the Linear Facilities; this is likely to be around 100 feet wide.
- “Linear Corridor” is the area surveyed in 2011 within which all the Linear Facilities ultimately will be sited. The Linear Corridor was substantially wider than the ultimate area that will be included in the ROW to accommodate flexibility in the siting of Project elements.
- “Survey Area” is the total area that was surveyed in Fall 2011 (Figure 4). For plants, this area included the Solar Plant Site and Linear Corridor. For both plants and desert

tortoise, this area included an alternate gen-tie route south of I-10 and an area north of Southern California Edison's (SCE's) proposed CRS to accommodate potential future shifts in the gen-tie alignment.

- "Project vicinity" is intended to be a general term to describe the broader, surrounding area.

2.0 PROJECT SETTING

2.1 Project Location

The Project is located in the Sonoran Desert approximately 13 miles northwest of the City of Blythe, California (Figures 1). Surrounding mountain ranges include the McCoy Mountains to the west, the Little Maria Mountains to the north, and the Big Maria Mountains to the northeast. McCoy Wash, a broad wash system flowing into Palo Verde Valley, is located immediately east of the Solar Plant Site. Elevations range from 390 to 735 feet above mean sea level. The Project is located immediately north of Solar Trust of America's recently-permitted BSPP.

2.2 General Site Characteristics

A detailed description of site characteristics with photographs can be found in the McCoy Solar Energy Project Biological Resources Technical Report (Tetra Tech and Karl 2011); however, the following provides a summary of the Project's habitats (both natural and altered) and vegetation communities, also illustrated on Figures 2 and 3.

The Project Area north of I-10 lies along the bajada sloping out of the eastern side of the McCoy Mountains. The western portion of the Solar Plant Site is dominated by gently undulating terrain with broad patches of largely unvegetated, well-developed, highly oxidized gravel desert pavement. Widely spaced washes, generally less than approximately 10 feet deep, flow through the pavement plain; associated small runnels flow into these washes. The exception to this is in the southwestern corner of the Solar Plant Site, where there are several 20-25 feet deep drainages. As the bajada flattens to the east, drainages become shallow, braided runnels with a few swales (especially along Black Creek Road). There are patches of sheet flow near McCoy Wash. Consistent with the hydrology and distance from the mountains, substrates become finer toward the eastern portion of the Solar Plant Site, becoming only scattered fine and very fine gravels over soft to slightly hard sandy loam along the eastern side. There are scattered patches of fine gravel- and coarse gravel-desert pavement throughout the eastern, and especially the southeastern, portion of the Solar Plant Site.

Vegetation on the Solar Plant Site is described using alliances developed by Sawyer, Keeler-Wolf and Evens (2009) and used by the California Natural Diversity Data Base (CDFG 2010). Upland vegetation is characterized by associations (i.e., subsets) of the Creosote Bush-White Burr Sage (*Larrea tridentata-Ambrosia dumosa*) Scrub Alliance. However, even typical upland vegetation is largely confined to drainages on the Project Area, probably because most of the available water is in the drainages due to the low regional rainfall and substrate and soil quality. On the desert pavement plains in the west, there are essentially no shrubs outside of water courses. In the eastern approximately half of the site, the interstices have moderately low vegetation cover of mostly creosote bush – approximately 7-8 percent cover, but lower in several broad patches. This low cover and the small stature of the plants again points to low available water. Where sheet flow predominates, shrub cover is a little higher (<10 percent), and

co-dominants include white burr sage, brittlebush (*Encelia farinosa*), and white rhatany (*Krameria grayii*).

Runnels and very small washes on the Solar Plant Site, including over most of the eastern Solar Plant Site, are dominated by creosote bush, white burr sage, brittlebush, and white rhatany; galleta grass (*Pleuraphis rigida*) is patchily common to co-dominant. In the more well-developed washes in the western portion of the site, the vegetation is characterized by the Desert Lavender (*Hyptis emoryi*) Scrub and Catclaw Acacia (*Senegalia* (= *Acacia greggii*) Thorn Scrub Alliances. Desert lavender, Anderson boxthorn (*Lycium andersonii*), catclaw acacia, creosote bush, white burr sage, brittlebush, chuckwalla bush (*Bebbia juncea*), and white rhatany and/or little-leaf rhatany (*Krameria erecta*; mostly upslope) are typical dominants; galleta grass is intermittently co-dominant. An occasional palo verde (*Parkinsonia florida* [= *Cercidium floridum*]) or ironwood (*Olneya tesota*), or patches of a few individuals, can also be found in some swales or in the more well-developed parts of some runnels where water volume is probably higher or water is more consistently available. Most plants are small (generally <15 ft in height), but there are occasional larger individuals. There are also a couple, several hundred foot stretches where palo verde is common, although many of the trees are only saplings. The most well-developed of these is an approximately 3,000-foot segment of one wash in the western half of the Solar Plant Site. It is dominated by relatively large palo verde, along with the common wash-shrub species and could be considered a Palo Verde-Ironwood Woodland Alliance.

The Linear Corridor exits the southeastern corner of the Solar Plant Site onto a barren, densely fine-gravelly, flat plain with little vegetation. As the corridor turns south, it travels through a relatively flat lower bajada with numerous small swales. Soils are generally fine, soft to consolidated loams lightly covered by fine to very fine gravels or none. The shrub cover is dominated by an approximately 10 percent cover of creosote bush and white burr sage; galleta grass is common in the swales, along with occasional ironwood trees. Much of the northern portion of the Linear Corridor runs along a distinctive alluvial deposit of rounded riverine gravel on a long, low ballena, or pebble terrace, standing 30-75 feet above the surrounding bajadas. A well-developed, large-arboreal wash resulting from the coalescence of several small washes meets and crosses the Linear Corridor just south of the pebble terrace. There, it becomes re-routed against a long east-west agricultural berm, where it forms a long swale of dense palo verde and ironwood infested with dense Russian thistle (*Salsola tragus*) and Sahara mustard (*Brassica tournefortii*). The Linear Corridor and adjacent area north and south of this swale is cleared for agriculture (currently not in crops), except in the northwestern half, where native creosote bush and white burr sage habitat, with brittlebush-white burr sage-galleta grass runnels, remains. An actively farmed citrus orchard lies at the eastern end of this portion of the Linear Corridor.

As the Linear Corridor nears the mountains the substrates generally become more gravelly and heavy sheeting and well-developed arboreal washes begin to cross the Linear Corridor. Vegetation in the interfluves is generally very sparse creosote bush-white burr sage scrub. Near the freeway, the Linear Corridor crosses a low depression adjacent to a mesa as well as a nearby borrow pit. Soils are fine and hard and there is potential for pockets of standing water. The borrow pit hosts a dense honey mesquite-palo verde bosque-ironwood bosque. South of I-10, the Linear Corridor traverses a flat bajada of low plant diversity (creosote bush and white burr sage) and cover (8 percent). West of the existing PV solar facility, intermittent, loose, shallow sand sheets and dunes and small, exposed basins intersect the Linear Corridor, and

briefly ponding water is a potential in some of the basins. Well-developed, low dunes enter the route at the bend and remain characteristic of the Linear Corridor through and including most of the switchyard. This habitat contains widely spaced perennial shrubs (2-5 percent cover), with the dominant species including creosote bush, white burr sage, and galleta grass. Several sand-associates and other annuals are also abundant (e.g., sand verbena [*Abronia villosa*], birdcage primrose [*Oenothera deltoides*], desert marigold [*Baileya pauciradiata*], and narrow-leaved forget-me-not [*Cryptantha angustifolia*]). In the southern portion of the switchyard and south, the soil remains finely sandy, but fine gravel lightly covers the soil; creosote bush is dominant with white burr sage. Drainage is via sheet flow, small swales and runnels.

3.0 SURVEY METHODS

Special-status plant surveys for fall blooming species were conducted according to protocols that were reviewed and approved by the BLM, CDFG, and the FWS prior to field surveys (Tetra Tech and Karl 2010). These protocols were consistent with the CDFG Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009). They are also consistent with BLM's Survey Protocols Required for NEPA and ESA Compliance for BLM Special Status Plant Species (BLM 2009) for an intuitive controlled survey, wherein a full survey is completed (i.e., 100 percent visual examination) in habitats with the highest potential for rare plants, with sampling in the remaining areas. To this end, surveys focused on swales, washes, runnels, rocky outcrops, and dunes because of the affinity of the herbaceous species in Table 2 for those habitats and because areas where rainfall collects have the greatest potential for germination of most species. To achieve this focus and optimize sampling, the Project Area was divided into smaller sampling units (Cells and Segments) and into three survey categories:

- Full coverage (transects spaced no farther than 10 meters apart, covering 100 percent of the possible habitat) in the areas where the interdigitating mosaic of washes and runnels was too complex to survey at <100 percent. This comprised approximately three-fifths of the Solar Plant Site and 100 percent of the Linear Corridor. Transects were pre-programmed into Global Positioning System (GPS) units to ensure accurate and complete site coverage. Survey teams were generally limited to three people, including an experienced navigator who could simultaneously look for special species, to minimize the searching and focus inefficiencies that are common with larger teams.
- Full coverage in all vegetated drainages, from small runnels to larger washes. This occurred in the broad desert pavement plain in the west.
- Sampling in broad interfluvial spaces.

The Survey Area included the Solar Plant Site and Linear Corridor as well as an alternate gen-tie route south of I-10 and an area north of the proposed CRS to accommodate potential future shifts in the gen-tie alignment (Figure 4). Subsequent to Fall 2011 surveys, McCoy Solar, in coordination with Solar Trust of America and EnXco, determined that the Linear Corridor shift to allow room for EnXco's proposed facilities. This resulted in portions of the Linear Corridor falling outside of the Survey Area. However, Solar Trust of America surveyed these areas for plants and desert tortoise for the BSPP in 2009 and 2010 (see AECOM 2010a, 2010b). The BSPP was approved for development by the BLM and California Energy Commission in late 2010.

A qualified botanical team (Appendix A) conducted surveys when plants were in optimum condition for identification (generally with blooms, fruits, and leaves). (Woody and succulent perennials in Table 2 are easily identified when not blooming and were surveyed in Spring 2011 and are not included in this report.) Prior to starting the surveys, the biological lead examined plant phenology almost weekly in the Project Area to optimize the survey timing; surveys were then further chronologically prioritized to insure that the areas/habitats that could host special-status plants were surveyed at the appropriate phenological time, when those species were available for identification. Surveys were conducted of the Linear Corridor south and immediately north of I-10 primarily on August 31 and September 1 and 12-16, because plants were growing there in response to storms in early and mid August that were limited to this portion of the Survey Area. The remainder of the Linear Corridor and the Solar Plant Site was surveyed on October 4-10, 2011, in response to a large storm on September 13-14 that affected this portion of the Survey Area.

The Blythe Airport weather station reported below average precipitation for August and September 2011 (WRCC 2011; Table 1). However, personal observation and communication with local residents determined that portions of the Linear Corridor south of I-10 received precipitation in early and mid-August. Additionally, the Solar Plant Site and Linear Corridor north of I-10 received substantial precipitation, causing puddling and some flow in channels, on September 13. These late-summer, patchy rain events resulted in germination and growth, and many species were present for observation in most of the Project Area.

Table 1. 2011 Monthly precipitation data (in inches), Blythe, CA airport

YEAR	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual
2011	0.00	1.17	0.06	0.00	0.00	0.00	1.64	0.00	0.09	0.12	TBD	TBD	TBD
Average 1948-2010	0.49	0.44	0.36	0.15	0.02	0.02	0.25	0.61	0.35	0.26	0.19	0.41	3.54

Source: Western Regional Climate Center (WRCC) (2010); J. Ashby pers. comm. (2010); WRCC pers. comm. (2011)
TBD: To Be Determined – Data not currently available for these months

Surveyors targeted every special-status plant that could be reasonably expected to occur, but employed a comprehensive floristic survey approach, identifying all plants observed to ensure that unexpected special-status plants were also found. Surveyors were very experienced with plant species in the arid southwest, but were also equipped with plant descriptions, keys to identify plants to the subspecies level, and pictures of each special-status plant species with the potential to occur within the Survey Area. All species observed were identified microscopically using relevant publications (e.g., Baldwin et al. 2002, Felger 2000, Jepson eFlora 2011); special-status species were photographed and vouchered.

One species observed in Spring 2011, Utah cynanchum (*Funastrum utahense*), was found to be very common and therefore was not re-surveyed during the fall. Similarly, Las Animas colubrina (*Colubrina californica*), a woody perennial that was fully mapped on the site in Spring 2011, was not re-mapped. Finally, for desert unicorn plant (*Proboscidea althaeifolia*) only live plants, not fruits, were mapped. (Fruits are long-lasting and many were mapped in Spring 2011.)

Prior to conducting surveys, surveyors reviewed the target species (descriptions, photographs of live or herbarium specimens, microhabitat associations) and visited reference populations of species that had not been previously observed, to enhance search images of plants and microhabitats, determine distinctions among similar genera, and identify current phenology and plant vigor. This visit was limited to Abram's spurge (*Chamaesyce abramsiana*), because other

fall-growing species either had been observed already, no reference populations were reasonably close, and/or the species were highly unlikely due to lack of habitat or geographic range.

Surveyors described and mapped all populations of special-status fall blooming plant species (except as noted above). Populations were recorded using Global Positioning System (GPS) units, and population size, associated biotic and abiotic features, phenology, plant size (vigor), and threats to the population were noted.

3.1 Focused and Incidental Wildlife

Separate from plant surveys, surveyors conducted protocol desert tortoise surveys (FWS 2010) on September 13-15, 2011 of an alternate gen-tie route south of I-10 and an area north of the proposed CRS (Figure 4). Surveys achieved 100 percent coverage of these areas (the Linear Corridor was 240 feet wide), plus buffer transects within 500 feet, with transects spaced every 100 feet. Additionally, surveyors mapped and recorded incidental observations of special-status wildlife during plant surveys.

Two visits were made to habitats in and around the MSEP to survey for insects on August 31 and October 8, 2011 by entomologists Dr. David K. Faulkner and Jeanne M. Bellemin M.S. The primary focus was to establish the presence of two species of cuckoo wasp, *Hedychridium argenteum* and *Ceratochrysis bradleyi*, and to inventory invertebrates. Both species are ranked in the California Natural Diversity Database (California Department of Fish and Game) as G1 S1, but with questions about their rarity. The surveys focused on the proposed switchyard and vicinity and the Solar Plant Site. However, there had been no rain on the Solar Plant Site, so identical habitat nearby, which had received a little rain, was sampled as a reasonable surrogate. Aerial nets were used for the collection of specimens needing to be identified. Blacklighting (ultraviolet light traps) was attempted on one occasion to sample night-flying insects, but with little success due to strong winds. Since cuckoo wasps are diurnal, they would not be expected to be attracted to blacklights.

Table 2. Special-status summer- and fall-growing herbaceous species potentially occurring within the McCoy Solar Energy Project. Note: Other special-status species that grow only in late winter or spring, and woody species, were not included because they were surveyed in Spring 2011. See Tetra Tech and Karl (2011) for complete Project special-status plant species list.

Species		Status ¹				Habitat	Blooming Time	Likelihood of Occurrence on the Project Site ²
		Federal	State	CNDDB Rank	CNPS/ Other			
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral Sand Verbena	---	---	G5T3T4/S2	1B.1	Loose to aeolian sands; chaparral and coastal sage scrub; below 2,000 feet	January-September	Highly unlikely; not observed
<i>Chamaesyce abramsiana</i>	Abrams's Spurge	---	---	G4/S1.2	2.2	Sandy sites in Mojavean and Sonoran Desert scrubs in eastern California; 0 to 3,000 feet	September-November	Observed Fall 2011
<i>Chamaesyce parryi</i>	Parry's Spurge	---	---	G5/S1.3	2.3	Dunes an Aeolian soils in Mojavean Desert Scrub; in California, known only from Kelso; 1,300-2,400 feet	May-November	Unlikely due to limited range; not observed
<i>Chamaesyce platysperma</i>	Flat-seeded Spurge	BLM Sensitive	---	G3/S1.2?	1B.2	Sandy flats and dunes in Sonoran Desert Scrub; below 350 feet	February-September	Possible; not observed
<i>Cuscuta californica</i> var. <i>apiculata</i>	Pointed Dodder	---	---	G5T3?/S2S3	3	Sonoran and Mojavean Desert Scrubs in San Bernardino County (one record in western Riverside County), to Nevada and Baja, California; 0 – 1,650 feet	February-September	Possible; not observed
<i>Digitaria californica</i>	Arizona Cottontop	---	---	G5/S1.3	2.3	Rocky Sonoran and Mojavean Desert Scrubs; three consortium records in California; 950 to 4,900 feet	July-November	Unlikely due to rocky association; not observed
<i>Ditaxis claryana</i>	Glandular Ditaxis	---	---	G4G5/S1	2.2	Sandy flats in Mojavean and Sonoran Creosote Bush Scrubs in Imperial, San Bernardino, and Riverside counties; below 1,500 feet	Mostly December to May, rarely August-October	Possible; not observed
<i>Ditaxis serrata</i> var. <i>californica</i>	California Ditaxis	---	---	G5T2T3/S2	3.2	Sonoran Creosote Bush Scrub from 100 to 3,000 feet	All year	Observed Fall 2011 outside of Solar Plant Site
<i>Funastrum utahense</i>	Utah Cynanchum	---	---	G4/S3.2	4.2	Sandy and gravelly areas in Mojavean and Sonoran Creosote Bush Scrub; 490 – 4,700 feet	Spring, Fall	Abundant on site-observed in Spring 2011; observed in Fall 2011 also, but not recorded due to extensive mapping in Spring 2011

Table 2. Special-status summer annual plants potentially occurring within the McCoy Solar Energy Project

Species		Status ¹				Habitat	Blooming Time	Likelihood of Occurrence on the Project Site ²
		Federal	State	CNDDB Rank	CNPS/ Other			
<i>Helianthus niveus tephrodes</i>	Algodones Dunes Sunflower	---	E	G4T2/S1.2	1B.2	Desert dunes, especially Algodones Dunes	March-May, October-January	Unlikely; not observed
<i>Horsfordia alata</i>	Pink Velvet Mallow	---	---	G4/S3.3	4.3	Rocky areas in Sonoran Desert Scrub, 328-1,640 feet	December-April, although Consortium records are from January to December	Unlikely - not observed in rocky areas in Spring or Fall 2011
<i>Horsfordia newberryi</i>	Newberry's Velvet-mallow	---	---	G4/S3.3	4.3	Mostly rocky canyons and toeslopes in Sonoran Desert Scrub; 10 - 2,650 feet	March-April and November-December	Possible; not observed in Spring or Fall 2011
<i>Hymenoxys odorata</i>	Bitter Hymenoxys	---	---	G5/S2	2	Riparian scrub and Sonoran Desert Scrub, sandy flats near Colorado River, known only from the Colorado River alluvial plain, 150- 495 feet	February-May and October-November	Unlikely because of species association with the Colorado River floodplain; not observed
<i>Imperata brevifolia</i>	California Satintail	---	---	G2/S2.1	2.1	Wet springs, meadows, and flood plains in Chaparral, Coastal Scrub, Mojavean Desert Scrub; 0 - 1,650 feet	September-May, but Consortium records are for entire year	Highly unlikely due to lack of habitat; not observed
<i>Physalis lobata</i>	Lobed Ground Cherry	---	---	G5/S1.3?	2.3	Mojave Desert Scrub, playas, granitic soils, 1,640-2,625 feet	April-November	Unlikely. All known locations well to north of Project and at higher elevations. Not observed.
<i>Portulaca halimoides</i>	Desert Portulaca	---	---	G5/S3	4.2	Sandy areas and flats in Joshua tree woodland and desert mountains; 3,280-3,937 feet	April, August-October	Highly unlikely due to lack of habitat and elevational constraints; not observed
<i>Proboscidea althaeifolia</i>	Desert Unicorn Plant	---	---	G5/S3.3	4.3	Sandy areas in Sonoran Desert Scrub throughout southeastern California, below 3,300 feet.	(April-) May-August	Observed Fall 2010, Spring and Fall 2011
<i>Selaginella eremophila</i>	Desert Spike Moss	---	---	G4/S2.2?	2.2	Shaded rocky habitats in the Sonoran Desert, to Arizona and northern Mexico; below 3,600 feet	December-April, July-October	Unlikely due to lack of habitat; not observed
<i>Teucrium cubense depressum</i>	Dwarf Germander	---	---	G4G5T3T4/S2	2.2	Sandy soils, washes, fields; below 1,300 feet	March-May, and September-November	Possible; not observed

Table 2. Special-status summer annual plants potentially occurring within the McCoy Solar Energy Project

Species		Status ¹				Habitat	Blooming Time	Likelihood of Occurrence on the Project Site ²
		Federal	State	CNDDB Rank	CNPS/ Other			
<i>Wislizenia refracta palmeri</i>	Palmer's Jackass Clover	---	---	G5T2T4/S2?	2.2	Sandy washes and dunes in Sonoran Desert Scrub, to northwestern Mexico; potentially Mojave Desert (unverified); <430 feet.	March-November	Possible; not observed
<i>Wislizenia refracta</i> var. <i>refracta</i>	Jackass Clover	—	—	G5T5?/S1.2?	2.2	Sandy washes, roadsides, flats; 1,900 to 2,700 feet	April-December	Unlikely due to elevational constraints; not observed

Sources: Unless noted, information is from *The Jepson Manual* (Baldwin et al. 2002), California Native Plant Society (CNPS) Online Inventory (CNPS 2011), and Jepson Flora Project (<http://ucjeps.berkeley.edu>)

¹ Status:
 BLM Sensitive: Species under review, rare, with limited geographic range or habitat associations, or declining. BLM policy is to provide the same level of protection as FWS candidate species

CNDDB 2011: CDFG Special Vascular Plants, Bryophytes, and Lichens List, October 2011 (www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf).

Global Rank:	State Rank:	Subspecies or Variety Rank and Other Symbols
G1 = Critically Imperiled	S1 = Critically Imperiled	T1-T5: same definition as global and state ranks, except that rank only applies to the particular variety or subspecies.
G2 = Imperiled	S2 = Imperiled	X: species is considered extirpated
G3 = Vulnerable	S3 = Vulnerable	
G4 = Apparently Secure	S4 = Apparently Secure	
G5 = Secure	S5 = Secure	
	SX= All California sites are extirpated	

CNPS. 2011:
 Rank 1A - Plants presumed extinct in California
 Rank 1B - Plants rare and endangered in California and elsewhere
 Rank 2 - Plants rare and endangered in California but more common elsewhere
 Rank 3 -Plants about which CNPS needs more information
 Rank 4 -Plants of limited distribution (Watch List)
 (Note: California Rare Plant Rank 1 and 2 require CEQA consideration. List 3 and 4 plants that must be surveyed per the Northern and Eastern Colorado Desert Management Plan (BLM and CDFG 2002) were also included for surveying)

Threat Ranks:
 0.1-Seriously threatened in California (high degree/immediacy of threat)
 0.2-Fairly threatened in California (moderate degree/immediacy of threat)
 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

²Species that are unlikely or were not observed but are herbaceous and may not have germinated or had aboveground growth, were noted as "Not Observed", but were not excluded from possibly being on the site.

4.0 SURVEY RESULTS AND DISCUSSION

4.1 Special-status Plants

Surveyors did not find any federally or state-threatened, endangered, or candidate plant species during surveys. However, surveyors did observe populations of two California Rare Plant Ranked species within the Project Area: Abram's spurge (*Chamaesyce abramasiana*) and desert unicorn plant (*Proboscidea althaeifolia*). California ditaxis (*Ditaxis serrata* var. *californica*) was found outside of the Project Area. Results are presented on Figures 5A and 5B; a comprehensive table of results with corresponding figures is presented in Appendix B; and a comprehensive list of plants observed during surveys is in Appendix C.

Due to the shift in the Linear Corridor subsequent to fall surveys, portions of the Linear Corridor fall outside of the Survey Area. These areas were surveyed in Fall 2010 (see AECOM 2010b) for the BSPP. No special-status plants were observed during those surveys; however, rainfall in Summer 2010 was below average which precluded germination of summer annuals.

Abram's Spurge (California Rare Plant Rank 2; S1.2/G4)

This member of the Euphorbiaceae family is an annual herb native to California at elevations ranging between sea level and 915 feet in Imperial, Riverside, San Bernardino, and San Diego Counties (CNPS 2011). This species is reported to be found in creosote bush scrub community in sandy soils and blooms from September to November (CNPS 2011), although we found it in very fine and often compacted soils, with low sand composition, that hold moisture. The Consortium of California Herbaria (Consortium) has 18 records in California, only two of which occur in Riverside County, one record in the Coachella Valley from 1968 and one recent record from 2000 south of I-10, about 22 miles west of Blythe (Consortium 2011).



Abram's spurge (photo A. Karl)

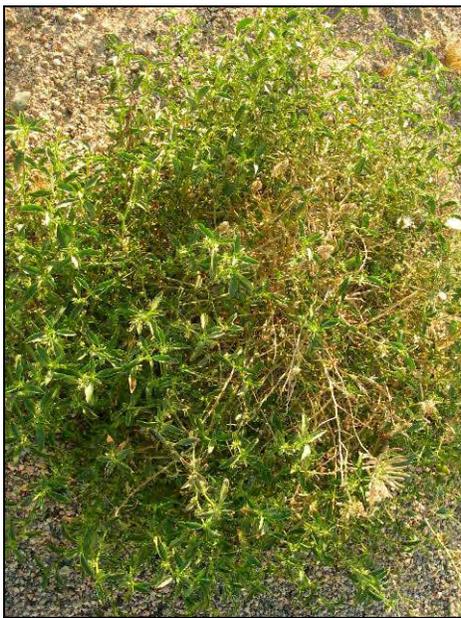
During Fall 2011 surveys, Abram's spurge was found on MSEP primarily within the central portion of the Solar Plant Site with an additional population along the Linear Corridor north of I-10. Abram's spurge was not found south of I-10. The total population size in the Survey Area was estimated to be approximately 4,000+ individuals. It was found almost exclusively in shallow depressions and runnels and was patchily common in these areas.

While widespread in southern Arizona and northwestern Sonora, Mexico, and often an agricultural and urban weed, only one location for Abram's spurge had been documented in the

Blythe region prior to the MSEP surveys. However, this is most likely because Abram's spurge has been undersampled in California. It grows in the fall and few fall plant surveys have been conducted in the MSEP region, especially of the geographic size of a solar facility¹. Furthermore, most fall surveys focus on areas with higher rainfall than Blythe. Based on the relatively marginal habitat for Abram's spurge on the Project Area, we surmised that this species was probably far more common in the region where the habitat was better. We conducted a short search of likely habitats (swales and playas) in the Blythe area and Chuckwalla Valley and found tens of thousands of plants along Ford Dry Lake and also on Hayfield Dry Lake, approximately 20 and 60 miles west of MSEP, respectively. Abram's spurge was the dominant or co-dominant understory species in both locations. So, although the species occurs on MSEP, it is neither restricted to that site nor does it reach its highest abundance there. It is more widespread and far more common in the Blythe region than formerly known.

California Ditaxis (California Rare Plant Rank 3; S2/G5T2T3)

This member of the Euphorbiaceae family is a perennial herb endemic to California within the United States (CNPS 2011). This species is found at elevations ranging between 30 and 1,000 feet in sandy soils of creosote bush scrub (CNPS 2011). It grows in spring and fall, in response to rain, with aboveground portions dying back in dry periods. The Consortium has twenty-eight records from Riverside County from 1905 to 2009, with at least five records located near the I-10 corridor (Consortium 2011). CNPS reports twenty occurrences with several records near the I-10 corridor between approximately Palm Desert and Desert Center (CNPS 2011). It is fairly common in the Desert Center vicinity (Eagle Crest Energy 2009) and west (Karl and Uptain 1985), about 50 miles west of MSEP (Eagle Crest Energy 2009).



California ditaxis (Photo: A. Karl)

Four plants were found to the west of the Solar Plant Site boundary during Fall 2011 surveys. There were two plants at each location, approximately 465 feet apart. This species also blooms in spring; however, none was observed during MSEP Spring 2011 surveys. At the BSPP, no

¹ AECOM conducted fall surveys in 2010 on the BSPP, immediately south of MSEP, but there had been little rainfall that summer, and subsequently no germination of summer herbaceous species.

specimens of California ditaxis were detected during spring or fall surveys (AECOM 2010a, AECOM 2010b).

As a California Rare Plant Rank 3 plant, more information is needed on this plant to determine its abundance in California and elsewhere. It does not require consideration in CEQA unless sufficient information is available to assess potential impacts to the species (CDFG 2009), or under NEPA. It is included here to provide data to the resource agencies (in addition to submitted CNDDDB forms). The plants are located outside of the Project Area and will not be affected by development.

Desert Unicorn Plant (California Rare Plant Rank 4; Rank S3.3/G5)

This perennial herb grows on deep, alluvial sands in Sonoran desert scrub habitat (Reiser 1994), at elevations below 3,300 feet. While thought to be uncommon in California (Baldwin et al. 2002), during surveys it was patchily common on the MSEP Solar Plant Site. Desert unicorn plant has a fleshy root system that can remain dormant in dry years. It typically grows and flowers between July and September after substantial summer rains. However, some individuals have aboveground growth in spring, and fruits (seed pods) from the previous year are large and moderately visible.



Desert unicorn plant in flower (Photo E. Mix)

This species was observed mostly throughout the central part of the Solar Plant Site and in portions of the Linear Corridor. Surveyors observed approximately 622 plants within the Project Area, primarily in swales that held water for a short time. Results are consistent with Spring 2011 MSEP observations of seed pods within the central portion of the Solar Plant Site (see Tetra Tech and Karl 2011). The consistency of plants in appropriate swales was also observed elsewhere in the region, including the Genesis Solar Energy Project (Tetra Tech and Karl 2010) and BSPP (AECOM 2010a).

As a California Rare Plant Rank 4 plant, it requires CEQA consideration if the population has local or regional significance (CDFG 2009). Based on the abundance and distribution within the MSEP and nearby project areas, the MSEP population is not considered locally or regionally significant.

4.2 Focused and Incidental Wildlife Observations

Eight special-status wildlife species, including desert tortoise (*Gopherus agassizii*; federally and state-listed as Threatened) sign and burrowing owl (*Athene cunicularia*; California Species of Special Concern), were detected during supplemental desert tortoise surveys and incidentally to plant surveys (Tables 3 and 4, Figures 6A and 6B). All species were previously observed during Spring 2011 surveys and their presence and distribution are generally consistent with Spring 2011 results (Tetra Tech and Karl 2011). Comprehensive results are located in Appendix D and correspond to Figures 6A and 6B. For a detailed discussion of each species, please see the *McCoy Solar Energy Project Biological Resources Technical Report* (Tetra Tech and Karl 2011).

Table 3. Fall 2011 Non-listed Wildlife Observations

Species	Sign Type	Number of Sign	Comments
Mojave fringe-toed lizard	Individuals	188	Within sand dunes along Linear Corridor south of I-10
Burrowing Owl	Individuals	8	
	Burrow (not associated with an individual)	5	Recently used or active
Loggerhead Shrike	Individuals	12	Seven observations
Yellow Warbler	Individuals	3	Three observations
Brewer's Sparrow	Individuals	3	One observation
Wild Burro	Mandible	1	Old
Desert Kit Fox	Den	3	Active

4.2.1 Desert Tortoise

No desert tortoise sign was observed during focused surveys in the supplemental survey areas; however, desert tortoise activity was detected incidentally during fall plant surveys. Five recent (since spring surveys) scat and a set of tracks were detected, as well as four burrows (Figure 6A, 6B). The burrows and three of the scat were in areas within the Solar Plant Site and Linear Corridor that were determined in the spring to be occupied by tortoise. Two of the five scat were found farther in the center of the Solar Plant Site (Map numbers 25 and 26 in Figure 6A), where no recent sign (scat, tracks, Class 1 and 2 burrows) was detected during spring surveys. In spring, two Class 3 burrows (tortoise burrows not used this season) and one Class 4 (possibly tortoise) burrow were detected in the eastern Solar Plant Site, suggesting minor transient use of the lower bajada. The two recent scat detected in the center of the Solar Plant Site this fall, with no accompanying burrows, support the conclusion that the entire Solar Plant Site is tortoise habitat, although mostly receives only minor use.

Table 4. Fall 2011 Desert Tortoise Observations

Sign Type	Age	Comments
Tracks	-	380 mm burrow in hillside
Burrow	Class 2	260 mm, in side of small slope
Burrow	Class 1	320 mm, in hillside
Burrow	Class 3	300 mm & 330 mm, 2 pallets under <i>Olneya tesota</i> (on opposite sides)
Scat	TY1	10 mm, in incised wash bottom
Scat	TY2	25 mm, on desert pavement on edge of incised wash
Scat	TY2	15 mm, in incised wash bottom
Scat	TY2	16 mm
Sign Type	Age	Comments
Scat	TY2	16 mm

TY – This Year

Class 1 – Definitely tortoise; fresh

Class 2 – Definitely tortoise; this season

Class 3 – Definitely tortoise; not used this season

4.2.2 Burrowing Owl

Eight burrowing owls were observed incidentally to fall plant surveys, all within the Solar Plant Site Survey Area (Table 3; Figure 6A). Seven of the eight owls were in the western half of the Solar Plant Site Survey Area, five of which were clustered west of the Solar Plant Site boundary (Map numbers 1 – 5 on Figure 6A). Their proximity to each other may suggest they were from the same family, and included dispersing young. Several were flushed from wash banks in incised washes. Three of the five burrows were observed in identical locations or close to burrows or owls previously documented. The other two burrows this fall were new burrows.

4.2.3 Insects

No cuckoo wasp specimens were encountered during the surveys, in large part because it is innately difficult to survey for rare insect species, and harder still if little or nothing is known of the insect's life history, such as cuckoo wasps. The short survey and timing also contributed to the results. Although both species are active during the fall, the spring season has more flowering annuals that the cuckoo wasps visit for nectar; the plants are also a resource for the bees and wasps that the cuckoo wasps parasitize. Perceived species rarity often may be a result of collecting bias and not a reflection on the insect's actual abundance. An example would be the moth lacewing (*Oliarces clara*), known from a few specimens until it was discovered that adults emerge in huge numbers every two-three years, but remain active just a few days. Populations were also found to be quite localized. So, the moth lacewing previously had been undersampled, but also presents a distinct sampling difficulty because of its limited and unpredictable activity period.

Appendix D lists the insect species recorded primarily from the two sampling areas. Most of the species would be anticipated as permanent residents of the area while a few are introduced from agricultural areas nearer the Colorado River and Blythe.

5.0 REFERENCES

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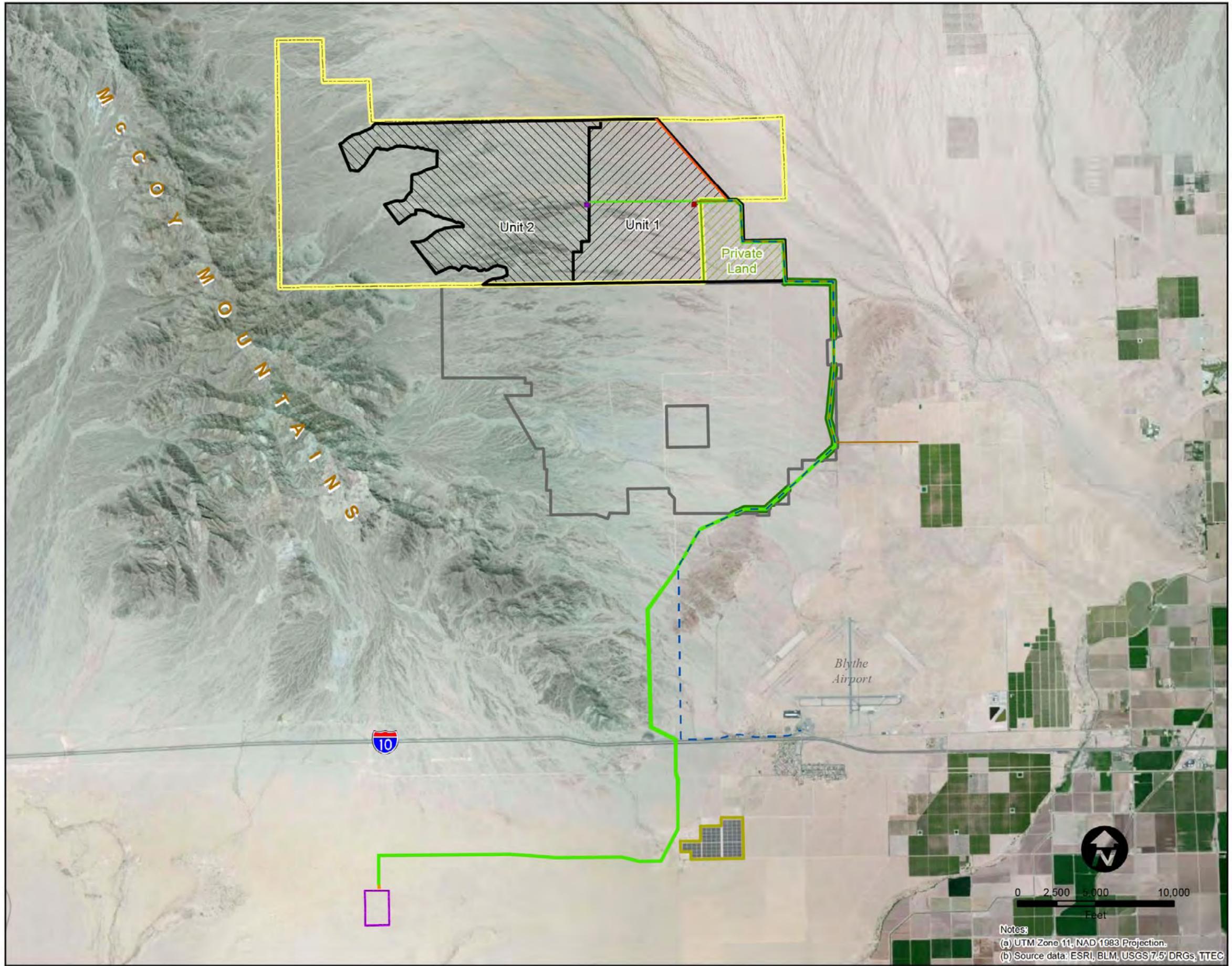
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FIGURES



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, BLM, USGS 7.5' DRGs, TTEC

McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

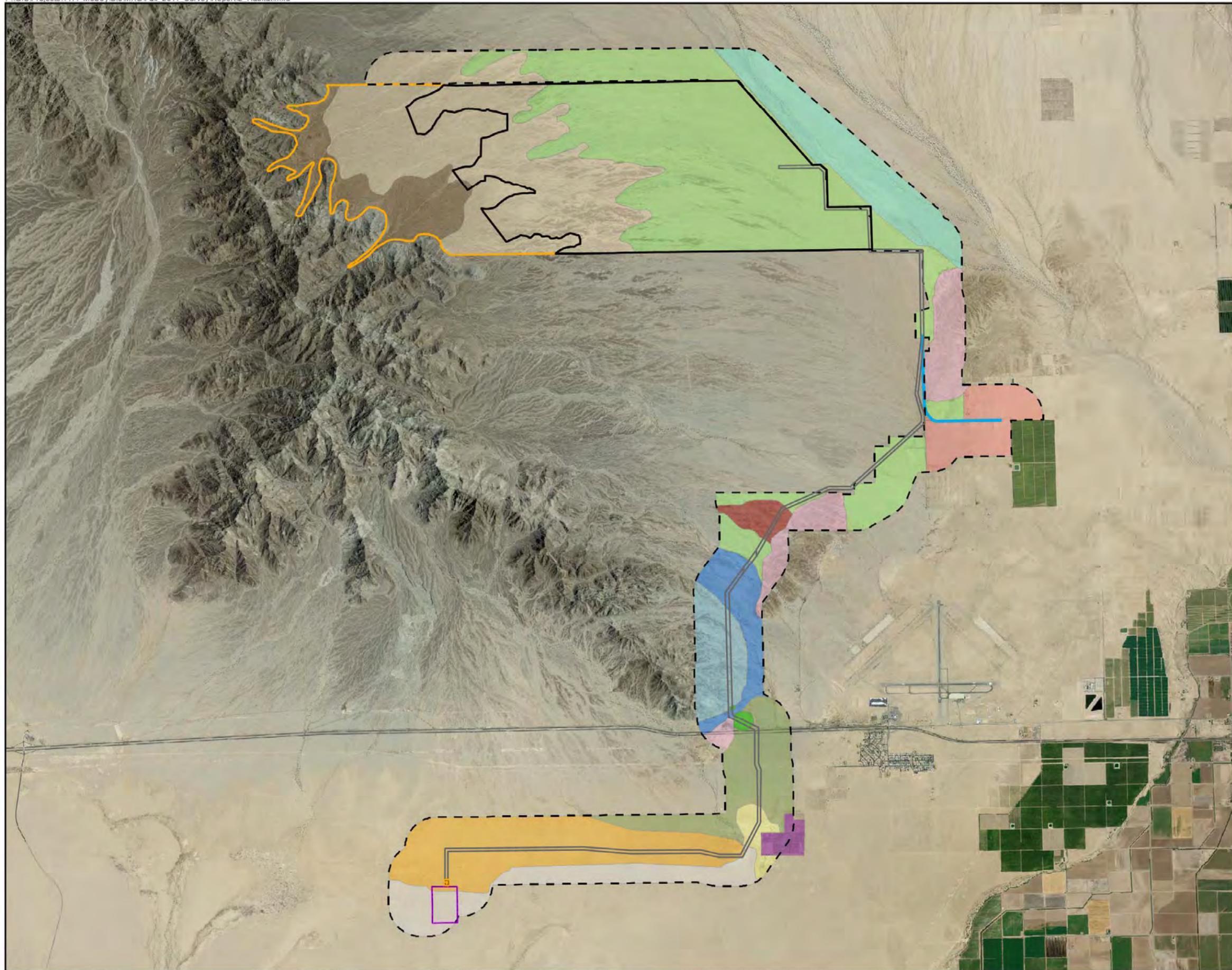


Legend

Project Features

- MSEP BLM ROW Grant Application Boundary (7,700 acres)
- MSEP Solar Plant Site Unit 1 - 2,194 acres
 - 1,717 acres BLM Land
 - 477 acres Private Land
- MSEP Solar Plant Site Unit 2 - 2,598 acres
 - 2,598 acres BLM Land
- Blythe Solar Power Project
- PV Solar Facility
- Linear Corridor
- 180 ft-wide Shared Corridor
- Distribution Line and Secondary Emergency Access
- MSEP Access Road Shared with Other Solar Projects
- Designated Linear Corridor for Potential Future Solar Projects to the North
- Switchyard
- SCE Colorado River Substation
- Unit 1 Substation
- Unit 2 Substation

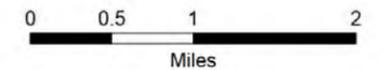
**FIGURE 1
OVERALL PROJECT LOCATION MAP**



McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

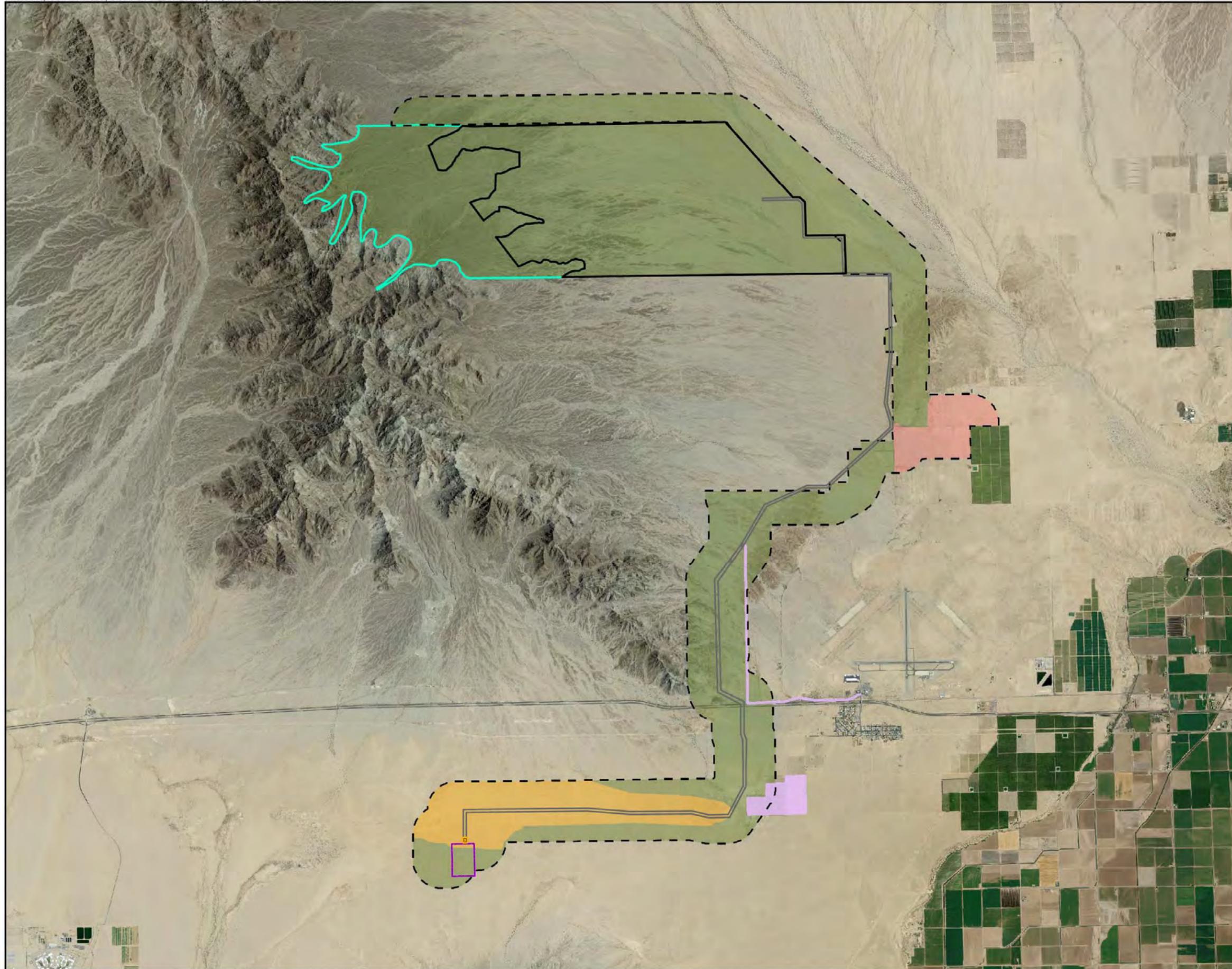
- MSEP Solar Plant Site Boundary
 - Linear Corridor
 - Colorado River Substation (SCE)
 - Switchyard
 - Extent of Area Surveyed
 - Potential Primary Recipient Area
- Habitat**
- Arboreal Wash
 - Agriculture
 - Borrow Pit and Depression
 - Boulder Outflow
 - Desert Pavement Plain; 3-10 m Incised Washes
 - Intermittent Low Sand Dunes and Swales
 - Lower Bajada; Few Drainages
 - Lower Bajada; Shallow Runnels and Swales
 - McCoy Mountains Toeslopes; Arboreal Washes
 - McCoy Wash
 - Mid-Bajada; Arboreal Washes
 - PV Solar Facility
 - Pebble Plain
 - Sand Dunes
 - Sandy Lower Bajada; Sheet Flow, Swales and Percolation
 - Well-Developed Desert Pavement



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: A. Karl, USDA.

**FIGURE 2
PROJECT AREA HABITATS**



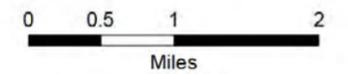


McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

- MSEP Solar Plant Site Boundary
- Linear Corridor
- Colorado River Substation (SCE)
- Switchyard
- Extent of Area Surveyed
- Potential Primary Tortoise Recipient Area
- Vegetation**
- Creosote Bush - White Burr Sage Scrub
- Creosote Bush - White Burr Sage - Galleta Grass
- Ruderal Vegetation or Bare Ground
- No Vegetation (Developed)

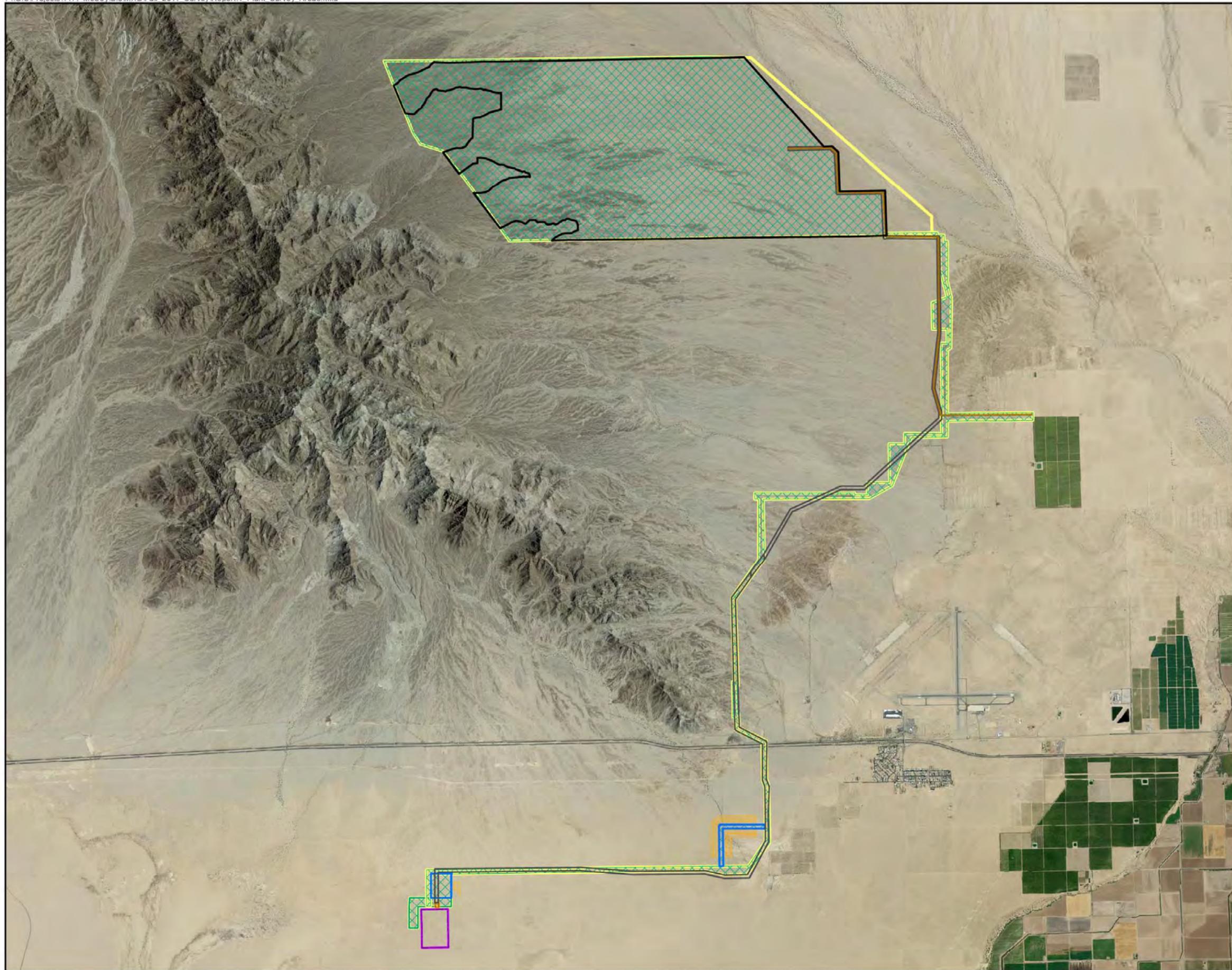
Habitat data for the portions of the Linear Corridor that falls outside of the extent of the area surveyed were taken from AECOM 2010.



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: A. Karl, USDA.

FIGURE 3
VEGETATION COMMUNITIES





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA

Legend

-  MSEP Solar Plant Site Boundary
-  Proposed Colorado River Substation (SCE)
-  Switchyard
-  Linear Corridor
-  Distribution Line and Secondary Emergency Access
-  Fall 2011 Plant Survey Area
-  Fall 2011 Desert Tortoise Surveys (100% Coverage)
-  100 to 500 ft Buffer and Burrowing Owl Transects
-  Spring 2011 Survey Area

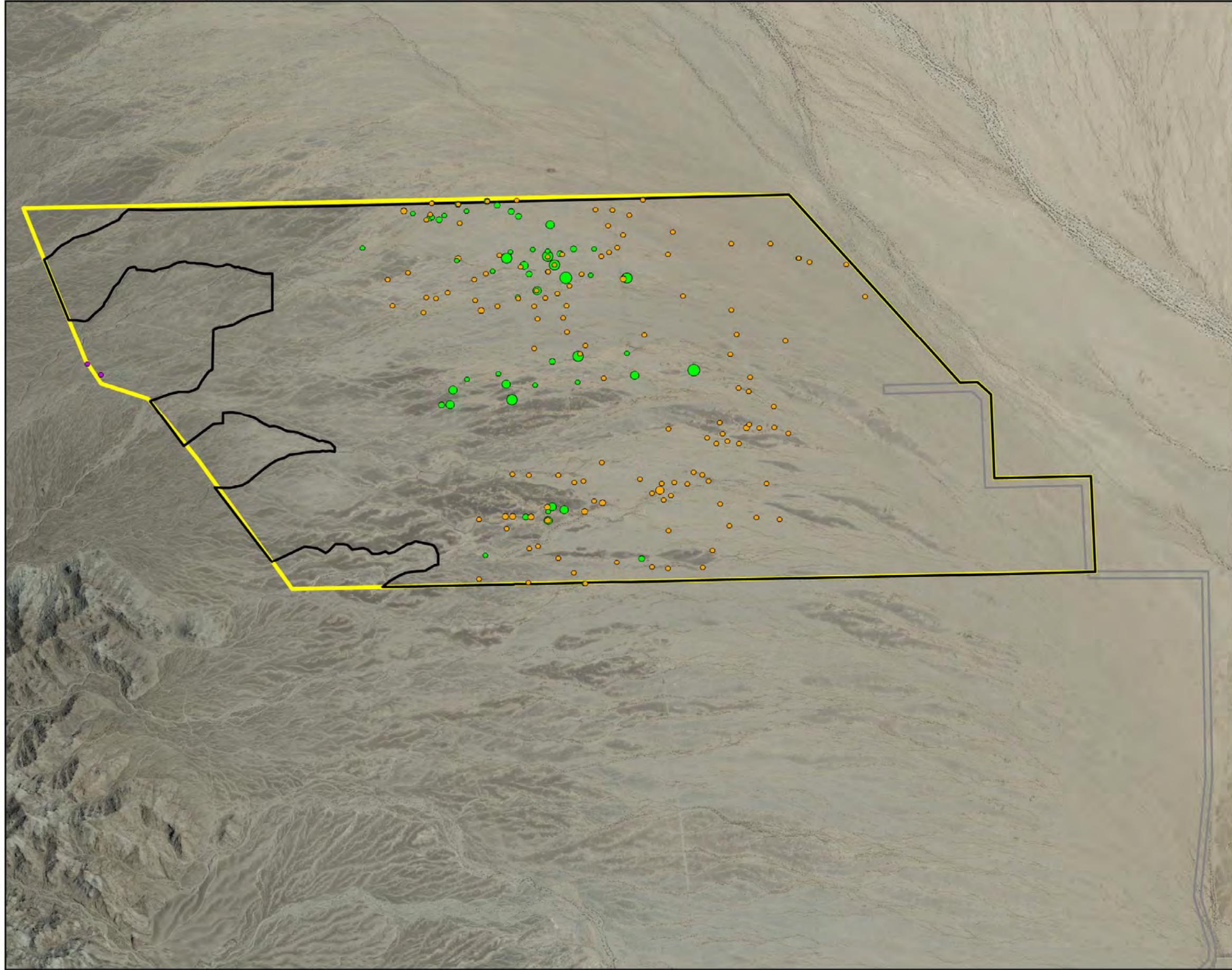
The portions of the Linear Corridor that fall outside of the survey area were surveyed in 2010 (see AECOM 2010).



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, TI, USDA.

FIGURE 4
SPRING AND FALL 2011 SURVEY AREAS

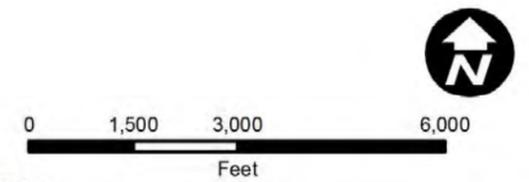




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



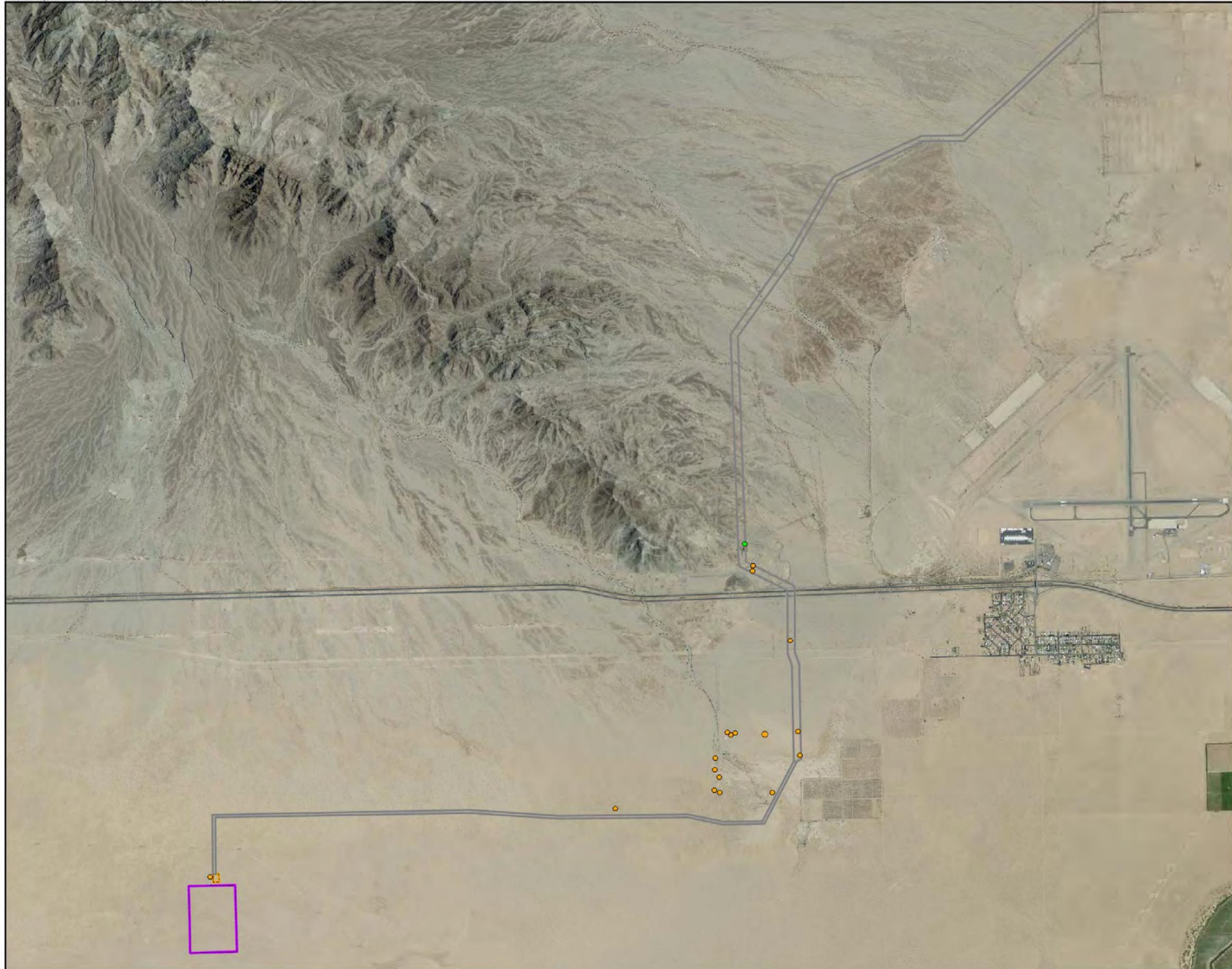
- Legend**
- Common Name**
- Abram's Spurge
 - California Ditaxis
 - Desert Unicorn Plant
- Population Size**
- 1-10 Plants
 - 11-50 Plants
 - 51-100 Plants
 - 101-500 Plants
 - 501-1,000 Plants
- Site Features**
- MSEP Solar Plant Site Boundary
 - Proposed Linear Corridor
 - Solar Plant Site Survey Area



Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, TTEC

FIGURE 5A
SPECIAL-STATUS PLANTS OBSERVED
DURING FALL 2011 SURVEYS



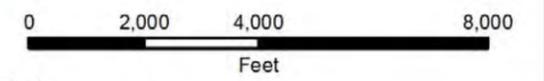


McCOY SOLAR ENERGY PROJECT

RIVERSIDE COUNTY, CA



- Legend**
- Common Name**
- Abram's Spurge
 - California Ditaxis
 - Desert Unicorn Plant
- Population Size**
- 1-10 Plants
 - 11-50 Plants
 - 51-100 Plants
 - 101-500 Plants
 - 501-1,000 Plants
- Proposed Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - Switchyard

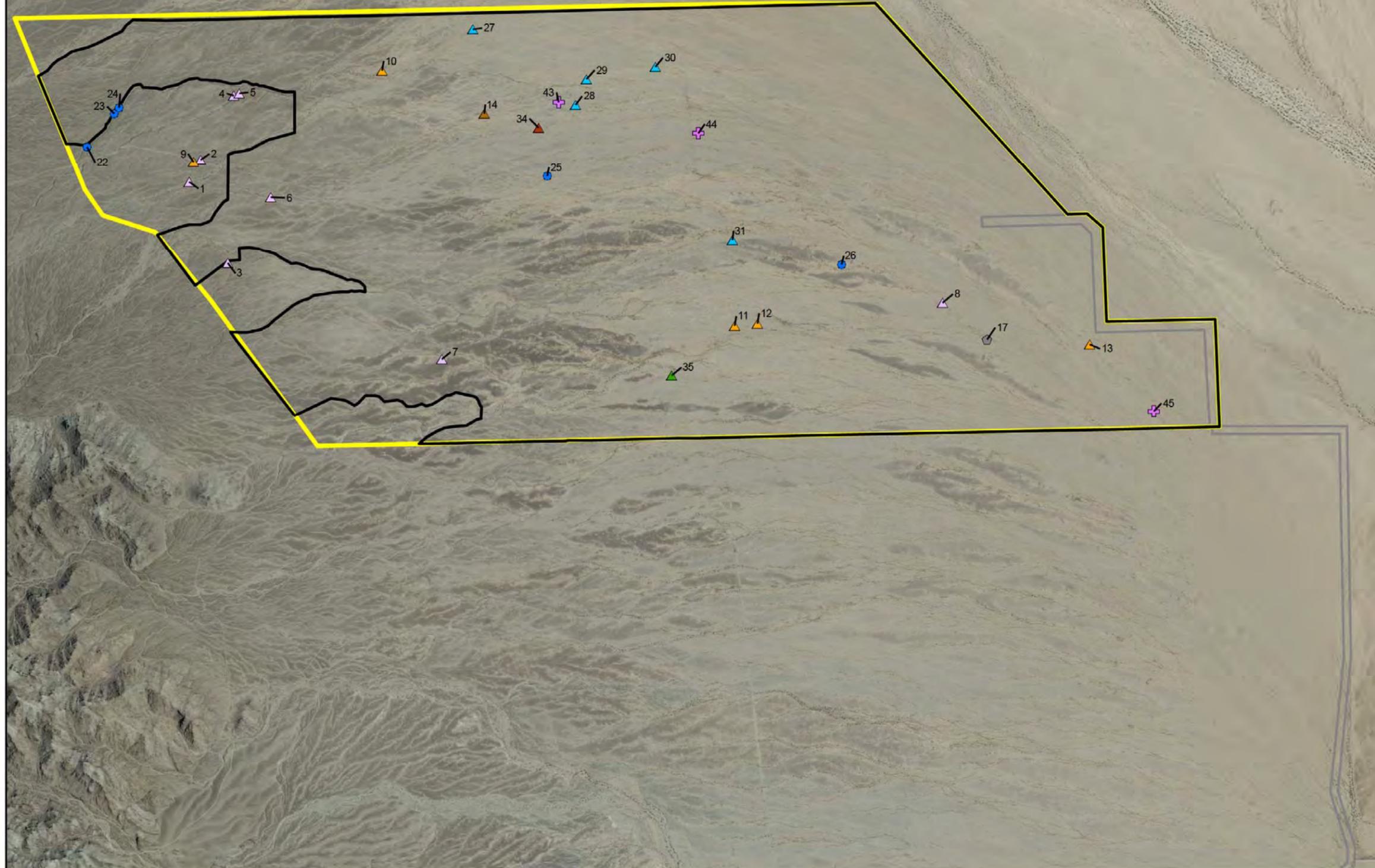


Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, TTEC

FIGURE 5B
SPECIAL-STATUS PLANTS OBSERVED
DURING FALL 2011 SURVEYS



McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Birds

- ▲ Brewer's Sparrow
- △ Burrowing Owl
- ▲ Burrowing Owl Burrow
- ▲ Le Conte's Thrasher
- ▲ Loggerhead Shrike
- ▲ Yellow Warbler

Reptiles

- Desert Tortoise Tracks
- ◆ Desert Tortoise Burrow
- Desert Tortoise Pallet
- Desert Tortoise Scat
- Mojave Fringe-toed lizard

Mammals

- ⊕ Kit Fox Den
- ⊕ Wild Burro Mandible

Numbers correspond to Appendix D

- ▭ MSEP Solar Plant Site Boundary
- ▭ Proposed Linear Corridor
- ▭ Solar Plant Site Survey Area

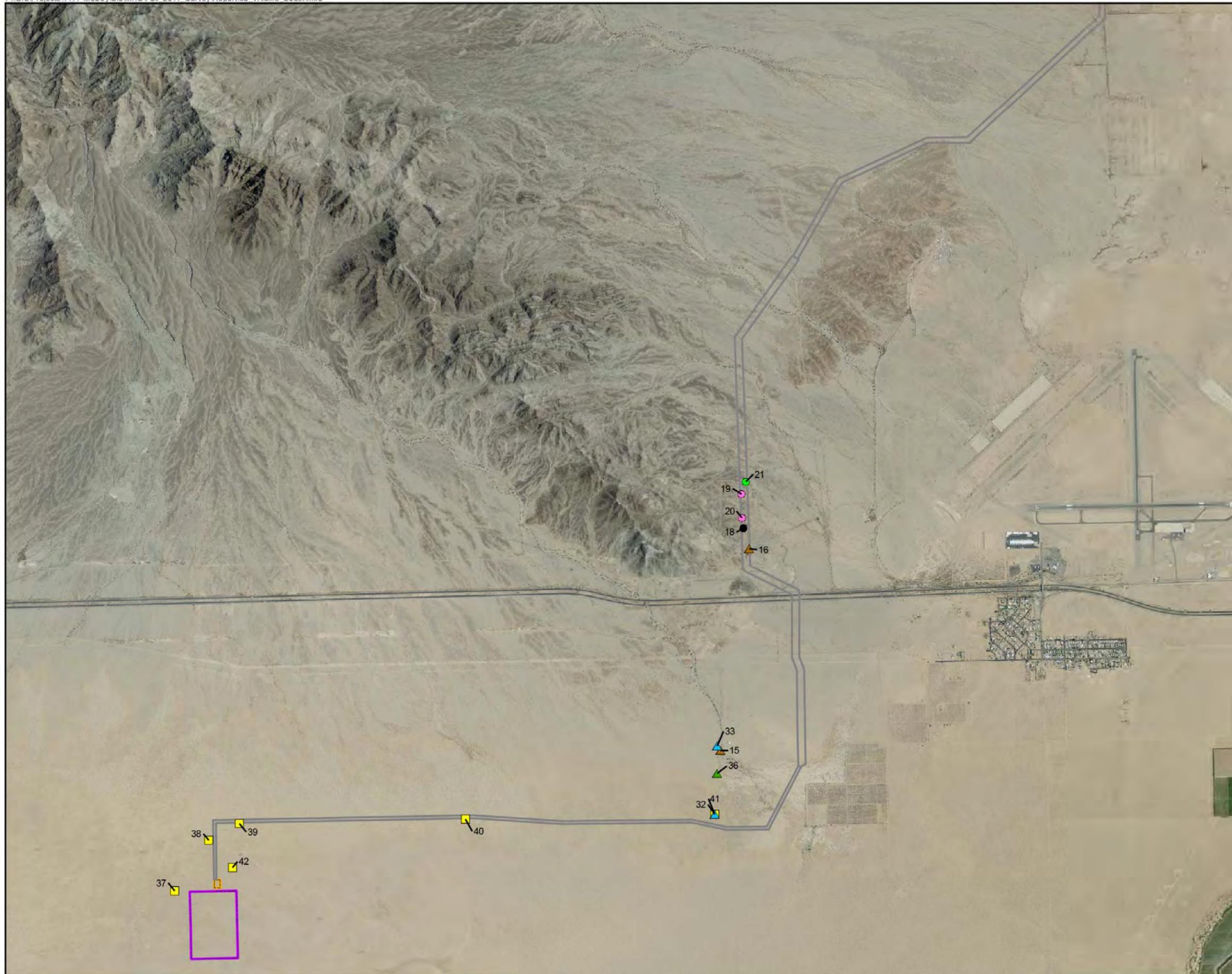


0 1,500 3,000 6,000
Feet

Notes:
(a) UTM Zone 11, NAD 1983 Projection.
(b) Source data: ESRI, TTEC

**FIGURE 6A
SPECIAL-STATUS WILDLIFE OBSERVED
DURING FALL 2011 SURVEYS**





McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Birds

- ▲ Brewer's Sparrow
- ▲ Burrowing Owl
- ▲ Burrowing Owl Burrow
- ▲ Le Conte's Thrasher
- ▲ Loggerhead Shrike
- ▲ Yellow Warbler

Reptiles

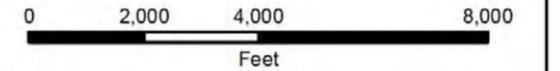
- Desert Tortoise Tracks
- Desert Tortoise Burrow
- Desert Tortoise Pallet
- Desert Tortoise Scat
- Mojave Fringe-toed lizard

Mammals

- ⊕ Kit Fox Den
- ⊕ Wild Burro Mandible

Numbers correspond to Appendix D

- ▭ Proposed Linear Corridor
- ▭ Proposed Colorado River Substation (SCE)
- ▭ Switchyard



Notes:

- (a) UTM Zone 11, NAD 1983 Projection.
- (b) Source data: ESRI, TTEC

FIGURE 6B
SPECIAL-STATUS WILDLIFE OBSERVED
DURING FALL 2011 SURVEYS



APPENDIX A
Fall 2011 Field Biologists

Field Biologists	Fall Plant Surveys	Supplemental Desert Tortoise Surveys	Insect Surveys
Alice Karl, Ph.D.*	X	X	
Art Schaub	X	X	
Emily Mix *	X	X	
David Faulkner			X
Glenn Rink	X		
Jeanne M. Bellemin			X
Kent Hughes	X		
Marc Baker, Ph.D.	X		
Michael Honer	X		
Michelle Cloud Hughes	X		
Neal Kramer	X		
Paul Frank	X	X	
Tasya Herskovits	X		
Tim Thomas	X	X	

*Report Preparers

APPENDIX B
Comprehensive Fall 2011 Special-status Plant Survey Results

Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species	Population Size (Number of Plants or Abundance)	Area (square meters)	
	Easting	Northing				
1	704394	3732779	<i>Chamaesyce abramsiana</i>	Abram's spurge	1	< 1
2	704741	3733087	<i>Chamaesyce abramsiana</i>	Abram's spurge	15	12
3	704812	3733066	<i>Chamaesyce abramsiana</i>	Abram's spurge	5	2
4	704952	3733026	<i>Chamaesyce abramsiana</i>	Abram's spurge	20	50
5	704971	3733032	<i>Chamaesyce abramsiana</i>	Abram's spurge	10	150
6	704972	3733155	<i>Chamaesyce abramsiana</i>	Abram's spurge	2	< 1
7	705033	3733012	<i>Chamaesyce abramsiana</i>	Abram's spurge	50	15
8	705054	3731476	<i>Chamaesyce abramsiana</i>	Abram's spurge	20	4
9	705075	3733049	<i>Chamaesyce abramsiana</i>	Abram's spurge	5	10
10	705123	3731483	<i>Chamaesyce abramsiana</i>	Abram's spurge	60+	1025
11	705144	3731603	<i>Chamaesyce abramsiana</i>	Abram's spurge	77	70
12	705179	3732675	<i>Chamaesyce abramsiana</i>	Abram's spurge	10	10
13	705192	3733140	<i>Chamaesyce abramsiana</i>	Abram's spurge	25	600
14	705258	3733084	<i>Chamaesyce abramsiana</i>	Abram's spurge	6	15
15	705262	3731692	<i>Chamaesyce abramsiana</i>	Abram's spurge	1	< 1
16	705414	3730229	<i>Chamaesyce abramsiana</i>	Abram's spurge	3	10
17	705432	3733167	<i>Chamaesyce abramsiana</i>	Abram's spurge	20	30
18	705476	3732587	<i>Chamaesyce abramsiana</i>	Abram's spurge	3	Not noted
19	705516	3733135	<i>Chamaesyce abramsiana</i>	Abram's spurge	30	60
20	705523	3731734	<i>Chamaesyce abramsiana</i>	Abram's spurge	10	15
21	705587	3731650	<i>Chamaesyce abramsiana</i>	Abram's spurge	60	60
22	705592	3732695	<i>Chamaesyce abramsiana</i>	Abram's spurge	100+	200
23	705623	3732748	<i>Chamaesyce abramsiana</i>	Abram's spurge	4	60
24	705633	3733082	<i>Chamaesyce abramsiana</i>	Abram's spurge	17	100
25	705635	3731521	<i>Chamaesyce abramsiana</i>	Abram's spurge	125+	585
26	705684	3732372	<i>Chamaesyce abramsiana</i>	Abram's spurge	3	1
27	705692	3733042	<i>Chamaesyce abramsiana</i>	Abram's spurge	15	75
28	705735	3732634	<i>Chamaesyce abramsiana</i>	Abram's spurge	55	400
29	705753	3730547	<i>Chamaesyce abramsiana</i>	Abram's spurge	23	6
30	705781	3732563	<i>Chamaesyce abramsiana</i>	Abram's spurge	50	20
31	705809	3732769	<i>Chamaesyce abramsiana</i>	Abram's spurge	1	< 1

Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species	Population Size (Number of Plants or Abundance)	Area (square meters)	
	Easting	Northing				
32	705829	3731641	<i>Chamaesyce abramsiana</i>	Abram's spurge	7	1
33	705844	3732428	<i>Chamaesyce abramsiana</i>	Abram's spurge	55	360
34	705933	3732754	<i>Chamaesyce abramsiana</i>	Abram's spurge	2	20
35	705934	3732713	<i>Chamaesyce abramsiana</i>	Abram's spurge	200	30000
36	705934	3732584	<i>Chamaesyce abramsiana</i>	Abram's spurge	2	5
37	705936	3730591	<i>Chamaesyce abramsiana</i>	Abram's spurge	10	25
38	705938	3730521	<i>Chamaesyce abramsiana</i>	Abram's spurge	60	45
39	705954	3732973	<i>Chamaesyce abramsiana</i>	Abram's spurge	60	40
40	705972	3730632	<i>Chamaesyce abramsiana</i>	Abram's spurge	50-75	20
41	705973	3731836	<i>Chamaesyce abramsiana</i>	Abram's spurge	33	60
42	705992	3732640	<i>Chamaesyce abramsiana</i>	Abram's spurge	202	2250
43	706039	3732731	<i>Chamaesyce abramsiana</i>	Abram's spurge	20	40
44	706069	3730610	<i>Chamaesyce abramsiana</i>	Abram's spurge	50-75	2500
45	706088	3732529	<i>Chamaesyce abramsiana</i>	Abram's spurge	850	600
46	706149	3732772	<i>Chamaesyce abramsiana</i>	Abram's spurge	25	200
47	706184	3731668	<i>Chamaesyce abramsiana</i>	Abram's spurge	7	1
48	706189	3731881	<i>Chamaesyce abramsiana</i>	Abram's spurge	222	1000
49	706240	3729993	<i>Chamaesyce abramsiana</i>	Abram's spurge	2	1
50	706293	3732556	<i>Chamaesyce abramsiana</i>	Abram's spurge	5	Not noted
51	706321	3732771	<i>Chamaesyce abramsiana</i>	Abram's spurge	6	20
52	706595	3732531	<i>Chamaesyce abramsiana</i>	Abram's spurge	150	6750
53	706595	3731904	<i>Chamaesyce abramsiana</i>	Abram's spurge	1	< 1
54	706658	3731721	<i>Chamaesyce abramsiana</i>	Abram's spurge	75	4200
55	706719	3730201	<i>Chamaesyce abramsiana</i>	Abram's spurge	40	2
56	707154	3731764	<i>Chamaesyce abramsiana</i>	Abram's spurge	1000	125
57	707930	3721565	<i>Chamaesyce abramsiana</i>	Abram's spurge	10	4
58	702108	3731815	<i>Ditaxis serrata</i> var. <i>californica</i>	California ditaxis	2	1
59	702219	3731726	<i>Ditaxis serrata</i> var. <i>californica</i>	California ditaxis	2	1
60	702556	3718224	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
61	704605	3732518	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	20 m (linear)
62	704643	3732302	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	8	300

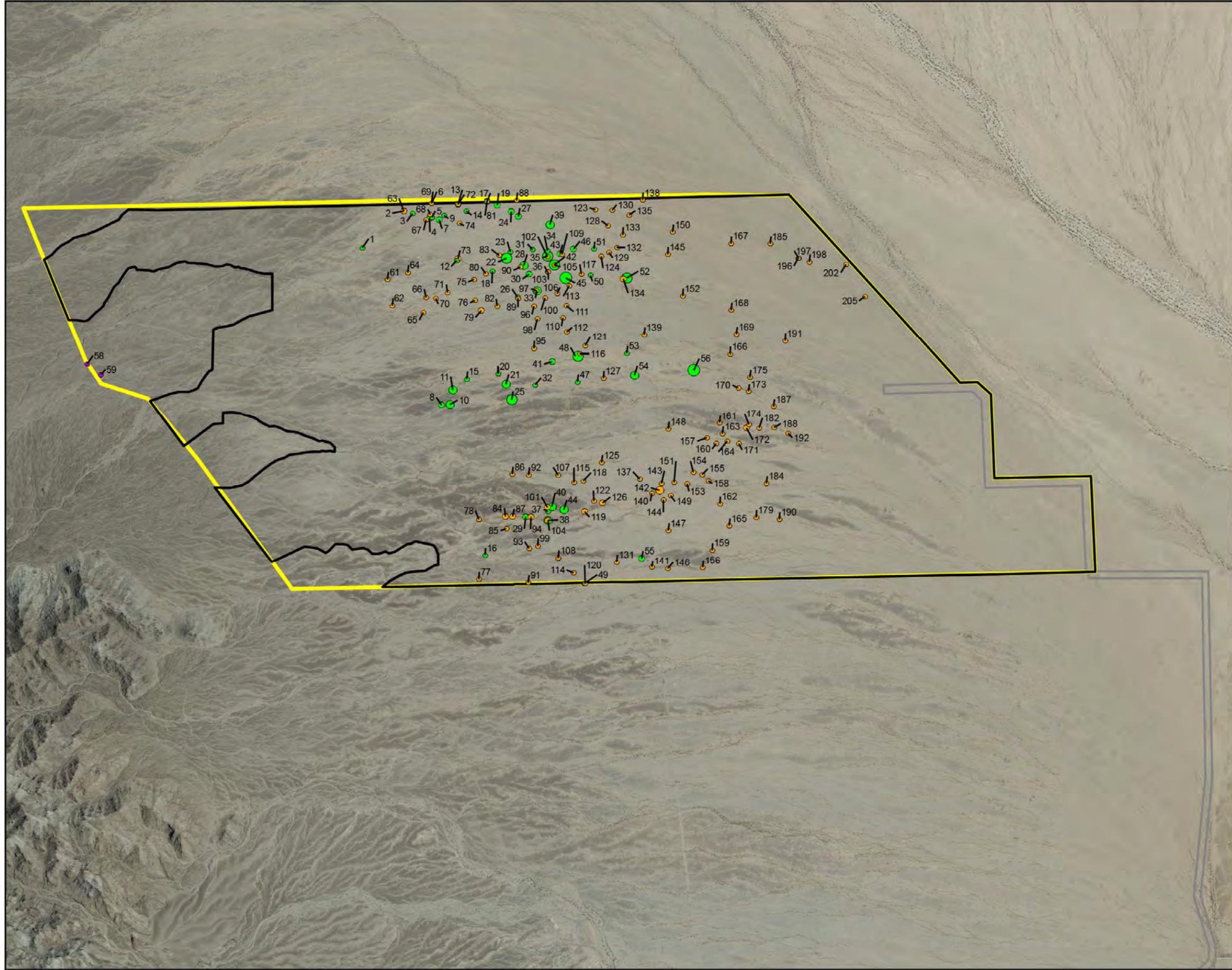
Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species	Population Size (Number of Plants or Abundance)	Area (square meters)	
	Easting	Northing				
63	704740	3733086	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	12	1000
64	704772	3732576	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	100
65	704899	3732244	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	Not noted
66	704923	3732370	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	8	100
67	704926	3733013	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	130
68	704957	3733057	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
69	704967	3733150	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	10
70	705007	3732360	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	5
71	705100	3732410	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	5
72	705192	3733140	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
73	705192	3732692	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	26	30000
74	705201	3732985	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
75	705323	3732517	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	200
76	705329	3732346	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	250
77	705361	3730030	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	9	70
78	705364	3730530	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	6	175
79	705383	3732262	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	15	250
80	705418	3732567	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
81	705432	3733167	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	30
82	705517	3732298	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	6	2500
83	705531	3732720	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	50
84	705584	3730553	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	28	6240
85	705591	3730454	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	7	3
86	705641	3730901	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	1
87	705644	3730551	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	11	4
88	705678	3733176	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
89	705690	3732361	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	50
90	705707	3732624	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
91	705774	3730001	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
92	705779	3730896	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	30
93	705782	3730287	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1

Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species	Population Size (Number of Plants or Abundance)	Area (square meters)	
	Easting	Northing				
94	705798	3730549	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	11	3920
95	705820	3731945	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	20
96	705822	3732297	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	2
97	705840	3732428	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
98	705850	3732192	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
99	705852	3730309	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
100	705914	3732364	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	50
101	705932	3730630	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	32	20000
102	705935	3732709	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	60
103	705936	3732585	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	300
104	705938	3730521	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	17	90
105	705992	3732639	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	Not noted
106	706013	3732401	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
107	706021	3730896	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
108	706023	3730208	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	0.01
109	706056	3732728	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
110	706061	3732200	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	3
111	706089	3732301	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	10	30
112	706095	3732083	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
113	706115	3732465	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	50
114	706151	3730084	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
115	706156	3730834	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	1
116	706204	3731901	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	50
117	706216	3732563	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
118	706231	3730847	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	40 m (linear)
119	706244	3730592	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	37	240
120	706246	3729993	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	20 m (linear)
121	706249	3731968	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	1
122	706318	3730682	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	8	3660
123	706332	3733096	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
124	706381	3732712	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	6	600

Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species	Population Size (Number of Plants or Abundance)	Area (square meters)	
	Easting	Northing				
125	706385	3730998	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	0.005
126	706391	3730667	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	11	66 m (linear)
127	706399	3731698	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	1
128	706435	3732965	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
129	706444	3732744	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	55
130	706472	3733092	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	50
131	706510	3730172	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	15
132	706512	3732784	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	7	5
133	706560	3732890	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
134	706565	3732524	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	25	3000
135	706612	3733055	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
136	706626	3718909	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
137	706702	3730861	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
138	706725	3733177	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	77
139	706739	3732060	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
140	706803	3730745	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	10
141	706804	3730132	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	40
142	706866	3730769	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	56	200
143	706884	3730828	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
144	706898	3730691	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	20 m (linear)
145	706934	3732728	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	1
146	706936	3730120	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
147	706940	3730435	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
148	706941	3731275	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
149	706958	3730726	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
150	706976	3732913	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	1
151	706986	3730834	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
152	707059	3732382	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	15
153	707096	3730822	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	5	1000
154	707148	3730919	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	1
155	707220	3730899	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	4	Not noted

Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species	Population Size (Number of Plants or Abundance)	Area (square meters)	
	Easting	Northing				
156	707225	3730126	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
157	707260	3731202	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	8	50
158	707272	3730848	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	6	30
159	707303	3730272	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
160	707336	3731157	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
161	707365	3731328	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	0.5
162	707368	3730658	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
163	707390	3731236	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	10
164	707431	3731177	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
165	707447	3730475	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	0.04
166	707452	3731897	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
167	707461	3732817	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
168	707463	3732264	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
169	707507	3732063	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
170	707522	3731620	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	5	40
171	707528	3731154	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	0.5
172	707592	3731286	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	13	630
173	707608	3731589	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	10
174	707609	3731311	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	5	40
175	707619	3731706	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
176	707624	3719092	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	6	600
177	707629	3719296	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
178	707634	3719411	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
179	707670	3730544	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
180	707673	3719224	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
181	707676	3719069	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	7	200
182	707695	3731283	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	9	10
183	707756	3719671	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	100
184	707757	3730826	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	5	75
185	707787	3732815	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
186	707788	3719644	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1

Map Number Corresponds to Figures 5A and 5B	UTM (NAD 83)		Species		Population Size (Number of Plants or Abundance)	Area (square meters)
	Easting	Northing				
187	707816	3731464	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
188	707819	3731287	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	10
189	707834	3719664	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	200
190	707862	3730527	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
191	707911	3732010	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
192	707935	3731239	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
193	708005	3721291	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
194	708014	3721343	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	15
195	708014	3721343	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	15
196	708022	3732697	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
197	708024	3732695	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
198	708113	3732665	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	3	200
199	708134	3719650	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	12	500
200	708206	3719066	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	2	5
201	708387	3720594	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	1
202	708418	3732645	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1
203	708463	3719680	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	1
204	708485	3719440	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	1
205	708576	3732378	<i>Proboscidea althaeifolia</i>	Desert unicorn plant	1	< 1



McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



Legend

Common Name

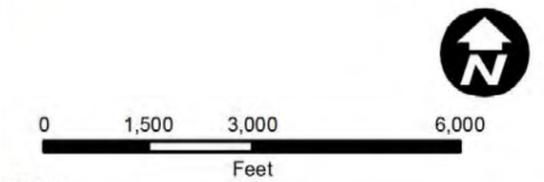
- Abram's Spurge
- California Ditaxis
- Desert Unicorn Plant

Population Size

- 1-10 Plants
- 11-50 Plants
- 51-100 Plants
- 101-500 Plants
- 501-1,000 Plants

Numbers Correspond to Appendix B

- MSEP Solar Plant Site Boundary
- Proposed Linear Corridor
- Solar Plant Site Survey Area



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, TTEC

APPENDIX B SPECIAL-STATUS PLANTS OBSERVED DURING FALL 2011 SURVEYS

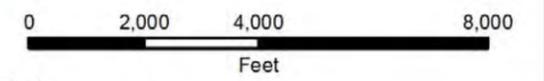




McCOY SOLAR ENERGY PROJECT RIVERSIDE COUNTY, CA



- Legend**
- Common Name**
- Abram's Spurge
 - California Ditaxis
 - Desert Unicorn Plant
- Population Size**
- 1-10 Plants
 - 11-50 Plants
 - 51-100 Plants
 - 101-500 Plants
 - 501-1,000 Plants
- Numbers Correspond to Appendix B
- Proposed Linear Corridor
 - Proposed Colorado River Substation (SCE)
 - Switchyard



Notes:
 (a) UTM Zone 11, NAD 1983 Projection.
 (b) Source data: ESRI, TTEC

APPENDIX B SPECIAL-STATUS PLANTS OBSERVED DURING FALL 2011 SURVEYS



APPENDIX C

Comprehensive List of All Plant Species Observed during 2010 and 2011 Field Surveys

Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring and Fall 2011 Surveys	
<i>Abronia villosa</i> var. <i>villosa</i>	sand verberna
<i>Achyronychia cooperi</i>	frost-mat
<i>Adenophyllum porophylloides</i>	adenophyllum
<i>Allionia incarnata</i>	windmills
<i>Ambrosia dumosa</i>	white bursage
<i>A. (=Hymenoclea) salsola</i>	cheesebush
<i>Amsinckia menziesii</i>	fiddleneck
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	fiddleneck
<i>Aristida adscencionis</i>	three-awn
<i>A. californica</i>	three-awn
<i>A. purpurea</i>	purple three-awn
<i>Asclepias albicans</i>	buggywhip milkweed
<i>A. subulata</i>	rush milkweed
<i>Astragalus acutirostris</i>	keel-beak
<i>Astragalus aridus</i>	astragalus
<i>A. insularis</i> var. <i>harwoodii</i>	Harwood's milkvetch
<i>A. nuttallianus</i>	Nuttall locoweed
<i>Atrichoseris platyphylla</i>	gravel-ghost
<i>Atriplex elegans</i>	wheelscale
<i>Baileya pauciradiata</i>	desert marigold
<i>Baccharis brachyphylla</i>	short-leaved baccharis
<i>Bahiopsis (= Viguiera) parishii</i>	viguiera
<i>Bebbia juncea</i>	chuckwalla bush
<i>Boerhavia coulteri</i>	spiderling
<i>B. wrightii</i>	spiderlings
<i>Bouteloua aristidoides</i>	needle grama
<i>B. barbata</i>	six-weeks grama
<i>Brandegea bigelovii</i>	desert starvine
* <i>Brassica tournefortii</i>	Sahara mustard
* <i>Bromus madritensis</i> var. <i>rubescens</i>	red brome
<i>Calycoseris wrightii</i>	white tackstem
<i>Camissonia boothii</i> ssp. <i>condensata</i>	bottlebrush primrose
<i>C. boothii</i> ssp. <i>desertorum</i>	bottlebrush primrose
<i>C. brevipes</i>	yellow-cups
<i>C. cardiophylla</i>	heart-leaved primrose
<i>C. claviformis</i> ssp. <i>aurantiaca</i>	brown-eyed primrose
<i>C. refracta</i>	narrow-leaved primrose
<i>Casuarina</i> sp.	beach sheoak
<i>Cercidium floridum (=Parkinsonia florida)</i>	blue paloverde
<i>Chaenactis carphoclinia</i>	pebble pincushion
<i>C. stevioides</i>	desert pincushion
<i>Chamaesyce abramsiana</i>	Abram's spurge
<i>C. micromera</i>	spurge
<i>C. polycarpa</i>	spurge
<i>C. setiloba</i>	spurge
* <i>Chenopodium album</i>	pigweed
* <i>C. murale</i>	goosefoot
<i>Chorizanthe brevicornu</i>	brittle spine-flower
<i>C. corrugate</i>	spineflower
<i>C. rigida</i>	rigid spinyherb
<i>Colubrina californica</i>	Las Animas colubrina

Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring and Fall 2011 Surveys	
<i>Crossidium seriatum</i>	moss
<i>Cryptantha angustifolia</i>	narrow-leaved forget-me-not
<i>C. barbiger</i>	bearded cryptantha
<i>C. costata</i>	ribbed cryptantha
<i>C. dumetorum</i>	flexuous forget-me-not
<i>C. maritima</i>	white-haired forget-me-not
<i>C. micrantha</i>	purple-rooted forget-me-not
<i>C. nevadensis</i>	Nevada forget-me-not
<i>C. pterocarya</i>	wing-nut forget-me-not
<i>Cylindropuntia (=Opuntia) echinocarpa</i>	silver cholla
<i>C. (=Opuntia) ramosissima</i>	pencil cholla
<i>Dalea mollis</i>	silk dalea
<i>D. mollissima</i>	silk dalea
<i>Dicoria canescens</i>	desert dicoria
<i>Ditaxis lanceolata</i>	lance-leaved ditaxis
<i>D. neomexicana</i>	ditaxis
<i>D. serrata</i> var. <i>californica</i>	California ditaxis
<i>Dithyrea californica</i>	spectacle-pod
<i>Echinocactus polycephalus</i>	cottontop cactus
<i>Encelia farinosa</i> var. <i>farinosa</i>	brittlebush
<i>E. farinosa</i> var. <i>phenicodonta</i>	brittlebush
<i>E. frutescens</i>	rayless encelia
<i>Ephedra aspera</i>	joint fir
<i>E. californica</i>	California joint fir
<i>Eremalche rotundifolia</i>	desert five-spot
<i>Eriastrum diffusum</i>	phlox
<i>E. harwoodii</i>	Harwood's phlox
<i>Eriogonum deflexum</i>	skeleton-weed
<i>E. inflatum</i>	desert trumpet
<i>E. reniforme</i>	kidney-leaved buckwheat
<i>E. thomasii</i>	Thomas' buckwheat
<i>E. trichopes</i>	little trumpet
<i>Erodium texanum</i>	storksbill
<i>Erioneuron pulchellum</i>	fluff grass
<i>Eschscholtzia glyptosperma</i>	gold-poppy
<i>E. minutiflora</i>	small-flowered gold-poppy
<i>Eucrypta micrantha</i>	small-flowered eucrypta
<i>Euphorbia eriantha</i>	beetle spurge
<i>Fagonia laevis</i>	California fagonbush
<i>Ferocactus cylindraceus</i>	barrel cactus
<i>Funastrum (=Sarcostemma) hirtellum</i>	hairy milkweed
<i>F. (=S.) cyanchoides hartwegii</i>	climbing milkweed
<i>F. (=Cynanchum) utahense</i>	Utah cynanchum
<i>Fouquieria splendens</i>	ocotillo
<i>Geraea canescens</i>	desert sunflower
<i>Gilia latifolia</i>	broad-leaved gilia
<i>G. stellata</i>	star gilia
<i>Grayia spinosa</i>	spiny hopsage
<i>Guillenia (=Thelypodium) lasiophylla</i>	California mustard
<i>Hesperocallis undulata</i>	desert lily
<i>Hibiscus denudatus</i>	rock hibiscus

Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring and Fall 2011 Surveys	
<i>Hyptis emoryi</i>	desert lavender
<i>Kallstroemia californica</i>	kallstroemia
<i>Krameria erecta</i>	little-leaf rhatany
<i>K. grayi</i>	white rhatany
<i>Lactuca serriola</i>	prickly lettuce
<i>Langloisia setosissima</i> ssp. <i>setosissima</i>	bristly langloisia
<i>Larrea tridentata</i>	creosote bush
<i>Lepidium lasiocarpum</i>	pepper grass
<i>Linanthus jonesii</i>	Jones' linanthus
<i>Loeseliastrum mathewsii</i>	desert calico
<i>L. schottii</i>	Schott gilia
<i>Logfia (= Filago) arizonica</i>	Arizona filago
<i>L. depressa</i>	dwarf filago
<i>Lotus strigosus</i>	hairy lotus
<i>Lupinus arizonicus</i>	Arizona lupine
<i>Lycium andersonii</i>	Anderson boxthorn
<i>L. pallidum</i> var. <i>oligospermum</i>	boxthorn
<i>Malacothrix glabrata</i>	desert dandelion
* <i>Malva parviflora</i>	cheeseweed
<i>Mammillaria tetrancistra</i>	fish-hook cactus
<i>Marina parryi</i>	parry dalea
<i>Mentzelia affinis</i>	blazing star
<i>M. albicaulis</i>	white-stemmed blazing star
<i>M. involucrata</i>	sand blazing star
<i>M. multiflora</i> var. <i>longiloba</i>	blazing star
<i>Mirabilis bigelovii</i> var. <i>retrorsa</i>	four-o'clock
<i>Mohavea confertifolia</i>	ghost flower
<i>Monoptilon bellioides</i>	Mojave desert-star
<i>Nama demissum</i>	purple mat
<i>N. hispidum</i> var. <i>spathulatum</i>	hispid nama
<i>Nicotiana obtusifolia</i>	tobacco
<i>Oenothera deltooides</i>	dune primrose
<i>O. primiveris</i>	yellow desert primrose
<i>Oligomeris linifolia</i>	mignonette
<i>Olneya tesota</i>	ironwood
<i>Opuntia basilaris</i>	beavertail cactus
<i>Orobancha cooperi</i>	broom-rape
<i>Palafoxia arida (= linearis)</i>	Spanish needle
* <i>Panicum antidotale</i>	blue panicgrass
<i>Pectis papposa</i>	chinchweed
<i>Pectocarya heterocarpa</i>	hairy-leaved comb-bur
<i>P. platycarpa</i>	broad-nutted comb-bur
<i>P. recurvata</i>	arch-nutted comb-bur
<i>Perityle emoryi</i>	Emory rock daisy
<i>Peucephyllum schottii</i>	desert fir
<i>Phacelia crenulata</i> var. <i>ambigua</i>	notchleaf phacelia
<i>P. crenulata</i> var. <i>minutiflora</i>	notchleaf phacelia
<i>P. neglecta</i>	alkali phacelia
<i>Phoradendron californicum</i>	mistletoe
<i>Physalis crassifolia</i>	ground cherry
<i>Plagiobothrys jonesii</i>	Jones' popcornflower

Plant Species Observed at the McCoy Solar Energy Project, including the Proposed Translocation Area, during Spring and Fall 2011 Surveys	
<i>Plantago ovata</i>	plantain
<i>Pleuraphis (=Hilaria) rigida</i>	big galleta grass
<i>Pleurocoronis plurisetata</i>	arrow-leaf
<i>Pluchea sericea</i>	arrow weed
<i>Porophyllum gracile</i>	odora
<i>Prenanthes (= Lygodesmia) exigua</i>	brightwhite
<i>Proboscidea althaeifolia</i>	desert unicorn plant
<i>Prosopis glandulosa</i>	honey mesquite
<i>Prunus fasciculata</i>	desert almond
<i>Psathyrotes ramosissima</i>	turtleback
<i>Psoralea emoryi</i>	Emory dalea
<i>P. spinosa</i>	smoke tree (immediately adjacent to plant site)
<i>Rafinesquia neomexicana</i>	desert chicory
* <i>Salsola tragus</i>	Russian thistle, tumbleweed
* <i>Schismus arabicus</i>	Mediterranean grass
<i>Senecio mohavensis</i>	Mojave ragwort
<i>Senegalia (= Acacia) greggii</i>	catclaw acacia
* <i>Sisymbrium irio</i>	London rocket
* <i>Sonchus oleraceus</i>	sow thistle
<i>Sphaeralcea ambigua</i>	globe mallow
<i>S. emoryi</i>	Emory globe mallow
<i>Stephanomeria exigua</i>	annual mitra
<i>S. parryi</i>	Parry rock-pink
<i>S. pauciflora</i>	Wire-lettuce
<i>Stillingia spinulosa</i>	broad-leaved stillingia
<i>Streptanthella longirostris</i>	mustard
* <i>Tamarix phylla</i>	tamarisk
<i>Tidestromia oblongifolia</i>	Arizona honeysweet
<i>Tiquilia plicata</i>	plicate coldenia
<i>Tortula acaulon</i>	moss
* <i>Tribulus terrestris</i>	caltrops, puncture vine
<i>Trianthema portulacastrum</i>	horse purslane
<i>Trichoptilium incisum</i>	yellow-head
<i>Trixis californica</i>	trixis
<i>Vulpia octoflora</i>	vulpia
<i>Ziziphus obtusifolia</i> var. <i>canescens</i>	graythorn

APPENDIX D

Comprehensive Fall 2011 Special-status Wildlife and Insect Observations

Table A. Comprehensive Fall 2011 Special-status Wildlife Observations

Table B. Insect Species Observed in 2011 Field Surveys

**Table A. Comprehensive Fall 2011 Special-status
Wildlife Observations**

Map Number Corresponds to Figures 6A and 6B	UTM (NAD 83)		Species		Sign Type	Comments
	Easting	Northing				
1	702863	3731898	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Flushed from draw, no burrow located
2	702951	3732065	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Caliche burrow with pellets, feathers
3	703150	3731300	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Flew from cavity in concreted ground of 2 m incised wash bank, feathers, 1 pellet, whitewash, used a few days a week
4	703196	3732538	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Burrow in bank of 4 m incised wash, near top, no pellets or whitewash
5	703234	3732554	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Flushed from under a shrub in an incised wash, no associated burrow found
6	703468	3731785	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Incidental observation, flew in wash, inspected several holes but no burrows found
7	704736	3730594	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	Flushed from shade of <i>Ambrosia dumosa</i> , no burrow located
8	708443	3731007	<i>Athene cunicularia</i>	Burrowing owl	1 Individual	No burrow found
9	702897	3732049	<i>Athene cunicularia</i>	Burrowing owl	Burrow	Feathers, pellets, whitewash, perch
10	704292	3732722	<i>Athene cunicularia</i>	Burrowing owl	Burrow	Whitewash and pellets
11	706900	3730839	<i>Athene cunicularia</i>	Burrowing owl	Burrow	In old kit fox natal den, whitewash and pellets, one entrance currently in use
12	707071	3730856	<i>Athene cunicularia</i>	Burrowing owl	Burrow	Recently used with much whitewash at several entrances and a few pellets
13	709532	3730703	<i>Athene cunicularia</i>	Burrowing owl	Burrow	Whitewash and pellets
14	705048	3732408	<i>Dendroica petechia</i>	Yellow warbler	1 Individual	
15	707646	3719542	<i>Dendroica petechia</i>	Yellow warbler	1 Individual	
16	707935	3721555	<i>Dendroica petechia</i>	Yellow warbler	1 Individual	In mesquite bosque
17	708772	3730739	<i>Equus asinus</i>	Wild burro	Mandible	Old
18	707874	3721761	<i>Gopherus agassizii</i>	Desert tortoise	Tracks	Class 1; 380 mm burrow in hillside
19	707858	3722102	<i>Gopherus agassizii</i>	Desert tortoise	Burrow	Class 2; 260 mm, in side of small slope
20	707863	3721865	<i>Gopherus agassizii</i>	Desert tortoise	Burrow	Class 1; 320 mm, in hillside
21	707902	3722223	<i>Gopherus agassizii</i>	Desert tortoise	Pallet	Class 3; 300 mm & 330 mm, 2 pallets under <i>Olneya tesota</i> (on

Map Number Corresponds to Figures 6A and 6B	UTM (NAD 83)		Species	Sign Type	Comments	
	Eastings	Northing				
					opposite sides)	
22	702109	3732161	<i>Gopherus agassizii</i>	Desert tortoise	Scat	TY1: 10 mm, in incised wash bottom
23	702309	3732405	<i>Gopherus agassizii</i>	Desert tortoise	Scat	TY2: 25 mm, on desert pavement on edge of incised wash
24	702345	3732452	<i>Gopherus agassizii</i>	Desert tortoise	Scat	TY2: 15 mm, in incised wash bottom
25	705513	3731942	<i>Gopherus agassizii</i>	Desert tortoise	Scat	TY2: 16 mm
26	707695	3731287	<i>Gopherus agassizii</i>	Desert tortoise	Scat	TY2: 16 mm
27	704963	3733028	<i>Lanius ludovicianus</i>	Loggerhead shrike	1 Individual	
28	705723	3732469	<i>Lanius ludovicianus</i>	Loggerhead shrike	1 Individual	
29	705802	3732660	<i>Lanius ludovicianus</i>	Loggerhead shrike	1 Individual	
30	706314	3732752	<i>Lanius ludovicianus</i>	Loggerhead shrike	1 Individual	
31	706885	3731473	<i>Lanius ludovicianus</i>	Loggerhead shrike	1 Individual	In <i>Cercidium floridum</i>
32	707587	3718904	<i>Lanius ludovicianus</i>	Loggerhead shrike	4 Individuals	
33	707612	3719585	<i>Lanius ludovicianus</i>	Loggerhead shrike	3 Individuals	
34	705448	3732302	<i>Spizella breweri</i>	Brewer's Sparrow	3 Individuals	
35	706436	3730474	<i>Toxostoma lecontei</i>	Le Conte's thrasher	1 Individual	
36	707615	3719310	<i>Toxostoma lecontei</i>	Le Conte's thrasher	1 Individual	Perched and calling
37	702188	3718138	<i>Uma scoparia</i>	Mojave fringe-toed lizard	7 Individuals	3 Adults, 4 Juveniles
38	702528	3718644	<i>Uma scoparia</i>	Mojave fringe-toed lizard	36 Individuals	22 Adults, 18 Juveniles; observed among 36 transects, 60-70% north of road and in deeper sand
39	702838	3718811	<i>Uma scoparia</i>	Mojave fringe-toed lizard	36 Individuals	20 adults, 16 juveniles
40	705096	3718855	<i>Uma scoparia</i>	Mojave fringe-toed lizard	74 Individuals	32 adults, 28 juveniles, 14 unknown age
41	707587	3718904	<i>Uma scoparia</i>	Mojave fringe-toed lizard	20 Individuals	10 adults, 10 juveniles
42	702766	3718372	<i>Uma scoparia</i>	Mojave fringe-toed lizard	15 Individuals	9 adults, 6 juveniles observed among 36 transects, 60-70% north of road and in deeper sand
43	705598	3732489	<i>Vulpes macrotis</i>	Kit fox	Den	Active; tracks
44	706630	3732263	<i>Vulpes macrotis</i>	Kit fox	Den	Active. 3 entrances plus large site 54 m to NE with ~6 entrances
45	710005	3730205	<i>Vulpes macrotis</i>	Kit fox	Den	Active. Large complex with tracks and many holes

Table B. Insect Species Observed in 2011 Surveys

Order	Family	Genus	Species		Solar Plant Site	Switchyard and Linear Corridor
Blattodea	Polyphagidae	<i>Arenivaga</i>				X
Orthoptera	Acrididae	<i>Trimerotropis</i>	<i>pallidipennis</i>		X	X
Neuroptera	Chrysopidae	<i>Chrysoperla</i>				X
	Myrmeliontidae	<i>Myrmeleon</i>				X
Coleoptera	Buprestidae	<i>Acmaeodera</i>	<i>ephedrae</i>			X
		<i>Acmaeodera</i>	<i>tuta</i>		X	X
		<i>Acmaeodera</i>				
	Cleridae	<i>Trichodes</i>	<i>ornatus</i>	ornate checkered beetle	X	
	Meloidae	<i>Cysteodemus</i>	<i>armatus</i>	inflated beetle	X	
		<i>Epicauda</i>				X
		<i>Lytta</i>	<i>morrisoni</i>	blister beetle	X	
		<i>Lytta</i>				X
		<i>Phodaga</i>	<i>alticeps</i>	blister beetle		X
		<i>Pleuropasta</i>	<i>mirabilis</i>	blister beetle	X	
	Tenebrionidae	<i>Asbolus</i>	<i>verrucosus</i>	desert ironclad beetle	X	
		<i>Cryptoglossa</i>	<i>muricata</i>	death-feigning beetle		X
		<i>Eleodes</i>				X
Lepidoptera	Pieridae	<i>Pieris</i>	<i>rapae</i>			X
	Noctuidae	<i>Spodoptera</i>				X
		<i>Trichoplusia</i>	<i>ni</i>			X
	Sphingidae	<i>Hyles</i>	<i>lineata</i>		X	X
	Lebullaidae	<i>Sympetrum</i>	corruptum	variegated meadowhawk	X	
Hymenoptera*	Anthophoridae	<i>Centris</i>				X
	Braconidae					X

Order	Family	Genus	Species	Solar Plant Site	Switchyard and Linear Corridor
	Formicidae	<i>Pogonomyrmex</i>			X
		<i>Veromessor</i>			
	Pompilidae	<i>Pepsis</i>	tarantula hawk	X	X
Diptera	Asilidae	<i>Efferia</i>			X
	Bombyliidae	<i>Chrysanthrax</i>			X
		<i>Lordotus</i>			X
		<i>Phythiria</i>			X
		<i>Toxophora</i>			X

**Hedychridium argenteum*, *Ceratochrysis bradleyi* not recorded.

X

X