

APPENDIX C

Appendix C: Biological Resources Technical Report and Aquatic Resources Report

Biological Resources Technical Report



**May
2026**

Savira Solar Project Plan Number PDB260064

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Acronyms

amsl	above mean sea level
ACEC	Area of Critical Environmental Concern
BO	Biological Opinion
BRTR	Biological Resources Technical Report
BBCS	Bird and Bat Conservation Strategy
BLM	Bureau of Land Management
CA-177	California Highway 177
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CDFA	California Department of Food and Agriculture
CESA	California Endangered Species Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CNPS	California Native Plant Society
CNDDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
DFA	Development Focus Area
DRECP	Desert Renewable Energy Conservation Plan
FEIS	Final Environmental Impact Statement
FESA	Federal Endangered Species Act
GIS	Geographic Information Systems
GPS	Global Positioning System
I-10	Interstate 10
LUPA	Land Use Plan Amendment
NEPA	National Environmental Protection Act
TCAs	Tortoise Conservation Areas
USFWS	US Fish and Wildlife Service

1 Introduction

1.1 Background

Ironwood Consulting, Inc (Ironwood) was contracted by Panorama Environmental (Panorama) on behalf of Savira Renewables, LLC (Proponent), a wholly-owned, indirect subsidiary of Clearway Energy Group, LLC, to conduct biological surveys on the Savira Solar Project (Project). The Project Proponent proposes solar development on approximately 535 acres of privately owned lands¹. The Project is located east of the town of Desert Center in unincorporated Riverside County, California and is comprised of two land parcels north of Interstate 10 (I-10), referred to as the northern and southern parcels in this report (Figure 1). Panorama is overseeing all environmental permitting for the Project and has contracted Ironwood to assess potential habitat for sensitive and special-status species within the Project site.

1.2 Purpose

This Biological Resources Technical Report (BRTR) provides a description of methods and results of biological resource surveys and investigations conducted from spring of 2024 through early winter of 2025 for the Project site. The primary purpose of this report is to provide biological information that will be used as the foundation for impact assessments pursuant to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). The discussion included herein may also be used to support consultation with U.S. Fish and Wildlife Service (USFWS) under the Federal Endangered Species Act (FESA) and for any necessary incidental take authorization from the California Department of Fish and Wildlife (CDFW) with respect to the California Endangered Species Act (CESA).

1.3 Site Location

The Project site is located within the Chuckwalla Valley in unincorporated Riverside County, California between the towns of Desert Center and Blythe. The Project site is north-adjacent to Interstate 10 (I- 10; Figure 1). The Project site is located across on the Corn Spring U.S. Geological Survey (USGS) 7.5-minute Topographic Map quadrangle (USGS 2018). The Project site is comprised of approximately 535 acres of private lands within eastern Riverside County (Figures 1,2, 3). The surrounding adjacent parcels are a mix of private ownership and public land managed by the Bureau of Land Management (BLM). The Project site does not overlap landscape blocks for the California Desert Linkage Network. The nearest landscape block is the Palen - McCoy Wilderness Area, located approximately 1.35-mile northeast from the Project site. A small portion of the southwest corner of the Project site is within desert tortoise critical habitat, but is outside of conservation areas. The Project site does not overlap Areas of Critical Environmental Concern (ACEC); Palen Dry Lake ACEC and Palen Ford ACEC is northeast to the Project site. Nearby land uses include previously developed solar facilities, transmission lines, fallow agriculture and active agriculture.

¹ Assessor Parcel Numbers 811-123-001, 811-231-003, 811-231-004, 811-231-009, 811-190-004, and 811-190-005

1.4 Project Summary

Project facilities include an operations and maintenance (O&M) building, a Project substation, a 250-megawatt (MW) battery energy storage system (BESS) and access driveways. The Savira Solar Project would include a 230-kilovolt (kV) substation. From there, the solar energy generated by the Project would be transmitted via a new 230 kV gen-tie line to the existing Arica/Victory Pass substation and then carried on an existing gen-tie line from the Arica/Victory Pass substation to the Southern California Edison (SCE) 230 kV Red Bluff substation.

2 Site Characteristics

2.1 Regional Setting

The Project site is located in the central portion of the Chuckwalla Valley, east of Palm Springs, in the Colorado Desert. The elevation of Chuckwalla Valley ranges from less than 400 feet (122 meters) above mean sea level (amsl) at Ford Dry Lake to approximately 1,800 feet (549 meters) amsl west of Desert Center and along the upper portions of the alluvial fans that surround the valley perimeter. The surrounding mountains rise to over 3,000 feet (914 meters) amsl. The topography of the Project site generally slopes downward toward the northeast at gradient of less than two percent. Ground surface elevations within the Project site range from approximately 600 feet amsl in the northeast corner of the Project site and 750 feet amsl in the southwest corner.

Anthropogenic features and land use near the Project site include agricultural (date palm farm), trash dumping, renewable energy, energy transmission, historical military operations, and recreational development. Adjacent and nearby land uses are summarized in Table 1 and are shown in Figure 1.

Table 1. Adjacent and Nearby Land Uses.

Direction	Land Uses
North	Arica Solar Project, Victory Pass Solar Project
South	I-10, Desert tortoise critical habitat, Chuckwalla Mountains Wilderness, Chuckwalla ACEC
East	Palen/Maverick Solar Project, proposed Redonda Solar Project, active irrigated date palm farm, Palen Ford Dry Lake ACEC
West	Victory Pass Solar Project

2.2 Hydrology

The Project site is located within the Colorado River Hydrologic Region (HR). The Colorado River HR covers approximately 13 million acres (20,000 square miles) in southeastern California and is the most arid HR in California, with annual precipitation averaging less than 4 inches (WRCC 2025). The Project site is in the Big Wash and Hayfield Lake-Lake Tamarisk HUC 10 Hydrologic Areas, which flow to closed basins that are not

connected with the Colorado River or other traditional navigable waters. Palen Dry Lake and Ford Dry Lake represent the lowest elevations within the basin.

Desert washes within this region are almost always dry but contract and expand dramatically in size due to extreme variations in flows, which can range from high-discharge floods to extended periods when surface flow is absent. The Project site lies between the alluvial fans emanating from the Eagle Mountains to the west, Chuckwalla Mountains to the south, and Palen Mountains to the north (Google Earth Pro, 2025).

The Project site is situated in the lower alluvial fan that is characterized by less stabilized soils consisting of finer sand and silt, compared to the upper alluvial fan that supports more stabilized, rocky soils with well-defined channels. The topography of the Project site is relatively flat with gradients of less than two percent. Alluvial processes across the Project site generally flow from southwest to northeast. Agricultural practices and developments, such as the I-10, have greatly modified natural hydrology.

2.3 Soils

The soils on the Project site are entirely Carsitas-Carsitas non gravelly complex, 2 to 4 percent slopes (Figure 4). This soil unit is primarily formed in alluvium from granitoid and/or gneissic rocks and are somewhat excessively drained. The Carsitas soils are on alluvial fans, fan aprons, valley fills, dissected remnants of alluvial fans and in drainageways (USDA NRCS 2015). Table 2 displays additional information for this soil map unit and others mapped within the Project site.

Table 2. USDA NRCS Mapped Soil Units

Name	Symbol	Drainage Class	Runoff Class	Hydric Soil	Acreage Within Project Site
Carsitas-Carsitas non gravelly complex, 2 to 4 percent slopes	101	Somewhat excessively drained	Negligible	No	534.5

2.4 Sand Transport System

The Project site is located within the Chuckwalla Valley, a region of active aeolian (wind-blown) sand migration and deposition with sand migration zones (transport corridors) that extend from north of Palen Dry Lake, through Ford Dry Lake, to the Palo Verde Mesa. Aeolian processes play a major role in the creation and establishment of sand dune formations and habitat in the Chuckwalla Valley and those within the Project vicinity. Aeolian sands (dunes, sand fields, and similar habitats) are important habitats for plants and wildlife, including special status species such as *Eriastrum harwoodii* and Mojave fringe-toed lizard. Active sand transport deposits that include low to low to moderate transport categories do not occur on the Project site (Lancaster 2014, Kenney 2017). The Project site consists of only sources for sand transport and is not part of the active sand transport corridor (Figure 5).

2.5 Rainfall

The Colorado River Basin Region has the driest climate in California, with an average annual precipitation of 5.5 inches and average annual runoff of 200,000 acre-feet. Rainfall is sporadic and amounts vary with location, with substantially more rainfall occurring in the mountains than on the valley floors (Sanford 2021). Data was obtained from the Western Regional Climate Center (WRCC 2025) for the most proximate stations to the Project site: Blythe Airport and Eagle Mountain weather stations (approximately 40 miles and 10 miles from the Project site, respectively). The subtropical climate of the Colorado Desert is characterized by dry, mild winters averaging 54 degrees Fahrenheit (°F) and dry, hot summers that average 90°F. Summer highs are known to reach 122°F. Since 2010, the highest level of winter rainfall since 2010 occurred between October 2019 and March 2020 (3.6 in [91.4 mm]). Since then, there were two consecutive years of below-average rainfall (2020/2021 and 2021/2022) followed by two years of above-average rainfall (2022/2023 and 2023/2024). Average historical winter precipitation recorded since the 1940s in the area was about 1.9 in (48.3 mm) while most recently, since year 2000, winter rainfall averaged approximately 1.8 in (45.7 mm; WRCC 2025).

Table 3. Seasonal Rainfall Summary

Year	Winter – October to March (inches)	Summer – April to September (inches)
2010	4.8	0.1
2011	2.5	1.2
2012	1.0	3.3
2013	1.5	2.6
2014	0.7	1.2
2015	2.1	1.3
2016	1.5	0.7
2017	3.4	1.1
2018	0.1	0.5
2019	2.6	0.2
2020	3.6	1.0
2021	0.9	0.6
2022	1.2	2.4
2023	0.5	0.7
2024	1.4	0.0
Seasonal Average	1.8	1.1

2.6 Vegetation Communities

Vegetation communities in the Project site were mapped and classified by botanists, using *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and cross-referencing with *A Manual of California Vegetation, 2nd edition* (Sawyer et al. 2009) and the National Vegetation Classification System (NVCS) referenced in the DRECP (CDFW and AIS 2022). Vegetation was mapped by drawing vegetation polygons and dropping location points on aerial images in ArcGIS Field Maps which were converted into GIS shapefiles using ArcGIS Pro and confirmed on one-foot pixel aerial imagery on a diagonal flat screen monitor at the office. Most mapped vegetation boundaries are accurate to within approximately 10 feet (3 meters).

The small-scale PDF vegetation map (Figure 6) provided with this report was generated from ArcGIS shapefiles; the shapefiles were used to calculate areas of each vegetation type and may be viewed at larger scale for management or analysis purposes, if needed. Any vegetation map is subject to imprecision for several reasons:

- Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
- Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
- Vegetation types tend to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.

Creosote bush scrub, deciduous orchard, and non-native grassland comprises the majority of the Project Site. A small area of desert dry wash woodland was mapped at the western extent of the Project site, which is identified as sensitive (CDFW 2025a) due to the association with alluvial processes. Vegetation communities on the Project site are shown on Figure 6.

2.6.1 Creosote Bush Scrub

This natural community is characterized by the dominance of creosote bush (*Larrea tridentata*) with white bursage (*Ambrosia dumosa*). This land cover fits the *Larrea tridentata*-*Ambrosia dumosa* shrubland alliance classification described in *A Manual of California Vegetation Second Edition* (Sawyer et al., 2009; CNPS 2025a), the Sonoran Creosote Bush Scrub (Code: 333100) classification in *Preliminary Descriptions of the Terrestrial Communities of California* (Holland 1986), and the *Lower Bajada and Fan Mojavean – Sonoran Desert Scrub* NVCS classification (NVCS). Creosote bush scrub has a NatureServe rank of S5 (CDFW 2025a, Nature Serve 2025; see Section 4.1 for Nature Serve status rank definitions). This natural community is not considered sensitive by CDFW (CDFW 2025a). This community occurs in the western segment of the Project site.

2.6.2 Non-native grassland

Non-native grassland is synonymous *Mediterranean California naturalized annual and perennial grassland* NVCS classification and *Bromus rubens* - *Schismus arabicus*, *barbatus* herbaceous semi-natural alliance, red brome or

Mediterranean grass grasslands. It does not have a rarity rank since it is a non-native vegetation community. This community is characterized by red brome or Mediterranean grass having 80% or higher relative cover in the herbaceous layer. Red brome has a Cal-IPC rating of high and Mediterranean grass has a Limited Cal-IPC rating. This community can occur in any topographical setting with any substrate and can especially outcompete native vegetation communities in areas with disturbance. This is the main vegetation community in the northern parcels closest to the active date palm farm that have been disturbed by past agricultural activity.

2.6.3 Desert Dry Wash Woodland/Microphyll Woodland

On the Project site, this community is characterized by an open layer of desert ironwood (*Olneya tesota*) with blue palo verde (*Parkinsonia florida*) of at least 2-3% cover. This community fits the blue palo verde (*Parkinsonia florida*) - ironwood (*Olneya tesota*) (microphyll) Woodland alliance classification described in *A Manual of California Vegetation Second Edition* (Sawyer et al., 2009; CNPS 2025a), the Desert Dry Wash Woodland (Code: 62200) classification in *Preliminary Descriptions of the Terrestrial Communities of California* (Holland 1986), and the Sonoran - Coloradan Semi Desert Wash Woodland / Scrub NVCS classification (NVCS). Creosote bush scrub has a NatureServe rank of S4 (Nature Serve 2025). This natural community is designated as sensitive by CDFW (CDFW 2025a).

Desert dry wash woodland is characteristic of desert washes and is likely to be regulated by CDFW as jurisdictional state waters. *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland, often supported by braided wash channels that change following every surface flow event. Microphyll woodland is mapped on the western edge of the Project site.

2.6.4 Other land covers

Deciduous orchards/vineyards: Deciduous orchards/vineyards consist of abandoned agricultural land where there used to be a date palm farm as well as a portion of an active date palm farm along the eastern edge of the northern Project area.

Lacustrine: Lacustrine vegetation communities are those that are associated with ponded water. Within the Project site, this community is mapped where a detention pond is maintained with limited to no vegetation for agricultural purposes. This area may be subject to jurisdictional state waters regulated by CDFW.

Urban: North of the man-made retention pond, a staging area for agricultural equipment, vehicles, tractors, and a few storage buildings occurs that is labeled as urban and was previously developed

3 Data Collection Methods

3.1 Literature Review

Prior to conducting field surveys, analysis was performed with Geographic Information Systems (GIS) using the following digital datasets, which include the most current information, data sources, and tools:

- *Corn Spring* U.S. Geological Survey (USGS) 7.5-minute Topographic Map quadrangles (USGS 2018).
- National Agriculture Imagery Program (NAIP) aerial imagery
- Information for Planning, and Consultation (IPaC), Carlsbad Fish and Wildlife Office (USFWS 2025a)
- Threatened & Endangered Species Active Critical Habitat Report (USFWS 2025b)
- National Wetlands Inventory Wetlands Mapper (USFWS 2025c)
- Desert Renewable Energy Conservation Plan (DRECP; BLM and USFWS, 2014)
- Desert Renewable Energy Plan (DRECP) Data Basin Gateway (CBI 2025)
- CNPS Online Inventory of Rare and Endangered Plants (CNPS 2025b)
- The Consortium of California Herbaria Jepson Interchange (CCH 2025)
- California Natural Diversity Database (CNDDB 2025)
- Calflora, Information on California Plants (Calflora 2025a)
- Manual of California Vegetation and DRECP mapping (Sawyer et al. 2009)
- Natural Resource Conservation Service (NRCS) Web Soil Survey (USDA NRCS 2025)
- Western Regional Climate Center (WRCC 2025)
- Previous biological resources and delineation reports and permit applications for nearby projects (e.g., Palen/Maverick, Crimson, Oberon, Arica & Victory Pass, and Easley Solar Projects)

3.2 Special Status Species Definition

Special-status species are those designated as federal or state listed endangered, threatened, candidate, or state rare under the ESA, CESA, and/or the NPPA and species that are designated as sensitive or locally important by federal agencies, state agencies, local agencies, and nonprofit resource organizations. Criteria includes:

- Officially listed or candidates for listing by California or the federal government as endangered, threatened, of special concern, or rare under CESA or FESA
- Plants or animals which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA
- Plants listed in the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2025b)
- Wildlife species identified by CDFW as Species of Special Concern (Figure 7)
- Plants or animals included in the CDFW lists of Special Animals and Special Vascular Plants, Bryophytes, and Lichens (CNDDB 2025b, c; Figure 7)
- Considered special-status species in local or regional plans, policies, or regulations such as the Northern and Eastern Colorado Desert Coordinated Management Plan/EIS

- Protected under other statutes or regulations (e.g., Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, etc.)

All surveys were conducted per protocols and requirements for each species within the recommended timing, including full-coverage desert tortoise surveys and burrowing owl surveys. Any modifications are further explained within each individual sensitive species section below.

3.3 Wildlife Surveys

Based upon review of the literature, a list of special-status wildlife species with potential to occur in or near the Project site was compiled (Appendix A). Full coverage wildlife surveys were conducted during the following periods:

- Desert tortoise and breeding season burrowing owl surveys (#1), 10-m transects: April 15-19, 2024
- Burrowing owl breeding surveys: (#2) May 13-14, 2024; (#3) June 10-11, 2024; (#4) July 8, 2024
- Burrowing owl non-breeding surveys: (#1) September 17, 2024; (#2) October 3-17, 2024 at 20-meter transects; (#3) December 2, 2024; (#4) January 6-7, 2025

Wildlife surveys employed belt transects approximately 10 meters (32.8 feet) apart in order to provide 100 percent (full) coverage for the proposed solar facility.

Survey crews in the spring season consisted of experienced desert wildlife biologists with at least one botanist on the crew. Survey crews in the fall season consisted of experienced botanists with at least one wildlife biologist per crew. Surveys were conducted by walking linear transects and visually searching for live individuals or sign of any sensitive species. All burrows or burrow complexes that may be inhabited by sensitive species were carefully inspected for potential occupancy or sign of recent use.

During wildlife surveys, biologists recorded all wildlife species observed, regardless of conservation status. Common species were tallied at the end of each transect and recorded throughout each day by each crew. During the spring surveys, additional avian counts were completed in the mornings during surveys until 10 a.m. All locational information for special status species observations and sign detected were recorded on digital Zerion iForms for any new data collected. During each survey period, data collected from previous survey periods was uploaded to Fieldmaps as field reference to ensure that duplicate data was not taken. Non-breeding surveys for burrowing owl were also conducted in the fall season with one full coverage survey at 20-meters combined with fall plant surveys and the remaining consisting of burrow checks.

3.3.1 Mojave Desert Tortoise

Wildlife surveys conducted in 2024 conformed to full coverage desert tortoise protocol surveys with 10-meter transects on the Project site (USFWS 2019). All observed tortoise sign [e.g., live tortoises (all age classes), shell/bone/scutes, scats, burrows/pallets, tracks, eggshell fragments, and courtship rings] was recorded. Incidental observations of desert tortoise sign were recorded if they were not previously recorded in subsequent surveys for other resources (i.e., botanical, avian, jurisdictional delineations). The condition of burrows, scat, and carcasses were categorized per the following class designations (USFWS 2009):

- Burrows:
 - o Class 1: currently active, with desert tortoise or recent desert tortoise sign
 - o Class 2: good condition (no evidence of recent use) - definitely desert tortoise
 - o Class 3: deteriorated condition (including collapsed burrows) - definitely desert tortoise
 - o Class 4: good condition - possibly desert tortoise
 - o Class 5: deteriorated condition (including collapsed burrows) - possibly desert tortoise.
- Scat:
 - o Class 1: wet (not from rain or dew) or freshly dried, obvious odor
 - o Class 2: dried, with glaze, some odor, dark brown
 - o Class 3: dried, no glaze or odor, signs of bleaching (light brown), tightly packed material
 - o Class 4: dried, light brown to pale yellow, loose material, scaly appearance
 - o Class 5: bleached, or consisting only of plant fiber
- Carcasses:
 - o Class 1: C< 1 year, fresh putrid, scutes mostly adhered, sheen on exposed scutes, unexposed bone waxy and solid
 - o Class 2: 1-2 years, scutes mostly adhered to bone, exposed scutes pale without sheen, unexposed bone silky
 - o Class 3: 2-3 years, scutes peeling off bone, unexposed scutes pale and without sheen, no growth ring peeling
 - o Class 4: 4 years, shell bone falling apart, growth rings on scutes peeling; bone fissured
 - o Class 5: > 4 years, disarticulated and scattered

3.3.2 Couch's Spadefoot Toad

A reconnaissance level survey for potential Couch's spadefoot toad habitat was conducted during the 2024 surveys by searching for areas that may provide suitable habitat for reproduction. Areas where water may accumulate and remain for at least 2 weeks following heavy rain were recorded as potential Couch's spadefoot toad reproductive habitat – no notable areas were observed, but areas of the Project site will be inspected for any sign of Couch's spadefoot toad following heavy rains in warmer months (during spring and summer) when reproduction typically occurs (Mayhew 1965).

3.3.3 Avian Species

3.3.3.1 Western Burrowing Owl

Survey recommendations in the 1993 *California Burrowing Owl Consortium Guidelines* (CBOC 1993) and 2012 CDFW Staff Report (CDFW 2012) include baseline data collection and an assessment of site use by burrowing owl. One full-coverage survey was conducted during spring surveys, during the breeding season, which were consistent with Phase II of the CBOC 1993 Guidelines and partially consistent with the 2012 CDFW Staff Report.

Occupancy of burrowing owl habitat is confirmed at a site when at least one burrowing owl, or its sign at or near a burrow entrance, is observed within the last three years (CDFW 2012; CBOC 1993).

The first burrowing owl survey, when surveys were conducted at 10-meter spacing, provided a greater level of coverage than the 30-meter spacing recommended in the 1993 CBOC Guidelines and the 20-meter spacing recommended in the 2012 CDFW Staff Report. All burrows detected during wildlife surveys were assessed for wildlife occupancy, to ensure detection of any special status species, including burrowing owl that may have occupied a burrow. The 10-meter transect spacing also increased the likelihood of flushing live burrowing owls during the survey. All sign of burrowing owl, including individuals, feathers, tracks, whitewash, pellets, and suitable burrows were recorded if present. An additional 150-meters of buffer around the Project site was also surveyed following the protocol survey.

A modification of the 2012 protocol survey recommendations was completed for the subsequent three surveys during the active burrowing owl season. The subsequent three surveys were modified as burrow inspections for all previously detected burrows, including mammal, potential tortoise, or burrowing owl burrows. All burrows were re-visited to check for any change in burrowing owl sign and were included as new burrowing owl sign if detected. Any new burrows observed during these burrow checks were added to the next check. These burrow checks were spaced at the same time intervals as the 2012 recommendations, with at least 3 weeks of time passing between each session of burrow surveys. Similarly, during the non-breeding burrowing owl season, at least one full coverage 20-meter survey was conducted with three additional burrow check survey periods spaced within proper intervals.

3.3.3.2 Golden Eagle

Targeted surveys for golden eagles were not performed for the Project due to numerous surveys conducted in the Project vicinity and Chuckwalla Valley since 2010. A compilation of survey methodology and results from other projects that have conducted these surveys in the last ten years is provided in the results section of this report.

3.3.3.3 Avian Counts

Avian counts were conducted during Spring 2024 surveys. Each survey team consisted of at least one avian biologist who was exclusively tasked with tallying all avian observations. The avian biologist walked with each survey team in the morning, from the start of the survey until about 10:00 am, or earlier if weather conditions were unfavorable for avian detection (i.e., high wind). After these avian counts, the avian biologist continued to note any incidental wildlife species observed while also assisting with surveys being performed.

3.3.4 Special Status Bat Species

Targeted surveys for bats were not conducted. Acoustic bat surveys previously conducted for the Palen Solar Energy Project provide supplementary information about bat populations within the Project site vicinity.

3.3.5 Other Special Status Wildlife Species

Sign of desert kit fox and American badger were not observed on the Project site during field surveys. It is important to note that recorded “canid” burrows may include desert kit fox. Records include live or dead

individuals, scat, tracks, burrows, and burrow complexes. Activity and the likelihood of species usage for each burrow or complex was determined by the burrow size and sign types observed at the burrow site. A burrow or complex was categorized as “active” if it exhibited sign (dig marks, tracks, scat). All burrows and burrow complexes were mapped and attributed, if possible, to species. If a burrow could not be attributed to species, it was recorded as a “canid” burrow, which may include desert kit fox, coyote, or domestic dog.

3.4 Special Status Plants

Based upon review of the literature, a list of special-status plant species with potential to occur in or near the Project site was compiled (Appendix B). Focused special status plant surveys were conducted during the following periods:

- Spring surveys; parallel linear pedestrian belt transects spaced at 10-meter intervals throughout the Project site footprint in addition to a 150-m buffer with belt transects spaced at 20-m. April 15 – April 19, 2024
- Fall surveys; parallel linear pedestrian belt transects spaced at 20-meter intervals throughout the Project site footprint. October 3 – October 17, 2024.

Survey methodology was consistent with the following guiding documents:

- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 2000)
- Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2000)
- CNPS Botanical Survey Guidelines (CNPS 2001)
- Survey Protocols for Survey and Manage Strategy 2: Vascular Plants (Whiteaker et al. 1998)

Plant surveys performed in spring of 2024 included visual coverage across the entire Project site. All surveyors were trained on diagnostic features and habitat notes of special status species that may occur, and each crew of surveyors had at least one highly experienced botanist.

Surveyors employed belt transects spaced at 10-meters apart during the spring season. These surveys were completed in conjunction with avian counts in the mornings. Avian biologists chosen to support these botanical surveys were also skilled in plant identification and could easily integrate with the plant survey after completing avian counts in the morning.

Prior to beginning plant surveys, reference populations of special status plants were visited to ensure that timing for surveys was sufficient and that most special status plant species that have the potential to occur would be identifiable. On March 7, 2024, reference populations were observed for *Ditaxis serrata* var. *californica* near the proposed Sapphire Solar Project in Desert Center. On March 18, 2024, Harwood’s eriastrum (*Eriastrum hardwoodii*), and ribbed cryptantha (*Johnstonella costata*) were observed flowering north of the Arica Solar Project and *Astragalus insularis* var *harwoodii* was observed flowering near the Desert Quartzite Solar Project.

During the fall season, surveyors employed belt transects spaced at 20-meters apart. These surveys were completed in conjunction with non-breeding burrowing owl surveys.

During plant surveys, botanists recorded all plant species, regardless of conservation status. All locational information for special status species observations were recorded on digital Zerion iForms for any new data collected. Data collected in previous seasons was uploaded to Fieldmaps as field reference to ensure that duplicate data from previous surveys was not collected.

Table 4. Special-Status Wildlife and Plant Survey Personnel and Dates.

Date	Survey Type	Surveyors
4/15/2024- 4/19/2024	Wildlife and sensitive plant surveys, avian count, Burrowing owl breeding season #1	Hattie Oswald, Marc Baker, Michelle Cloud-Hughes, Anthony Chasar, Rudy Badia, Sadie Decurtis, Tracy Ridlinghafer,
04/15/2024- 4/18/2024	Jurisdictional delineation	Leigh Rouse, Beth Bowers, and Rose Cornwell
5/13/2024- 5/14/2024	Burrowing owl breeding season #2	Maggie Pasanen
6/10/2024- 6/11/2024	Burrowing owl breeding season #3	Marcy Bueno
7/8/2024	Burrowing owl breeding season #4	Evan Tucker, Jesse Goodyear
9/17/2024	Burrowing owl non-breeding season #1	Kenny Bender, Hattie Oswald
10/3/2024- 10/17/2024	Fall plant surveys, burrowing owl non-breeding #2	Thomas Silvia, Hattie Oswald, Jesse Goodyear, Marc Baker, Michelle Cloud-Hughes, Evan Tucker, Rita Leal
12/2/2024-	Burrowing owl non-breeding #3	Hattie Oswald, Jessie Goodyear, Marcy Bueno
1/6/2025- 1/7/2025	Burrowing owl non-breeding #4	Hattie Oswald

4 Results

4.1 Special Status Wildlife

Twelve special-status wildlife species were identified by a query derived from CNDDDB data (CNDDDB 2025) for recorded observations within a five-mile radius of the Project site, or were observed during the field surveys.

The probability of these resources occurring on site was assessed based on an analysis of the biological, physical and environmental conditions necessary for each species.

Special status wildlife species observed within the Project site or that were determined to have a moderate to high potential to occur are discussed further in this section.. A comprehensive list of wildlife species observed during surveys is included in Appendix C and Summarized results of surveys are in Appendix C. Conservation status for wildlife species is defined below:

Federal

FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

FCT = Proposed for federal listing as a threatened species

BCC = Fish and Wildlife Service: Birds of Conservation Concern

FSS = United States Forest Service Sensitive

State

SSC = State Species of Special Concern

CFP = California Fully Protected

SE = State listed as endangered

ST = State listed as threatened

WL = State watch list

CPF = California Protected Furbearing Mammal

CPGS = California Protected Game Species

CDF-S = California Department of Forestry & Fire Protection Sensitive

Bureau of Land Management

BLM-S = BLM Sensitive

FOC = DRECP Focus and Planning Species

Western Bat Working Group (WBWG)

H = imperiled or at high risk of imperilment

M = warrant closer evaluation, more research, and conservation actions

L = most of the existing data support stable populations

NatureServe

Subnational² Rarity Ranks

S5 = Secure: at very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

S4 = Apparently Secure: at a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

² "Subnational" refers to state, territory, province, or tribal-level jurisdictions (NatureServe 2024)

S3 = Vulnerable— At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

S2 = Imperiled: at high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

S1 = Critically Imperiled: at very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

Global Rarity Ranks

G5= Secure — At very low risk of extinction or collapse due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.

G4=Apparently Secure: At fairly low risk of extinction or collapse due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

G3=Vulnerable: At moderate risk of extinction or collapse due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

G2=Imperiled: At high risk of extinction or collapse due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

G1=Critically imperiled: At very high risk of extinction or collapse due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.

4.1.1 Crotch's Bumble Bee: SE (candidate)

Crotch's bumble bee (*Bombus crotchii*) inhabits grasslands and shrublands throughout southwestern California. They are generalist foragers and have been associated with plants in the *Fabaceae*, *Apocynaceae*, *Lamiaceae*, *Hydrophyllaceae*, *Asclepiadoideae*, and *Asteraceae* families (Thorp et al 1983). They have also been observed using plants *Asclepias*, *Chaenactis*, *Lupinus*, *Meicago*, *Phacelia*, and *Salvia*, as food (Williams et al 2014). The Project site is located east of the current range of Crotch's bumblebee and is outside the historic range (CDFW, 2023d, Figure 9). Nearest records to the Project site include a record near Corn Springs in 1993 and Palm Springs in 1954 (CNDDDB 2025a). There are more recent records western side of Riverside County, west of Palm Springs (CNDDDB 2025a, California Bumble Bee Atlas, 2023). The Project site is within historic range for the species but is outside the current range for Crotch's bumblebee, which begins east of the Project site near the Salton Sea (see Figure 8). No Crotch's bumble bees were observed during wildlife or plant surveys.

4.1.2 Monarch Butterfly: FT (proposed), BLMS

Monarch butterfly (*Danaus Plexippus*) is federally proposed to be classified as a threatened species that can be found throughout North America, including much of California. Potential breeding areas include a variety of habitats that support milkweed (*Asclepias spp.*). Female monarchs lay eggs primarily on milkweed plants, which provide an essential source of nutrition for larvae and chemical compounds that aid in deterring predators. Metamorphosis from egg to adult occurs over a period of approximately one month, depending on ambient temperature. Adults mate within a period of a few days following emergence and typically live between 2 to 5 weeks (WAFWA 2019). Mating begins in the spring and continues in generational

succession through the summer as migration continues northward across the western states (WAFWA 2019). By fall, monarchs reach reproductive diapause and begin migration to overwintering sites. Although specific migration patterns are not well understood, it is generally thought to follow watercourses with riparian vegetation, which correlate with available water that supports adequate vegetation for roosting and sources of nectar (WAFWA 2019)

A suitable habitat model was developed for monarch butterflies that considered all associated milkweed species (except tropical milkweeds) using occurrence records from museum records, citizen science efforts, and opportunistic data from federal and non-governmental organizations. Urban land cover types were positively associated with *Asclepias speciosa* (showy milkweed), *A. subulata* (skeleton milkweed), *A. asperula* (spider milkweed), and *A. tuberosa* (butterfly milkweed) while riparian vegetation was positively associated with *A. subulata* (rush milkweed) and *A. asperula* (Dilts et al 2019). This model indicates that most of the Project site is located within moderately suitable habitat for monarch and milkweed (Figure 9). However, the Dilts et al 2019 model, excludes other factors for habitat suitability consideration such as climate change, herbicide, and pesticide use, and development which does occur adjacent to the Project site.

Monarch butterfly larvae forage on milkweed and use them as larval hosts (Front, 2019), but adults have shown preference to oviposit/reproduce at sites with milkweed and high plant species diversity that provide more sources of nectar for energy. Sites with high milkweed densities alone did not have higher reproduction than sites with both milkweed and high nectar plant diversity (Kral-O'Brien et al 2020).

Winter roost sites for monarchs extend along the coast from northern Mendocino to Baja California, Mexico. Overwintering sites have specific microhabitat requirements such as protection from wind, exposure to dappled sunlight, and presence of high humidity (Chaplin and Wells 1982, Masters et al 1988, Leong 1999). Overwintering roosts are typically located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. In the desert southwest, overwintering aggregations are found near rivers or ephemeral creeks, with Goodding's willow (*Salix goodingii*) and Fremont's cottonwood (*Populus fremontii*) utilized as roost trees. The closest overwintering aggregation observed to the Project site is in Rancho Mirage (WAFMA 2019). Unlike the Project site, this area is identified as high suitability for monarchs and milkweed.

The Project site did not have any milkweed or monarch observations and would be an unlikely breeding or overwintering area. Monarchs may only be observed foraging during migration in the Project site.

4.1.3 Mojave Desert Tortoise: ST, FT, FOC

Mojave desert tortoises (*Gopherus agassizii*) live north and west of the Colorado River in the Mojave Desert of California, southern Nevada, northwestern Arizona, and southwestern Utah, and in the Sonoran (Colorado) Desert in southern California (USDI and FWS 1990). Desert tortoises inhabit a variety of habitats from flats and slopes dominated by creosote bush – white bursage communities, where a diversity of perennial plants is relatively high, to a variety of habitats in higher elevations. Tortoises are found most often on gentle slopes with sandy-gravel soils. Soils must be appropriately soft for digging burrows, but firm enough so that burrows do not collapse (Andersen et al. 2000). Tortoises typically prefer habitats with abundant annual forbs, grasses, and cactus, which constitute its primary food sources. Plant species that have high potential for potassium excretion

(high-PEP) may be critical to the diet of desert tortoise (Oftedal 2002; Oftedal et al. 2002). The Project site is located within the USFWS Colorado Desert Recovery Unit for Mojave desert tortoise and the southwest edge of the Project site is within desert tortoise critical habitat that is also designated as a Desert Tortoise Conservation Areas in the DRECP (Figure 10).

Nussear et al. 2009 includes a model for the statistical probability of desert tortoise occurrence, and since publication it has continued to be a reliable tool in determining the likelihood for tortoise occupancy across the historical range of the species. The model provides a geographic representation of predicted occupancy ranging from very low (0.0) to very high (1.0). Various analyses of desert tortoise have used a model value of ≥ 0.5 as denoting the threshold for suitable habitat for desert tortoise (USFWS 2021). Conversely, lands that score < 0.5 have a low to moderate probability of desert tortoise occupancy.

The majority of the Project site has a predicted occupancy value of 0.6. Predicted occupancy values range from 0.4 in the northern segment of the site, to 0.69 in a small southwestern segment of the Project site where it overlaps with critical habitat. Generally, predicted occupancy increases trending south toward the Chuckwalla Mountains Wilderness and decreases as it trends north toward the Palen Mountains (Nussear et al. 2009, Figure 11). These areas with predicted occupancy values greater than 0.5 are also closest to desert tortoise conservation areas. These predicted occupancy values do not account for habitat degradation resulting from existing anthropogenic features (Nussear et al. 2009), which would further reduce the occurrence probability in disturbed areas.

No desert tortoise sign or live individuals were observed on the Project site during field surveys. The northern portion of the Project site has an occupancy value of < 0.5 , making it less suitable for desert tortoise. However, much of the southern section is modelled as 0.6-0.7 (Nussear et al. 2009, Figure 11). The higher occupancy value could be attributed to the proximity of desert tortoise critical habitat. Although this area is modelled with a higher occupancy value, the model did not consider the anthropogenic impacts of I-10 and fallow agriculture that occurs in that landscape that would make the area less suitable for desert tortoise occupancy and consistent with the lack of desert tortoise observations.

4.1.4 Mojave Fringe-Toed Lizard: SSC, BLMS

The Mojave fringe-toed lizard (*Uma scoparia*) occupies arid, sandy, sparsely vegetated habitats and is associated with creosote scrub throughout much of its range (Jennings and Hayes 1994). It is found within and around aeolian sand habitats in the deserts of Los Angeles, Riverside, and San Bernardino Counties in California and La Paz County in Arizona (Hollingsworth and Beaman 1999; Stebbins 1985; Murphy et al. 2006). Within these regions, it occurs at more than 35 sand dune complexes in California and one in Arizona (Jarvis 2009). Nearly all records for this species are associated with present-day and historical drainages and sand dune complexes associated with three major river systems with blow sand: Amargosa River, Mojave River, and Colorado River (BLM 2015).

Mojave fringe-toed lizards normally hibernate from November to February, emerging from hibernation sites from March to April. The breeding season is April to July (Mayhew 1965). From May to September, they are active in the morning and late afternoon but seek cover during the hottest parts of the day. They burrow in the sand for both cover from predators and protection from undesirable temperatures (Stebbins 2003), though they

also will seek shelter in rodent burrows. As this species requires loose, wind-blown sand, and very little occurs on the Project site, no observations of the species were documented and is not within the distribution model for the species (Figure 11).

4.1.5 Couch's Spadefoot Toad: SSC, BLMS

Couch's spadefoot toad (*Scaphiopus couchii*) is often found in shortgrass plains, mesquite savannah, creosote bush desert, thorn forest, tropical deciduous forest (Mexico), and other areas of low rainfall (Stebbins 2003). It is considered an opportunistic species because it only appears when rainfall forms temporary pools and potholes with water lasting longer than 10-12 days, which are required for breeding, hatching, and metamorphosis. Runoff basins at the base of sand dunes are also sites of reproduction (Mayhew 1965). In California, it is known to occur in the low desert region, especially the Colorado River corridor. In Riverside County, Couch's spadefoot toad is distributed in the northeastern terminus of the Salton Trough, north and east of the Chuckwalla Mountains in the Chuckwalla and Palen Valleys, and west of the Colorado River in the Palo Verde Valley (CDFW 2025b). It burrows underground or occupies rodent burrows when inactive.

Couch's spadefoot toad was not observed on the Project site during field surveys. Observed potential breeding habitats where water accumulates within the Project Site are likely too shallow to support breeding of this species; but may still hold water with persistent rain. There was no standing water observed within the Project site during field surveys. The potential for Couch's spadefoot toad to occur on the Project is expected to be low.

4.1.6 Western Burrowing Owl: CESA candidate, SSC, BCC, BLMS, FOC

The western burrowing owl (*Athene cunicularia hypugaea*) inhabits arid lands throughout much of the western United States and southern interior of western Canada (Haug et al. 1993). Suitable habitat for western burrowing owl includes open habitat with available burrowing opportunities, including agricultural fields (active and fallow), creosote scrub, desert saltbush, ephemeral washes, and ruderal areas.

Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong affinity for previously occupied nesting and wintering sites and will often return to previously used burrows, particularly if they had successful reproduction in previous years (Gervais et al. 2008). They generally depend on other species to dig suitable burrows for use but may also use anthropogenic surrogate burrows such as rubble piles or drainage pipes. If formerly occupied burrows are badly damaged or collapsed, burrowing owls cannot repair them and must seek alternate sites. The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug et al. 1993).

In the Colorado Desert, burrowing owls generally occur at low densities in scattered locations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Gervais et al. 2008). Burrowing owls tend to be opportunistic feeders, and a large portion of their diet consists of beetles, grasshoppers, and other large arthropods. The consumption of insects increases during the breeding season (Haug et al. 1993). Small mammals, especially mice and voles (*Microtus* and *Peromyscus* spp.) are important food items. Other prey animals include herpetofauna, young cottontail rabbits, bats, and birds such as sparrows and horned larks.

No live individuals were observed, but four burrows with sign were observed during surveys. Appendix D summarizes the burrowing owl observations from wildlife surveys and Figure 12 displays all noteworthy avian observations, including burrowing owl observations.

4.1.7 Golden Eagle: CFP, WL, CDF-S, BCC, BLMS, FOC

Golden eagles are typically year-round residents throughout most of their western United States range. They breed from late January through August with peak activity March through July (Kochert et al. 2002). Habitat for golden eagles typically includes rolling foothills, mountain areas, and deserts. Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002). They generally nest in rugged, open habitats with canyons and escarpments, often with overhanging ledges and cliffs or large trees used as cover.

Recent data analysis and population modeling suggest the status of the golden eagle population in the western United States is gradually declining towards an equilibrium of about 26,000 individuals, down from an estimated 34,000 in 2009 and 2014 (USFWS 2016). The future population estimate relies on the continuation of current ecological and biological conditions. It was estimated that 3,400 golden eagles die annually from anthropogenic causes in the United States and suggest a level of sustainable take is approximately 2,000 individuals annually (USFWS 2016). Additional unmitigated mortality will steepen the rate of decline that the golden eagle population is presently undergoing (USFWS 2016).

The Project site lacks suitable cliff nesting habitat for golden eagles. The nearest known cliff nest sites that have some potential for golden eagle use are approximately 3.5 miles from the Project site (Figure 13). The Project site supports suitable open foraging habitat for golden eagles, but no golden eagles were observed during surveys, see summary in Table 5.

Table 5. Regional Golden Eagle Surveys.

Year	Type of Survey	Associated Project (s)	Surveying Firm	Golden Eagle Observations
2010	Aerial survey	Desert Sunlight Solar Project, Genesis Solar Project, Palen Solar Project	Wildlife Research Institute (WRI 2010)	1 active nest in Coxcomb Mountains, 1 active territory in Eagle Mountains
2011	Aerial eagle (not nesting) and transect survey	Other research survey	West (personal communication)	No observations in area surveyed
2011	Aerial and ground	Regional Nest Survey	BioResource Consultant (personal communication)	No observations in area surveyed

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Year	Type of Survey	Associated Project (s)	Surveying Firm	Golden Eagle Observations
2011	Aerial survey	Joshua Tree National Park	Wildlife Research Institute (WRI 2010)	4 territories active - Eagle Mountains- West Central, Eagle Mountains - West Northwest, Hexie Mountains - Central, Little San Bernardino - East); the Eagle Mountain territories were productive - had a total of 3 young observed
2011	Ground survey	Desert Harvest Solar Project	Bloom Biological 2013	No active nests, 1 golden eagle sighting
2012	Aerial (not nesting) and transect survey, tracking eagles	Other research survey	West and Duerr et al (Ironwood 2012)	No observations in area surveyed
2012	Ground survey	Desert Sunlight Solar Project	Ironwood Consulting (Ironwood 2012)	No active nests - 7 golden eagle sightings (6 in Eagle Mountains, 7 in Coxcomb Mountains
2013	Tracking eagles	Other research survey	West (Ironwood Consulting 2017)	No observations in area surveyed
2013	Ground survey	BLM raptor-raven nest survey	Corvus Ecological (personal communication)	No observations in area surveyed
2013	Ground survey	Desert Sunlight Solar Project	Corvus Ecological (Ironwood Consulting 2013)	No active nests, 4 golden eagle sightings
2013	Air and ground survey, camera traps	Palen Solar Project	Bloom Biological(Bloom 2013)	1 subadult at bait station during all 5 weeks; 3rd year flying along cliffs
2014	Air and ground survey	BLM raptor-raven nest survey	Boarman (personal communication)	No observations in area surveyed
2015	Ground survey	BLM raptor-raven nest survey	Corvus Ecological (personal communication)	No observations in area surveyed

Year	Type of Survey	Associated Project (s)	Surveying Firm	Golden Eagle Observations
2020	Ground survey	BLM raptor-raven nest survey	Corvus Ecological (Corvus Ecological 2020)	3 nests in Joshua Tree National Park (general locational information pending)
2020	Variable radius point count	Chuckwalla CHU	Corvus Ecological (Corvus Ecological 2020)	USFWS and NPS yet to release most recent data

4.1.8 Le Conte's Thrasher: SSC, BLMS, BCC

In California, Le Conte's thrasher (*Toxostoma lecontei*) is a resident in the San Joaquin Valley and the Mojave and Colorado Deserts (Weigand and Fitton 2008). This pale gray bird occurs in desert flats, washes, and alluvial fans with sandy and/or alkaline soil and scattered shrubs. Preferred nest substrate includes thorny shrubs and small desert trees and nesting rarely occurs in monotypic creosote scrub habitat or Sonoran Desert woodlands (Prescott 2005). Breeding activity occurs from January to early June, with a peak from mid- March to mid-April. Le Conte's thrashers forage for food by digging and probing in the soil. They eat arthropods, small lizards and snakes, and seeds and fruit; the bulk of their diet consists of beetles, caterpillars, scorpions, and spiders. Suitable foraging habitat for Le Conte's thrasher occurs throughout the Project site, and suitable nesting habitat occurs in the desert dry wash woodland areas of the Project Site and Gentie. Le Conte's thrasher was not observed during the field surveys.

4.1.9 Prairie Falcon: WL

The prairie falcon (*Falco mexicanus*) is on the CDFW watch list. It inhabits dry environments in the North American west from southern Canada to central Mexico. It is found in open habitat at all elevations up to 3,350 m, but is associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Prairie falcons require cliffs or bluffs for nesting though will sometimes nest in trees, on power line structures, on buildings, or inside caves or stone quarries. Ground squirrels and horned larks are the primary food source, but prairie falcons will also prey on lizards, other small birds, and small rodents (CDFW 2025b).

The Project site contains suitable open foraging habitat for this species but does not contain suitable cliff or bluff nesting habitat. There was one observation of the species flying over the Project site (Figure 14).

4.1.10 Loggerhead Shrike: SSC (nesting)

Loggerhead shrikes (*Lanius ludovicianus*) are small predatory birds that are common year-round residents throughout most of the southern portion of their range, including southern California. In southern California, they are generally much more common in interior desert regions than along the coast (Humble 2008). They can be found within lowland, open habitat types, including creosote scrub and other desert habitats, sage scrub, non-native grasslands, chaparral, riparian, croplands, and areas characterized by open scattered trees and shrubs. Loss of habitat to agriculture, development, and invasive species is a major threat; this species has

shown a significant decline in the Sonoran Desert (Humple 2008). Loggerhead shrikes initiate their breeding season in February and may raise a second brood as late as July; they often re-nest if their first nest fails or to raise a second brood (Yosef 1996). In general, loggerhead shrikes prey upon large insects, small birds, amphibians, reptiles, and small rodents over open ground within areas of short vegetation, usually impaling prey on thorns, wire barbs, or sharp twigs to cache for later feeding (Yosef 1996). Suitable foraging and nesting habitat for loggerhead shrike is found throughout the Project site. Several live individuals were observed perching, flying, and/or singing within the Project site during field surveys and avian counts (Figure 14).

4.1.11 Gila Woodpecker: SE, BLMS, BCC

Gila woodpecker is predominantly a permanent resident across its range in areas of southeast California, southern Nevada, central Arizona, extreme southwest New Mexico, and parts of Mexico. The Gila woodpecker is an uncommon to fairly common resident in Southern California along the Colorado River, and locally near Brawley, Imperial County (Garrett and Dunn 1981). A pair of Gila woodpeckers was incidentally observed near the Corn Springs campground feeding young in 2018 (Ironwood 2017), approximately 7 miles southeast of the Project site. Suitable habitats include riparian woodlands, uplands with concentrations of large columnar cacti, old-growth xeric-riparian wash woodlands, and urban or suburban residential areas (Rosenberg et al. 1987; Edwards and Schnell 2000). Gila woodpeckers prefer large patches of woody riparian vegetation for nesting (greater than 49 acres), but they have also been documented in various habitat types, such as desert washes (McCreedy 2008) and residential areas (Mills et al. 1988).

In California, their primary habitat is cottonwood-willow riparian woodland. Where Gila woodpeckers occur in dry desert wash woodlands, they excavate cavity nests in large blue palo verdes (McCreedy 2008). They also may nest in ornamental trees including palms. Availability of suitable nesting trees is a limiting factor in breeding habitat suitability (Grinnell and Miller 1944). Potentially suitable habitat within the Project site is found in desert washes in palo verde or ironwood trees large enough for cavity nests. The probability of this species nesting on the Project site is low since only a few palo verde trees on the site are large enough for tree cavities, and the site is near the western margin of the Gila woodpecker's range (Zeiner et al 1988-1990). Gila woodpeckers are loud and conspicuous, and readily located by field biologists when present. No live individuals or tree cavities were observed.

4.1.12 California Horned Lark: WL

The California horned lark (*Eremophila alpestris actia*) is found throughout California except the north coast and is less common in mountainous areas. It prefers open areas that are barren or with short vegetation including deserts, brushy flats, and agricultural areas, and includes creosote scrub. Eggs are laid March to early June, and it frequently lays a second clutch (CDFW 2025b). Suitable open foraging and nesting habitat occur throughout the Project site. Horned larks were observed frequently during surveys, but are difficult to discern from California horned larks in the field, however, the most recent range map indicates that the Project site is outside the range of their current range, which begins west of Salton Sea (CWHR, 2007) so occurrence of the species occurrence would be low.

4.1.13 Black-tailed Gnatcatcher: WL

Black-tailed gnatcatcher (*Poliophtila melanura*) is a permanent resident from southeastern California and Arizona to southern Texas and northern Mexico. They are found in arid scrublands, desert brush, and dry washes amongst creosote bush, ocotillo, mesquite, paloverdes, and cactus. They live in pairs all year-round, defend their territory, and forage for small insects amongst low shrubs and trees. The Project site contains suitable foraging and potential nesting habitat, however this species was not observed during field surveys.

4.1.14 Sonora Yellow Warbler: SSC

The Sonora yellow warbler (*Setophaga petechia sonorana*) occurs principally as a migrant and summer resident from late March through early October, and breeds from April to late July (Dunn and Garrett 1997). The Sonora yellow warbler breeds only along the lower Colorado River in California, and from southern Arizona and southwest New Mexico to north-central Mexico and possibly the Colorado River Delta (Rosenberg et al. 1991). During breeding season, it generally nests and forages in riparian shrubs and trees close to water. Its diet includes ants, bees, wasps, caterpillars, beetles, true bugs, flies, and spiders (Beal 1907, Shuford and Gardali 2008). The Project site supports suitable foraging habitat for Sonora yellow warbler during migration, but the Project site does not provide wet, deciduous thickets and woodlands that are utilized by this species for breeding. No Sonora yellow warblers were observed during field surveys.

4.1.15 Short Eared Owl: SSC, BCC

The short-eared owl (*Asio flammeus*) is a widespread winter migrant in central and western California, and generally present from September through April. It is an uncommon winter migrant in southern California. Habitat requirements include grasslands, prairies, dunes, meadows, irrigated lands, and wetlands. Short-eared owls generally require dense vegetation for roosting and nesting (Shuford and Gardali 2008). The Project site does not support suitable nesting habitat for short eared owl due to the sparse vegetation. However, the species may be found incidentally during migration while foraging in or near wetlands, riparian areas, or irrigated areas associated with the adjacent farms. No short-eared owls were observed during field surveys.

4.1.16 Ferruginous Hawk: WL

The ferruginous hawk (*Buteo regalis*) is an uncommon winter resident and migrant at lower elevations and open grasslands in the Central Valley and Coast Ranges, and a fairly common winter resident of grasslands and agricultural areas in southwestern California (Garrett and Dunn 1981). This species frequents open grasslands, sagebrush flats, and desert scrub. Prey items include lagomorphs, small mammals, reptiles, and amphibians (CDFW 2025b). There is potential foraging habitat throughout the Project site that ferruginous hawks could use during wintering or migration seasons. The site is outside the Ferruginous hawk's breeding range, and Ferruginous hawk are not expected in the area during nesting season. Ferruginous hawk was not observed during field surveys on the Project site.

4.1.17 Swainson's Hawk: ST, BLMS, FOC

Swainson's hawk (*Buteo swainsoni*) breeds in open habitats throughout much of the western United States and Canada, and in northern Mexico. In California, breeding populations of Swainson's hawks occur in desert, shrub

and grasslands, and agricultural habitats with tree rows; however, most of the state's breeding sites are in the Great Basin and Central Valley (Woodbridge 1998). The only desert breeding occurrences are in the Antelope Valley, over 200 miles northwest of the Project site. These birds favor open habitats for foraging, and are near-exclusive insectivores as adults, but may also forage on small mammals and reptiles. The Project site provides potential migration season foraging habitat but is outside the nesting range of this hawk. Swainson's hawk was not observed on the Project site during field surveys and avian counts.

4.1.18 American Peregrine Falcon: CDF-S

In California, range is primarily central to northern California, with wintering habitat and (more recently) nesting occurrences located in southern California. Migrants occur along the coast and in the western Sierra Nevada in spring and fall. It breeds mostly in woodland, forest, and coastal habitats, and favors open landscapes with cliffs as nest sites. They are found irregularly in the southern desert region, generally during migratory and winter seasons, but also during breeding season in recent years. They nested historically in desert mountain ranges near the Colorado River (Rosenberg et al. 1991; Patten et al. 2003) and may be re-occupying this historical part of their nesting range as their populations recover. Their diet consists primarily of birds and bats (CDFW 2025b). Waterfowl and shorebirds make up a large proportion of their prey, and nest sites are often within foraging range of large water bodies. Suitable migratory or foraging habitat is present throughout the Project site, but no suitable nesting habitat is present. American peregrine falcon was not observed on the Project site during field surveys and avian counts.

4.1.19 Vaux's Swift: SSC, BCC

Vaux's swift (*Chaetura vauxi*) is a summer resident of northern California and a fairly common migrant throughout most of the state in spring and fall. It roosts in hollow trees and snags, and often in large flocks. Vaux's swifts feed exclusively on flying insects (Shuford and Gardali 2008). The entire Project site provides suitable habitat during migration for foraging, but there is no suitable nesting habitat on the Project site. Vaux's swifts was not observed on the Project site during field surveys.

4.1.20 Mountain Plover: SSC, BCC, BLMS, FOC

Mountain plover (*Charadrius montanus*) is found in semi-arid plains, grasslands, and plateaus. It uses open grasslands, plowed fields with little vegetation, and open sagebrush areas. Winter habitats include desert flats, and plowed fields. Mountain plovers are insectivores, feeding primarily on large ground-dwelling insects, including grasshoppers, beetles, and crickets (Shuford and Gardali 2008). Its distribution was modeled as occurring in the Chuckwalla Valley (BLM and USFWS 2014). The entire Project site provides suitable habitat during migration but is unlikely to support suitable nesting habitat, since the Project site is outside its breeding range. Mountain plovers were not observed on the Project site during field surveys.

4.1.21 Northern Harrier: SSC, BCC

Northern harrier (*Circus hudsonius*) inhabits most of California at various times of the year and is found up to 3000 m elevation. Northern harriers frequent meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. It is a widespread winter resident and migrant in suitable habitat. They primarily feed on small mammals, birds, frogs, small reptiles, crustaceans, and insects (CDFW 2025b). There is suitable

foraging throughout the Project site, but no suitable nesting habitat. Northern harrier was not observed on the Project site during field surveys and avian counts.

4.1.22 Yellow-breasted Chat: SSC

The yellow-breasted chat (*Icteria virens*) is an uncommon summer resident and migrant in coastal California, in foothills of the Sierra Nevada, and within the Colorado Desert. Breeding occurrences closest to the Project are known from the Salton Sea and Colorado River. In southern California, yellow-breasted chats breed locally on the coast, and very locally inland (Garrett and Dunn 1981). During migration, they may be found in lower elevations of mountains in riparian habitat (McCaskie et al. 1979). The yellow-breasted chat may be found on the Project site during migration likely within desert dry wash woodland areas, but suitable nesting habitat is not present. No yellow breasted chats were observed on the Project site during field surveys.

4.1.23 Crissal Thrasher: SSC, BLMS

Crissal thrasher (*Toxostoma crissale*) is a year-round resident of southeastern deserts, occupying dense shrubs in desert riparian and desert wash habitats, including mesquite, ironwood, and acacia. It primarily forages on the ground, feeding on invertebrates, berries, and seeds (Bent 1948; Shuford and Gardali 2008). The Project site provides limited but suitable nesting and foraging habitat primarily associated with dry wash woodlands. Crissal thrasher was not observed on the Project site during field surveys.

4.1.24 Elf Owl: SE, BLMS

Elf owl (*Micrathene whitneyi*) is found in lowland habitats that provide cover and good nesting cavities. It is most common farther east and north, in deserts with many tall saguaro cactus or large mesquites, and in canyons in the foothills, especially around sycamores or large oaks. The project site is near the western margin of its geographic range (Garrett and Dunn 1981); the nearest occurrences are near the Corn Springs campground and Cottonwood Springs vicinities (CDFW 2025). Elf owls are more common and widely distributed outside of California and probably have never been common in California due to limited geographic range and generally marginal habitat. The elf owl is migratory, spending winters in Mexico and southward. It arrives in California by March, and its breeding period extends from April to mid-July (Gould 1987).

The elf owl is a secondary cavity nester (it nests in cavities of trees and cacti, generally in disused woodpecker nests). Its nesting habitat is closely correlated with nesting habitat of woodpeckers, including Gila woodpecker (Hardy et al. 1999; Johnsgard 2002). Gila woodpeckers sometimes nest in blue palo verde and palms, and elf owls have been documented nesting in blue palo verde near Wiley's Well, southeast of the Project site, by Robert McKernan (former Director, San Bernardino County Museum; SBCM 2012a). Trees within the desert dry wash woodland habitat could provide suitable marginal habitat for nesting, but no tree cavities or live individuals were observed during field surveys.

4.1.25 Costa's Hummingbird (BCC)

Costa's hummingbird (*Calypte costae*) is a bird of conservation concern. In the Sonoran Desert they occur in desert washes with palo verde, jojoba, desert lavender, or chuparosa, on steep rock slopes, and in lowlands with saguaro, creosote bush, and cholla cacti typically below 3,000 feet elevation. In the Mojave Desert they frequent

scrub and woodlands near springs and streams with cottonwoods, brittlebrush, four-winged saltbush, and other species from near sea level to 4,000 feet elevation. Costa's Hummingbirds typically build a nest in palo verde, ironwood, cholla, acacia, graythorn, and other shrubs.

This species was not observed during surveys but has a moderate potential for occurrence in desert dry wash areas.

4.1.26 Other listed Avian Species

The Project site does not support suitable breeding or wintering habitat for the avian species listed below. These state or federal listed bird species have been recorded at other utility-scale solar energy facilities. There is a moderate potential for them to be in the Project vicinity during migration periods, but there is no suitable nesting or foraging habitat on the site for these species. None of these species were observed during field surveys or avian counts.

4.1.26.1 Yuma Ridgway's Rail: ST, CFP, FE

Yuma Ridgway's rail (*Rallus obsoletus yumanensis*), formerly known as Yuma clapper rail (*Rallus longirostris yumanensis*), nests in freshwater marshes. It is found along the lower Colorado River southward to its terminus at the Sea of Cortez, along the Gila River drainage in Arizona, at Lake Mead (and the Overton Arm) and its local tributaries, along the Virgin River in Nevada and Utah, and at the Salton Sea/Imperial Valley areas of California (BLM and USFWS 2014). Harrity and Conway 2019 captured 444 rails from 2016-2019 and attached transmitters to 103 rails to document annual migration and dispersal behaviors. As of December 16, 2019, they documented 24 migratory or dispersal movements (Harrity and Conway 2019). Yuma Ridgway's rail were thought to be mostly sedentary (Eddleman 1989), but recent rail mortalities at solar energy facilities and preliminary results of Harrity and Conway's (2019) telemetry study suggest that these rails fly over desert regions during dispersal and migration (Kagan et al. 2014, Harrity and Conway 2018). The transmitter data from this study confirms that rails migrate primarily at night (Harrity and Conway 2019). Most rails do not appear to follow the Colorado River corridor during migration, rather they cross vast expanses of desert upland and even open water to reach wintering grounds (Harrity and Conway 2019). These results help explain how Yuma Ridgway's rails perished at solar facilities far removed from any major sources of water or rail habitat (Kagan et al. 2014.) Outlier observations have been documented at Harper Dry Lake, East Cronese Dry Lake, and Desert Center. These locations are a large distance from known breeding areas (CDFW 2025b).

4.1.26.2 Southwestern Willow Flycatcher: SE, FE, FSS

All subspecies of willow flycatcher (*Empidonax traillii*) are state endangered, while one subspecies (*E. T. extimus*) is federally endangered. Willow flycatcher breeds in dense riparian habitats in the southwestern United States, and winters in southern Mexico, Central America, and northern South America (USFWS 2002). The willow flycatcher species is comprised of several recognized subspecies, including the southwestern willow flycatcher, which is the only subspecies that nests in the region. The closest known breeding habitat to the Project site is approximately 25 miles away along the Colorado River and adjacent to the Salton Sea (CDFW 2025b). Recent studies indicate that southwestern willow flycatchers do not migrate over the area of the desert where the Project site is located (Hatten 2016). However, other willow flycatcher subspecies (not listed as threatened or

endangered) may pass through the area during migration. The Project site does not support quality breeding habitat, and it is not within the migration route of this species.

4.1.26.3 Yellow billed cuckoo: SE, FT, BLMS, FSS, FOC

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) breeds in expansive riparian areas in portions of California, Nevada, Arizona, and New Mexico. The closest known breeding habitat is located approximately 35 miles away along the Colorado River (CDFW 2025b). During migration, western yellow-billed cuckoo migrates across the desert and use shrubland habitats, but there have been no documented sightings of western yellow-billed cuckoo within the Development Focus Areas (DFAs) identified in the DRECP LUPA (USFWS 2016). No suitable nesting habitat is present on the Project site, although it is possible that western yellow-billed cuckoo could be temporarily present during migration season.

4.1.26.4 Least Bell's Vireo: SE, FE

Least Bell's vireo (*Vireo bellii pusillis*) breeds in riparian habitats in southern California and portions of northern Baja California, Mexico and winters in southern Baja California, Mexico (USFWS 1998). Its numbers and distribution have probably increased since its listing, although it remains absent from large parts of its former range (USFWS 2016). The closest known breeding habitat to the Project site is to the northwest in the Big Morongo Canyon (USFWS 2016). Least Bell's vireos are also uncommon breeders at the Anza-Borrego Desert State Park, located approximately 70 miles southwest from the Project Site (USFWS 2016). The subspecies Arizona Bell's vireo (*V. b. arizonae*) is not ESA-listed, but is State-listed in California as endangered, and occurs along the lower Colorado River, approximately 35 miles east of the Project site.

Although there is little information on its migration behavior (USFWS 2016), least Bell's vireo likely migrates through the Colorado Desert. It is presumed that it may use riparian habitat and possibly upland scrub habitat during migration (USFWS 2016). No suitable nesting habitat is present on the Project site, although least Bell's vireo could be temporarily present on the Project site during migration season.

4.1.26.5 Lucy's Warbler: BLMS

Lucy's warbler (*Oreothlypis luciae*) is a BLM Sensitive Species. This passerine prefers riparian and wetland communities and is summer resident and breeder along the Colorado River, common to other desert areas, and rare near the Salton Sea. It occurs in desert wash and desert riparian habitats, especially those dominated by mesquite; also ranges into saltcedar (tamarisk) and other thickets. This species may use abandoned verdin nests, which are common within Chuckwalla Valley. They were not observed during surveys but could potentially occur within the desert dry wash woodland area.

4.1.26.6 Sandhill Crane: Lesser -SSC (wintering), Greater – FP, ST (nesting and wintering)

Lesser sandhill crane (*Grus canadensis canadensis*) and greater sandhill crane (*Grus canadensis tabida*). Both species typically breed in open wetland habitats that are surrounded by shrubs or trees. They prefer areas with standing water and nest in marshes, bogs, wet meadows, pariries, burned over aspen stands, and other moist habitats. They are omnivores and their diet consists of invertebrates, small vertebrates, and a variety of plant matter. Observations are expected to be of migrants only.

4.1.26.7 Long-billed Curlew: WL (nesting)

Long-billed curlew (*Numenius americanus*) is on the state watchlist for nesting populations. They typically prefer breeding and wintering habitats in large coastal estuaries and on upland herbaceous areas and croplands with more water. On estuaries they typically forage on intertidal mudflats. They feed primarily on invertebrates including worms, shrimp, crabs, and bivalves, though it is believed that they may also depredate nests of ground-dwelling birds (Boland 1988). There is no suitable habitat for nesting or wintering for the species, but the species may be observed during the migratory period, and may stop at nearby agricultural sites with water.

4.1.26.8 Vermillion flycatcher: WL (nesting)

Vermillion flycatcher (*Pyrocephalus rubinus*) is on the state watchlist for nesting populations. Nesting habitat includes cottonwoods, willows, and mesquite, which do not occur on the Project site - nesting potential is low, with only some marginal nesting habitat on the small overlapping desert dry wash woodland on the edge of the Project site. They are usually found near water in arid environments, irrigated agricultural areas, parks, golf courses, desert, savanna, and riparian woodlands. They prey on arthropods, flying insects, and terrestrial insects such as grasshoppers. Individuals observed are expected to be of migrants only.

4.1.26.9 Bank Swallow: BLM-S (nesting)

Bank swallow (*Riparia riparia*) is a neotropical migrant found primarily in riparian and other lowland habitats in California, occurring west of the deserts during the spring-fall period. In summer, it is restricted to riparian, lacustrine, and coastal areas. Bank swallows use vertical banks, bluffs, cliffs, -and riverbanks with fine-textured or sandy soils to dig holes for cover and nesting. It will also roost on logs, shoreline vegetation, and telephone wires. In migration, it flocks with other swallows over many open habitats. There is suitable foraging habitat throughout the Project site, but no suitable nesting habitat.

4.1.26.10 Sonoran Yellow Warbler: SSC, BCC

The Sonora yellow warbler (*Setophaga petechia sonorana*) occurs principally as a migrant and summer resident from late March through early October, and breeds from April to late July (Dunn and Garrett 1997). The Sonora yellow warbler breeds only along the lower Colorado River in California, and from southern Arizona and southwest New Mexico to north-central Mexico and possibly the Colorado River Delta. (Rosenberg et al. 1991). During breeding season, it generally nests and forages in riparian shrubs and trees close to water. Its diet includes ants, bees, wasps, caterpillars, beetles, true bugs, flies, and spiders (Beal 1907, Shuford 2008). The Project site supports suitable foraging habitat during migration in the desert dry wash woodland area, but there is no suitable nesting habitat present on the site.

4.1.26.11 Avian Counts

Twenty-two distinct avian species were observed during Spring avian counts. Appendix D summarizes the species observed during avian counts.

4.1.27 American Badger: SSC

The American badger is associated with dry open forest, shrub, and grassland communities with an adequate burrowing rodent population and friable soils. Badgers generally are associated with treeless regions, prairies, parklands, and cold desert areas (CDFW 2025b). Badgers inhabit burrows and often prey on small mammals that inhabit burrows, as evidenced by claw marks along the edges of burrows. Suitable habitat exists for American badgers throughout the Project site. There are several canid burrows and complexes observed that could be used by the species, but no American badger or sign thereof were observed on the Project site during field surveys (Figure 15). American badger was seen on the wildlife camera footage.

4.1.28 Desert Kit Fox: FOC

Desert kit fox (*Vulpes macrotis arsipus*) is protected by the California Code of Regulations (Title 14, CCR: §460) and Fish and Game Commission Section 4000 as a fur-bearing mammal. Title 14 of the California Code of Regulations, Section 460, stipulates that desert kit fox may not be taken at any time. Desert kit fox is a fossorial mammal that occurs in arid open areas, shrub grassland, and desert ecosystems within the Mojave and Sonoran Deserts. Desert kit fox typically occurs in association with its prey base, which includes small rodents, primarily kangaroo rats, rabbits, lizards, insects, and in some cases, immature desert tortoises (CDFW 2022a). Burrow complexes that have multiple entrances provide shelter, escape, cover, and reproduction, but desert kit fox may utilize single burrows for temporary shelter. Litters of one to seven young are typically born in February through April (McGrew 1979).

Desert kit fox and sign thereof were not observed within the Project site (Figure 15). However, canid burrows were observed within suitable habitat for desert kit fox that they may occupy in the future. Over time, kit fox distribution is dynamic and changes under natural conditions due to prey availability and other environmental factors such as the presence of coyotes that prey on kit fox pups.

4.1.29 Desert Bighorn Sheep: CFP, BLMS, FSS

The desert bighorn sheep (*Ovis canadensis nelsoni*, also called Nelson's bighorn sheep) is found from the Peninsular and Transverse Ranges through most of the desert mountain ranges of California, Nevada, and northern Arizona to Utah. The Project site is well outside the range of the listed threatened Peninsular bighorn sheep, which was formerly recognized as a subspecies and now considered a distinct vertebrate population segment of the desert bighorn sheep. Essential habitat for desert bighorn sheep includes steep, rocky slopes of desert mountains, and areas where surface water is available during dry seasons. In the spring, when annual plants are available, desert bighorn sheep tend to disperse downhill to bajadas and alluvial fans to forage.

Habitat in the desert mountain ranges surrounding the upper Chuckwalla Valley is occupied by desert bighorn sheep, and they occasionally use the valley floor habitat either for foraging (near the lower mountain slopes) or as movement routes among mountain ranges. Due to the project's location on the valley floor near sites with comparable land uses and human activity patterns, the project is not likely to affect bighorn sheep behavior or habitat use to any large extent. No sign or evidence of desert bighorn sheep was found during field surveys, but scat is often difficult to distinguish from burro deer. Potential for occurrence on the Project site is low.

4.1.30 Burro Deer: CPGS, FOC

Burro deer (*Odocoileus hemionus eremicus*) is a subspecies of mule deer (*Odocoileus hemionus*) that inhabits desert dry wash woodland communities in the Colorado region of the Sonoran Desert near the Colorado River. Some burro deer are year-round residents along the Colorado River, while others are transient and move between mesic and arid desert areas in response to seasonal water and forage availability. During hot summers burro deer concentrate along the Colorado River or the Coachella Canal where water developments have been installed and where microphyll woodland is dense and provides good forage and cover. With late summer thundershowers and cooler temperatures, burro deer move away from the Colorado River and Coachella Canal into larger washes or wash complexes in the foothills and nearby mountains (BLM and CDFG 2002). Burro deer likely move through the Project vicinity to access artificial water sources from nearby agriculture and aquaculture farms. Burro deer scat and tracks were observed within the Project site (Figure 14, Appendix D).

4.1.31 Special Status Bats

Bat roosts that occur in the vicinity of the Project site include McCoy Mountains, Eagles Nest Mine approximately 20 miles east of the Project site, within the Little Maria Mountains approximately 20 miles northeast of the Project site, and Paymaster Mine within the Pinto Mountains approximately 30 miles northwest of the Project site (CEC 2010). No active bat roosts were documented on the Project site during any of the surveys to date. It is not expected that any special status bat species would have a substantial likelihood to roost on the Project site since habitat features most associated with these species (e.g., rock ledges, cliffs, large tree hollows, mine shafts) do not occur on the Project site. However, roosting opportunities for more common bat species, such as the canyon bat and California myotis, are available in tree cavities, soil crevices and rock outcroppings within dry desert wash woodland habitat. Additionally, suitable foraging habitat for common and special status bats is found on the Project site near the adjacent palm farms where water is available year-round. Seven special status bat species may forage on or near the Project site; they are discussed further below.

4.1.31.1 Townsend's Big-Eared Bat: SSC, BLMS, FSS, FOC, H

Townsend's big-eared bat (*Corynorhinus townsendii*) roosts in caves, mines, abandoned dwellings, and large basal hollows of large trees (e.g., redwoods). Townsend's big-eared bat occurs from sea level to approximately 9,000 feet (2743 meters) elevation within a range of habitats. It typically forages along streams and within woodlands. The Project site does not provide roosting areas for Townsend's big eared bat. Foraging habitat may occur at artificial water sources within the date farm near the Project site.

4.1.31.2 California Leaf-Nosed Bat: SSC, BLMS, FOC, H

California leaf-nosed bat (*Macrotus californicus*) occurs in the deserts of California, southern Nevada, Arizona and south to northwestern Mexico. In California, it is known from eastern San Bernardino, Riverside, and San Diego counties and all of Imperial County (WBWG 2020; CDFW 2022a). California leaf-nosed bat relies on caves and mines for roosting habitat. Foraging habitat typically consists of riparian and desert wash habitats, which occur on the Project site. California leaf-nosed bat may forage within the Project site, but it is not expected to roost due to absence of suitable caves and mines.

4.1.31.3 Pallid Bat: SSC, BLMS, FSS, FOC, L

The pallid bat (*Antrozous pallidus*) is a locally common species throughout California, and a year-round resident in most of the range. It occupies a wide variety of habitats at elevations less than 6,000 feet (1829 meters) including grasslands, shrublands, woodlands, and forests, and is most common in open, dry habitats with rocky areas for roosting; pallid bat roosts in cliffs, caves, crevices, mines, hollow trees, and various human-made structures. The Project site may provide suitable foraging habitat for pallid bats within the dry wash woodland but does not provide suitable roosting habitat. Acoustic bat surveys for Palen Solar Power Project, which is adjacent to the Project site detected pallid bat within the Project vicinity (WEST 2017).

4.1.31.4 Western Mastiff Bat: SSC, BLMS, M

The western mastiff bat (*Eumops perotis californicus*) is widespread throughout the southwestern U.S. and into Mexico. Its distribution in California is widespread, with year-round occurrence data primarily in central and southern California (CDFW 2022a). The western mastiff bat is found in a range of habitats, including coastal, forests, woodland, and desert scrub areas where roosting sites are available (Pierson and Rainey 1998). Roosting habitat typically consists of rocky crevices in canyons and cliffs with vertical or nearly vertical walls. The majority of roost sites are at least two meters above the ground (e.g., on cliff faces) and without obstructions. Suitable habitat for foraging occurs throughout the Project site, but roosting habitat is lacking. Western mastiff bat was detected within the vicinity on acoustic bat surveys for Palen Solar Power Project (WEST 2017).

4.1.31.5 Western Yellow Bat: SSC, H

The western yellow bat (*Lasiurus xanthinus*) is a CDFW Species of Special Concern. It is found in Arizona, New Mexico, Mexico, and year-round in California. It is found in arid regions, in riparian, desert riparian, desert wash and palm oasis habitat. The western yellow bat is insectivorous, and roosts and feeds in palm oases and riparian habitats (CDFW 2025b). Potential roosting habitat exists within the Project site in desert dry wash woodlands and riparian habitat. Suitable habitat for foraging also occurs in those same areas. Western yellow bat was detected within the vicinity during acoustic bat surveys for the Palen Solar Power Project (WEST 2017).

4.1.31.6 Big Free-Tailed Bat: SSC, M

The big free-tailed bat (*Nyctinomops macrotis*) is distributed in the southwest U.S., and northern South America, generally from sea level to 8,000 feet (2438 meters) in elevation. It is rare in California, prefers rocky terrain, and roosts in tree cavities and man-made structures. It wanders in autumn, out of its normal range). Foraging and potential roosting habitat for the big free-tailed bats occurs within the Project in desert dry wash woodland. Big free-tailed bat was detected within the Project vicinity through acoustic surveys conducted for the Palen Solar Energy Project (WEST 2017).

4.1.31.7 Pocketed Free-Tailed Bat: SSC, M

The pocketed free-tailed bat (*Nyctinomops femorosaccus*) is common in Mexico but less common in western North America, from southern California, central Arizona, southern New Mexico, and western Texas (WBWG 2020). The pocketed free-tailed bat has been documented in Riverside, San Diego, and Imperial counties. Typical habitats include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Roosting habitat typically includes rock crevices associated with

granite boulders, cliffs, or rocky canyons at a height suitable for approach and takeoff (CDFW 2022b). Pocketed free-tailed bats occur in the desert from March through August, when they then migrate out of the area (BLM 2011). Suitable habitat for foraging exists on the Project site, but roosting habitat is lacking. Call sequences that may have been pocketed free-tailed bat were detected within the Project vicinity during acoustic surveys for Palen Solar Energy Project, but lacked features for definitive confirmation (WEST 2016).

4.1.32 Wildlife Movement

Movement between habitat areas is a typical part of wildlife activities and may be needed for long-term population sustainability. Land use changes can impact wildlife movement across the landscape, leading to habitat fragmentation and population isolation. When habitat is converted to other uses, it reduces habitat availability for wildlife and separates or isolates the remaining habitat areas. Habitat areas may be isolated from one another by distance across unfavorable habitat, or by linear barriers such as roadways or aqueducts. Barriers may be impassable for some species, such as a wide busy road, for a slow-moving animal, or may be only minor interruptions to movement, such as a narrow, lightly travelled road. Fragmentation and subsequent population isolation can affect wildlife populations by limiting dispersal and genetic exchange, limiting movement within the home-ranges for wide-ranging species, and limiting the opportunity for populations to occupy new habitat in response to the effects of climate change. Fragmentation also increases habitat “edge” (i.e., habitat adjacent to other land uses), leading to increased exposure to invasive species, human disturbance (vehicles, trash dumping, etc.), and an overall reduction of biodiversity and alteration or degradation of ecological processes. Existing and developing solar farms, residential/commercial developments, roads, and agriculture near the Project site contribute to the fragmentation of habitat (Figure 16).

Accessibility between habitat areas (i.e., “connectivity”) is important to long-term genetic diversity and demography of wildlife populations. In the short term, connectivity may also be important to individual animals’ ability to occupy their home ranges, if their ranges extend across a potential movement barrier. These considerations apply to greater or lesser extent to all plants and animals. Plant populations “move” over the course of generations via pollen and seed dispersal; most birds and insects travel and disperse via flight; terrestrial species, including small mammals, reptiles, arid land amphibians, and non-flying invertebrates, disperse across land. Therefore, landscape barriers and impediments are more important considerations for movement of terrestrial species. These considerations are especially important for rare species and wide-ranging mammals, which both tend to exist in lower population densities.

In the Chuckwalla Valley, animal movement among mountain ranges and other large habitat areas is biologically important for large mammal demography and genetics. Animals such as desert bighorn sheep may travel across the valley infrequently, to reach other subpopulations in surrounding mountains. In contrast to large animal movement, desert tortoises and other less-mobile animals may live out their entire lives within a linkage area between larger habitat blocks; for these species, movement among surrounding habitat areas may take place over the course of several generations.

In developed landscapes where remnant habitat exists as partially isolated patches surrounded by other land uses, planning for wildlife movement generally focuses on “wildlife corridors” to provide animals with access routes between habitat patches. In largely undeveloped areas, including the Chuckwalla Valley, wildlife habitat is available in extensive open space areas throughout much of the region, but specific barriers may impede or

prevent movement. In these landscapes, wildlife movement planning focuses on specific sites where animals can cross linear barriers (e.g., wash crossings beneath Interstate 10), and on broader linkage areas that may support stable, long-term populations of target species and allow demographic movement and genetic exchange among populations in distant habitats (e.g., surrounding mountains).

Movement opportunity varies for each species, depending on motility and behavioral constraints, as well as landscape impediments. The California Desert Connectivity Project provides a comprehensive and detailed habitat connectivity analysis for the California deserts (Penrod et al. 2012). The Connectivity Project identified a Desert Linkage Network to maintain habitat for movement between landscape blocks. Broad habitat linkages connect these landscape blocks (i.e. Wilderness Areas). The landscape blocks identified in the Project vicinity are the Eagle Mountains to the west, Coxcomb Mountains to the north, and the Palen-McCoy Mountains to the east. Broad habitat linkages were identified in the Desert Linkage Network, and the most prominent linkage in the Project vicinity extends from the southern base of the Coxcomb Mountains south along the foothills of the Eagle Mountains and across the I-10 into the Chuckwalla and Orocopia Mountains. This linkage measures approximately 16 miles (25.7 km) wide at its interface with I-10, with narrower extensions to the north around the base of the Eagle Mountains and to the west through the Orocopia Mountains.

On the 32-mile stretch of I-10 between the Desert Center and Wiley Wells Road exits there are 24 crossings that provide safe access under the freeway (CEC, 2010). Other than these crossings, the freeway is a nearly complete barrier to north-south terrestrial wildlife movement in the Chuckwalla Valley. A survey of potential tortoise accessibility across the I-10 investigated these 24 crossings (oriented approximately in a north-south direction) for suitability for large mammals, small mammals, and reptiles (CEC, 2010). The survey found that fencing was often missing or in disrepair, was not tethered to the underpasses, and does not function to funnel wildlife under the interstate. The study concluded the underpasses provide connectivity and safe movement corridors between habitat areas to the north and south of the I-10, but the fencing does not prevent animals from accessing I-10. Wildlife species and sign detected at the undercrossings included lizards, rodents, rabbit, roadrunner, ground squirrel, fox, coyote, bobcat, and burro deer. Additionally, the CDFW and USFWS have documented burro deer using I-10 undercrossings. Six of these undercrossings are located within the multi-species linkage area (Figure 16).

Wildlife cameras set up for the duration of the spring 2024 season at eight of these I-10 undercrossings nearest to the Project site, and captured greater road runners, coyotes, desert kit fox, American badger, burro deer, black-tailed jackrabbit, kangaroo rat, round-tailed ground squirrel, desert woodrat, desert iguana and unidentified rodent and lizard species. All the camera stations were east of the multi-species linkage. A summary of the species observed in Appendix D.

4.2 Special Status Plant Species

Fourteen special status plant species were reviewed for their potential to occur within the Project site and its vicinity based on regional plans and database records (Appendix B). The probability of occurrence is defined as follows:

- Present: Species observed at the time of the survey

- High: There are historic record(s) of the species within the Project site or within a five-mile radius, and the Project site provides suitable habitat conditions to support the species.
- Moderate: There are historic record(s) of the species within a five-mile radius from the Project site, or the Project site provides suitable habitat conditions to support the species.
- Low: No records exist of the species occurring within the Project site or its immediate vicinity and/or habitats needed to support the species are of poor quality.
- Minimal: Species were not observed during focused surveys conducted at an appropriate time for identification of the species, or species is restricted to habitats that do not occur within the Project site.

Special-status species detected within the Project site or that have a moderate to high occurrence potential are discussed further in this section. Special-status species observed are summarized in Appendix D and mapped on Figure 16.

4.2.1 Emory's Crucifixion Thorn: CRPR 2B.2

Crucifixion thorn (*Castela emoryi*) has 177 records occurring within California. Several records in Riverside County are near or within Desert Center, including Desert Sunlight Solar Farm north of the Project site, Athos Solar Project, Oberon Renewable Energy Project, and Arica Solar Project (CCH 2022). There is suitable habitat for crucifixion thorn within wash areas of the Project site. It is a large conspicuous shrub and can be located and identified at any time of year, even in a year of poor rainfall. Crucifixion thorn was not observed on the Project site during field surveys.

4.2.2 Glandular Ditaxis: CRPR 2B.2

Glandular ditaxis (*Ditaxis claryana*) is an annual or short-lived perennial that occurs in Sonoran Desert scrub and blooms in the fall following the start of the rainy season. There are 49 occurrences in the Consortium of California Herbaria (CCH 2022) and there is one record within Desert Center and another near Corn Spring, south of I-10 (CNDDDB, 2025a). Although the Project site provides suitable habitat, this species was not observed during field surveys.

4.2.3 California Ditaxis: CRPR 3.2

California ditaxis (*Ditaxis serrata* var. *californica*) has a CRPR of 3.2 and a NatureServe rank of G3G4/S2 S, which indicates more information is needed about the status of this species. California ditaxis may be a glabrous variety of the common *Ditaxis neomexicana* (CEC 2010). It occupies Sonoran Desert scrub vegetation and prefers sandy washes and alluvial fans of the foothills and lower desert slopes, from 100 feet (31 meters) to 3,000 feet (915 meters) amsl. It is known to occur in San Bernardino, Riverside, Imperial, and San Diego counties of California and in Sonora, Mexico (CNPS 2025a). California ditaxis was not observed on the Project site during field surveys.

4.2.4 Spiny Abrojo: CRPR 4.3

Spiny abrojo (*Condalia globose* var. *pubescens*) has limited distribution, but is not threatened in California. It can also be found in Arizona and Mexico. It is a perennial shrub that occurs in desert scrub primarily in the Sonoran

desert. It occurs only in Imperial and Riverside counties, with the closest record within the undeveloped Oberon Renewable Energy Project (Ironwood 2020). Suitable habitat occurs within the Project site, but spiny abrojo was not observed on the Project site during field surveys.

4.2.5 Chaparral Sand Verbena: BLMS, CRPR 1B.1

Chaparral sand verbena (*Abronia villosa* var. *aurita*) has 238 records within several counties in southern California, many of which are in Riverside County (CDFW 2025). It was added to the CNPS Inventory based on recommendations by Andrew C. Sanders of the UC Riverside Herbarium. It occurs on sandy substrate, desert dunes, chaparral, and coastal scrub. There is one record in the vicinity of the Desert Lily Sanctuary, located in 2012 (CDFW 2025). Moderately suitable habitat occurs within the Project site. No chaparral sand verbena were observed on the Project site during surveys. Only the more common hairy sand verbena (*Abronia villosa* var. *villosa*) was observed.

4.2.6 Cacti, Yucca, and Native Trees

Native cacti, succulents, and trees are generally not ranked as special status plant species, but the harvesting of these native plants is regulated under the California Native Plant Protection Act (Fish and Game Code §§ 1900-1913) and the California Desert Native Plant Act of 1981 (Food and Agricultural Code § 80001 et. seq.; Fish & Game Code §§ 1925-1926). Any vegetation to be salvaged and removed from the site (such as cactus or yucca) would be subject to sale at appraised value, according to CFR 43:5420.0-6. One cactus species was observed within the Project site - fishhook cactus (*Mammillaria tetrancistra*). See Figure 17.

Additionally, ocotillo (*Fouquieria splendens* ssp. *splendens*) and three species of native trees were found within the Project site:

- Desert ironwood (*Olneya tesota*)
- Blue palo verde (*Parkinsonia florida*)
- Honey mesquite (*Prosopis glandulosa*)

4.3 Invasive Plants

California Invasive Plant Council, a nonprofit organization dedicated to protecting California's ecology from damaging invasive plants, maintains an inventory that categorizes non-native invasive plants based on their determined threat level.

The CDFA designates a plant as a noxious weed if it is found to be "*troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate*" (CDFA 2025).

Invasive plants identified in Cal-IPC, weeds listed on the USDA Federal Noxious Weeds List (USDA 2010), or weeds listed on the CDFA CCR 4500 Noxious Weeds List (CDFA 2021) are referred to as "invasive" for the purposes of this report. Invasive plants could pose ecological threats to physical processes, natural communities, wildlife habitat, and vegetation structure (Cal-IPC 2025). The following invasive plants were identified on the Project site during field surveys, and are provided in Table 6 and Figure 18.

Table 6. Invasive Plants Identified on the Project Site during Field Surveys

Scientific Name	Common Name*	Cal-IPC Rating	USDA Federal Noxious Weed List	California (CCR 4500) Noxious Weeds List	CDFA Weed Pest Rating
<i>Brassica tournefortii</i>	Sahara mustard	High			C
<i>Cynodon dactylon</i>	Bermuda grass	Moderate			
<i>Polypogon monspeliensis</i> and <i>Polypogon sp.</i>	Annual beard grass and beard grass	Limited			
<i>Salsola tragus</i>	Russian thistle	Limited		X	B
<i>Schismus barbatus</i> and <i>Schismus sp.</i>	Common mediterranean grass and mediterranean grass	Limited			
<i>Sisymbrium irio</i>	Tumble mustard	Limited			
<i>Sonchus arvensis</i>	Sow thistle			X	
<i>Tamarix sp.</i>	Tamarisk	High			B

*Nomenclature is derived from Jepson eFlora (Jepson Flora Project, 2024), an online version containing keys derived from *The Jepson Manual, Vascular Plants of California* second edition (Baldwin et al. 2012) or CalFlora, a nonprofit database providing information on California plants.

Cal-IPC Ratings

Cal-IPC High: Invasive plants with a Cal-IPC “high” rating have severe ecological effects in wildlands. These species’ reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and most are widely-distributed.

Cal-IPC Moderate: Invasive plants with a Cal-IPC “moderate” rating have substantial, but generally not severe, ecological effects. These species’ reproductive biology and other attributes are conducive to moderate to high rates of dispersal. Establishment of “moderate” species is generally dependent upon ecological disturbance; distribution may range from limited to widespread.

Cal-IPC Limited: Invasive plants with a Cal-IPC “limited” rating are invasive, but their ecological effects are minor on a statewide level or there was not enough information to justify a higher rating. These species’ reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic (Cal-IPC, 2024).

CDFA Weed Pest Ratings

B: A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them. If found in the state, they are subject to state endorsed holding action and eradication only to provide for containment, as when found in a nursery. At the discretion of the individual county agricultural commissioner they are subject to eradication, containment, suppression, control, or other holding action.

C: A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments. If found in the state, they are subject to regulations designed to retard spread or to suppress at the discretion of the individual county agricultural commissioner. There is no state enforced action other than providing for pest cleanliness.

4.3.1 Sahara Mustard (*Brassica tournefortii*)

Sahara mustard has a highly invasive rating on Cal-IPC (Cal-IPC). It has severe ecological impacts on physical processes, plant and animal communities, and vegetation structure, as well as having reproductive biology and other attributes that are conducive to moderate to high rates of dispersal and establishment (Cal-IPC 2025). Sahara mustard is native to the deserts of North Africa, the Middle East, and the Mediterranean regions of

southern Europe (Bossard et al. 2000). Initial establishment of this species in California occurred through the importation of date palms from the Middle East to the Coachella Valley during the early 1900s (Bossard et al. 2000). Sahara mustard currently occurs across Riverside County, as well as all neighboring counties (Cal-IPC 2025). During the field surveys, patches of Sahara mustard were observed in the creosote bush scrub, non-native grasslands, and deciduous orchard on the Project site (Figure 18).

4.3.2 Russian Thistle (*Salsola tragus*)

Russian thistle has a Cal-IPC Limited rating, indicating a species that is invasive but has an ecological impact that is minor on a statewide level or there was not enough information to justify a higher score. Its reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but it may be locally persistent and problematic. Russian thistle is listed on the California (CCR 4500) Noxious Weed List, making it subject to state laws and regulations regarding its spread and pollution of an area (CDFA 2021). Russian thistle is an annual herb that is found in open and disturbed areas in the Mojave Desert and throughout western North America (MacKay 2003). Otherwise known as tumbleweed, it becomes large and round with age, the dried plant breaking off and rolling with the wind to aid in seed dispersal. Native to Eurasia, this plant was likely introduced around the turn of the century. It typically occurs on sandy soils on disturbed sites, cultivated and abandoned fields, and disturbed natural and semi-natural plant communities. Russian thistle was observed within the Project site (Figure 18).

4.3.3 Common Mediterranean grass (*Schismus barbatus*) and Mediterranean grass (*Schismus sp.*)

Common mediterranean grass and mediterranean grass have a Cal-IPC Limited rating (Cal-IPC 2025) and are not listed on the California (CCR 4500) Noxious Weed List (CDFA 2021) or the Federal Noxious Weed List (USDA 2010). It is an annual grass found in both central and southern California, particularly in disturbed areas and deserts, probably introduced at the turn of the century (CDFA 2020). It contributes to increased fire ignition and spread due to accumulation of dry thatch during dry seasons. Wildfire, in turn, contributes to the type-conversion of desert shrubland into annual grassland. These species' reproductive biology and other attributes result in low to moderate rates of invasiveness. Spread may occur from seed dispersal associated with soil disturbance, vegetation cutting, and from vehicle tires and footwear. Increase of these species is most likely to occur in areas where it already exists. Because of its widespread distribution, Mediterranean grass is not feasible to eradicate. Common mediterranean grass and unspecified mediterranean grass species were observed on the Project site (Figure 18).

4.3.4 Tumble mustard (*Sisymbrium irio*)

Tumble mustard has a Cal-IPC Moderate rating. While establishment of this species can cause substantial and apparent ecological impacts, these impacts are generally not severe. Ecological amplitude and distribution may range from limited to widespread. It is a winter annual forb/herb (family Brassicaceae), which can be found in abandoned fields, waste places, roadsides, and orchards. It matures earlier in the year than native species, allowing it to out-compete them. The species distribution is expanding throughout California desert regions (Cal-IPC 2024). It is not listed on the California (CCR 4500) Noxious Weed List (CDFA 2021) or the Federal Noxious

Weed List (USDA 2010). Tumble mustard was observed during field surveys in patches throughout the Project site (Figure 18).

4.3.5 Tamarisk (*Tamarix* sp.)

Tamarisk is a BLM weed species of concern, has a Cal-IPC High rating, and is has a 'B' weed pest rating by CDFA, (CDFA 2021). Tamarisk stands were observed throughout the Project site (Figure 18).

4.3.6 Annual beard grass (*Polypogon monspeliensis*) and beard grass (*Polypogon* sp.)

Annual beard grass and beard grass have a Cal-IPC Limited rating and is not listed on the California (CCR 4500) or Federal Noxious Weed Lists (USDA 2010). This species is invasive, but its ecological impact is minor on a statewide level or there was not enough information to justify a higher score. Ecological amplitude and distribution are generally limited, but it may be locally persistent and problematic. Annual beard grass is a winter or summer annual grass of the family Poaceae that can form dense stands in some areas of California. This species was observed in a patch of approximately 15-20 individuals within the central area of the Project site mapped as deciduous orchard (Figure 18).

4.3.7 Sow thistle (*Sonchus arvensis*)

Sow thistle is a non-native perennial herb from Eurasia on the California CCR 4500 list, which consists of invasive plants that pose a threat to the state's agriculture and environment. It is often found along roadsides and fields. It was observed within the buffer of the Project site near existing active or old agriculture, adjacent to roadsides.

4.3.8 Non-native, naturalized species

Other non-native naturalized plant species observed on the Project site include:

- Date palm (*Phoenix dactylifera*)
- Sowthistle (*Sonchus oleraceus*)
- Sweet acacia (*Vachellia farnesiana*)
- Nettle leaf goosefoot (*Chenopodium murale*)
- Cheeseweed (*Malva parviflora*)

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Appendix A: Potential for Special Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Invertebrates						
Crotch's bumble bee <i>Bombus crotchii</i>	SE candidate	-	-	Widely distributed in southwestern California but numbers have been declining. Bees are generalists, but this species has been associated with specific genera and families of plants. However, development and pesticides have a negative impact on their presence. Nearest records in Corn Springs and Palm Springs – most recent records have been in the western side of Riverside County. (CNDDDB 2025a). Project is outside historic range.	Low to Moderate	Not observed. Some families and genera of plants observed on the Project site, but outside current range.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Monarch butterfly <i>Danaus plexippus</i> pop. 1	--	FC		Habitats: wind-protected tree groves (eucalyptus [<i>Eucalyptus</i> sp.], Monterey pine [<i>Pinus radiata</i>], cypress), of dappled shade with nectar and water sources nearby; milkweed (<i>Asclepias</i>) must be present for breeding	Overwintering, breeding – low Migration, foraging – moderate	Not observed. No milkweed observed on Project site and no suitable overwintering trees. May be observed during migration.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Reptiles						
Agassiz’s desert tortoise <i>Gopherus agassizii</i>	ST	FT	FOC	This species is widely distributed in the Mojave, Sonoran, and Colorado deserts from below sea level to 2200 m (7220 ft) (Grover and DeFalco 1995). Most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except those on the most precipitous slopes. Desert tortoises occur in a wide variety of habitats in arid and semiarid regions. They require friable soil for burrow and nest construction. Highest densities are achieved in creosote bush communities with extensive annual wildflower blooms, such as occur in the western Mojave. However, tortoises can be found in areas of extensive lava formations, alkali flats and most other desert habitats.	Moderate	Not observed. The majority of the Project site has a predicted occupancy value of 0.6. Predicted occupancy values range from 0.4 in the northern segment of the site, to 0.69 in a small southwestern segment of the site. Generally, predicted occupancy increases trending south as it gets closer to desert tortoise critical habitat (Nussear et al. 2009). However, anthropogenic impacts from fallow agriculture and I-10 lowers habitat suitability, which is consistent with findings.
Mojave fringe-toed lizard <i>Uma scoparia</i>	SSC	BLM-S	FOC	It is restricted to fine, loose, wind-blown deposits in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub and desert shrub habitats. The CNDDDB indicate recent occurrences in Riverside County (CNDDDB 2025a).	Low	Not observed. Soil substrate not sandy enough to support species.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Amphibians						
Couch’s spadefoot toad <i>Scaphiopus couchii</i>	SSC	BLM-S	-	This species frequents arid and semi-arid habitats of the southwest, occurring along desert washes, in desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats. It is also found in cultivated cropland areas. It breeds in temporary pools within rocky streambeds, washes, at the edges of agricultural fields, in depressions adjacent to roads and railroad tracks, and cattle tanks. Pools of water need to persist for at least 7 to 8 days to facilitate eggs hatching and larvae fully transform.	Low to Moderate	Not observed. It is unlikely that ponded water persists for the duration of time necessary to provide suitable breeding habitat.
Mammals						
Colorado Valley woodrat <i>Neotoma albigula venusta</i>	-	-	-	Variety of habitats including low desert, pinyon-juniper woodlands, and desert-transition chaparral. Suitable habitat elements for this species include washes where organic debris gathers, areas of prickly pear cactus and mesquite, rocky areas, and crevices in boulders which are used for cover and nest sites.	Low	Project site does not support typical rocky wash habitat.
Burro deer <i>Odocoileus hemionus eremicus</i>	CPGS	-	FOC	Occur in early to intermediate successional stages of most forest, woodland, and brush habitats. Prefer a mosaic of various-aged vegetation that provides woody cover, meadow and shrubby openings, and free water.	High	There is suitable foraging habitat on Project site. No live individuals were observed. Sign of burro deer (scat and tracks) was observed on the Project site.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Desert bighorn sheep* <i>Ovis canadensis nelsoni</i> *Excludes the Peninsular Ranges distinct population segment, which is restricted to the Peninsular Ranges located 50 miles west.	CFP	BLM-S FSS	-	Habitats used include alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian (DeForge 1980, Monson and Sumner 1980, Wehausen 1980). Use rocky, steep terrain for escape and bedding. Remain near rugged terrain while feeding in open habitat.	Low to Moderate	The Project site greater than 5 miles from suitable mountainous habitat and provides low intact habitat value. This species may use the Project site for passage.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Yuma mountain lion <i>Puma concolor browni</i>	SSC	-	-	<p>In the DRECP planning area, mountain lions primarily inhabit the low mountains and extensive wash systems in and around Chuckwalla Bench, Chuckwalla Mountains, Chocolate Mountains, Picacho Mountains, Milpitas Wash, Vinagre Wash, and other washes in that area. Mountain lions typically occur in habitat areas with extensive, well-developed riparian or shrubby vegetation interspersed with irregular terrain, rocky outcrops, and community edges. Mountain lions are restricted to the southern Colorado Desert from Joshua Tree National Park south and east to the Colorado River. Burro deer, the primary prey item, are known to spend the hot summer and fall in riparian areas along the Colorado River and in dense microphyll woodlands near the Coachella Canal.</p>	Low to Moderate	<p>Project site provides suitable habitat and burro deer (prey source) present on the Project site.</p>
American badger <i>Taxidea taxus</i>	SSC	-	-	<p>Suitable habitat for badgers is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils.</p>	High	<p>Not observed during surveys. Observed on wildlife camera footage.</p> <p>There is suitable foraging and burrowing habitat on the Project site. Numerous suitable burrows associated with other species were observed on the Project site.</p>

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Desert kit fox <i>Vulpes macrotis arsipus</i>	-	-	FOC	Lives in annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. Cover provided by dens they dig in open, level areas with loose-textured, sandy, and loamy soils.	High	Not observed. The Project site supports suitable breeding and foraging habitat to support desert kit fox.
Bats						
Pallid bat <i>Antrozous pallidus</i>	SSC	BLM-S FSS	FOC L	Inhabit low elevation (less than 6,000 feet/1829 meters) rocky, arid deserts and canyonlands, shrub/steppe grasslands. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees with exfoliating bark, and various human structures (WBWG, 2005).	Foraging - Moderate Roosting - Low	Detected during acoustic sampling conducted at the Palen Solar Project west of the Project site. Typical roosting habitat is not present within the Project site; however, roosting opportunities may exist outside the site in the Project vicinity.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC	BLM-S FSS	FOC H	This species has been reported in a wide variety of habitat types ranging from sea level to approximately 9,000 feet (2743 meters) above MSL. Habitat associations include coniferous forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Foraging associations include edge habitats along streams, adjacent to and within a variety of wooded habitats.	Foraging - Moderate Roosting - Low	Not detected at the nearby Palen Solar Project during acoustic surveys; however, this species is difficult to detect with acoustic surveys due to low intensity echolocation signals. Typical roosting habitat is not present within the Project site.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Big brown bat <i>Eptesicus fuscus</i>	-	-	L	This widespread and abundant species has been recorded in virtually every North American vegetation type. Common to abundant in most of its range, the big brown bat is uncommon in hot desert habitats and is absent only from the highest alpine meadows and talus slopes. Vagrant individuals may be seen in any habitat. Uses buildings and other human-made structures for roosting to such an extent that natural roosting habits are under documented.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Spotted bat <i>Euderma maculatum</i>	SSC	BLM-S	M	Arid, low desert habitats to high elevation conifer forests and prominent rock features appear to be a necessary feature for roosting.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Western mastiff bat <i>Eumops perotis californicus</i>	SSC	BLM-S	M	Variety of habitats, from desert scrub to chaparral to oak woodland and into the ponderosa pine belt and high elevation meadows of mixed conifer forests.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Hoary bat <i>Lasiurus cinereus</i>	-	-	M	Highly associated with forested habitats in the west. Hoary bat roosts usually are located at the edge of a clearing, although more unusual roosting sites have been reported in caves, beneath rock ledges, woodpecker holes, squirrel nests, building sides, and in dried palm fronds on palm trees.	Foraging - Moderate Roosting - Low	Not confirmed during acoustic surveys at the nearby Palen Solar Project; several call sequences were associated with either hoary or pocketed free-tailed bats but lacked features for confirmation of species. Typical roosting habitat is not present within the Project site.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Western yellow bat <i>Lasiurus xanthinus</i>	SSC	-	H	Recorded below 600 m (2000 ft) in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species occurs year-round in California.	Moderate	Detected during acoustic surveys at the nearby Palen Solar Project specifically at the artificial pond located near the date palm farm. The Project site lacks typical foraging and roosting habitat.
California leaf-nosed bat <i>Macrotus californicus</i>	SSC	BLM-S	FOC H	Deserts of California, southern Nevada, Arizona and south to northwestern Mexico. This species depends on either caves or mines for roosting habitat. All major maternity, mating, and overwintering sites are in mines or caves (BLM CDD, 2002). Radio-telemetry studies of <i>Macrotus</i> in the California desert show that the California leaf-nosed bat forage almost exclusively among desert wash vegetation within 10 km of their roost (WBWG, 2005).	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
California myotis <i>Myotis californicus</i>	-	-	L	Optimal habitats for this species include all desert, chaparral, woodland, and forest from sea level up through ponderosa pine, mixed conifer, and Jeffrey pine.	Foraging - Moderate Roosting - Low	Detected during acoustic surveys at the Palen Solar Project. Typical roosting habitat is not present within the Project site.
Arizona myotis <i>Myotis occultus</i>	SSC	-	M	Commonly known from conifer forests from 6,000 to 9,000 feet (1829-2743 meters) in elevation, although maternity roosts are known from much lower elevations including areas along the Colorado River in California.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Cave myotis <i>Myotis velifer</i>	SSC	BLM-S	M	Found primarily at lower elevations (the Sonoran and Transition life zones) of the arid southwest in areas dominated by creosote bush, palo verde, and cactus. This species is a “cave dweller” and caves are the main roosts although this species may also use mines, buildings, and bridges for roosts.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Yuma myotis <i>Myotis yumanensis</i>	-	BLM-S	L	Associated with permanent sources of water, typically rivers and streams, feeding primarily on aquatic emergent insects, but Yuma myotis also use tinajas (small pools in bedrock) in the arid west. It occurs in a variety of habitats including riparian, arid scrublands and deserts, and forests. The species roosts in bridges, buildings, cliff crevices, caves, mines, and trees.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	SSC	-	M	Known to occur in the desert from March through August, when they then migrate out of the area. In California, they are found primarily in creosote bush and chaparral habitats in proximity to granite boulders, cliffs, or rocky canyons.	Low	Not detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Big free-tailed bat <i>Nyctinomops macrotis</i>	SSC	-	M	Found generally sea level to 8,000 feet (2438 meters) in elevation. This species occurs in desert shrub, woodlands, and coniferous forests. It roosts mostly in the crevices of rocks although big free-tailed bats may roost in buildings, caves, and tree cavities.	Foraging - Moderate Roosting - Low	Detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Canyon bat <i>Parastrellus hesperus</i>	-	-	L	The canyon bat (once known as the western pipistrelle) is a common to abundant resident of deserts, arid grasslands, and woodlands. Occupies all desert, brush, grassland, and woodland habitats up through mixed conifer forests. The most abundant bat in desert regions. Common in arid brushlands, grasslands, and woodlands, and uncommon in conifer forests. This species is a yearlong resident in California.	Foraging - Moderate Roosting - Low	Detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.
Mexican free-tailed bat <i>Tadarida brasiliensis</i>	-	-	L	Overall, this species is common in California and may be locally abundant. All habitats up through mixed conifer forests are used, but open habitats such as woodlands, shrublands, and grasslands are preferred.	Foraging - Moderate Roosting - Low	Detected during acoustic surveys at the nearby Palen Solar Project. Typical roosting habitat is not present within the Project site.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Birds						
Golden eagle <i>Aquila chrysaetos</i>	CFP WL CDF-S	BLM-S	FOC	Typically rolling foothills, mountain areas, sage-juniper flats, desert. Nests on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments used most frequently for nesting. The CNDDDB indicates there are 10 historical, and 6 recent detections within Riverside County, all greater than 10 miles from the Project site (CNDDDB 2022).	Nesting - Low Foraging - Moderate	The nearest suitable nesting habitat is over five miles from the Project site in the Palen Mountains and Chuckwalla Mountains. The Project site provides suitable foraging habitat; however, regional surveys indicate relatively few golden eagle observations near the Project and prey sources are limited. This species may occasionally use transmission towers and other structures for nesting.
Short-eared owl <i>Asio flammeus</i>	SSC	BCC	-	Year-round residents in Northern California and may be found in other portions of California during wintering. Require open country that supports small mammal populations, and that also provides adequate vegetation to provide cover for nests. This includes salt- and freshwater marshes, irrigated alfalfa, or grain fields, and ungrazed grasslands and old pastures. The CNDDDB contained no records within Riverside County (CNDDDB 2025a).	Nesting or Wintering - Absent Migration - Moderate	The Project site is not located within the geographic range for nesting habitat for this species. Short-eared owl is likely an uncommon migrant within agricultural lands in the vicinity of the Project during the non-breeding season.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Western burrowing owl <i>Athene cunicularia hypugaea</i>	SSC	BLM-S BCC	FOC	A yearlong resident of open, dry grassland and desert habitats. Uses rodent or other burrows for roosting and nesting cover. In the Colorado Desert, western burrowing owls generally occur at low densities in scattered populations (BLM 2013).	High	Live individual not observed. Suitable burrows and complexes with sign were observed during field surveys. Western burrowing owl is likely a resident within the Project and its vicinity.
Redhead (nesting) <i>Aythya americana</i>	SSC	-	-	During breeding season may be found along the Colorado River and Salton Sea. Also breeds locally in the Central Valley, coastal Southern California, eastern Kern County, and the Salton Sea. Nests in fresh emergent wetland bordering open water.	Low	Not observed. Detected at the adjacent Palen Solar Project. However, the Project site does not support typical foraging or nesting habitat. Occurrences are expected to be of migrants only.
Ferruginous hawk (Wintering) <i>Buteo regalis</i>	WL	-	-	Most common in grassland and agricultural areas in the southwest. Ferruginous hawks are found in open terrain from grasslands to deserts and are usually associated with concentrations of small mammals.	Nesting - Low Wintering or Migration – Low to Moderate	The Project site does not support typical nesting habitat, and is outside its typical nesting geographic range. The Project site is within the non-breeding (wintering) range of this species. Occurrences are expected to be of migrants only.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Swainson's hawk <i>Buteo swainsoni</i>	ST	BLM-S	FOC	Require large areas of open landscape for foraging, including grasslands and agricultural lands that provide low-growing vegetation for hunting and high rodent prey populations. Swainson's hawks typically nest in large native trees such as valley oak, cottonwood, walnut, and willow, and occasionally in nonnative trees, such as eucalyptus within riparian woodlands, roadside trees, trees along field borders, isolated trees, small groves, and on the edges of remnant oak woodlands.	Nesting - Low Wintering or Migration - Moderate	The Project site is outside the current geographic range for nesting. The DRECP species distribution model indicates low probability of suitable habitat within the Project site.
Costa's hummingbird (Nesting) <i>Calypte costae</i>	-	BCC	-	Primary habitats are desert wash, edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent shrub, lower-elevation chaparral, and palm oasis.	Moderate to High	Not observed. The Project site supports suitable foraging habitat and nesting habitat within desert scrub and native trees observed on Project site.
Vaux's swift (Nesting) <i>Chaetura vauxi</i>	SSC	BCC	-	This species is not known to breed in Riverside County or elsewhere in Southern California. Vaux's swifts prefer to nest in the hollows formed naturally inside of large old conifer trees, especially snags, which are entirely lacking from the project site.	Nesting - Low Wintering or Migration - Moderate	Not observed The Project site is outside the current geographic range for nesting. Occurrences are expected to be of migrants only.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Mountain plover (Wintering) <i>Charadrius montanus</i>	SSC	BLM-S BCC	FOC	Mountain plover habitat includes short-grass prairie or their equivalents, and in southern California deserts are associated primarily with agricultural areas.	Nesting - Low Wintering or Migration - Moderate	The Project site is outside the geographic range for nesting. This species may use the dry lakebed and nearby agricultural areas as winter habitat. The DRECP species distribution model depicts the agricultural land within Chuckwalla Valley as potential wintering habitat.
Black tern <i>Chlidonias niger</i>	SSC	BCC	-	Although restricted to freshwater habitats while breeding, can be fairly common on bays, salt ponds, river mouths, and pelagic waters in spring and fall migration (Grinnell and Miller 1944, Cogswell 1977).	Low	The Project site is outside the geographic range for nesting. Black tern is likely an uncommon migrant within the Project vicinity during the non-breeding season.
Northern harrier (Nesting) <i>Circus hudsonius</i>	SSC	BCC	-	This species does not commonly breed in desert regions of California, where suitable habitat is limited, but winters broadly throughout California in areas with suitable habitat. Northern harriers forage in open habitats including deserts, pasturelands, grasslands, and old fields.	Moderate-High	Not observed. This species is regularly detected in the Chuckwalla Valley, and was observed during 2024 surveys at the adjacent proposed Redonda Solar Project. The Project site is outside the geographical range for nesting. The Project site supports suitable foraging habitat during winter and migration.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Gilded flicker <i>Colaptes chrysoides</i>	SE	BLM-S BCC	-	Stands of giant cactus, Joshua tree, and riparian groves of cottonwoods and tree willows in warm desert lowlands and foothills. This species nests primarily in cactus, but also will use cottonwoods and willows of riparian woodlands. This species may be nearly extinct in California.	Low	Not detected in the Project vicinity; previous records are near the Colorado River. Project site does not support typical foraging or nesting habitat.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	SE	FT BLM-S FSS	FOC	Breeds along the major river valleys in southern and western New Mexico, and central and southern Arizona. In California, the western yellow-billed cuckoo's breeding distribution is now thought to be restricted to isolated sites in the Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys.	Low	Not detected in the Project vicinity; the closest suitable habitat for this species is along the Colorado River approximately 25 miles to the east of the Project. Project site does not support suitable breeding or wintering habitat.
Black swift (Nesting) <i>Cypseloides niger</i>	SSC	BCC	-	Nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats.	Low	Detected in Project vicinity (Palen Solar Project approximately 7 miles to the northwest); however, the Project site is outside the geographical range for nesting. Black swift is likely an uncommon migrant within the Project vicinity during the non-breeding season.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Willow flycatcher (Nesting) (including southwestern) <i>Empidonax traillii</i> (including ssp. <i>extimus</i>)	SE	FE (ssp. <i>extimus</i>) FSS (ssp. <i>Traillii</i>)	-	All subspecies are state-listed and one subspecies (<i>E. t. extimus</i>) is federal-listed. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena 1982). Common spring (mid-May to early June) and fall (mid-August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast.	Low	The Project site does not support typical foraging or nesting habitat. Occurrences are expected to be of migrants only.
California horned lark <i>Eremophila alpestris actia</i>	WL	-	-	A common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above treeline. In winter, flocks in desert lowlands and other areas augmented by winter visitants, many migrating from outside the state (Garrett and Dunn 1981).	Low	Not observed. Only horned lark observed and cannot be distinguished in the field. Project supports suitable foraging and nesting habitat for this species but is outside the range.
Prairie falcon (Nesting) <i>Falco mexicanus</i>	WL	-	-	Occurs in annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Typically nests in cliffs and bluffs.	Present	Observed. The Project site supports suitable foraging habitat, but lacks suitable nesting habitat for this species.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
American peregrine falcon (Nesting) <i>Falco peregrinus anatum</i>	CDF-S	-	-	Rare in the arid southeast, but they occur and are suspected to breed in the lower Colorado River Valley. Peregrine falcons require open habitat for foraging and prefer breeding sites near water. Nesting habitat includes cliffs, steep banks, dunes, mounds, and some human-made structures. This species was recorded during avian studies for the Palen Solar Project.	Nesting - Low Foraging - Moderate	Not observed. Previously documented in Project vicinity. The Project supports suitable foraging but lacks nesting habitat for peregrine falcon.
Lesser sandhill crane (Wintering) <i>Grus canadensis canadensis</i> Greater sandhill crane (Nesting and Wintering) <i>Grus canadensis tabida</i>	SSC FP ST	- BLM-S FSS	-	Breeds in open wetland habitats surrounded by shrubs or trees. They nest in marshes, bogs, wet meadows, prairies, burned-over aspen stands, and other moist habitats, preferring those with standing water. Outside of known wintering grounds, extremely rare except during migration over much of interior California.	Nesting - Low Migration - Moderate	Not observed. Detected in Project vicinity (adjacent Palen Solar Project); however, the Project site does not support typical foraging or nesting habitat. This species may utilize the aquaculture farm; occurrences are expected to be of migrants only.
Yellow-breasted chat (Nesting) <i>Icteria virens</i>	SSC	-	-	This species occupies shrubby riparian habitat with an open canopy, and will nest in non-native species, including tamarisk.	Low	Not observed. The Project site does not support typical foraging or nesting habitat. Occurrences are expected to be of migrants only.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC (nesting)	-	-	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats.	Present	Present. Live individuals were observed on the Project site, which supports suitable foraging and nesting habitat.
Gila woodpecker <i>Melanerpes uropygialis</i>	SE	BLM-S BCC	-	In California, this species is found primarily along the Colorado River and in small numbers in Imperial County. In southeastern California, Gila woodpeckers formerly were associated with desert washes extending up to 1 mile from the Colorado River; however, their range may be expanding.	Low	Not observed. The Project site does not support typical foraging or nesting habitat.
Elf owl <i>Micrathene whitneyi</i>	SE	BLM-S	-	A rarely observed spring and summer resident of the Colorado River Valley. West of the Colorado River, there are records at the oases of Cottonwood Springs and Corn Springs over 6 miles from the Project site (CNDDDB 2025a). Nests in desert riparian habitat with cottonwood, sycamore, willow, or mesquite; absent from desert riparian habitat dominated by saltcedar.	Low	Not observed. Trees on the Project site could provide marginal habitat for nesting. Generally, the Project site does not support high-quality foraging or nesting habitat.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Long-billed curlew (Nesting) <i>Numenius americanus</i>	WL	-	-	Preferred breeding and winter habitats include large coastal estuaries, upland herbaceous areas, and croplands. On estuaries, feeding occurs mostly on intertidal mudflats.	Nesting - Low Migration - Moderate	Not observed. The Project site does not support typical foraging or nesting habitat. This species may utilize the aquaculture farm; occurrences are expected to be of migrants only.
Lucy's warbler (Nesting) <i>Leiothlypis luciae</i>	SSC	BLM-S	-	An uncommon to common, summer resident and breeder along the Colorado River, fairly common locally in a few other desert areas, and rare near Salton Sea. It occurs in desert wash and desert riparian habitats, especially those dominated by mesquite; also ranges into saltcedar and other thickets. May use abandoned verdin nests.	Moderate	Not observed. Detected in Project vicinity (Palen Solar Project). Tamarisk within the Project site may potentially serve as suitable nesting habitat.
American white pelican (Nesting colony) <i>Pelecanus erythrorhynchos</i>	SSC	BCC	-	Common spring and fall migrant at Salton Sea and Colorado River. Migrant flocks pass overhead almost any month, but mainly in spring and fall throughout the state, especially in southern California (Cogswell 1977, McCaskie et al. 1979, Garrett and Dunn 1981).	Nesting/ Wintering - Low Migration - Moderate	Not observed. Detected in Project vicinity (Palen Solar Project). However, the Project site does not support typical foraging or nesting habitat. Occurrences are expected to be of migrants only.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Black-tailed gnatcatcher <i>Polioptila melanura</i>	WL	-	-	A year-round resident in southwestern United States and central and northern Mexico, in California the black-tailed gnatcatcher is found in the southeast desert wash habitat from Palm Springs and Joshua Tree National Park south, and along the Colorado River. It is now rare in eastern Mojave Desert north to the Amargosa River, Inyo County. This species nests primarily in wooded desert wash habitat, but also occurs in creosote scrub habitat during the non-breeding season. This species was observed during the 4/9, 4/12, and 4/27 avian counts (4 live adults).	Moderate	Not observed. The Project site supports suitable open foraging and creosote nesting habitat.
Vermilion flycatcher (Nesting) <i>Pyrocephalus rubinus</i>	SSC	-	-	They are usually found near water in arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodlands; nesting substrate includes cottonwood, willow, and mesquite.	Nesting/ Wintering - Low Migration - Moderate	Not observed. The Project site only provides marginal nesting habitat in the small amount of desert dry wash woodland for this species. Occurrences are expected to be of migrants only.
Bank swallow (Nesting) <i>Riparia riparia</i>	ST	BLM-S	-	A neotropical migrant found primarily in riparian and other lowland habitats in California west of the deserts during the spring-fall period. Uses holes dug in cliffs and riverbanks for cover. Will also roost on logs, shoreline vegetation, and telephone wires.	Nesting/ Wintering - Low Migration - Moderate	Not observed. The Project site is outside the geographic range for nesting. Bank swallow is likely a common migrant within the Project vicinity during the non-breeding season.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Sonora Yellow warbler (Nesting) <i>Setophaga petechia sonorana</i>	SSC	-	-	In southeastern California, this species is known only from the lower Colorado River Valley from the middle of San Bernardino County through Riverside and Imperial Counties. This species commonly uses wet, deciduous thickets for breeding, and seeks a variety of wooded, scrubby habitats in winter.	Nesting - Low Migration - Moderate	Not observed. Detected in the nearby Palen Solar Project. However, the Project site is outside the typical geographical range for nesting, which is primarily associated with the Colorado River. Occurrences are expected to be of migrants only.
Lawrence's goldfinch (Nesting) <i>Spinus lawrencei</i>	-	BCC	-	Highly erratic and localized in occurrence. Rather common along western edge of southern deserts. Breeds in open oak or other arid woodland and chaparral, near water. Typical habitats in southern California include desert riparian, palm oasis, pinyon-juniper, and lower montane habitats	Low	Not observed. The Project site does not support typical wintering or riparian woodland nesting habitat. Occurrences are expected to be of migrants only.
Bendire's thrasher <i>Toxostoma bendirei</i>	SSC	BLM-S BCC	-	Favors open grassland, shrubland, or woodland with scattered shrubs, primarily in areas that contain large cholla, Joshua tree, Spanish bayonet, Mojave yucca, palo verde, mesquite, catclaw, desert-thorn, or agave.	Low	Not observed. The Project site does not support typical habitat for this species. Occurrences are expected to be of migrants only.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Le Conte's thrasher <i>Toxostoma lecontei</i>	SSC	BLM-S BCC	-	Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs.	High	Not observed. The Project site supports suitable foraging and nesting habitat, primarily associated with larger trees (desert ironwood, palo verde). This species is regularly detected in Chuckwalla Valley. This species was also observed on the adjacent proposed Redonda Solar Project during 2024 surveys.
Crissal thrasher <i>Toxostoma crissale</i>	SSC	BLM-S	-	This species prefers habitat characterized by dense, low scrubby vegetation, which, at lower elevations, include desert and foothill scrub and riparian scrub.	Low-moderate	Not observed. The Project supports limited marginal habitat in the desert dry wash woodland area only. Occurrences are expected to be of migrants only.
Bell's vireo <i>Vireo bellii</i> Arizona Bell's vireo <i>V. b. arizonae</i> Least Bell's vireo <i>V. b. pusillus</i>	SE SE	BLM-S FE	- -	Subspecies <i>V. b. pusillus</i> (endemic to California and northern Baja California and state-listed and federal-listed) and subspecies <i>V. b. arizonae</i> are state-listed. Bell's vireo is now a rare, local, summer resident below about 600 m (2000 ft) in willows and other low, dense valley foothill riparian habitat and lower portions of canyons mostly in San Benito and Monterey cos.; in coastal southern California from Santa Barbara Co. south; and along the western edge of the deserts in desert riparian habitat.	Nesting/ Wintering – Minimal Migration – Low-Moderate	Not observed. The Project site does not support typical wintering or valley foothill nesting habitat. Occurrences are expected to be of migrants only.

Appendix A: Potential for Special Status Wildlife Species to Occur

Species	Status			Habitat Requirements, Geographic Range, Regional Occurrence Records	Potential to Occur on Project Site	Comments
	State	Federal	Other			
Yellow-headed blackbird (Nesting) <i>Xanthocephalus xanthocephalus</i>	SSC	-	-	Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Occurs as a migrant and local breeder in deserts.	Nesting/ Wintering - Minimal Migration – Low -Moderate	Not observed. The Project site does not support typical wintering or emergent wetland nesting habitat. Occurrences are expected to be of migrants only.

Conservation Status

Federal FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

FCT = Proposed for federal listing as a threatened species

BCC = Fish and Wildlife Service: Birds of Conservation Concern

FSS = United States Forest Service Sensitive

State SSC = State Species of Special Concern

CFP = California Fully Protected

SE = State listed as endangered

ST = State listed as threatened

WL = State watch list

CPF = California Protected Furbearing Mammal

CPGS = California Protected Game Species

CDF-S = California Department of Forestry & Fire Protection Sensitive

Bureau of Land Management

BLM-S = BLM Sensitive

FOC = DRECP Focus and Planning Species

Western Bat Working Group (WBWG)

H = imperiled or at high risk of imperilment

M = warrant closer evaluation, more research, and conservation actions

L = most of the existing data support stable populations

**Species not detected during previous surveys may have the potential to occur on the Project site in the future

Appendix B: Potential for Special Status Plant Species to Occur

Appendix B: Potential for Special Status Plant Species to Occur

Plant Species	Form; Habitat; Distribution (Counties)	Conservation Status	Elevation (Meters)	Blooming Period	Potential To Occur on the Project Site
Alverson's foxtail cactus <i>Escobaria alversonii</i>	Stem succulent; Mojavean desert scrub, Sonoran desert scrub (rocky or gravelly). San Bernardino, Riverside, and Imperial Counties.	Federal: none CRPR: 4.3	75-1,525	Apr-Jun	Low – marginal habitat Not observed
Chaparral sand verbena <i>Abronia villosa var. aurita</i>	Perianth tube; Sandy places in coastal-sage scrub, chaparral. Riverside, San Diego, and Imperial Counties.	Federal: none CRPR: 1B.1	< 1600	Mar - Aug	Minimal – no suitable habitat Not observed
Harwood's milkvetch <i>Astragalus insularis var. harwoodii</i>	Annual herb; sandy or gravelly - desert dunes, Mojavean Desert scrub; Riverside, San Bernardino, San Diego, Inyo	Federal: none CRPR: 2B.2	0-710	Jan-May	Low – marginal habitat Not observed

Appendix B: Potential for Special Status Plant Species to Occur

Plant Species	Form; Habitat; Distribution (Counties)	Conservation Status	Elevation (Meters)	Blooming Period	Potential To Occur on the Project Site
Desert beardtongue <i>Penstemon pseudospectabilis ssp. pseudospectabilis</i>	Perennial herb; Mojavean and Sonoran desert scrub. Gravelly, rocky desert washes. San Bernardino, Riverside, and Imperial Counties.	Federal: none CRPR: 2B.2	80-1,935	Jan-May	Low – marginal habitat Not observed
Triple-ribbed milkvetch <i>Astragalus tricarinatus</i>	Perennial herb; Joshua tree woodland and Sonoran desert scrub. Rocky slopes, canyon walls near washes; Orange, Riverside, San Bernardino, Imperial Counties.	Federal: endangered CRPR: 1B.2	450-1,190	Feb-May	Minimal – no suitable habitat Not observed
Emory's crucifixion thorn <i>Castela emoryi</i>	Perennial deciduous shrub; gravelly - Mojavean desert scrub, Playas, Sonoran Desert scrub, Imperial, Inyo, Riverside, San Bernardino	Federal: none CRPR: 2B.2	90-725	Apr-Oct	Low to moderate Not observed

Appendix B: Potential for Special Status Plant Species to Occur

Plant Species	Form; Habitat; Distribution (Counties)	Conservation Status	Elevation (Meters)	Blooming Period	Potential To Occur on the Project Site
Las Animas colubrina <i>Colubrina californica</i>	Perennial deciduous shrub; Mojavean desert scrub, rocky; Sonoran desert scrub Imperial; Riverside, San Diego; Chuckwalla Mountains	Federal: none CRPR: 2B.3	10-1000	Apr-Jun	Low – marginal habitat Not observed
Spiny abrojo <i>(Condalia globose var. pubescens)</i>	Perennial deciduous shrub, Sonoran desert scrub, Imperial, Riverside, San Diego	Federal: none CRPR: 4.2	85-1000	Mar-Nov	Moderate Not observed
Glandular ditaxis <i>Ditaxis claryana</i>	Perennial herb; sandy; Mojavean desert scrub; Sonoran desert scrub; Imperial, Riverside, San Diego	Federal: none CRPR: 2B.2	0-465	Oct-Mar	Moderate Not observed
California ditaxis <i>Ditaxis serrata var. californica</i>	Perennial herb; Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 3.2	30-1000	Mar-Dec	Moderate Not observed

Appendix B: Potential for Special Status Plant Species to Occur

Plant Species	Form; Habitat; Distribution (Counties)	Conservation Status	Elevation (Meters)	Blooming Period	Potential To Occur on the Project Site
Harwood's eriastrum <i>Eriastrum harwoodii</i>	Annual herb; Desert dunes; Riverside, San Bernardino, San Diego	Federal: none CRPR: 1B.2	125-915	Mar-Jun	Low – marginal habitat Not observed.
Slender-spined allthorn <i>Koeberlinia spinosa var. tenuispina</i>	Shrub; riparian woodland, Sonoran desert scrub; Imperial and Riverside Counties	Federal: none CRPR: 2B.2	400	May-Jul	Low - Moderate Not observed.
Spear-leaf matelea <i>Matelea parvifolia</i>	Perennial herb; rocky - Mojavean desert scrub, Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego; Hayfield Lake	Federal: none CRPR: 2B.3	440-1095	Mar-May	Low – marginal habitat Not observed
Desert spikemoss <i>Selaginella eremophila</i>	Perennial rhizomatous herb; chaparral, Sonoran desert scrub (gravelly or rocky); Imperial, Riverside, San Diego; Orocopia Mountains	Federal: none CRPR: 2B.2	200-1295	May-Jul	Minimal – no suitable habitat Not observed

Appendix B: Potential for Special Status Plant Species to Occur

Plant Species	Form; Habitat; Distribution (Counties)	Conservation Status	Elevation (Meters)	Blooming Period	Potential To Occur on the Project Site
Cove's cassia <i>Senna covesii</i>	Perennial herb; dry, sandy desert washes and slopes, Sonoran desert scrub; Imperial, Riverside, Kern, San Bernardino, San Diego	Federal: none CRPR: 2B.2	225-1295	Mar-Aug	Minimal – suitable habitat not present on the Project site. Not observed
Palmer's jackass clover <i>Wislizenia refracta</i> ssp. <i>Palmeri</i>	perennial deciduous shrub; Chenopod scrub, Desert dunes, Sonoran desert scrub, Sonoran thorn woodland, Riverside, San Diego; Palen sand dunes, Palen Mountains	Federal: none CRPR: 2B.2	0-300	Jan-Dec	Minimal – no suitable habitat. Project site is within an unsuitable elevation range Not observed

Federal FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

California Rare Plant Rank (CRPR)

CRPR 1A = Presumed extirpated in California and either rare or extinct elsewhere

CRPR 1B = Rare, threatened, or endangered in California and elsewhere

CRPR 2A = Presumed extirpated in California but more common elsewhere

CRPR 2B = Rare, threatened, or endangered in California but more common elsewhere

CRPR 3 = Plants which need more information

CRPR 4 = Limited distribution – a watch list

CBR = Considered, But Rejected

1 = Seriously endangered in California (high degree/immediacy of threat; over 80% of occurrences threatened)

2 = Fairly endangered in California (moderate degree/immediacy of threat; 20%-80% of occurrences threatened)

Appendix B: Potential for Special Status Plant Species to Occur

3 = Not very endangered in California (low degree/immediacy of threats or no current threats known; <20% of occurrences threatened or no current threats known)

Appendix C: Wildlife and Plant Compendiums

Table C 1. Wildlife Incidental Species Observed.

Common Name	Scientific Name
Reptiles	
Coachwhip	<i>Masticophis flagellum</i>
Desert horned lizard	<i>Phrynosoma platyrhinos</i>
Desert iguana	<i>Dipsosaurus dorsalis</i>
Long-tailed brush lizard	<i>Urosaurus graciosus</i>
Side-blotched lizard	<i>Uta stansburyana</i>
Sidewinder	<i>Crotalus cerastes</i>
Western whiptail lizard	<i>Aspidoscelis tigris</i>
Zebra-tailed lizard	<i>Callisaurus draconoides</i>
Birds	
American kestrel	<i>Falco sparverius</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Belted kingfisher	<i>Megaceryle alcyon</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Cliff swallow	<i>Petrochelidon pyrrhonata</i>
Common raven	<i>Corvus corax</i>
Eurasian collared-dove*	<i>Streptopelia decaocto</i>
Gambel's quail	<i>Callipepla gambelii</i>
Great-tailed grackle	<i>Quiscalus mexicanus</i>
Greater yellowlegs	<i>Tringa melanoleuca</i>
Horned lark	<i>Eremophila alpestris</i>
House finch	<i>Carpodacus menicanus</i>
House sparrow	<i>Passer domesticus</i>
House wren	<i>Troglodytes aedon</i>
Killdeer	<i>Charadrius vociferus</i>
Lark sparrow	<i>Chondestes grammacus</i>
Lesser nighthawk	<i>Chordeiles acutipennis</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Mourning dove	<i>Zenaida macroura</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Prairie falcon	<i>Falco mexicanus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Say's phoebe	<i>Sayornis saya</i>
Snowy plover	<i>Charadrius nivosus</i>

Common Name	Scientific Name
Tree swallow	<i>Tachycineta bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Verdin	<i>Auriparus flaviceps</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Warbling vireo	<i>Vireo gilvus</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western sandpiper	<i>Calidris mauri</i>
White-winged dove	<i>Zenaida asiatica</i>
Mammals	
Black-tailed jackrabbit	<i>Lepus califonica</i>
Burro deer	<i>Odocoileus hemionus eremicus</i>
Coyote	<i>Canis latrans</i>
Round-tailed ground squirrel	<i>Xerospermophilus tereticaudus</i>
Invertebrates	
Inflated beetle	<i>Cysteodemus armatus</i>
White-lined sphinx moth	<i>Hyles lineata</i>

Table C 2. Plant Species Observed.

Scientific Name	Common Name	Family
<i>Tidestromia suffruticosa</i> var. <i>oblongifolia</i>	Honeysweet	Amaranthaceae
<i>Asclepias albicans</i>	White-stemmed Milkweed	Apocynaceae
<i>Funastrum hirtellum</i>	Hairy milkweed	Apocynaceae
<i>Phoenix dactylifera</i>	Date palm	Arecaceae
<i>Ambrosia Dumosa</i>	White bursage	Asteraceae
<i>Ambrosia salsola</i>	Cheesebush	Asteraceae
<i>Chaenactis carphoclinia</i> var. <i>carphoclinia</i>	Pebble pincushion	Asteraceae
<i>Chaenactis stevioides</i>	Desert pincushion	Asteraceae
<i>Encelia farinosa</i>	Brittlebush	Asteraceae
<i>Geraea canescens</i>	Desert sunflower	Asteraceae
<i>Malacothrix glabrata</i>	Desert dandelion	Asteraceae
<i>Palafoxia arida</i> var. <i>arida</i>	Spanish needle	Asteraceae
<i>Perityle emoryi</i>	Emory's rock daisy	Asteraceae
<i>Psathyrotes ramosissima</i>	Turtleback	Asteraceae

Scientific Name	Common Name	Family
<i>Pseudognaphalium stramineum</i>	Cottonbatting plant	Asteraceae
<i>Sonchus oleraceus</i>	Sow thistle	Asteraceae
<i>Stephanomeria pauciflora</i>	Wire lettuce	Asteraceae
<i>Johnstonella angustifolia</i>	Narrow-leaved Johnstonella	Boraginaceae
<i>Cryptantha maritima</i>	Guadalupe cryptantha	Boraginaceae
<i>Tiquilia plicata</i>	Fanleaf crinklemat	Boraginaceae
<i>Brassica tournefortii</i> *	Sahara mustard	Brassicaceae
<i>Dithreya californica</i>	California shieldpod	Brassicaceae
<i>Sisymbrium irio</i> *	London rocket	Brassicaceae
<i>Dithyrea californica</i>	Spectacle pod	Brassicaceae
<i>Cylindropuntia echinocarpa</i>	Silver cholla	Cactaceae
<i>Cylindropuntia ramosissima</i>	Diamond cholla	Cactaceae
<i>Mammillaria tetrancistra</i>	Fishhook cactus	Cactaceae
<i>Achroynchia cooperi</i>	Frost mat	Carophyllaceae
<i>Atriplex canescens</i>	Hoary saltbush	Chenopodiaceae
<i>Atriplex polycarpa</i>	Allscale saltbush	Chenopodiaceae
<i>Chenopodium berlandieri</i>	Berlandier's goosefoot	Chenopodiaceae
<i>Chenopodium murale</i>	Nettle leaf goosefoot	Chenopodiaceae
<i>Salsola tragus</i> *	Russian thistle	Chenopodiaceae
<i>Dalea mollis</i>	Hairy prairie clover	Fabaceae
<i>Dalea mollissima</i>	Silky dalea	Fabaceae
<i>Neltuma oderata</i>	Honey mesquite	Fabaceae
<i>Olneya tesota</i>	Desert ironwood	Fabaceae
<i>Parkinsonia aculeata</i>	Mexican palo verde	Fabaceae
<i>Parkinsonia florida</i>	Blue palo verde	Fabaceae
<i>Psorothamnus schottii</i>	Schott's indigobush	Fabaceae
<i>Vachellia famesiana</i>	Sweet acacia	Fabaceae
<i>Fouquieria splendens</i>	Ocotillo	Fouquieriaceae
<i>Erodium texanum</i>	Desert heron's bill	Geraniaceae
<i>Krameria bicolor</i>	White rhatany	Krameriaceae
<i>Phacelia crenulata</i>	Notch-leaved phacelia	Hydrophyllaceae
<i>Hesperocallis undulata</i>	Desert lily	Liliaceae
<i>Mentzelia albicaulis</i>	White stemmed blazing star	Loasaceae
<i>Mentzelia involucrata</i>	Sand blazing star	Loasaceae
<i>Malva parviflora</i>	Cheeseweed	Malvaceae
<i>Nama demissum var. demissum</i>	Purplemat	Nameacease

Scientific Name	Common Name	Family
<i>Abronia villosa</i>	Desert sand verbena	Nyctaginaceae
<i>Allionia incarnata</i>	Windmills	Nyctaginaceae
<i>Chylismia claviformis</i>	Clavate fruited primrose	Onagraceae
<i>Eremothera boothii</i>	Booth's sun cup	Onagraceae
<i>Plantago ovata</i>	Booly plantain	Plantaginaceae
<i>Cynodon dactylon</i> *	Bermuda grass	Poaceae
<i>Polypogon monspeliensis</i> *	Annual beard grass	Poaceae
<i>Schismus arabicus</i> *	Arabian schismus	Poaceae
<i>Schismus barbatus</i> *	Mediterranean grass	Poaceae
<i>Chorizanthe brevicornu</i>	Brittle spineflower	Polygonaceae
* <i>Tamarix ramossisima</i>	Tamarisk	Tamaricaceae
<i>Larrea tridentata</i>	Creosote bush	<u>Zygophyllaceae</u>

BOLD=special-status species

*=invasive species

Appendix D: Survey Results Summary

Table D 1. Burrowing Owl Observations

Species	Sign Type	Notes	Date
Burrowing owl	Burrow	Whitewash	2024-05-13
Burrowing owl	Burrow	Feathers, whitewash, pellets	2024-05-13
Burrowing owl	Burrow	Whitewash, feathers, dig marks, tracks	2024-10-09
Burrowing owl	Burrow	Whitewash, pellets	2024-10-17

Table D 2. Noteworthy Avian Observations.

Species	Sign Type	Notes	Date
Loggerhead shrike	Live individual	Flying	2024-03-19
Loggerhead shrike	Live individual	Foraging, perching, singing	2024-03-19
Loggerhead shrike	Live individual	Flying, foraging, perching, singing	2024-04-15
Loggerhead shrike	Live individual	Flying, other	2024-04-17
Loggerhead shrike	Live individual	Perching	2024-10-10
Loggerhead shrike	Live individual	Flying, perching	2024-10-10
Loggerhead shrike	Live individual	Perching, singing	2024-10-17
Prairie falcon	Live individual	Flying	2024-09-20

Table D 3. Noteworthy Mammal Observations.

Species	Mammal Sign Types	Activity	Notes	Date
Burro deer	Scat	No		2024-04-15
Burro deer	Scat	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	No		2024-04-17
Canid	Burrow	Yes	Scat, dig marks, tracks	2024-05-13
Canid	Burrow	No		2024-05-13
Canid	Burrow	Yes	Dig marks, tracks	2024-05-13

Species	Mammal Sign Types	Activity	Notes	Date
Canid	Burrow	Yes	Scat	2024-05-13
Canid	Burrow	Yes	Scat	2024-05-13
Canid	Burrow	Yes	Dig marks, tracks, scat	2024-05-13
Canid	Burrow	Yes	Dig marks, tracks, scat	2024-05-13
Canid	Burrow	No		2025-01-07
Coyote	Burrow	No		2024-04-17
Coyote	Burrow	No		2024-04-18
Coyote	Burrow	No		2024-10-03

Table D-4. Underpass Camera Data

Species	C-14	C-15	C-16	C-17	C-18	C-19	C-20	C-21
Greater roadrunner	-	-	Yes	-	Yes	-	-	Yes
Coyote	-	Yes	Yes	-	Yes	Yes	-	Yes
Desert kit fox	-	-	Yes	-	Yes	Yes	Yes	
American badger	-	-	-	-	-	-	-	Yes
Burro deer	-	Yes	-	-	-	-	-	-
Black-tailed jackrabbit	-	Yes	Yes	-	Yes	Yes	-	Yes
Kangaroo rat	-	-	-	-	-	-	-	Yes
Round-tailed ground squirrel	-	-	-	-	-	-	-	Yes
Desert woodrat	-	Yes	-	Yes	-	-	-	
Rodent sp.	-	-	-	-	Yes	-	-	Yes
Desert iguana	-	Yes	Yes	-	-	-	Yes	Yes
Lizard sp.	-	-	-	-	-	-	-	Yes

Table D 5. Spring 2024 Avian Count Summary.

Avian Species	Spring 2024 Avian Count Dates					Species Totals
	4/15	4/16	4/17	4/18	4/19	
American kestrel (<i>Falco sparverius</i>)	2	-	-	-	1	3
Ash-throated flycatcher (<i>Myiarchus cinerascens</i>)	-	-	-	1	-	1
Belted kingfisher (<i>Megasceryle alcyon</i>)	1	-	-	-	-	1
Brewer's blackbird (<i>Euphagus cyanocephalus</i>)	-	-	-	-	-	0
Cliff swallow (<i>Petrochelidon pyrrhonota</i>)	3	-	-	-	1	4
Common raven (<i>Corvus corax</i>)	-	-	-	2	2	4
Eurasian collared-dove (<i>Streptopelia decaocto</i>)	1	-	-	-	-	1
Gambel's quail (<i>Callipepla gambelii</i>)	4	-	2	3	-	9
Greater yellowlegs (<i>Tringa melanoleuca</i>)	1	-	-	-	-	1
Great-tailed grackle (<i>Quiscalus mexicanus</i>)	-	-	-	4	2	6
Horned Lark (<i>Eremophila alpestris</i>)	-	-	-	-	3	3
House finch (<i>Haemorhous mexicanus</i>)	-	6	6	18	3	33
Loggerhead shrike (<i>Lanius ludovicianus</i>)	4	-	-	-	-	4
Mourning dove (<i>Zenaida macroura</i>)	8	2	8	14	17	49
Northern rough-winged swallow (<i>Stelgidopteryx serripennis</i>)	3	-	-	-	-	3
Red-tailed hawk (<i>Buteo jamaicensis</i>)	2	1	-	-	-	3

Avian Species	Spring 2024 Avian Count Dates					
	4/15	4/16	4/17	4/18	4/19	Species Totals
Say's phoebe (<i>Sayornis saya</i>)	-	-	-	1	-	1
Snowy plover (<i>Charadrius nivosus</i>)	2	-	-	-	-	2
Tree swallow (<i>Tachycineta bicolor</i>)	2	-	-	-	-	2
Turkey vulture (<i>Cathartes aura</i>)	10	12	20	2	16	60
Verdin (<i>Auriparus flaviceps</i>)	-	-	1	6	1	8
Western sandpiper (<i>Calidris mauri</i>)	1	-	-	-	-	1
Total Observed	44	21	37	51	46	199

Table D 6. Noteworthy Plant Observations.

Species	Phenology	Notes	Date
Ocotillo (<i>Fouquieria splendens</i>)	Flower only	3 plants in 20 m radius. Large healthy-looking plants	2024-04-17
Ocotillo (<i>Fouquieria splendens</i>)	Flower only		2024-04-17
Ocotillo (<i>Fouquieria splendens</i>)	Flower only		2024-04-17
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Small individual in sandy drainage. looks like it's been foraged, stunting growth	2024-04-18
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	~1m tall; stressed but with new growth	2024-04-18
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	~2.2m tall	2024-04-18
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	1 small plant in an open drainage area.	2024-04-18
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Small individual less than a foot tall. In rocky sandy area	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Small individual 20 m south of access road in rocky gravel area	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Single individual in rocky gravel area	2024-04-19

Species	Phenology	Notes	Date
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Individual found in gravel drainage	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative		2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	~1m tall	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	~1.2m tall	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Small plant; ~14cm tall	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	~75cm tall	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	~0.5cm tall	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative		2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Two small plants three feet apart	2024-04-19
Ocotillo (<i>Fouquieria splendens</i>)	Vegetative	Small individual; ~30cm	2024-10-03
Fishhook cactus (<i>Mammillaria tetrancistra</i>)	Vegetative	1 plant with 5 heads. 200 m south of access road. In open rocky area.	2024-04-18

Table D 7. Noteworthy Invasive Plant Observations.

Plant Species	Phenology	Date
Annual beard-grass (<i>Polypogon monospermioides</i>)	Plant dried up / Not chlorophytic	10/3/2024
Beard-grass (<i>Polypogon sp.</i>)	Flower/fruit	3/21/2024
Bermuda grass (<i>Cynodon dactylon</i>)	Flower/fruit	4/18/2024
Bermuda grass (<i>Cynodon dactylon</i>)	Vegetative	10/3/2024
Common Mediterranean grass (<i>Schismus barbatus</i>)	Vegetative	3/19/2024
Common Mediterranean grass (<i>Schismus barbatus</i>)	Fruit only	4/17/2024
Russian thistle (<i>Salsola tragus</i>)	Flower only	4/17/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Vegetative	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Vegetative	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Plant dried up/Not chlorophytic	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Plant dried up/Not chlorophytic	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Flower/Fruit	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Vegetative	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Vegetative	3/19/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Flower/fruit	4/17/2024
Sahara mustard (<i>Brassica tournefortii</i>)	Flower/fruit	4/17/2024

Appendix C: Survey Results Summary

Plant Species	Phenology	Date
Sahara mustard (<i>Brassica tournefortii</i>)	Flower/fruit	4/18/2024
Sow thistle (<i>Sonchus arvensis</i>)	Flower/fruit	3/19/2024
Tumble mustard (<i>Sisymbrium irio</i>)	Flower/fruit	3/19/2024
Tumble mustard (<i>Sisymbrium irio</i>)	Flower/fruit	3/19/2024
Tumble mustard (<i>Sisymbrium irio</i>)	Flower/fruit	4/17/2024
Tumble mustard (<i>Sisymbrium irio</i>)	Flower/fruit	4/18/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	4/17/2024
Tamarisk (<i>Tamarix</i> sp.)	Vegetative	4/18/2024
Tamarisk (<i>Tamarix</i> sp.)	Vegetative	4/18/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower/fruit	4/18/2024
Tamarisk (<i>Tamarix</i> sp.)	Vegetative	10/3/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Vegetative	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Vegetative	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower only	10/10/2024
Tamarisk (<i>Tamarix</i> sp.)	Flower/fruit	10/17/2024
Tamarisk (<i>Tamarix</i> sp.)	Vegetative	10/17/2024

Appendix E: Figures

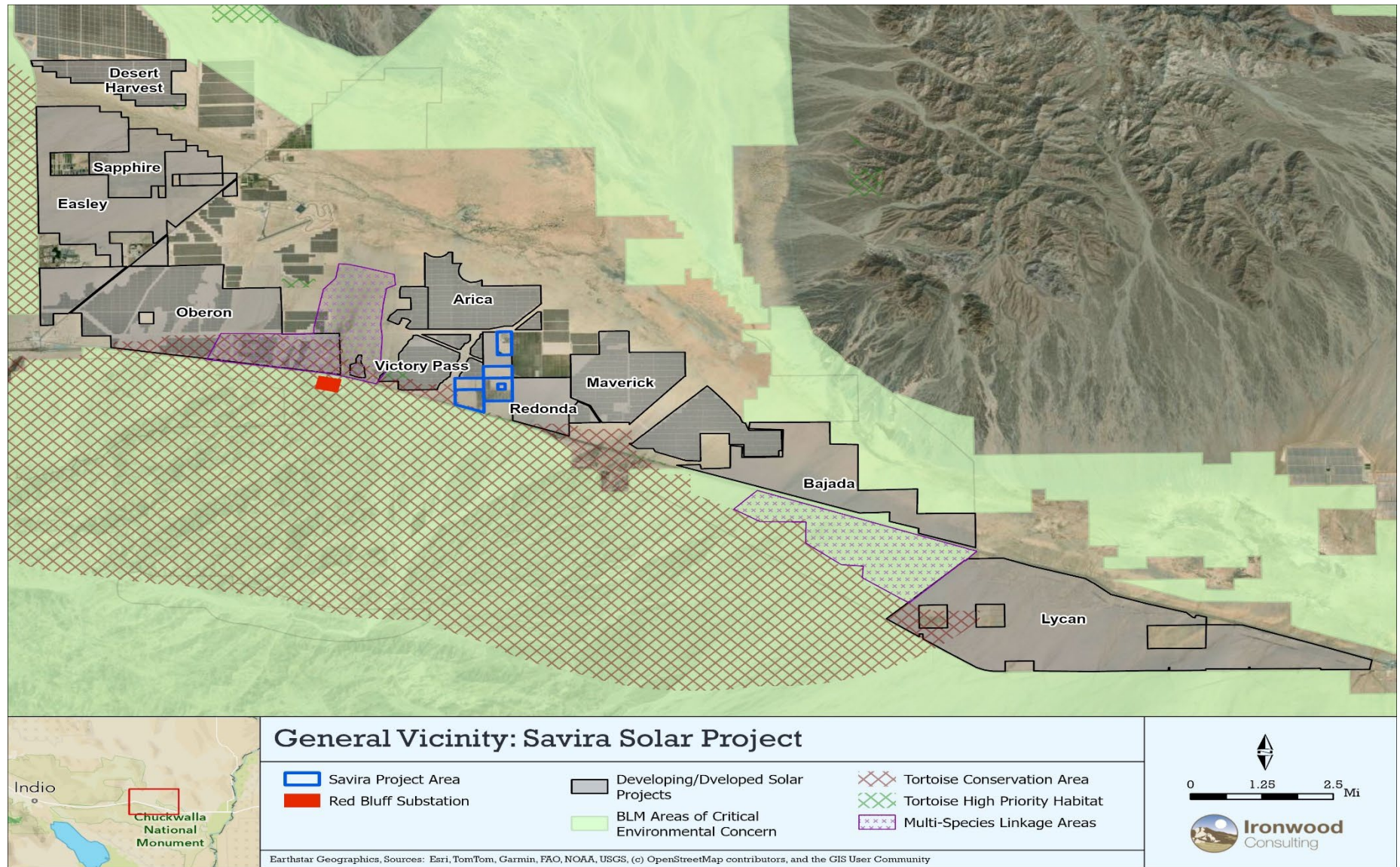


Figure 1. General Vicinity.

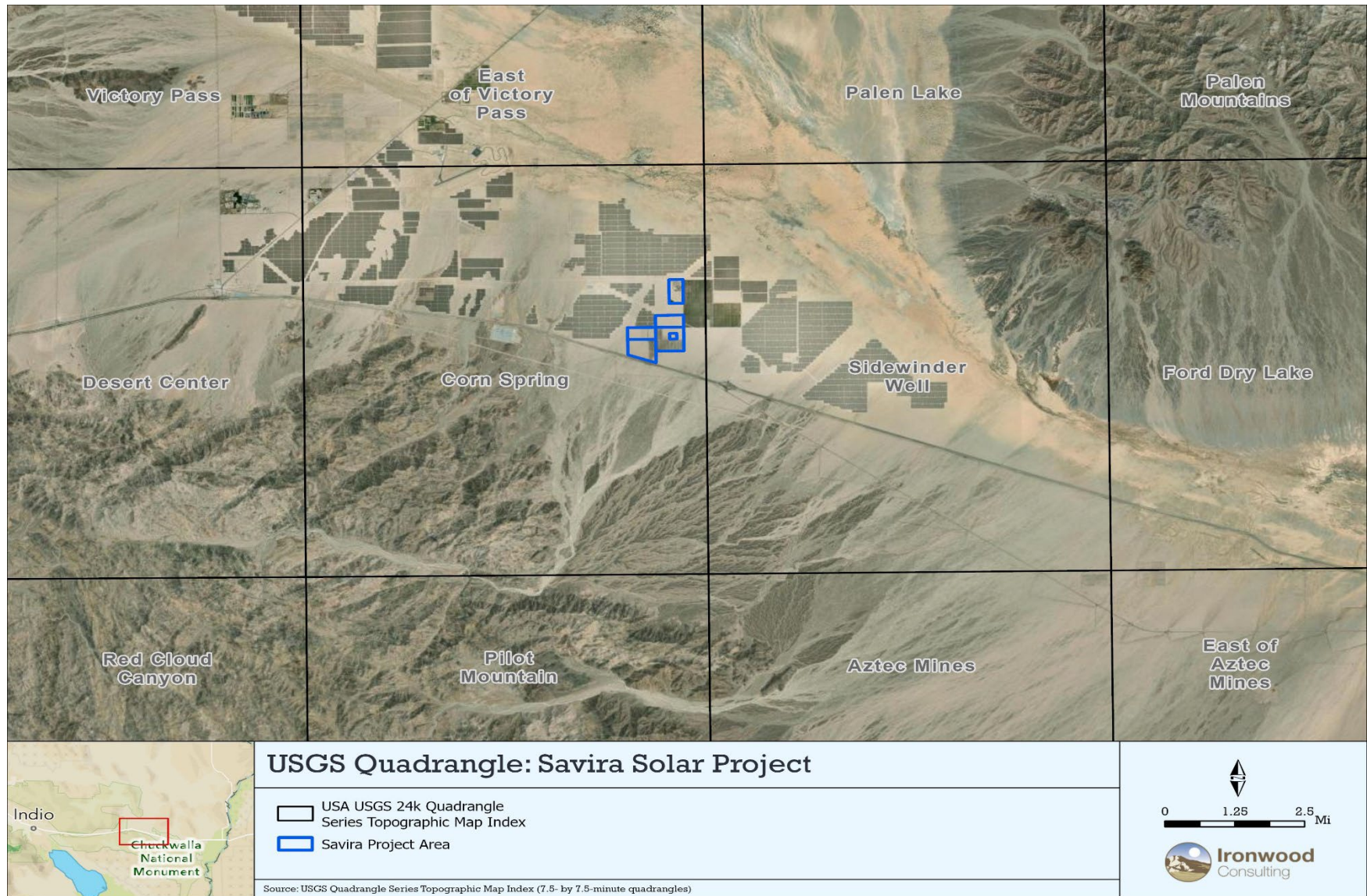


Figure 2. USGS Topographic Quadrangle.

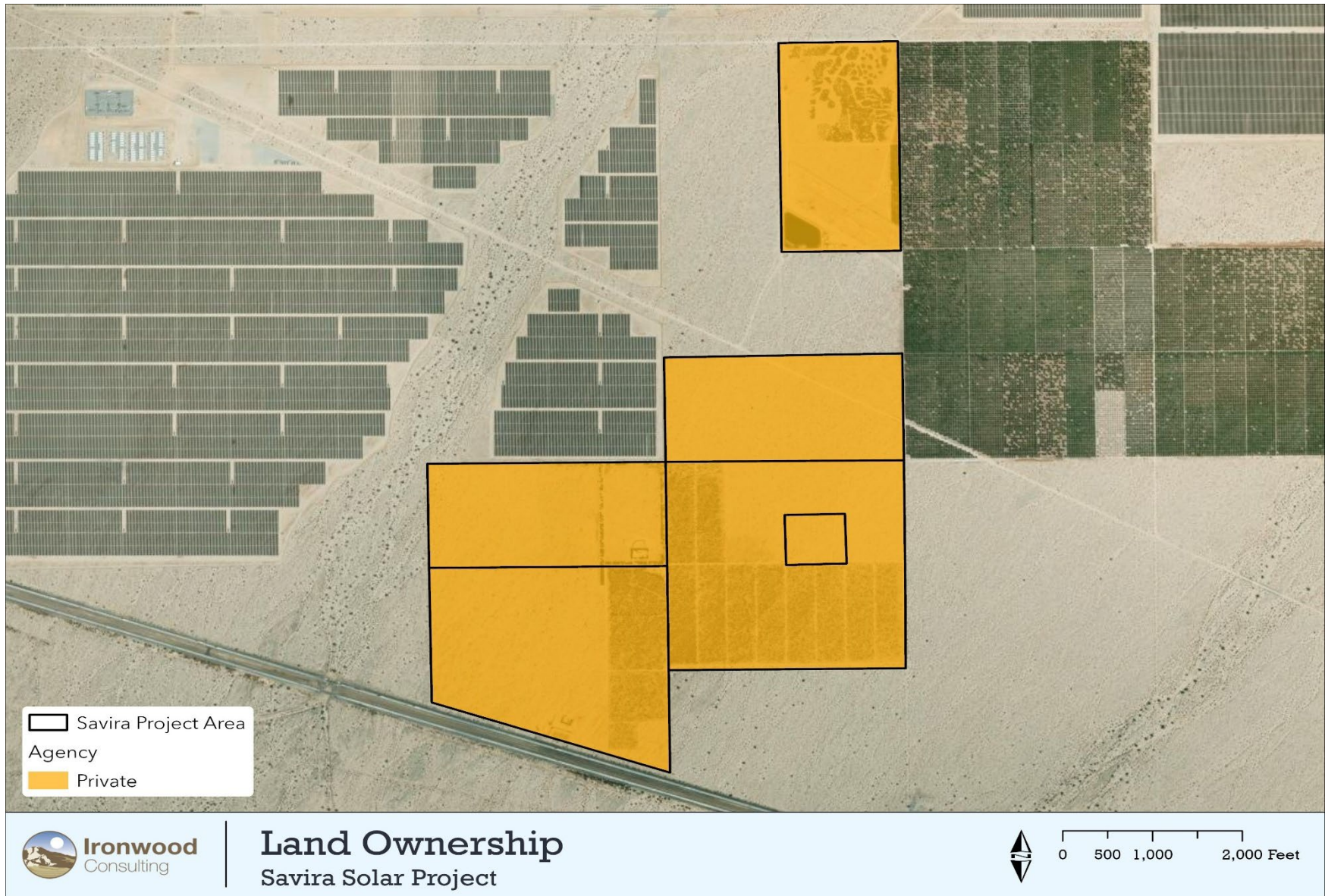


Figure 3. Land Ownership.

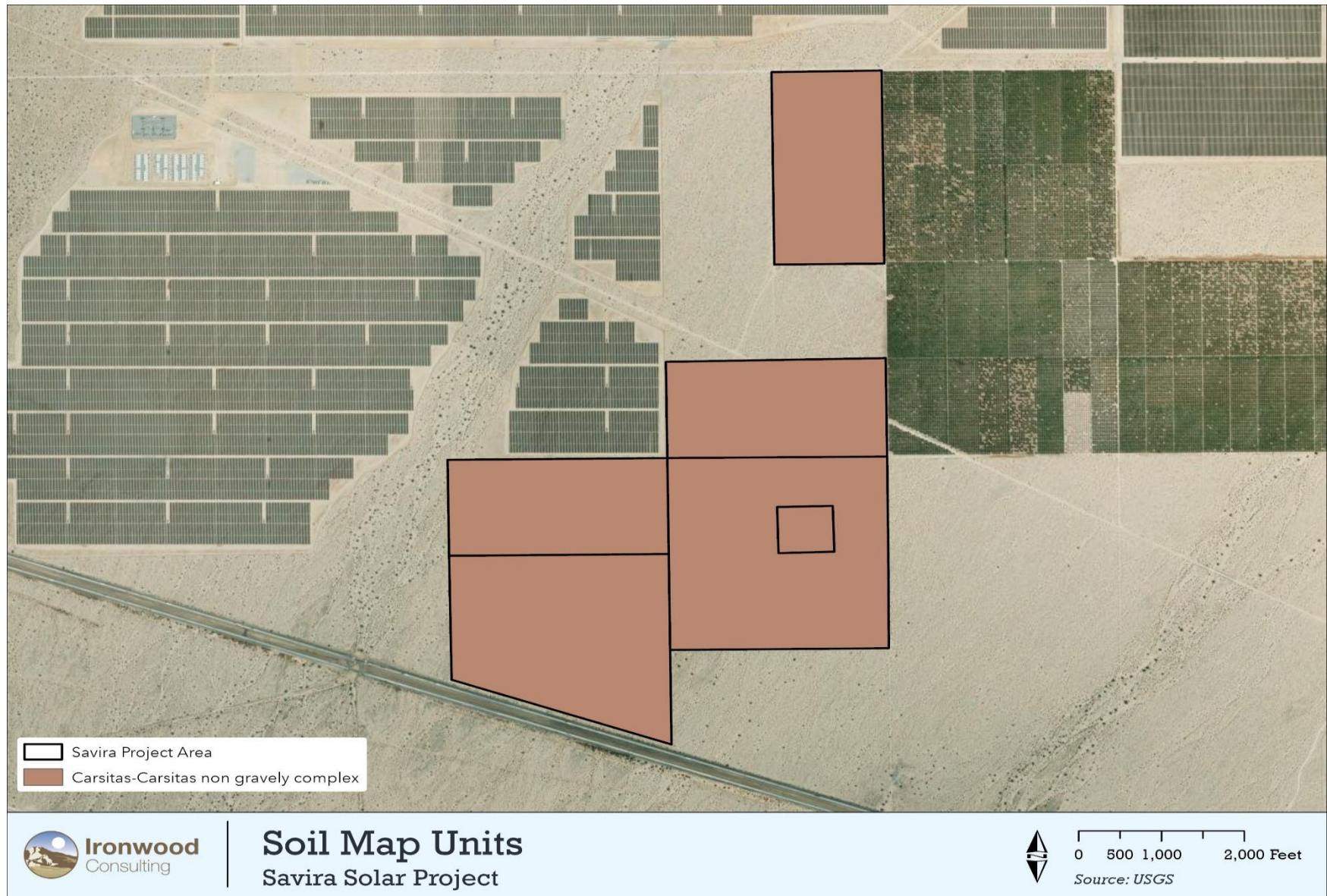


Figure 4. Soils.

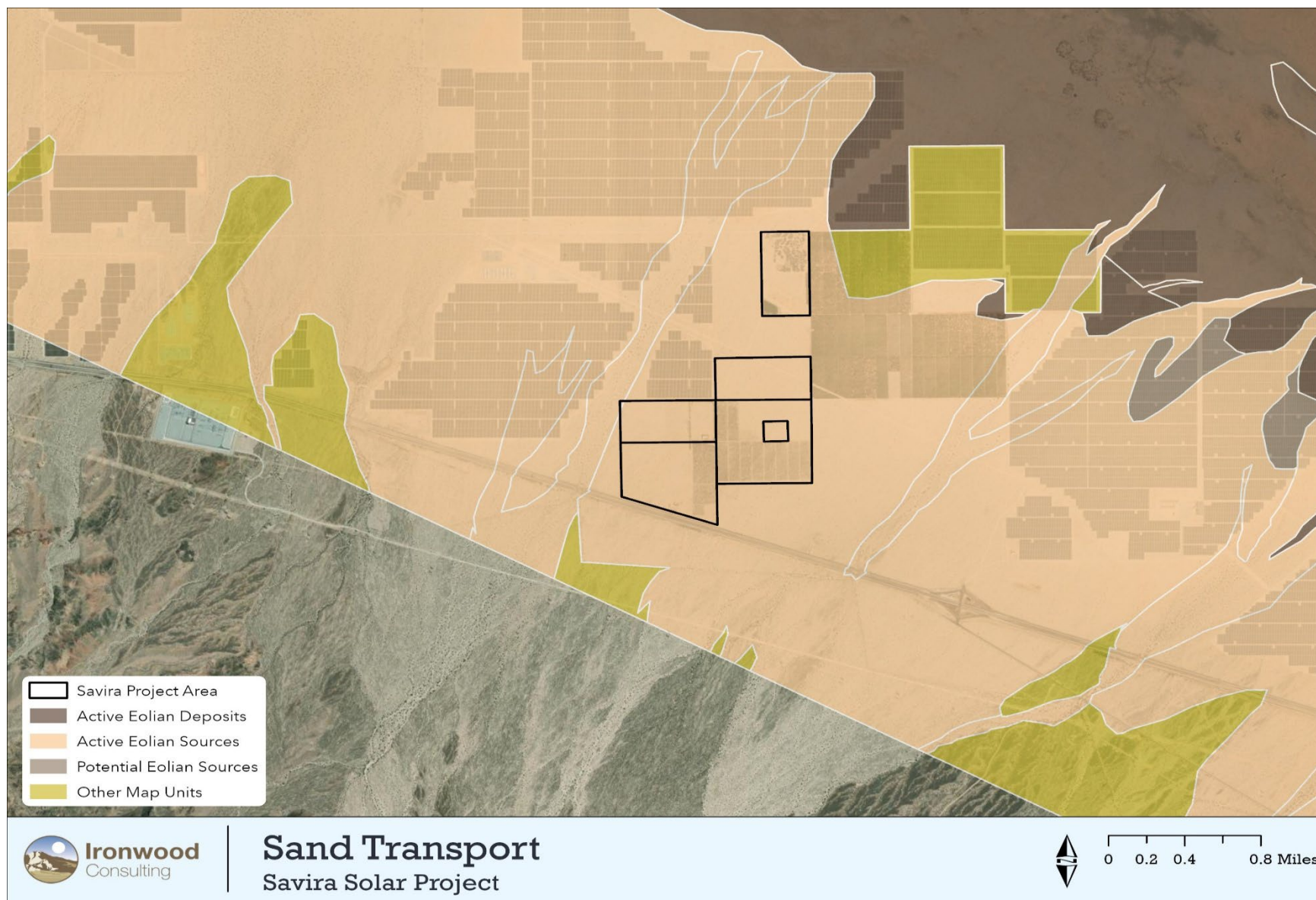


Figure 5. Sand Transport.

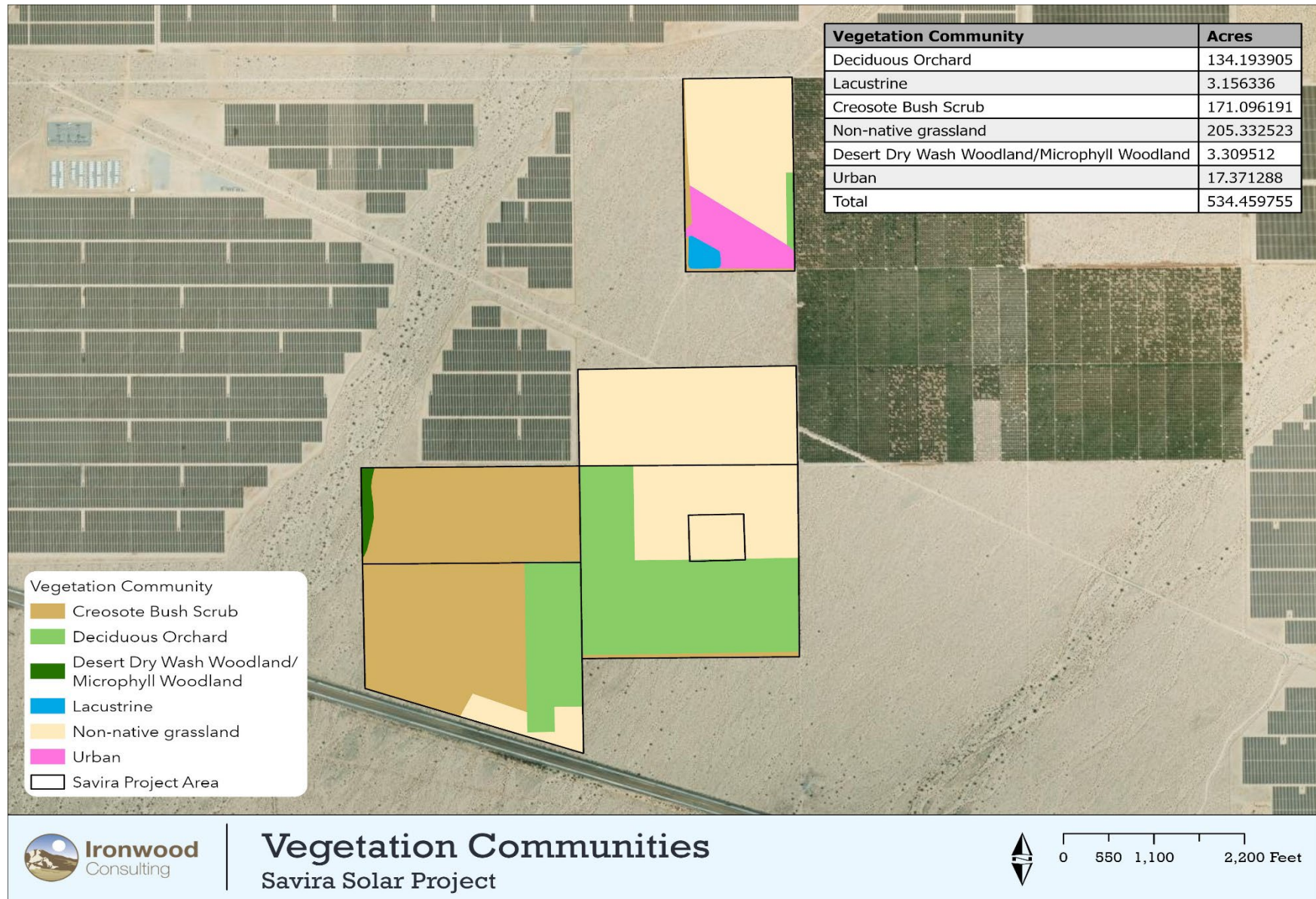


Figure 6. Vegetation Communities.

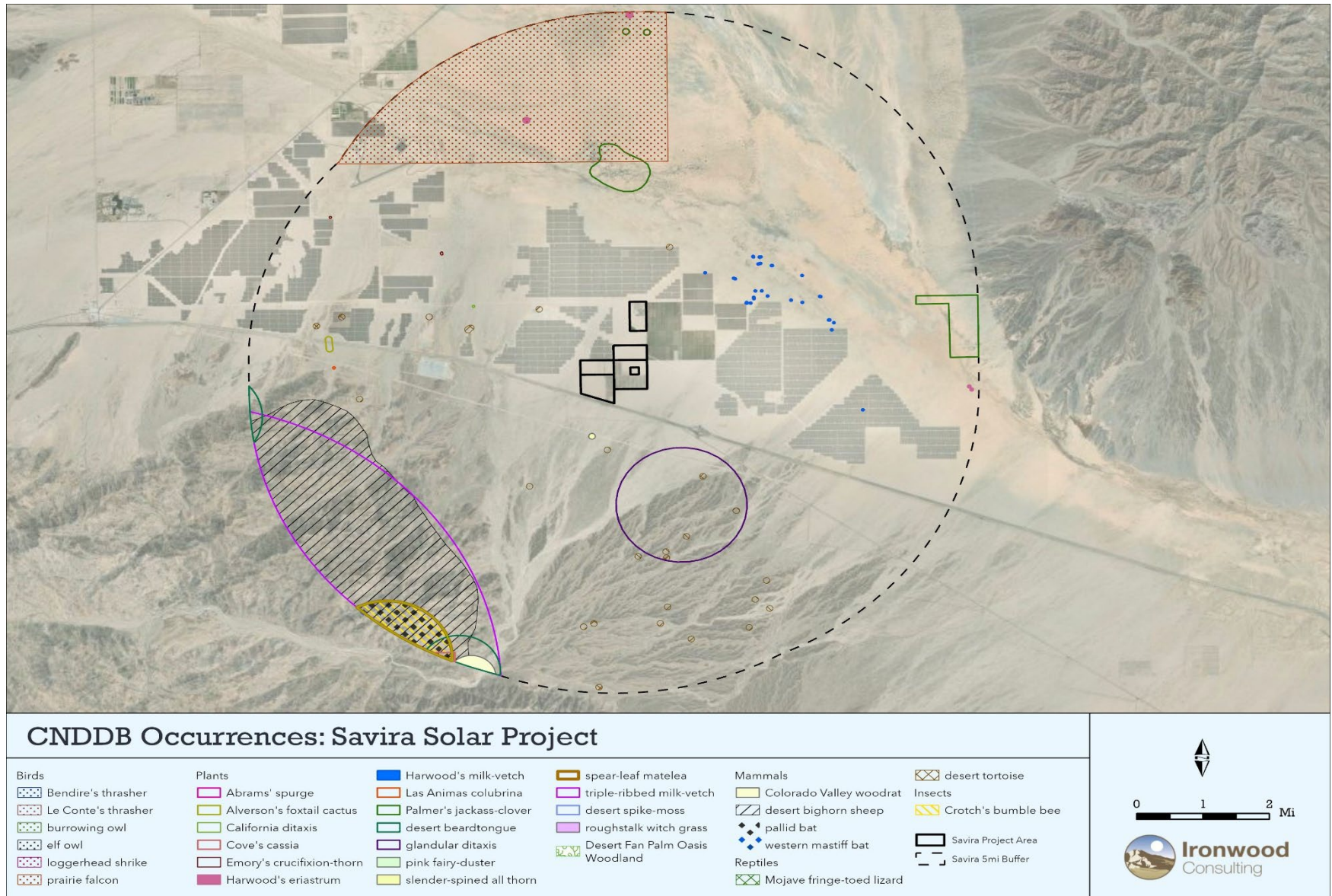


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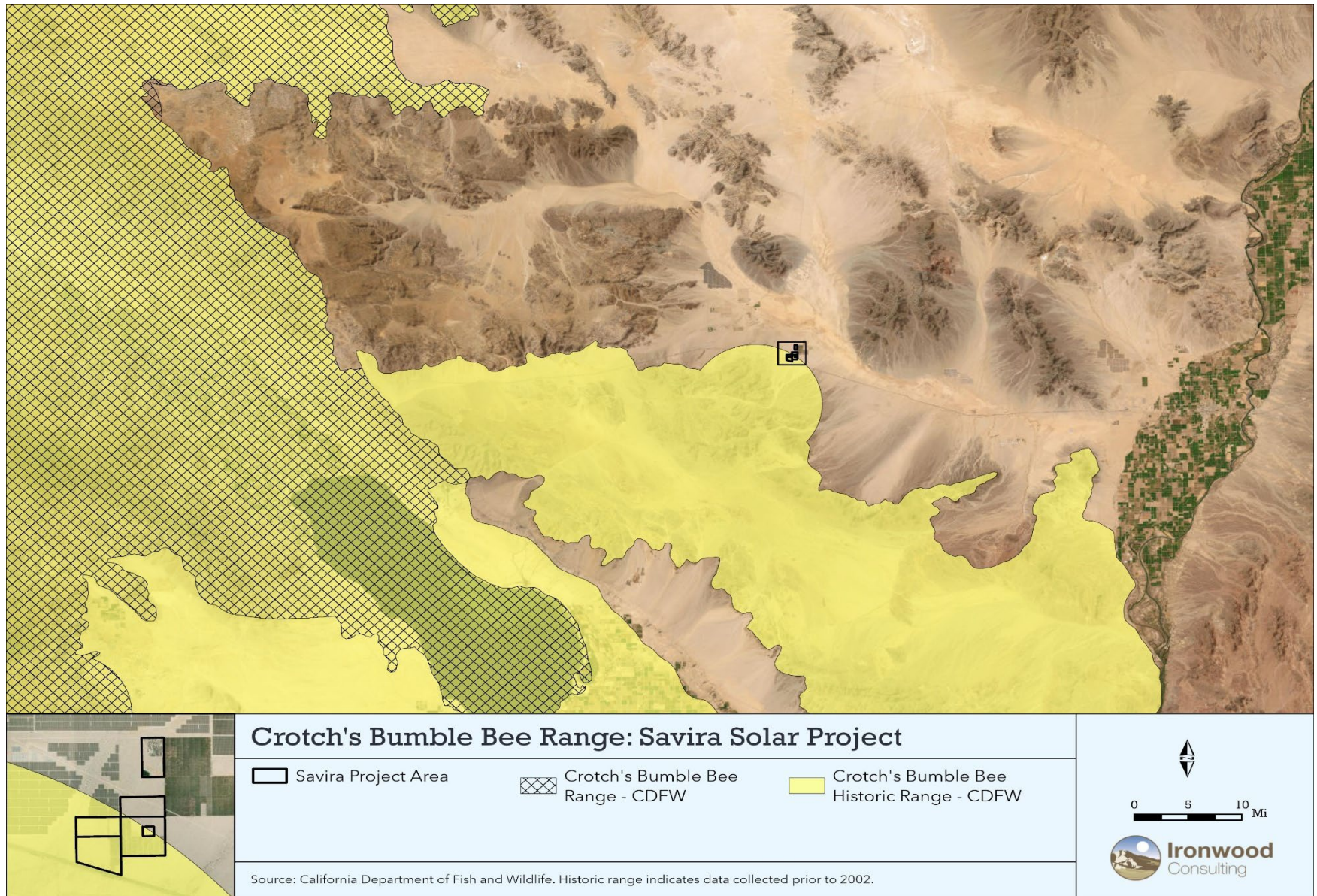


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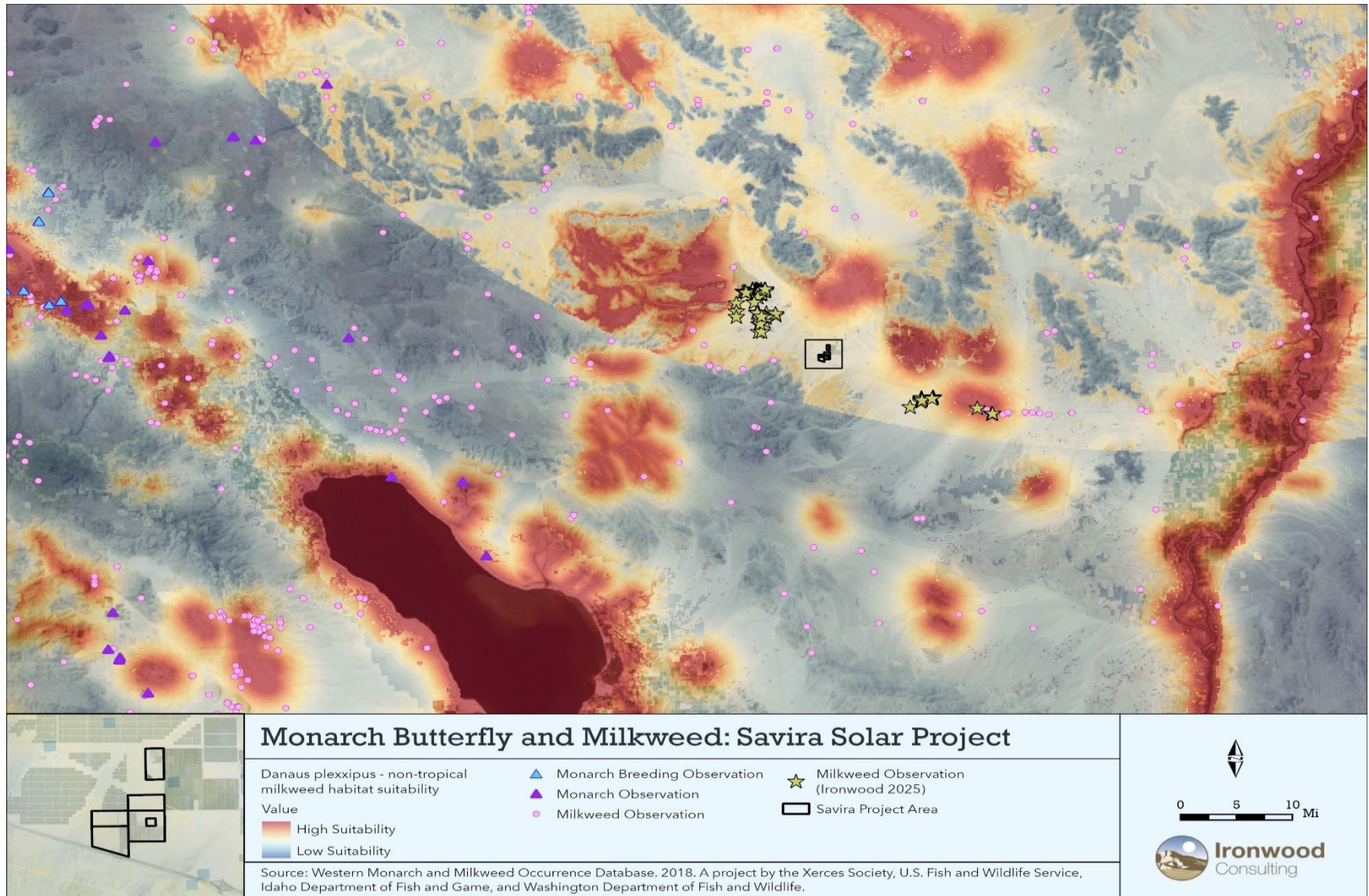


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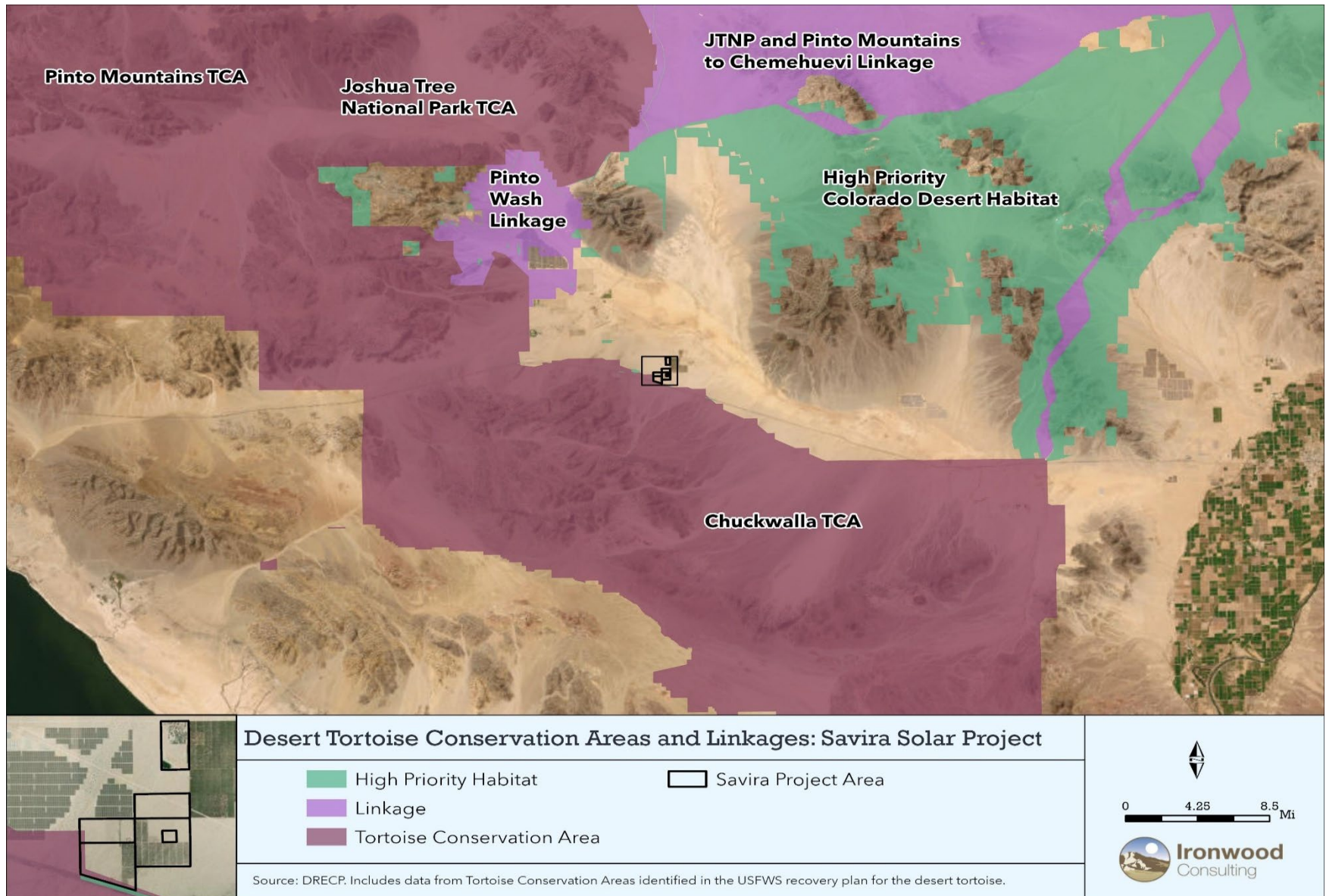


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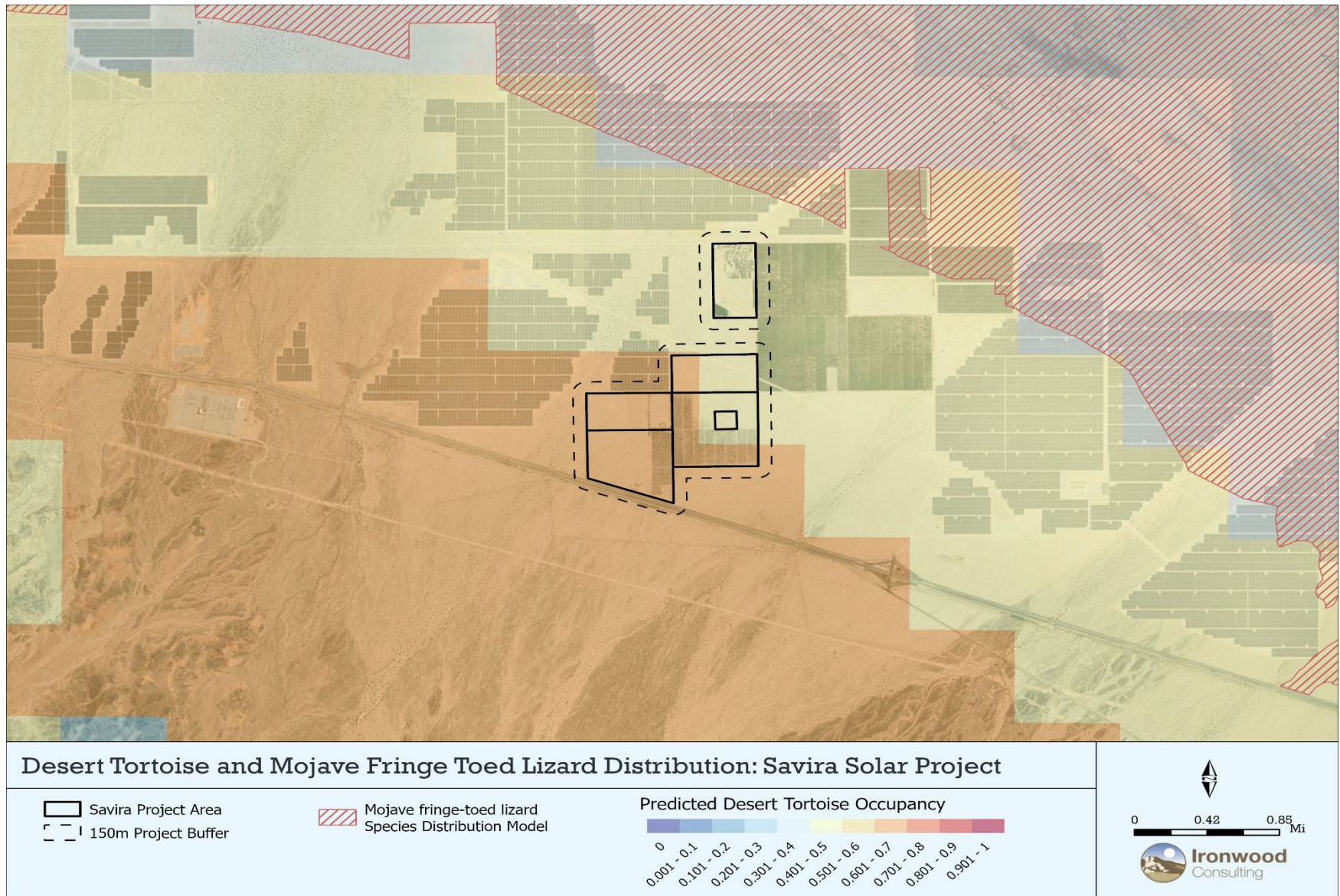


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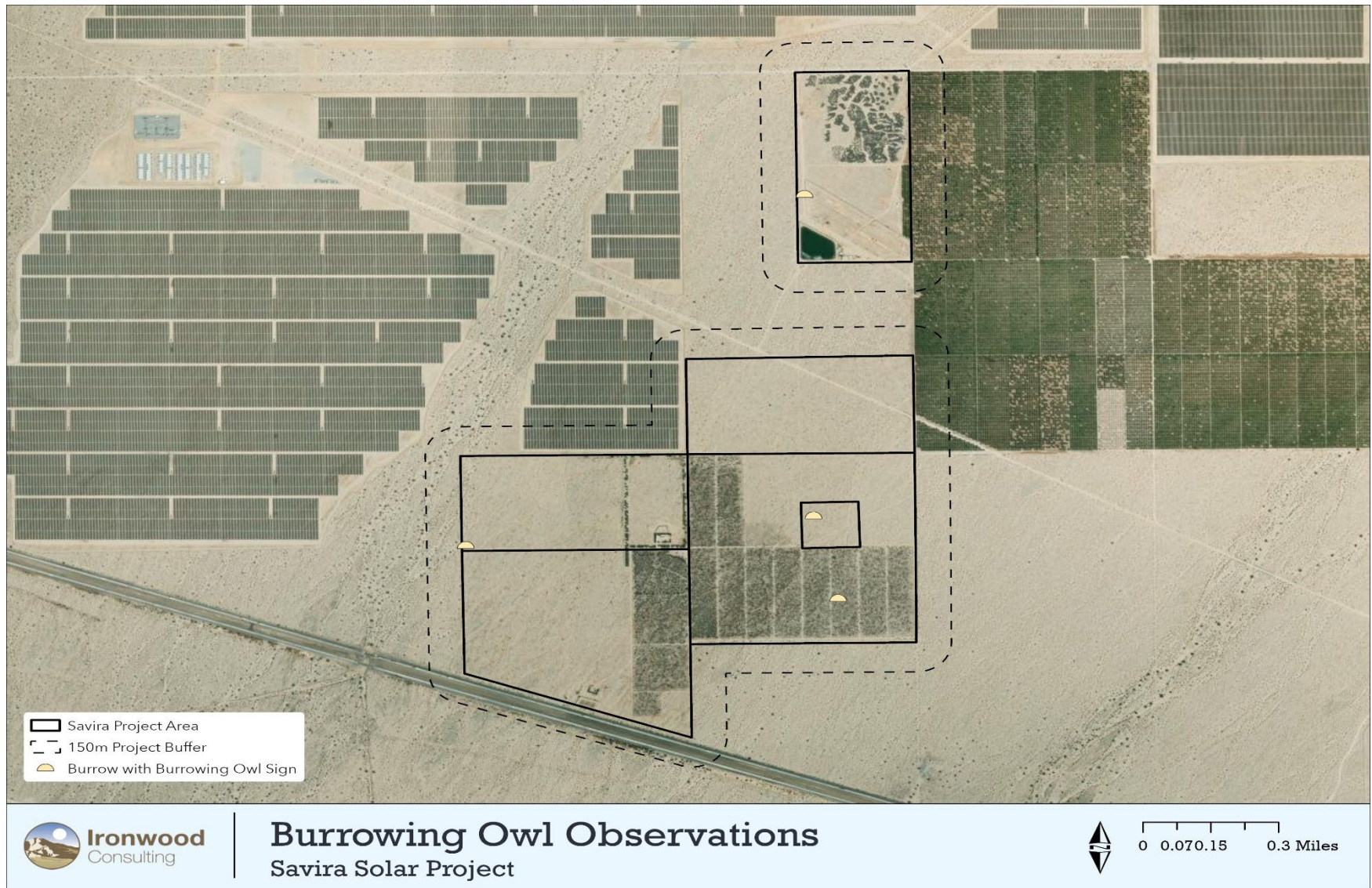


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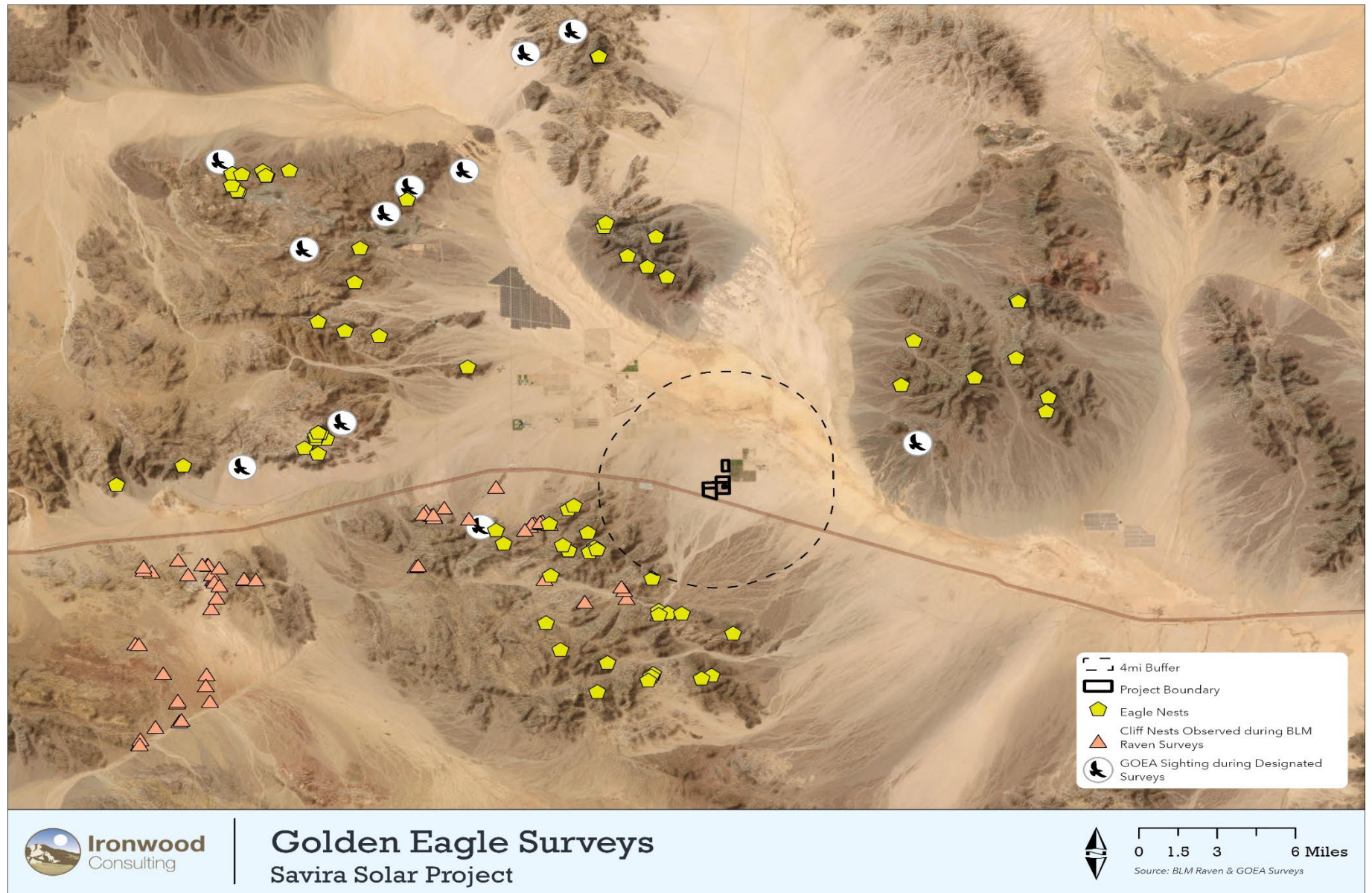


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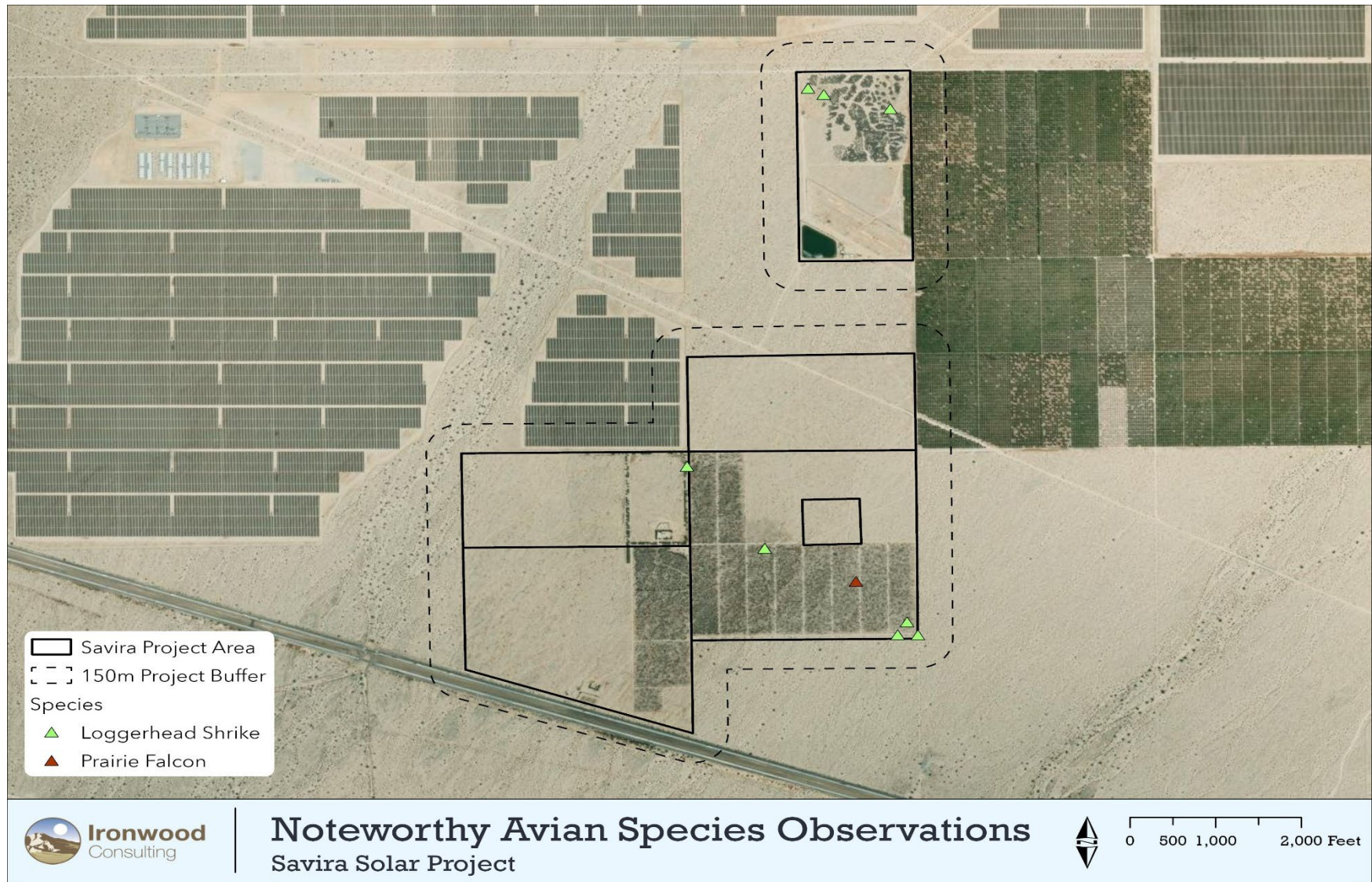


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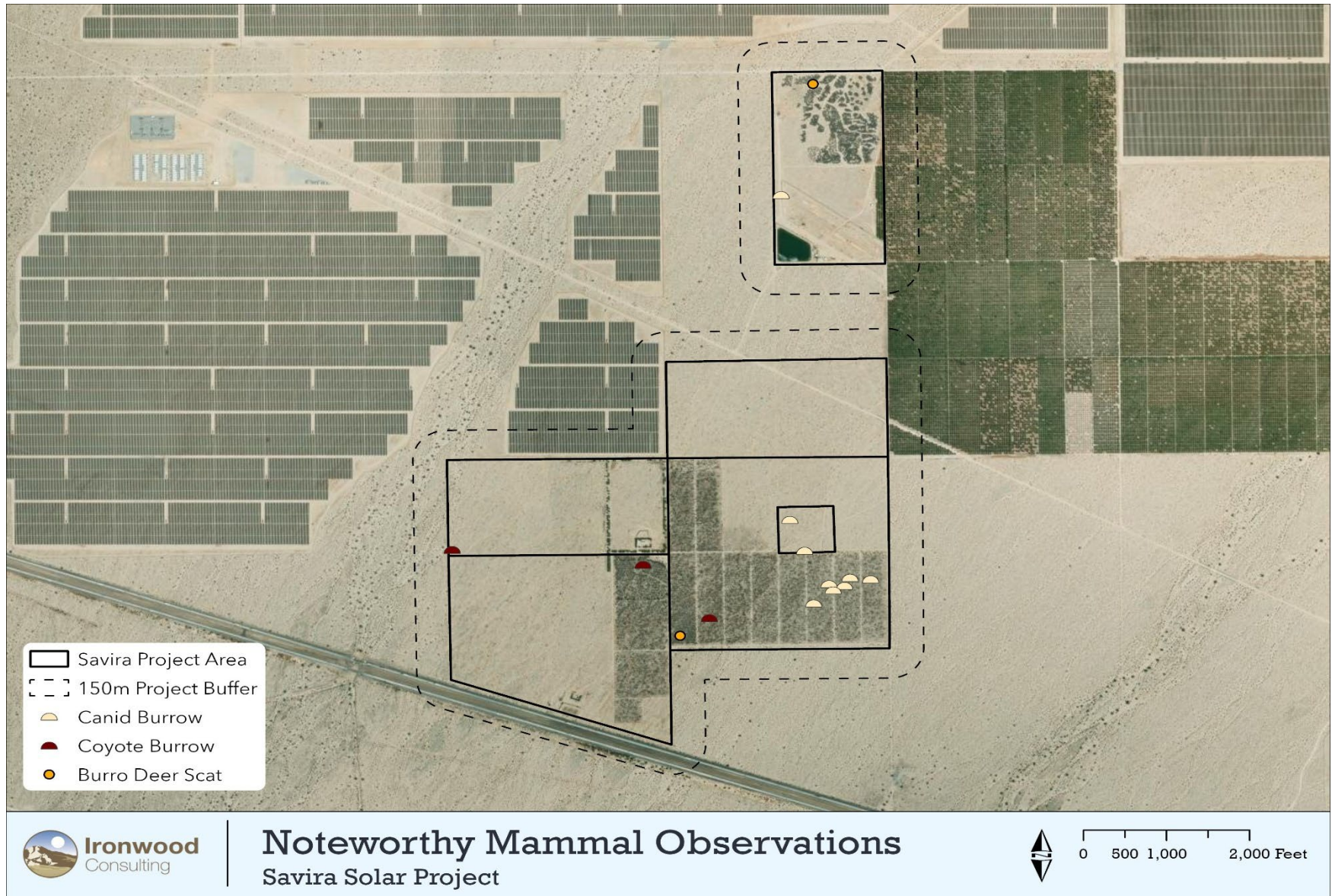


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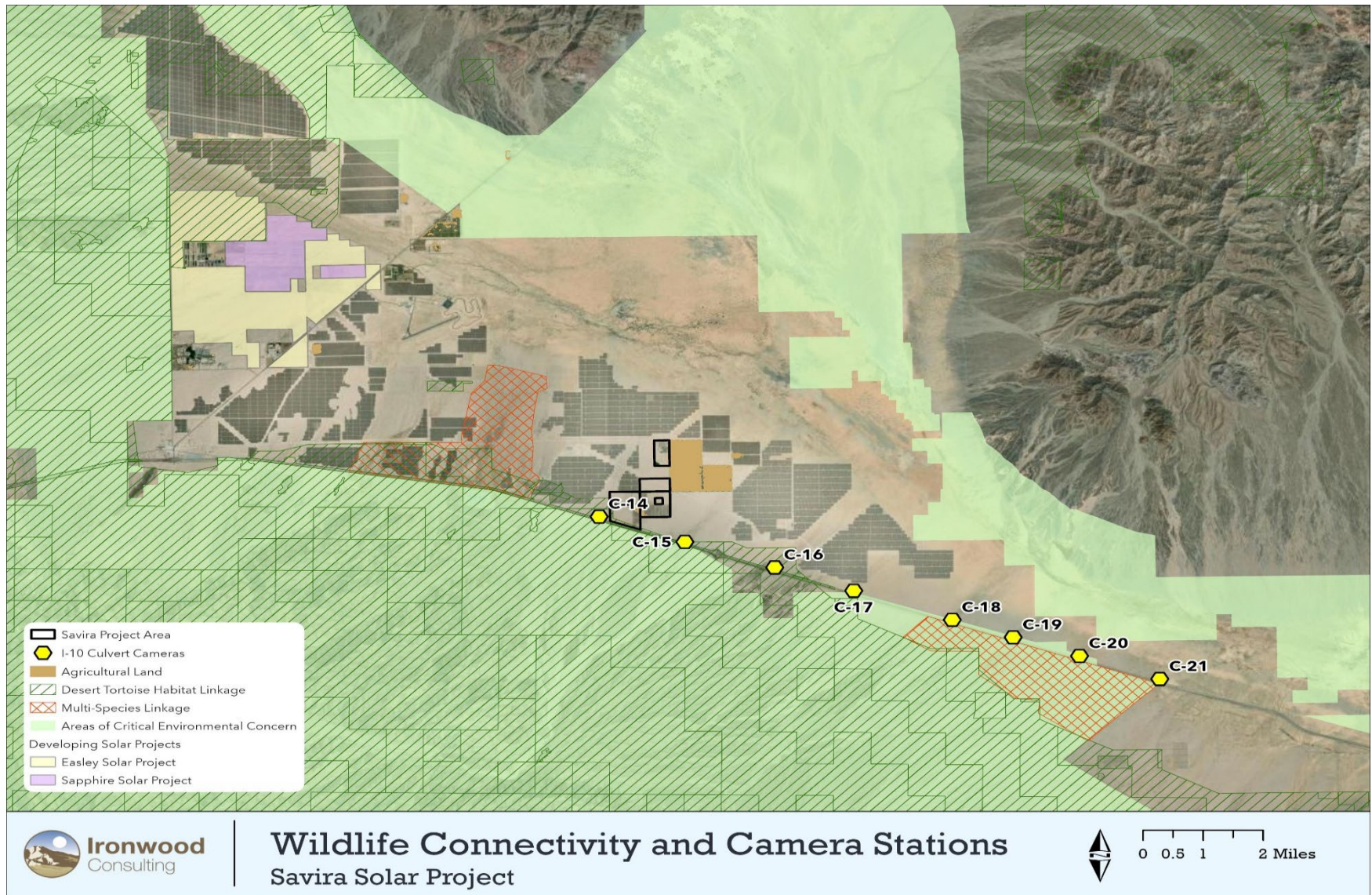


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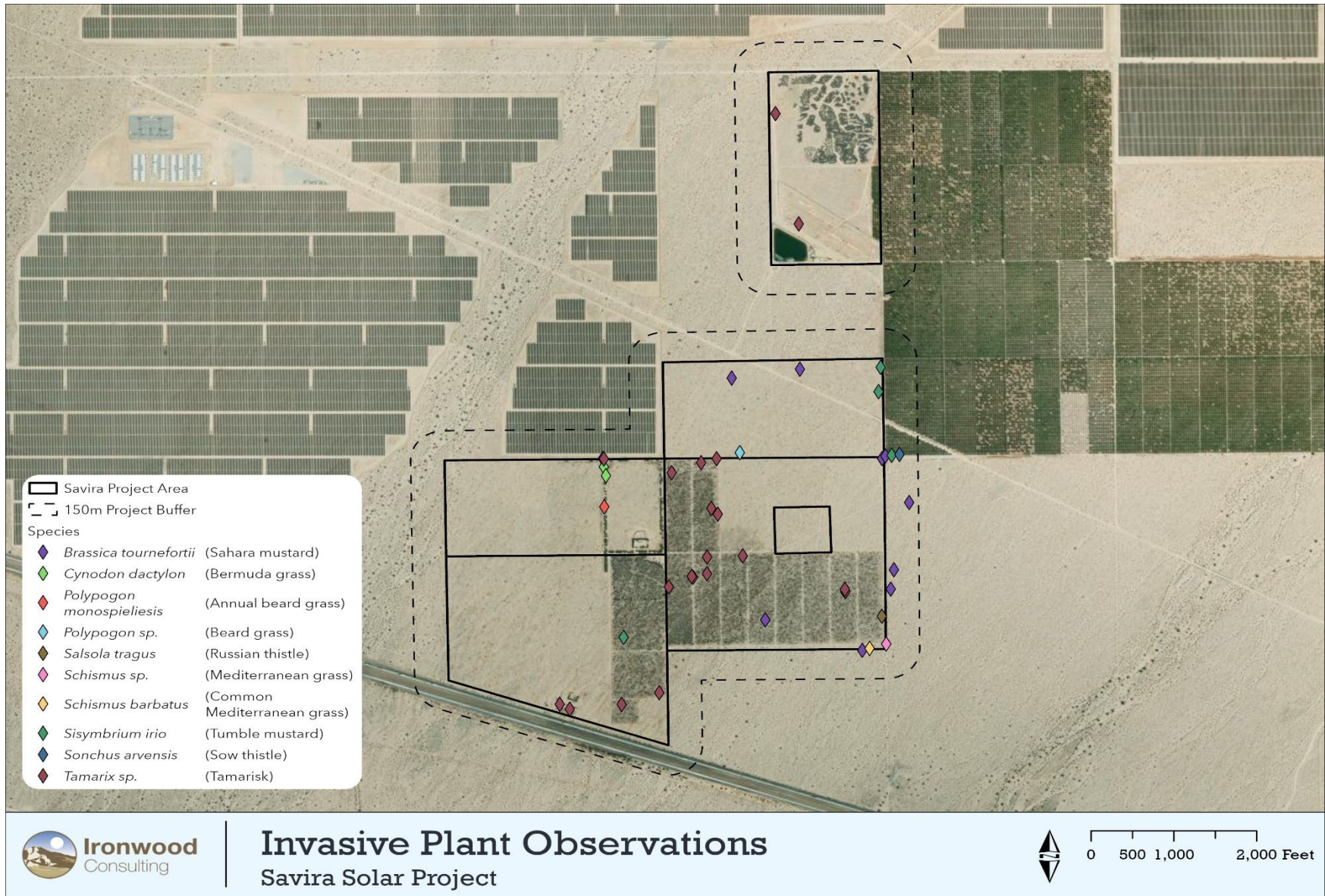


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Appendix E: Figures

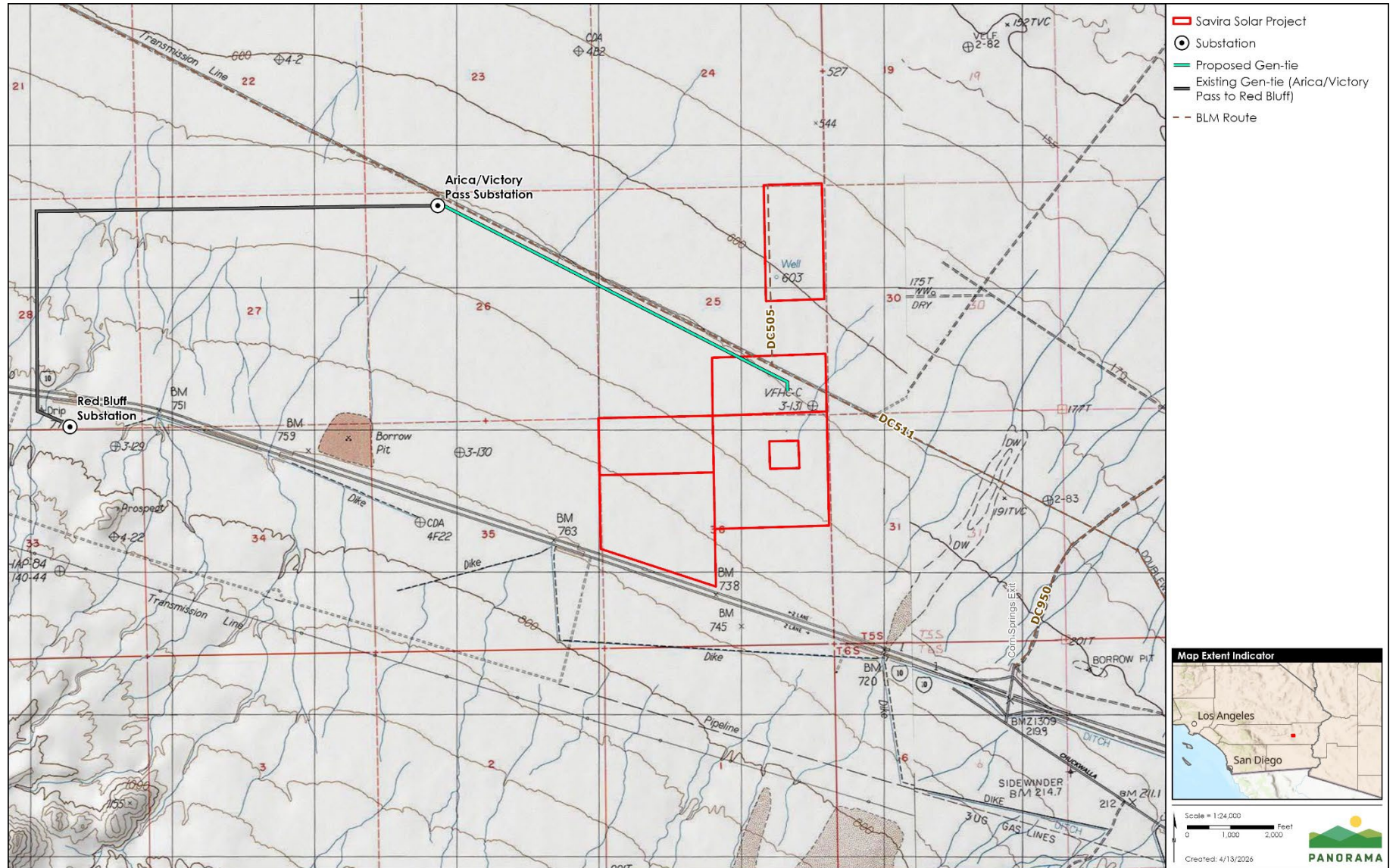


Figure 19. Topographic Map



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AQUATIC RESOURCES REPORT



May 2026

Savira Solar Project Plan Number PDB260064

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Acronyms

amsl	above mean sea level
ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act

CFGC	California Fish and Game Code
CNPS	California Native Plant Society
CWA	Clean Water Act
EPA	Environmental Protection Agency
GIS	Geographic Information Systems
GPS	Global Positioning System
HR	Hydrologic Region
I-10	Interstate 10
LSAA	Lake and Streambed Alteration Agreement
NRCS	Natural Resource Conservation Service
NVCS	National Vegetation Classification System
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USFWS	US Fish and Wildlife Service
WDR	Waste Discharge Requirements
WRCC	Western Regional Climate Center

1 Introduction

1.1 Background

Ironwood Consulting, Inc. (Ironwood) was contracted by Panorama Environmental (Panorama) on behalf of Savira Renewables, LLC, a wholly-owned, indirect subsidiary of Clearway Energy Group, LLC, to delineate jurisdictional waters and other aquatic resources on the Savira Solar Project (Project) east of the town of Desert Center in unincorporated Riverside County, California (Figure 1). The proposed Project site is located on approximately 535 acres of privately owned lands¹ (Figure 2). The Project site is comprised of two land parcels north of Interstate 10 (I-10), referred to as the northern and southern parcels in this report (Figure 1).

The following report describes delineation methods and the results of investigations to determine the presence of aquatic resources that may be subject to federal jurisdiction under the Clean Water Act, Regional Water Quality Control Board (RWQCB) jurisdiction as waters of the state (WOTS), and/or California Department of Fish and Wildlife (CDFW) jurisdiction under § 1602 of the California Fish and Game Code (CFGF). The primary purpose of this report is to provide the location, extent, and estimated acreage impacts to potentially jurisdictional waters in support of Project compliance requirements under the RWQCB Water Quality Certification and Wetlands Program and Lake and Streambed Alteration (LSA) Program implemented by CDFW.

1.2 Site Location

The Project site is located within the Chuckwalla Valley unincorporated Riverside County, California. The Project site is located within the Chuckwalla Valley, between the towns of Desert Center and Blythe, north of Interstate 10 (Figure 1). The Project site is situated within the Corn Spring and Sidewinder Well 7.5 USGS topographic quadrangles. The entire Project site occurs on private land within a Desert Renewable Energy Conservation Plan development focus area. A small portion of the southwest corner of the Project site is within desert tortoise critical habitat but is outside of conservation areas. The Project site does not overlap Areas of Critical Environmental Concern (ACEC); Palen Dry Lake ACEC and Palen Ford ACEC is northeast to the Project site. Nearby land uses include previously developed solar facilities, transmission lines, fallow agriculture and active agriculture.

1.3 Project Summary

Project facilities include an operations and maintenance (O&M) building, a Project substation, a 250-megawatt (MW) battery energy storage system (BESS) and access driveways. The Savira Solar Project would include a 230-kilovolt (kV) substation. From there, the solar energy generated by the Project would be transmitted via a new 230 kV gen-tie line to the existing Arica/Victory Pass substation and then carried on an existing gen-tie line from the Arica/Victory Pass substation to the Southern California Edison (SCE) 230 kV Red Bluff substation.

¹Assessor Parcel Numbers 811-123-001, 811-231-003, 811-231-004, 811-231-009, 811-190-004, and 811-190-005

2 REGULATORY SETTING

2.1 Clean Water Act (§ 401 and § 404)

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into waters of the U.S. (WOTUS) to protect the physical, biological, and chemical integrity of WOTUS. Under provisions of the CWA, U.S. Army Corps of Engineers (USACE) administers the day-to-day Section 404 program, which includes general and individual permit decisions, jurisdictional determinations, developing policy and guidance, and enforcing the provisions of Section 404. WOTUS are defined in 33 CFR 328.3, which has been clarified following multiple Supreme Court decisions and supplemental guidance documents issued by USACE and the Environmental Protection Agency (EPA), the agency that is responsible for developing and interpreting policy, guidance, and environmental criteria for the Section 404 program.

On October 3, 2022, the Supreme Court heard oral arguments in the case of *Sackett v. Environmental Protection Agency* (*Sackett v. EPA*), which considered the jurisdictional scope of WOTUS, and more specifically the connectedness of waterways and wetlands.

On May 25, 2023, the Supreme Court issued a decision on *Sackett v. EPA* interpreting the scope of the CWA. The Supreme Court's 2023 holding is summarized as follows:

- “Waters” encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes.
- To qualify as WOTUS, waters must also be connected to traditional navigable waters.
- The CWA extends only to those wetlands that are, as a practical matter, indistinguishable from WOTUS, meaning that the wetland has a continuous surface connection with that water, making it difficult to determine where the water ends, and the wetland begins.
- The significant nexus test, which had previously been included to determine jurisdiction of waters, is no longer applicable.
- Consistent with the Court's decision in *Sackett*, this report focuses on whether aquatic features at the project site are relatively permanent and sufficiently connected to traditional navigable waters.

Subsequently, on August 29, 2023, the agencies issued a final rule to amend the final “Revised Definition of ‘Waters of the United States’” rule (88 FR 61968 61969, September 8, 2023). The amended rule conforms with the definition of WOTUS by the Supreme Court and states that parts of the January 2023 Rule were invalidated under the Supreme Court's interpretation of the CWA. Therefore, 40 CFR 120.2 and 33 CFR 328.3 now define WOTUS (88 FR 61968 61969, September 8, 2023) accordingly:

- a. Waters of the United States means:
 - i. Waters which are:
 - 1. Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - 2. The territorial seas; or
 - 3. Interstate waters

4. Impoundments of waters otherwise defined as waters of the United States under this definition
5. Tributaries of waters identified that are relatively permanent, standing, or continuous flowing bodies of water,
6. Wetlands adjacent to the following waters:
 - ii. Waters identified in paragraph (a)(1); or
 - iii. Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) and with a continuous surface connection to those waters;
 - iv. 5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) that are relatively permanent, standing, or continuous flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3).

Also relevant to the regulatory setting for this analysis, the following definitions are included in 33 CFR 328.3 (c):

- “Wetlands” means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.
- “Adjacent” (also revised in the recent rulings) means having a continuous surface connection.

Navigable Waters of the United States are regulated by USACE and are defined as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 CFR Part 329.4).

Consistent with the Court’s decision in Sackett and current regulations, this report focuses on whether aquatic resources within the Project site are relatively permanent and sufficiently connected to traditional navigable waters.

2.2 California Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne), Division 7 of the California Water Code, establishes the responsibilities and authorities of the nine Regional Water Quality Control Boards (RWQCBs) and the State Water Resources Control Board (SWRCB). This act establishes that the waters of the State shall be protected for use and enjoyment by the people of the State; that the activities and factors which may affect the quality of the waters of the State shall be regulated to attain the highest water quality. Porter-Cologne also names the RWQCBs to formulate and adopt water quality control plans for all areas within the region. In the State of California, SWRCB and RWQCBs, in conjunction with USACE, administer Section 401 of the CWA (33 U.S.C. 1341) in relation to permitting fill of federally jurisdictional waters. Additionally, beyond federal jurisdiction the SWRCB and the RWQCBs may exert regulatory authority over waters of the state, which are defined in Section 13050(e) of the Porter-Cologne Water Quality Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” This definition may include isolated wetlands and other waters that may be outside of federal jurisdiction, which may be subject to Waste Discharge Requirements (WDRs).

Under Porter-Cologne, the RWQCB may regulate discharge of waste. All parties proposing to discharge waste that could affect waters of the State must file a report of waste discharge with the appropriate RWQCB (§ 13260 of the California Water Code). The RWQCB would then respond to the report of waste discharge by issuing WDRs, or by waiving WDRs for the proposed discharge. Both of the terms *Discharge of Waste* and *waters of the State* are broadly defined such that discharges of waste, including fill, any material resulting from human activity or any other discharge that may directly or indirectly affect waters of the State. While all waters of the U.S. that are within the borders of California are also waters of the State pursuant to Porter-Cologne, the converse is not true. Waters of the U.S. are federally jurisdictional and legally distinct from waters of the State. While CWA Section 404 permits and Section 401 certifications are required when activity results in fill or discharge directly below ordinary high water mark of waters of the U.S., any activity that results or may result in a discharge that directly or indirectly impacts waters of the State or the beneficial uses of those waters may be subject to WDRs.

Effective on May 28, 2020, the SWRCB adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures include the following four primary components:

- 1) a wetland definition;
- 2) a framework for determining if a feature that meets the wetland definition is a water of the state;
- 3) wetland delineation procedures; and
- 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities.

The Procedures define a wetland as an area, which under normal circumstances, supports:

- continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
- the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
- the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The Procedures describe a jurisdictional framework for aquatic features that meet the current, or any historic definition, of a wetland. The Water Boards rely on wetland area determinations from that verified by USACE following the methods described in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and regional supplements. The methods described are accepted for delineation of wetlands but modified only to allow for the fact that the lack of vegetation does not preclude the determination of an area meeting the definition of a wetland. Aquatic features that do not meet the definition of a wetland may still be regulated as a non-wetland water of the state (e.g., lakes, streams, and ocean waters) but the Procedures do not include guidance for jurisdictional determinations for other waters of the state.

The following wetlands are considered "waters of the state":

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands that meet the following criteria:

- a. Approved by an agency as compensatory mitigation for impacts to other waters of the state except where the approving agency explicitly identifies the mitigation as being of limited duration
- b. Specifically identified in a water quality control plan as a wetland or other water of the state;
- c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the landscape; or
- d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b) (
 - i. Industrial or wastewater treatment or disposal,
 - ii. Settling of sediment,
 - iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program;
 - iv. Treatment of surface waters,
 - v. Agricultural crop or stock watering,
 - vi. Fire suppression,
 - vii. Industrial processing or cooling,
 - viii. Active surface mining – even if the site is managed for interim wetlands functions and values.

The Procedures set forth that waters of the State include all waters that meet the current or any historic definition of waters of the U.S. In other words, if at any time in the past a feature would have met the definition of waters of the U.S. pursuant to any current or historical federal rule, the feature would meet the current definition of waters of the State.

If waters of the State are determined to potentially be temporarily or permanently affected by a proposed action, an application for dredge or fill is necessary. When considering project impacts and alternatives, it is recommended to avoid waters of the State to the greatest extent feasible, then minimize permanent impacts, and lastly compensate for impacts. The application should describe how the proposed action will not result in significant degradation of the water of the State. Applications should include all items listed in the Cal. Code Regs., title 23, § 3856, a delineation report, project start/end dates, maps, description of impacted waters, and alternatives analysis (unless exemption applies). Additional application requirements (e.g., supplemental field data, a draft compensatory mitigation plan, proposed water quality monitoring plan, or draft restoration plan for temporary impacts) may be necessary based on coordination with the appropriate RWQCB office.

2.3 California Fish and Game Code §§ 1600 to 1616

Pursuant to § 1602 of the California Fish and Game Code (CFGF), notification to the California Department of Fish and Wildlife (CDFW) is required for any proposed activity that may substantially divert or obstruct a river, stream, or lake. § 1602(a) specifically provides that:

An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake unless all of the following occur:

(1) The department receives written notification regarding the activity in the manner prescribed by the department...

The program developed by CDFW to implement this notification process is generally referred to as the LSAA Program (the acronym LSAA represents a Lake and Streambed Alteration Agreement). CDFW traditionally defines a stream (including creeks and rivers) as a “body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life.” A stream includes watercourses with surface or subsurface flow that supports or has supported riparian vegetation. CDFW's definition of lakes include natural lakes or man-made reservoirs. Areas within CDFW jurisdiction include riparian habitats associated with watercourses, where “riparian habitat” is not defined in the statute (Title 14, Section 1.72) but typically refers to vegetation associated with a stream channel. The limits of jurisdiction include ephemeral, intermittent, and perennial watercourses and include the outermost edge of riparian vegetation or the top of bank of streams or lakes, whichever is wider. Generally, CDFW jurisdiction is often extended to include areas that exhibit any one of the three wetland indicators – vegetation, soils, or hydrology.

CDFW may require an LSAA prior to any activity that would substantially divert or obstruct the natural flow, or substantially change the bed, channel, or bank of a river, stream, or lake, or use material from a streambed. CDFW's issuance of an LSAA is subject to California Environmental Quality Act certification.

3 Site Characteristics

3.1 Regional Setting

The Project site is located in the central portion of Chuckwalla Valley, east of Palm Springs in the Colorado Desert. The elevation of Chuckwalla Valley ranges from less than 400 feet above mean sea level (amsl) at Ford Dry Lake to approximately 1,800 feet amsl west of Desert Center and along the upper portions of the alluvial fans that surround the valley perimeter. The surrounding mountains rise to over 3,000 feet amsl. The topography of the Project site generally slopes downward toward the northeast at gradient of less than two percent. Ground surface elevations within the Project site ranges from approximately 600 feet amsl in the northeast corner and 750 feet amsl in the southwest corner.

Anthropogenic features and land use near the Project site include agricultural (date palm farm), trash dumping, renewable energy, energy transmission, historical military operations, and recreational development. Adjacent and nearby land uses are summarized in Table 1 and shown on Figure 1.

Table 1. Adjacent and Nearby Land Uses

Direction	Land Uses
NORTH	Arica Solar Project, Victory Pass Solar Project
SOUTH	I-10; desert tortoise critical habitat, Chuckwalla Mountains Wilderness, Chuckwalla ACEC

Direction	Land Uses
EAST	Palen/Maverick Solar Project, proposed Redonda Solar Project, active irrigated date palm farm, Palen Ford Dry Lake ACEC
WEST	Victory Pass Solar Project

3.2 Hydrology

The Project site resides within the Colorado River Hydrologic Region (HR). The Colorado River HR covers approximately 13 million acres (20,000 square miles) in southeastern California and is the most arid HR in California with annual precipitation averaging less than 4 inches (WRCC 2025). The Project site is in the Big Wash and Hayfield Lake-Lake Tamarisk HUC 10 Hydrologic Areas, which flow to closed basins, not connected with the Colorado River or other traditional navigable waters. Palen Dry Lake and Ford Dry Lake represent the lowest elevations within the basin.

Desert washes within this region are almost always dry but contract and expand dramatically in size due to extreme variations in flows, which can range from high-discharge floods to extended periods when surface flow is absent. The Project site lies between the alluvial fans emanating from the Eagle Mountains to the west, Chuckwalla Mountains to the south, and Coxcomb Mountains to the northeast, and Palen Mountains to the north.

The Project site is situated in the lower alluvial fan that is characterized by less stabilized soils consisting of finer sand and silt, compared to the upper alluvial fan that supports more stabilized, rocky soils with well-defined channels. The topography of the Project site is relatively flat with gradients of less than two percent. Alluvial processes across the Project site generally flow from southwest to northeast (Figure 3). Agricultural practices and developments, such as the I-10, have greatly modified natural hydrology.

3.3 Soils

The soils on the Project site are entirely Carsitas-Carsitas non gravelly complex, 2 to 4 percent slopes (Figure 3). This soil unit is primarily formed in alluvium from granitoid and/or gneissic rocks and are somewhat excessively drained. The Carsitas soils are on alluvial fans, fan aprons, valley fills, dissected remnants of alluvial fans and in drainageways (USDA NRCS 2025, Figure 4).

3.4 Aeolian Sand Transport

The Project site is located within the Chuckwalla Valley, a region of active aeolian (wind-blown) sand migration and deposition with sand migration zones (transport corridors) that extend from north of Palen Dry Lake, through Ford Dry Lake, to the Palo Verde Mesa. Aeolian processes play a major role in the creation and establishment of sand dune formations and habitat in the Chuckwalla Valley and those within the Project vicinity. Aeolian sands (dunes, sand fields, and similar habitats) are important habitats for plants and wildlife, including special status species such as *Eriastrum harwoodii* and Mojave fringe-toed lizard. Active sand transport deposits that include low to low to moderate transport categories do not occur on the Project site (Lancaster 2014, Kenney 2017). The Project site consists of only sources for sand transport and is not part of the active sand transport corridor (Figure 5).

3.5 Rainfall

The Colorado River Basin Region has the driest climate in California, with an average annual precipitation of 5.5 inches and average annual runoff of 200,000 acre-feet. Rainfall is sporadic and amounts vary with location, with substantially more rainfall occurring in the mountains than on the valley floors (Sanford 2021). Data was obtained from the Western Regional Climate Center (WRCC 2025) for the most proximate stations to the Project site: Blythe Airport and Eagle Mountain weather stations (approximately 40 miles and 10 miles from the Project site, respectively). The subtropical climate of the Colorado Desert is characterized by dry, mild winters averaging 54 degrees Fahrenheit (°F) and dry, hot summers that average 90°F. Summer highs are known to reach 122°F. Since 2010, the highest level of winter rainfall since 2010 occurred between October 2019 and March 2020 (3.6 in [91.4 mm]). Since then, there were two consecutive years of below-average rainfall (2020/2021 and 2021/2022) followed by two years of above-average rainfall (2022/2023 and 2023/2024). Average historical winter precipitation recorded since the 1940s in the area was about 1.9 in (48.3 mm) while most recently, since year 2000, winter rainfall averaged approximately 1.8 in (45.7 mm; WRCC 2025).

Table 2. Seasonal rainfall summary

Year	Winter – October to March (inches)*	Summer – April to September (inches)*
2010	4.8	0.1
2011	2.5	1.2
2012	1.0	3.3
2013	1.5	2.6
2014	0.7	1.2
2015	2.1	1.3
2016	1.5	0.7
2017	3.4	1.1
2018	0.1	0.5
2019	2.6	0.2
2020	3.6	1.0
2021	0.9	0.6
2022	1.2	2.4
2023	0.5	0.7
2024	1.4	0.0
Seasonal Average	1.8	1.1

3.6 Vegetation Communities

The National Vegetation Classification Standard (NVCS) communities were reviewed to determine vegetation communities within the Project site. Six vegetation communities were mapped within the Project site: Sonoran creosote bush scrub, non-native grassland, microphyll woodland/desert dry wash woodland, deciduous orchard/vineyard, lacustrine, and urban as described below (Figure 6).

Sonoran creosote bush scrub: Sonoran creosote bush scrub has rarity rank of S5 (CDFW 2025), being demonstrably secure. It is synonymous with *Larrea tridentata* (creosote bush) - *Ambrosia dumosa* (burro bush) alliance (Sawyer et. al 2009) and *Lower Bajada and Fan Mojavean-Sonoran Desert Scrub* (NVCS). This is the main vegetation community in the southwest parcels.

Non-native grassland: Non-native grassland is synonymous to *Bromus rubens* - *Schismus arabicus*, *barbatus* herbaceous semi-natural alliance, red brome or Mediterranean grass grasslands and does not have a rarity rank, as it is a non-native vegetation community. This community is characterized by either red brome or Mediterranean grass having 80% or higher relative cover in the herbaceous layer. Red brome has a CAL-IPC rating of high and Mediterranean grass has a CAL-IPC rating of limited. This community can occur in any topographical setting with any substrate, and often outcompetes native vegetation communities in areas with disturbance. This is the main vegetation community in the northern parcels closest to the active date palm farm that have been disturbed by past agricultural activity.

Microphyll woodland/desert dry wash woodland: Microphyll woodland and desert dry wash woodland are interchangeable descriptions. For the purposes of this report, microphyll (small leaves) is more descriptive of what occurs on the Project site. Microphyll woodland is a sensitive vegetation community recognized with a rarity rank of S4 (CDFW 2025). It is often characteristic of desert washes and is likely to be regulated by CDFW as jurisdictional state waters. This community is synonymous with blue palo verde (*Parkinsonia florida*) - ironwood (*Olneya tesota*) woodland alliance (Sawyer et. al 2009) as well as honey mesquite (*Neltuma glandulosa*) thickets, and Sonoran - Coloradan Semi Desert Wash Woodland / Scrub (NVCS). Microphyll woodland is mapped on the western side of the Project site.

Deciduous orchards/vineyards: Deciduous orchards/vineyards consist of abandoned agricultural land where there used to be a date palm farm as well as a portion of an active date palm farm along the eastern edge of the northern Project area.

Lacustrine: Lacustrine vegetation communities are those that are associated with ponded water. Within the Project area, this community is mapped where a detention pond is maintained with limited to no vegetation for agricultural purposes. This area may be subject to jurisdictional state waters regulated by CDFW and RWQCB.

Urban: North of the man-made detention pond, a staging area for agricultural equipment, vehicles, tractors, and a few storage buildings occurs that is labeled as urban.

4 Methods

4.1 Field Investigations

Field investigations (surveys) for aquatic resources, including wetlands and other open waters, were conducted between April 15 and April 30, 2024. Surveyors included Leigh Rouse, Beth Bowers, and Rose Cornwell, all of whom were qualified with 40-hour jurisdictional water training or other appropriate training, and had previous experience with jurisdictional resources associated with arid lands of the California deserts. Transects were typically performed perpendicular to flow patterns and conducted within all Project components to obtain sufficient quantity of data points to facilitate Geographic Information System (GIS) digitization of jurisdictional features. Point, line, or polygon data were collected at individual features that displayed characteristic sign of episodic flow or retention of water. In some cases, data were collected in upland areas to provide a record of areas that lacked watercourse features. Representative photos were taken at aquatic resources and areas determined to be uplands (with relict channels or sand dunes). Photo points are shown on Figure 7, and photos are provided in Appendix B. Data, including the width of the ordinary high water mark (OHWM) and bank to bank, were taken for each aquatic feature that occurred within the Project site, typically at the center of each feature.

4.1.1 Wetland Determination

Wetlands potentially subject to USACE jurisdiction were delineated based on the *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2010). Potential wetlands as defined by the USACE 1987 manual were evaluated using a three-parameter approach: dominance of hydrophytic vegetation, hydric soils, and wetland hydrology. The indicator status for vegetation was determined by the most current National Wetland Plant List (USACE 2020) and using the nomenclature offered in the US Department of Agriculture (USDA) NRCS PLANTS Database (NRCS 2023). Hydric soil determinations followed the guidance provided by the *Regional Supplement* and indicators described in *Field Indicators of Hydric Soils in the United States* (NRCS 2018) (U.S. Department of Agriculture (USDA) and Natural Resources Conservation Service (NRCS) 2018).

If present, the boundaries of wetlands were delineated with ESRI ArcGIS Collector[®]. A sub-meter geographic positioning system (GPS) was used in the field to map wetland boundaries.

4.1.2 Waters Determination

The limits of non-wetland waters potentially subject to state or federal jurisdiction were determined following the methods outlined in *U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* ("OHWM Field Guide", (Lichvar and McColley 2008), *Mapping Episodic Stream Activity (MESA)* (Brady and Vyverberg 2013)), *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2014), and CDFW's traditional definition of bed, channel, or bank as referenced in § 1602(a) of the California Fish and Game Code. The MESA protocol was developed to assist with delineation of streams in dryland environments, specifically within the arid and semi-arid Mojave, Sonoran, Great Basin, and eastern Sierra regions of California, to facilitate project permitting in compliance with California Fish and Game Code.

The OHWM, defined by USACE as the “line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.” Ironwood evaluated all linear water features for OHWM indicators to assist with delineation of the lateral extents of waters. Ironwood staff walked apparent stream features and recorded OHWM indicators associated with the primary low flow channel and floodplain at representative cross-sections. Where indicators were apparent, Ironwood recorded GPS points at the transition line between the low flow channel, active floodplain, and low terrace for all linear aquatic features in the Project site.

Field investigations were conducted in spring and did not necessarily coincide with antecedent precipitation events; therefore, Ironwood ecologists relied on fluvial transport and deposition indicators from recent or historic episodic flow, as described in the MESA Guide (Brady and Vyverberg 2013), to identify and delineate channel and watercourse (“waters”) features.

Such indicators included:

- Flow lineations
- Cut banks
- Sediment sorting
- Vegetation channel alignment
- Sand/gravel bars
- Mud cracks/curls
- Wrinkle marks
- Drift/wrack lines
- Exposed roots
- Scour
- Sand filled channels

Water features and riparian communities were mapped at a minimum scale of 1:6000, often down to 1:3000, as suggested in the MESA guidance for utility solar projects (Brady and Vyverberg 2013). Where vegetation contained a mixture of upland and desert wash-dependent indicator species from two or more vegetation communities, the indicator species that appeared with the greatest vegetation coverage (absolute dominance based on percent cover) was used to identify or verify the vegetation community.

Geomorphic indicator data were recorded at each data point location using a field data form specifically developed for this methodology based on the MESA Guide indicators (Brady and Vyverberg 2014).

Documentation of physical indicators providing evidence of aquatic resource areas as opposed to upland areas provided a technical basis for: (1) determining the presence or absence of a stream, other types of watercourse, and lake/manmade reservoir and (2) if present, determining if the landform is active, dormant, abandoned, or relict as defined by the following criteria developed by Brady and Vyverberg (2013):

- **Active:** Hydrologically active watercourse. Active channels are subject to CDFW jurisdiction.

- **Dormant:** A watercourse isolated from its principal water source by natural causes or human-constructed features such as roads, but that retains its potential for hydrologic reactivation and stream / watercourse function.
- **Abandoned:** A watercourse in which water flow no longer occurs, such as a channel isolated from its water source by faulting or stream capture, or human-constructed features like levees, incised roadways, and surface flow diversions. The presence of physical indicators of fluvial inactivity is necessary to demonstrate abandonment, and the cause of the abandonment (such as a levee or road berm) should be identified. With time and the absence of flow, an abandoned channel will become a relict landform.
- **Relict:** Surface water flow no longer occurs, as demonstrated by the presence of physical indicators of antiquity, which demonstrate that the channel is a relict landform.

4.2 Post-field analysis

Post-field analysis was conducted by Ironwood ecologists and GIS specialists, in tandem, to code, define, designate, and edit all acquired field data representing jurisdictional waters. Acreages were calculated in ESRI ArcGIS. The linear path and extents of water features were digitized using polylines with an accompanying width measurement, which were used to convert polylines to polygons, or mapped with a GPS unit by walking flow path boundaries in the field. Wetland boundaries were digitized in the field by walking the lateral extents and recording location data with a GPS, which were converted to polygon data in ArcGIS. The resulting features were reviewed and further refined based on the interpretation of high-resolution aerial imagery.

5 Results

The Project site is situated on a low gradient alluvial plain and is intersected by numerous unnamed ephemeral and intermittent drainages that flow generally northeast toward Big Wash. Big Wash is shown as an intermittent blue-line stream on USGS topographic maps (2024) and is identified as an intermittently flooded riverine system by USFWS NWI (USFWS 2024). Potential jurisdictional aquatic resources identified by Ironwood biologists are shown on Figure 7. The northeasterly flow of drainages has been disrupted by past and ongoing human disturbances. I-10 constricted most flow through bridges under the highway. The date palm farms and new solar development have created barriers to flow, which can cause erosion through those features. In the recent past, orchards have been cleared and left in brush piles, currently shown as deciduous orchard on Figure 6. South of I-10 and through the I-10 bridges, the flow is tributary from the Chuckwalla Mountains, but north of I-10 and between the bridges, flow is discontinuous.

5.1 Unvegetated Ephemeral Dry Wash

Unvegetated ephemeral dry washes were mapped consistent with the presence of active channels, primarily within the creosote bush scrub (Figure 7). Unvegetated ephemeral dry washes were not dominated by xeric riparian vegetation such as desert ironwood or blue palo verde, yet irregular and isolated occurrences of wash-dependent shrubs and trees may be found within mapped unvegetated ephemeral dry wash.

Active channels within the lower alluvial fan, where the Project site is situated, showed signs of frequent avulsion (changes in flow direction following surface water flow events) due to patterns of brief, intense surface water flow. The avulsion process results in a network of active and inactive (abandoned) channels. Active channels supported evidence of scour, cut banks, headcuts, flow lineations, sediment sorting, vegetation channel alignment, mud cracks, sand filled channels, wrack lines, and organic drift. Areas that were cleared of previous orchards have little to no drainages and lack evidence of recent episodic flow. Inactive and relict channels and swales were observed to be discontinuous, shallow depressions with no evidence of recent episodic flow. Although some of these features are visible on aerial imagery, the absence of watercourse indicators, presence of upland indicators (e.g., bioturbation), and isolation from a larger floodplain disqualified these features as being mapped as unvegetated ephemeral dry wash and were determined to be relict channels. Because I-10 directed flow to bridges, fewer active channels occur between the desert dry wash woodlands associated with the bridges. Between the I-10 bridges, runoff from the highway forms small, isolated channels that then become more braided through the alluvial fan.

5.2 Riparian Woodland – Desert Dry Wash Woodland

Desert dry wash woodland, considered a desert riparian vegetation type, most of which are associated with I-10 bridges that concentrate flow from the Chuckwalla Mountains south of I-10 (Figure 7). Desert dry wash woodland is a xeric riparian vegetation community (Holland 1986). Areas mapped as Desert Dry Wash Woodland were composed of ephemeral dry wash (streambed) and riparian interfluvies within a matrix of dominant wash-dependent vegetation. Holland (1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland. desert dry wash woodland is characterized by braided wash channels that experience regular avulsion. This community is synonymous with blue palo verde (*Parkinsonia florida*) - ironwood (*Olneya tesota*) (microphyll) woodland alliance (Sawyer et. al 2009) and *Sonoran - Coloradan Semi Desert Wash Woodland / Scrub* (NVCS). Within the Project site, this vegetation community is dominated by an open tree layer of ironwood, with occasional blue palo verde. The understory typically consisted of creosote bush scrub with big galleta grass (*Pleuraphis rigida*). Big galleta grass rarely occurs outside of the desert dry wash woodland, and the creosote are more robust than those outside the desert dry wash woodlands. Only the edge of desert dry wash woodlands occurs on the western side of the Project site (Figure 7).

5.3 Detention Pond

A man-made detention pond associated with the date palm farm occurs within the northern parcel (Figure 7). This pond is an NWI-mapped palustrine unconsolidated bottom, permanently flooded, excavated (PUBHx) aquatic feature.

5.4 Excavated Depression

One area along I-10 appears to be previously excavated and likely holds water during precipitation events. This man-made, excavated depression had some tamarisk in the bottom where mud cracks indicated that water may have pooled in the recent past.

6 JURISDICTIONAL FINDINGS AND RECOMMENDATIONS

The following discussion represents the best effort at determining the jurisdictional boundaries of aquatic resources using the most current regulations and guidance from the USACE and CDFW. Table 3 summarizes the acreage of aquatic resources with potential jurisdictional status for the USACE, RWQCB, and CDFW. It is recommended that agencies provide the final jurisdictional determination.

Table 3. Summary of aquatic resources and potential jurisdictional status.

Aquatic Resource	Area (acres)	U.S. Army Corps of Engineers	RWQCB Waters of the State	CDFW 1602 Resources
Unvegetated ephemeral Wash (Bank to Bank)	13.00	Not subject to USACE jurisdiction	Subject to RWQCB jurisdiction	Subject to CDFW 1602 jurisdiction
Dry Desert Wash Woodland	3.31	Not subject to USACE jurisdiction	Subject to RWQCB jurisdiction	Subject to CDFW 1602 jurisdiction
Detention Pond	3.31	Not subject to USACE jurisdiction	Subject to RWQCB jurisdiction	Subject to CDFW 1602 jurisdiction
Excavated Depression	0.65	Not subject to USACE jurisdiction	Subject to RWQCB jurisdiction	Subject to CDFW 1602 jurisdiction

6.1 Clean Water Act (§ 401 and § 404)

Aquatic resources delineated within the Project site lack surface connections to Palen Lake or Big Wash, an intermittent riverine feature northeast of the Project site. Big Wash is isolated from and does not convey flow to a known jurisdictional waters of the U.S. Palen Lake, Big Wash, and the aquatic resources within the Project site do not meet the criteria described for waters of the U.S. described in section 2.1 - no territorial seas or navigable waters, their tributaries. USACE has determined that no jurisdictional waters of the US were found within other projects in the same basin (Desert Sunlight, Desert Harvest, and Palen Solar Projects). An Approved Jurisdictional Determination (SPL-2021-00035) was issued by the USACE on March 10, 2021 for the Arica Solar Project (Appendix C) that is just north of the Project site (Figure 1). The Approved Jurisdictional Determination states the following:

Based on the information provided and additional review, it appears the project site does not contain water(s) of the United States Pursuant to 33 CFG Part 325.9. The basis for our determination can be found in the enclosed Approved Jurisdictional Determination form. In general, the site has been found to drain entirely to Ford Dry Lake, and as such, only contains isolated, intrastate waters, to do not appear to have a connection to interstate commerce. Due to this determination, a Department of the Army permit would not be required for activities on this project site.

Due to the conclusion drawn in the Arica Approved Jurisdictional Determination and the federal jurisdictional criteria identified in Section 2.1 of this report, it is assumed that waters of the U.S. do not occur within the Savira Solar Project. Given the absence of a nexus to a federal waters of the U.S., the aquatic resources in the Project site are potentially not subject to federal jurisdiction under CWA Section 404 and Section 401. An Approved

Jurisdictional Determination for the Savira Project site issued by the USACE is recommended to confirm status of federal jurisdiction.

6.2 California Porter-Cologne Water Quality Act

The RWQCB regulates discharges to jurisdictional waters under the California Porter-Cologne Water Quality Control Act, which is implemented through issuance of National Pollutant Discharge Elimination System permits for point source discharges and WDRs for non-point source discharges.

The California WQCB regulations adopted in 2020 require project proponents to apply to the appropriate RWQCB to obtain authorization for dredge or fill in jurisdictional waters of the State. Based on the findings above, it is likely that the aquatic features within the Project site would likely fall under the jurisdiction of RWQCB. An application should be submitted to the Colorado River Basin RWQCB, along with the required supplemental material (including precise impact calculations) and fee. CEQA review will be required for the effects to jurisdictional waters of the State.

6.3 California Fish and Game Code §§ 1600–1616

California Fish and Game Code § 1602 requires project proponents to notify CDFW prior to any activity that may substantially modify CDFW-jurisdictional streambeds. Based on the findings above, a Notification of Lake or Streambed Alteration form should be submitted to CDFW, along with the required supplemental material (including precise impact calculations) and fee. CEQA review will be required for the effects CDFW-jurisdictional streambeds and associated riparian habitat. The area estimated to meet the definition of CDFW-jurisdictional waters within the Project site are shown in Table 3.

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Appendix A — Figures

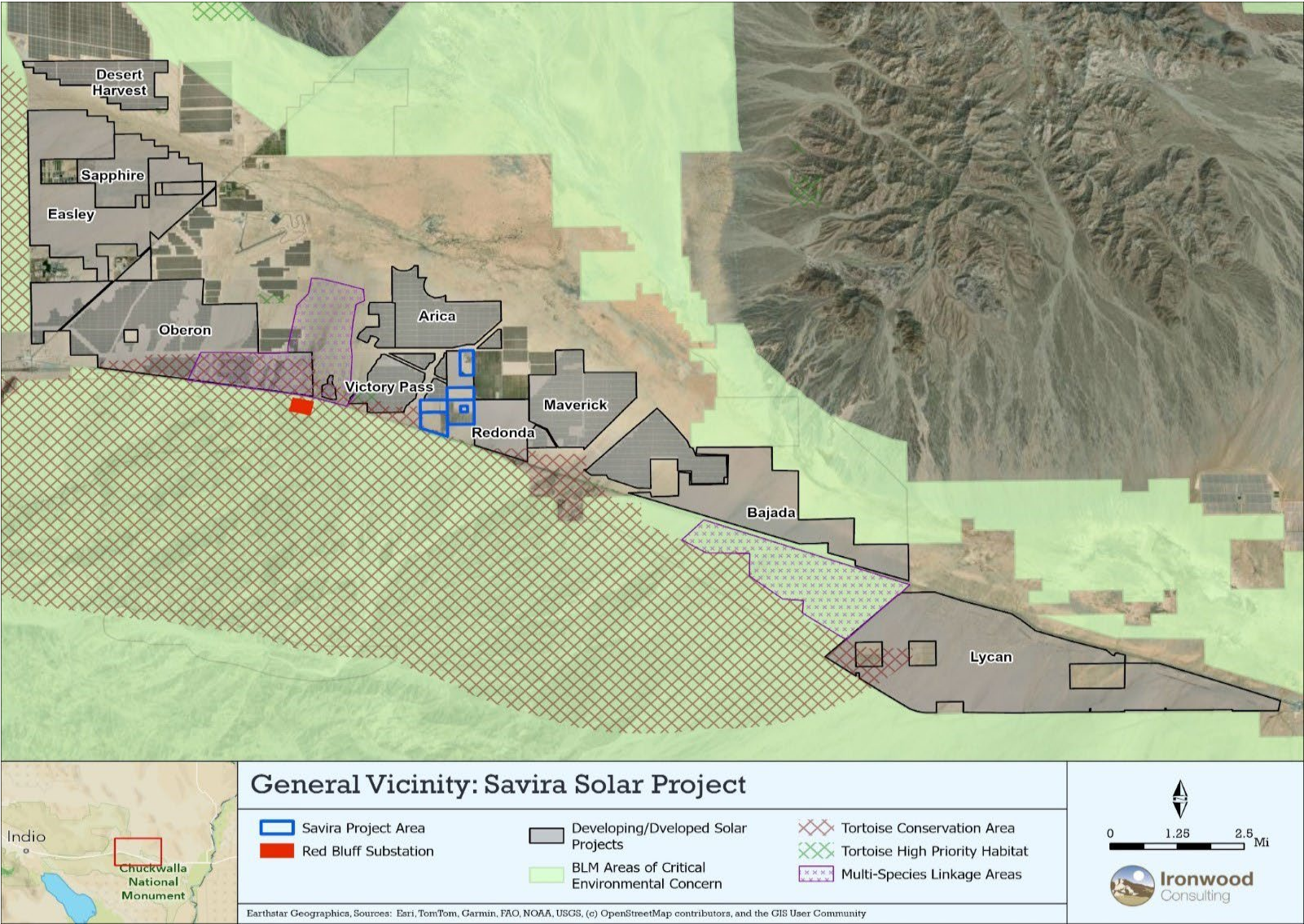


Figure 1. General Vicinity

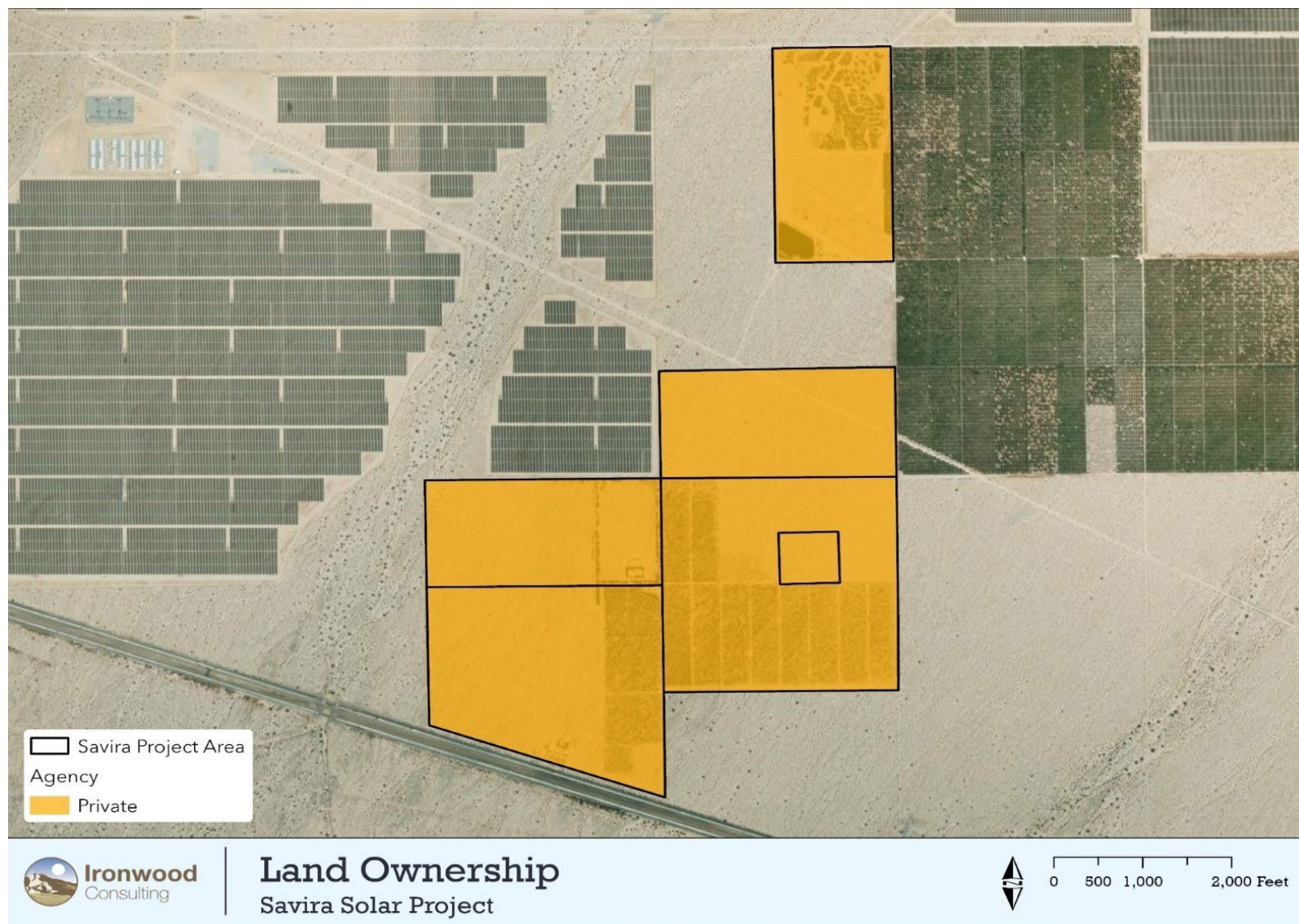


Figure 2. Land Ownership.

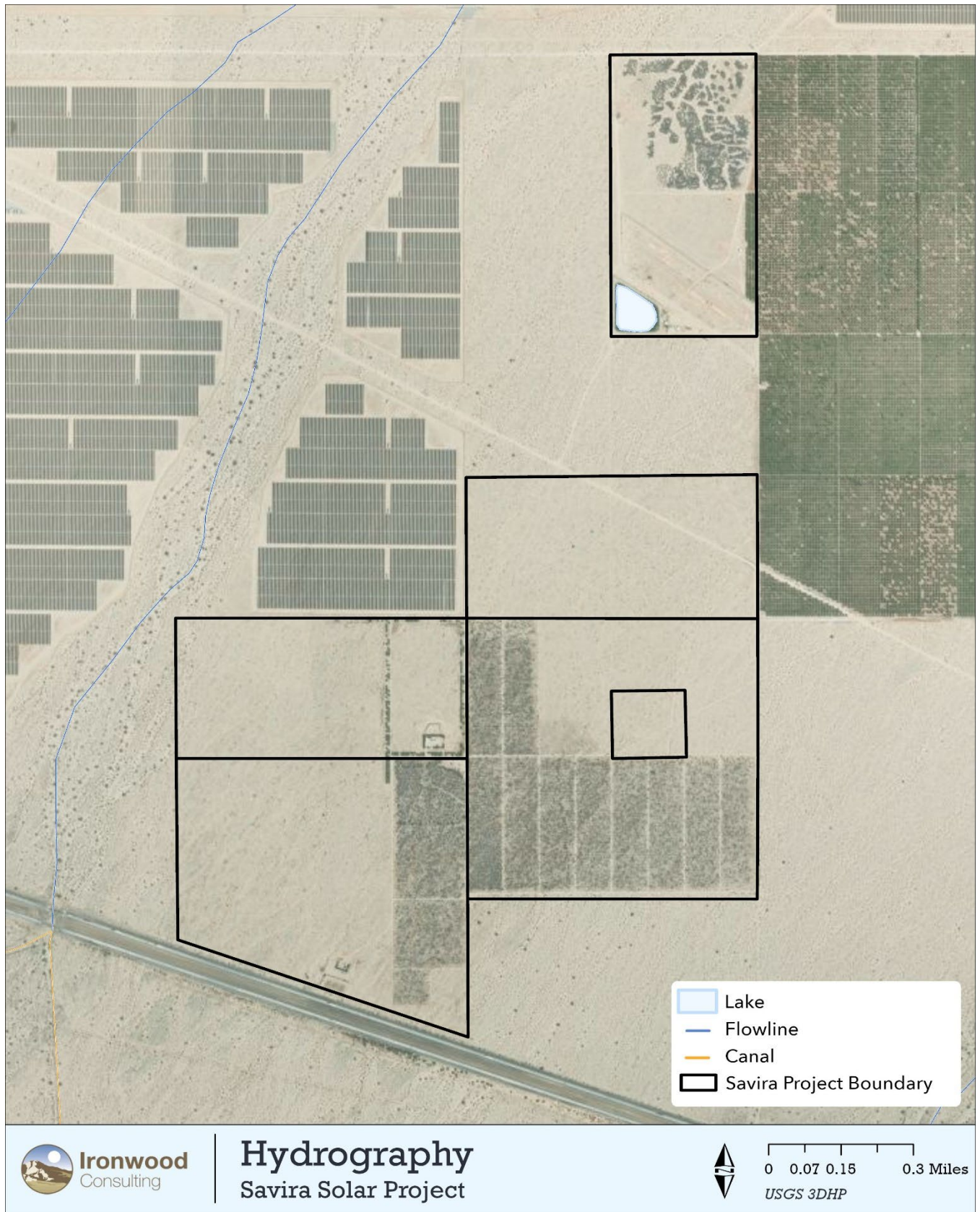


Figure 3. Hydrography

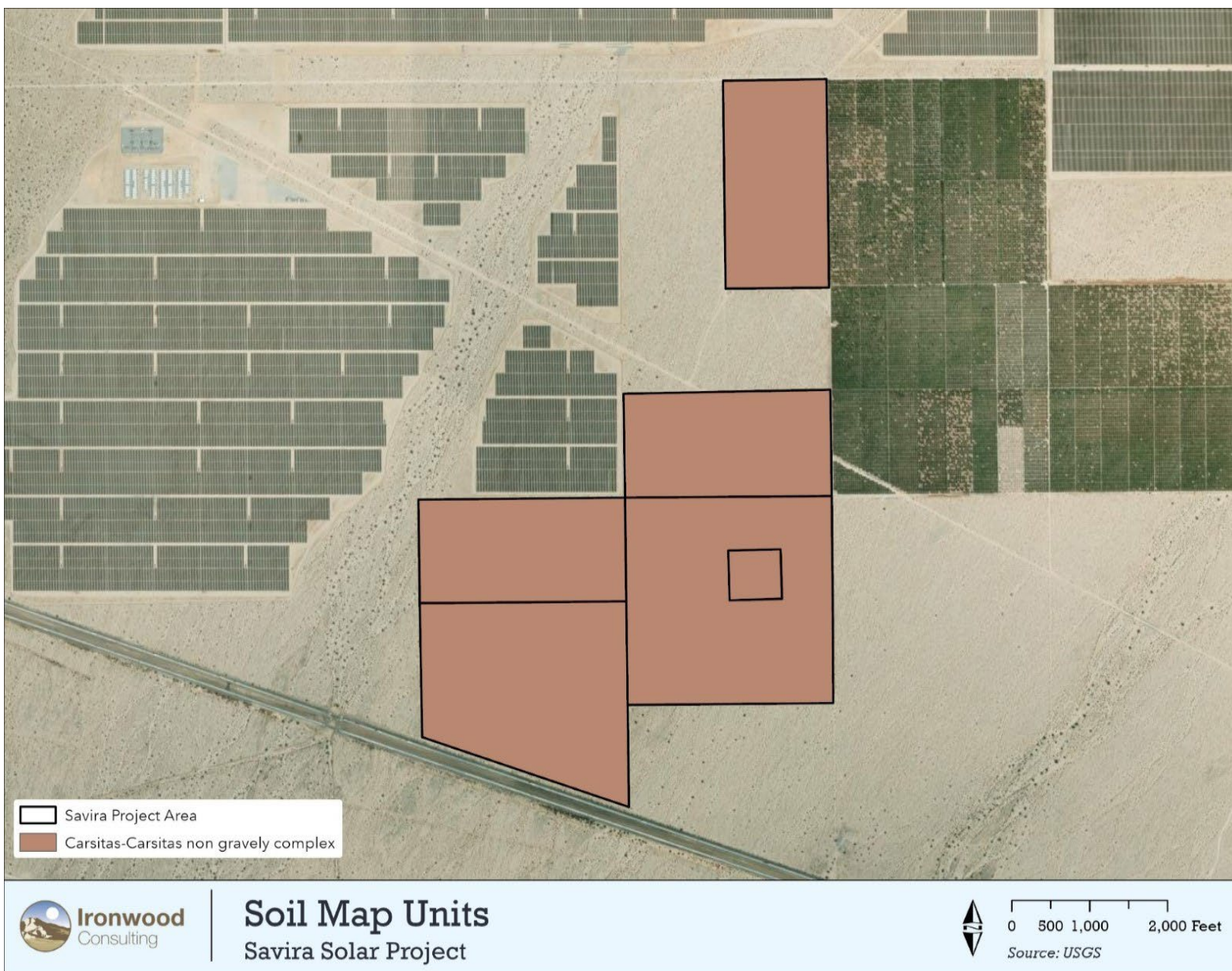


Figure 4. Soil Map Units.

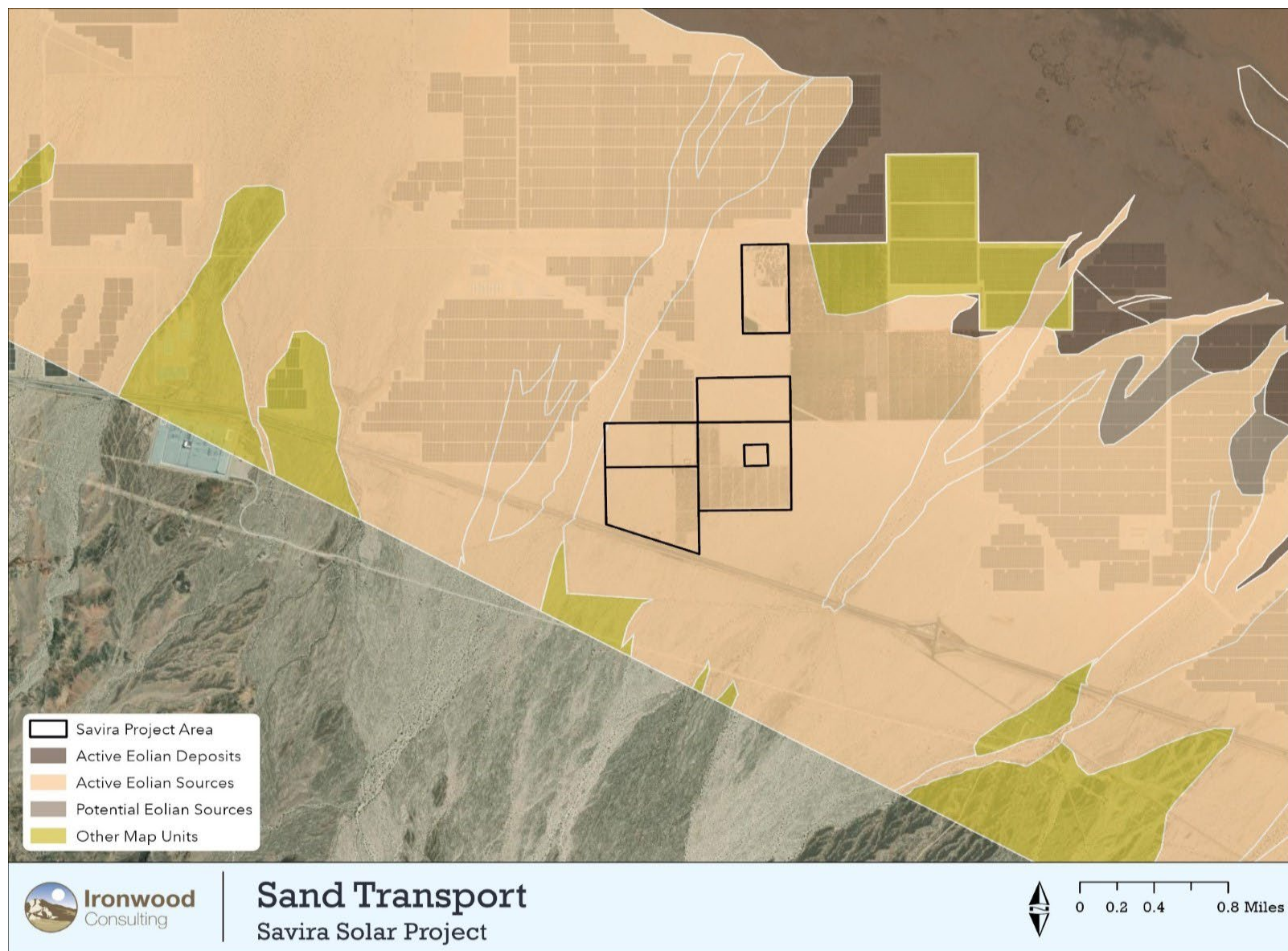


Figure 5. Sand Transport.

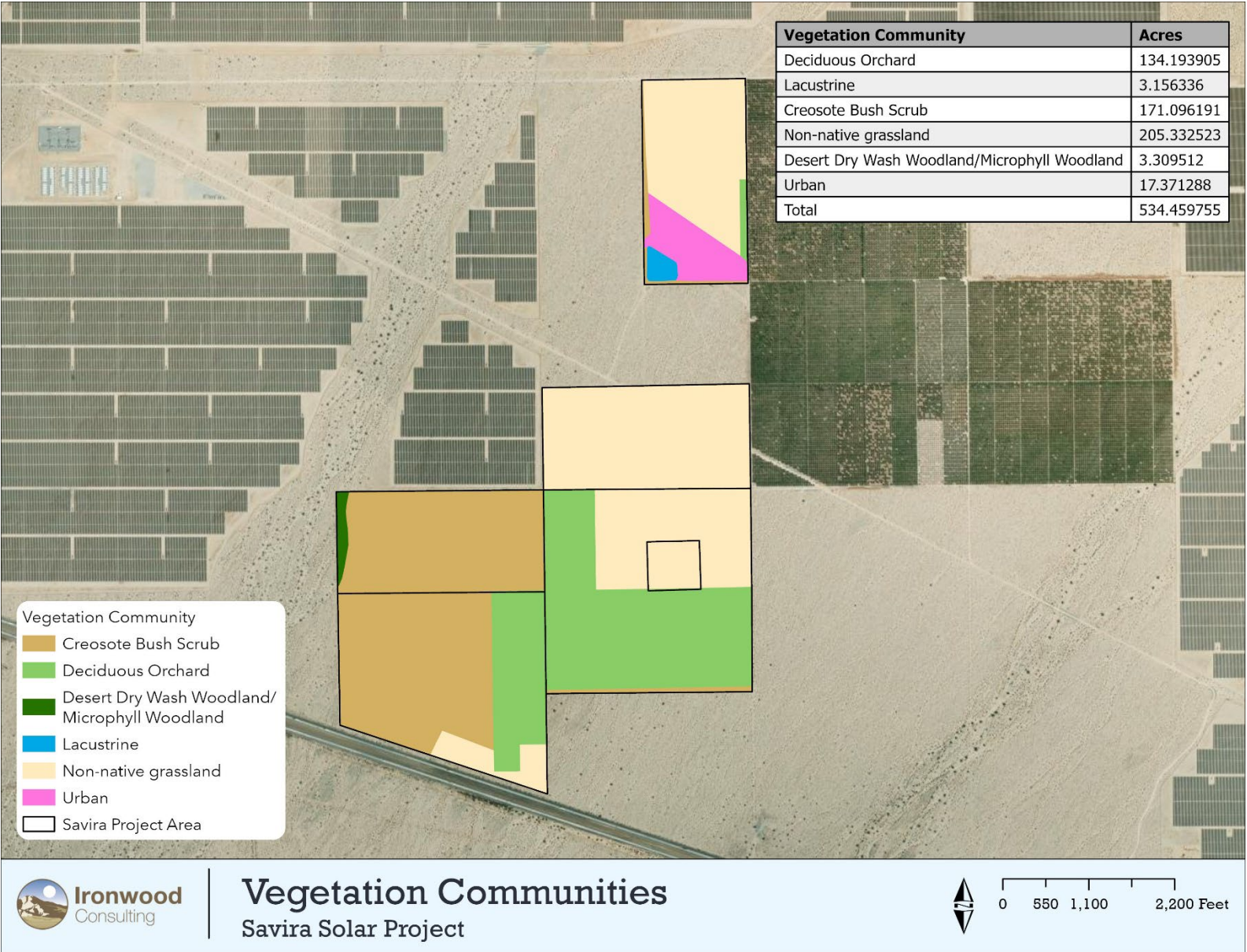


Figure 6. Vegetation Communities.

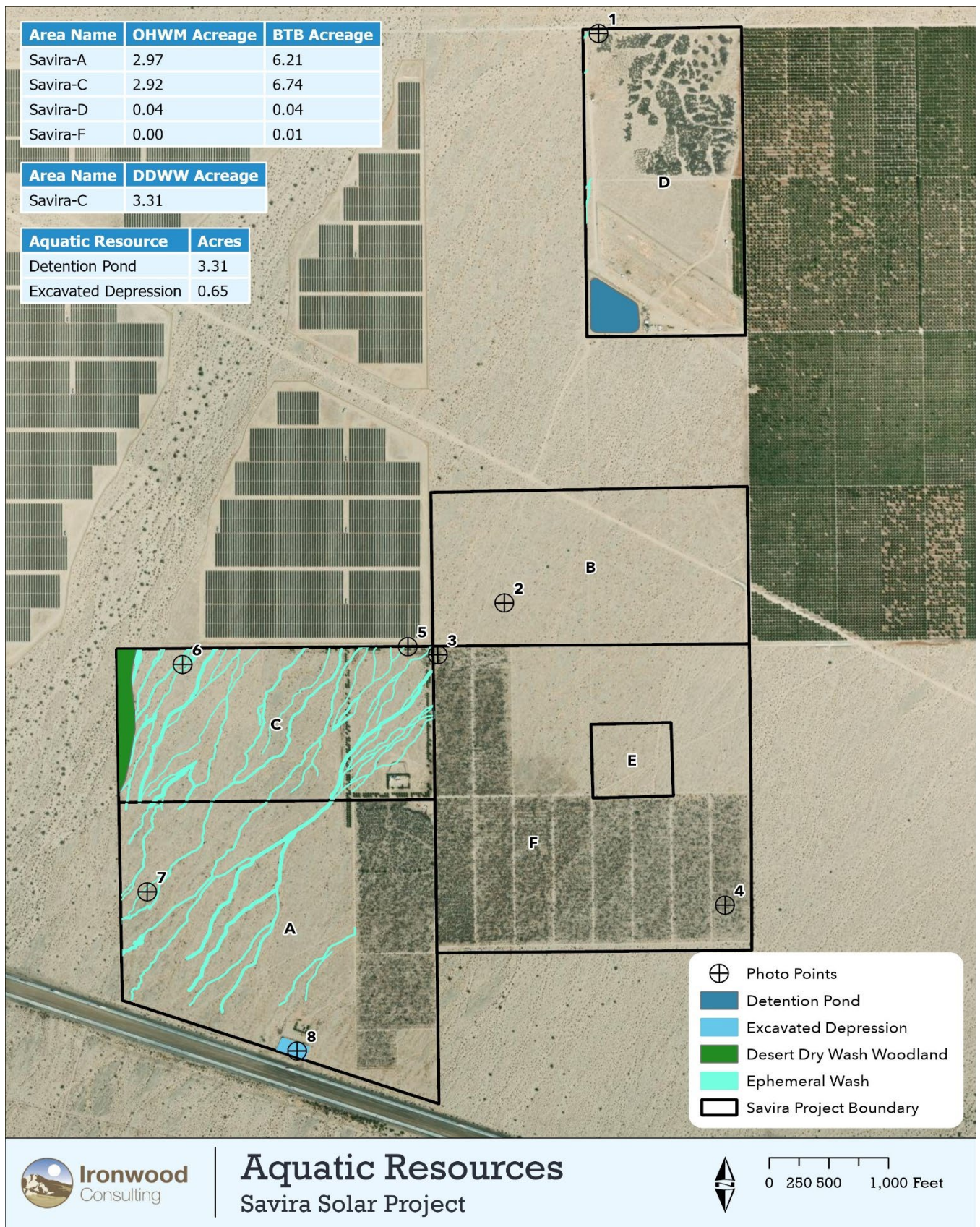


Figure 7. Aquatic Resources

Appendix B — Photo Log



Photo point 1. Orchard brush pile that lacks active channels in the northern parcel.



Photo Point 2. Former agricultural area that lacks active channels in the southern parcel.



Photo Point 3. Orchard brush pile that lacks active channels in the southern parcel.



Photo Point 4. Orchard brush pile that lacks active channels in the southern parcel



Photo Point 5. Irrigated date palm within area that lacks active channels in the southern parcel.



Photo Point 6. Active channel lined with burro bush in the southern parcel.



Photo 7. Desert pavement that lacks active channels in the southern parcel.



Photo Point 8. Excavated depression in the southern parcel.

Appendix C— Arica Solar Project Jurisdictional Determination

**JURISDICTIONAL WATERS REPORT
ARICA SOLAR PROJECT
RIVERSIDE COUNTY, CALIFORNIA**



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November 2020

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Appendix

Appendix A – Athos Solar Project Approved Jurisdictional Determination	
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List of Acronyms

amsl	above mean sea level
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFGF	California Fish and Game Code
CWA	Clean Water Act
DRECP	Desert Renewable Energy Conservation Plan
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
GIS	Geographic Information Systems
GPS	Global Positioning System
LSAA	Lake and Streambed Alteration Agreement
MESA	Mapping Episodic Stream Activity
NAIP	National Agriculture Imagery Program
NVCS	National Vegetation Classification System
PV	Photovoltaic
RWQCB	Regional Water Resources Control Board
SWANCC	Solid Waste Agency of North Cook County
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
WDR	Waste Discharge Requirement
WRCC	Western Regional Climate Center

1 INTRODUCTION

1.1 Background

Arica Solar, LLC is proposing to develop the Arica Solar Project (Project) near the Desert Center community within unincorporated Riverside County, California. The proposed Project site is located on Bureau of Land Management (BLM) managed lands. The Arica Solar Project is expected to generate 265 megawatts (MW) of renewable energy using photovoltaic (PV) panels and will connect to the existing Red Bluff substation.

This Jurisdictional Waters Report presents the methods, results, and recommendations associated with the jurisdictional waters evaluation performed in 2020. The primary purpose of this report is to provide the location of and quantify jurisdictional waters within the Project site. Information found in this report would be evaluated during future site design, impact calculations, and permitting process.

1.2 Site Location

The Project site is in unincorporated eastern Riverside County, California. It consists of approximately 2,000 acres of BLM-administered land. The Project site is situated within Chuckwalla Valley near the community of Desert Center, nearly halfway between the cities of Indio and Blythe, north of the Interstate-10 freeway, on the Sidewinder Well and Corn Spring 7.5-Minute U.S. Geological Survey topographic quadrangles.

The Project site is located within in the California Desert Conservation Area (CDCA) planning area, and within the southern Desert Tortoise Recovery Unit of the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan. The Project site is not located within any ACECs (Areas of Critical Environmental Concern), but Alligator Rock ACEC is almost 3 miles southwest, the Desert Lily Preserve ACEC is 3 miles north, and Joshua Tree National Park is 5 miles north of the Project site (Figure 1). The shared Project generation tie (gen-tie) line would cross the Chuckwalla ACEC.

The entirety of the Project site is located within the boundaries of the Riverside East Solar Energy Zone (SEZ) identified in the Solar Programmatic Environmental Impact Statement (EIS) approved by a Record of Decision signed by BLM on October 12, 2012. Additionally, the Project site is within the Chuckwalla Valley ecoregion subarea of the Desert Renewable Energy Conservation Plan (DRECP) area. The DRECP identifies the federal lands in and around the Project site in the Land Use Plan Amendment (LUPA) and Final Environmental Impact Statement (FEIS) as a Development Focus Area (DFA), as approved by a Record of Decision signed by BLM on September 14, 2016.

1.3 Project Summary

Arica Solar, LLC, a subsidiary of Clearway Energy Group LLC (Clearway), has proposed to construct and operate the Arica Solar Project on land administered by BLM, on approximately 2000 acres. The proposed solar project site would be adjacent to another concurrently proposed project (Victory Pass), also proposed by Clearway that will share a few components. The Project will consist of photovoltaic (PV) solar

modules, tracker components, power inverters, transformers, an electrical collection system, one or two project substations, a shared switchyard, battery storage, access roads, and a shared gen-tie line to the existing Southern California Edison (SCE) Red Bluff Substation.

2 REGULATORY SETTING

2.1 Clean Water Act (§ 401 and § 404)

The federal Clean Water Act (CWA) is applicable to jurisdictional waters of the United States. The Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) finalized a revised definition of “waters of the United States” under the CWA, within the Navigable Waters Protection Rule, which became effective on June 22, 2020. Waters of the United States is clearly divided into four categories and encompasses *“the territorial seas and traditional navigable waters; perennial and intermittent tributaries that contribute surface water flow to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters”* (Federal Register 85:222250). Waters that are not included within four categories are not waters of the United States, and non-jurisdictional under the CWA.

2.2 California Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne), Division 7 of the California Water Code, establishes the responsibilities and authorities of the nine RWQCBs and the SWRCB. This act establishes that the waters of the State shall be protected for use and enjoyment by the people of the State; that the activities and factors which may affect the quality of the waters of the State shall be regulated to attain the highest water quality. Porter-Cologne also names the RWQCBs to formulate and adopt water quality control plans for all areas within the region. The Project is located within the Colorado River (Region 7) RWQCB jurisdiction.

Under Porter-Cologne, the RWQCB may regulate discharge of waste. All parties proposing to discharge waste that could affect waters of the State must file a report of waste discharge with the appropriate RWQCB (§ 13260 of the California Water Code). The RWQCB would then respond to the report of waste discharge by issuing waste discharge requirements (WDRs), or by waiving WDRs for the proposed discharge. Both of the terms *Discharge of Waste* and *waters of the State* are broadly defined such that discharges of waste, including fill, any material resulting from human activity or any other discharge that may directly or indirectly affect waters of the State. While all waters of the U.S. that are within the borders of California are also waters of the State pursuant to Porter-Cologne, the converse is not true. Waters of the U.S. are federally jurisdictional and legally distinct from waters of the State. While § 404 permits and § 401 certifications are required when activity results in fill or discharge directly below ordinary high-water mark of waters of the U.S., any activity that results or may result in a discharge that directly or indirectly impacts waters of the State or the beneficial uses of those waters may be subject to WDRs.

Pursuant to California Water Code § 13191.3(a), the SWRCB and RWQCBs would comply with the listing requirements of § 303(d) of the CWA which requires states to identify waters that do not meet or are not expected to meet by the next listing cycle, applicable water quality standards.

2.3 California Fish and Game Code §§ 1600 to 1616

Pursuant to § 1602 of the California Fish and Game Code (CFG), California Department of Fish and Wildlife (CDFW) may require a Lake or Streambed Alteration Agreement (LSAA) prior to any activity that would substantially divert or obstruct the natural flow, or substantially change the bed, channel, or bank of a river, stream or lake, or use material from a streambed. CDFW's issuance of a LSAA is subject to California Environmental Quality Act (CEQA) certification.

CDFW traditionally defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of lake includes natural lakes or man-made reservoirs. CDFW jurisdiction also includes riparian or wetland vegetation associated with a watercourse.

Streambed morphology and presence was evaluated for the Project site based on guidance from a combination of *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a); *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (USACE 2014); and *Mapping Episodic Stream Activity (MESA) Field Guide and Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* ("MESA Guide"; Brady and Vyverberg 2013) published by the California Energy Commission in 2014. The primary objective of the MESA guide was to clarify definitions used to determine CDFW-jurisdictional waters and replace guidance (e.g., *A Field Guide to Lake and Streambed Alteration Agreements* [CDFW 1994]) with current understanding of fluvial geomorphology and ecohydrology. Guidance outlined in CDFW Code Sections 1600-1616 was used to determine the presence of stream bank, riparian areas, and floodplains where state jurisdiction may apply.

3 ENVIRONMENTAL SETTING

3.1 Regional Setting

The Project site is in the central portion of Chuckwalla Valley, east of Palm Springs in the Colorado Desert. The elevation of Chuckwalla Valley ranges from less than 400 feet above mean sea level (amsl) at Ford Dry Lake to approximately 1,800 feet amsl west of Desert Center and along the upper portions of the alluvial fans that surround the valley perimeter. The surrounding mountains rise to over 3,000 feet amsl. The topography of the Project site generally slopes downward toward the northeast at gradient of less than 1 percent. Ground surface elevations at the Project site itself ranges from approximately 485 feet amsl in the northeast to 645 feet amsl in the southwest.

Anthropogenic features and land use near the Project site include agriculture, renewable energy, energy transmission, and historical military operations.

3.2 Hydrology

The Project site resides within the Colorado River Hydrologic Region (HR). The Colorado River HR covers approximately 13 million acres (20,000 square miles) in southeastern California and is the most arid HR in California with annual precipitation averaging 5.5 inches (DWR 1994). The Project site is in the Big Wash HUC 10 Hydrologic Areas, which flow to closed basins, not connected with the Colorado River or other traditional navigable waters (Figure 2). Palen Dry Lake and Ford Dry Lake represent the lowest elevations within the basin.

Desert washes within this region are almost always dry but contract and expand dramatically in size due to extreme variations in flows, which can range from high-discharge floods to extended periods when surface flow is absent. The Project site lies between the alluvial fans emanating from the Eagle Mountains to the west, Chuckwalla Mountains to the south, and Coxcomb Mountains to the north.

The Project site is situated in the lower alluvial fan that is characterized by less stabilized soils consisting of finer sand and silt, compared to the upper alluvial fan that supports more stabilized, rocky soils with well-defined channels. The topography the Project site is relatively flat with gradients of less than two percent.

Alluvial processes across the Project site generally flow from southwest to northeast. The I-10 (about 2 miles south of the Project site) crosses the alluvial fan that emanates from the Chuckwalla Mountains. The I-10 and associated wing dikes, which were constructed over 45 years ago, have altered natural surface flows from dozens of meandering small alluvial washes into concentrated discrete channels. Lancaster et al. (2014) noted that changes to drainage patterns resulting from the construction of I-10 translate into downstream hydrological degradation, focusing surface flow into freeway undercrossings and rendering portions of the alluvial fan less active than under historical conditions. Minor washes located in the hydrological shadow of I-10 were cut off from upstream flows and therefore transport lower volumes of water and entrained sediment. Major, culverted washes received more surface flow and distribute a higher volume and fine sediment compared to conditions that preceded the construction of I-10. These effects persist on the Project site under current conditions.

3.3 Rainfall

Precipitation data was obtained from the Western Regional Climate Center (WRCC 2020) for the most proximate stations to the Project site: Blythe Airport and Eagle Mountain weather stations (approximately 40 and 10 miles from the Project site, respectively). Historical rainfall data were totaled and averaged for the winter (October through March) and summer (April through September) periods (Table 1). Over the period of analysis, the highest winter rainfall occurred in 2010 and highest summer rainfall occurred in 2012. Winter rains prior to the spring 2020 survey were above average over the period analyzed.

Table 1. Regional Rainfall Totals 2010-2020

Year	Winter - October to March (inches)*	Summer - April to September (inches)*
2010	4.8	0.1
2011	2.5	1.2
2012	1	3.31
2013	1.5	2.6
2014	0.7	1.2
2015	2.1	1.3
2016	1.5	0.7
2017	3.4	1.1
2018	0.1	0.5
2019	2.6	0.165
2020	3.6	-
Seasonal Average	2.2	1.2

**Source: Western Regional Climate Center (WRCC 2020): Blythe Airport and Eagle Mountain weather stations.*

3.4 Soils

Soils mapped on the Project site consist of two soil types per the United States General Soils Map. The southwestern portion of the site is mapped as the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni map unit characterized by soils with high percentage (greater than 65 percent) of sand with moderate susceptibility to wind erosion. The northeastern portion of the site is mapped as Rositas-Dune-Land Carsitas. It is characterized by soils with a very high sand percentage (greater than 95 percent) and is highly susceptible to wind erosion (Figure 3).

3.5 Sand Transport System

The Project site is located within the Chuckwalla Valley, a region of active aeolian (wind-blown) sand migration and deposition. Aeolian processes play a major role in the creation and establishment of sand dune formations and habitat in the Chuckwalla Valley and those within the Project site. Aeolian sands (dunes, sand fields, and similar habitats) are important habitats for certain plants and animals.

In conjunction with the DRECP process, the Department of Conservation's California Geological Survey prepared a regional Eolian System Mapping Report for Eastern Riverside County in 2014 (Lancaster et al. 2014; note that eolian and aeolian are alternate spellings of the same word).

Active aeolian sand transport areas were consistent with analysis conducted by Kenney et al (2014) with active aeolian sand migration in the northern and northeastern boundaries and with aeolian sand sources in the remainder of the site (Figure 4). The active areas of aeolian sand migration areas have finer sand that is suitable habitat for sensitive wildlife (such as Mohave fringe toed lizard) and plant species (such as Harwood's milkvetch). There is some instability over time and space, as sand corridors expand, contract or migrate with changing weather and climate. A more recent analysis by Kenney in 2017 shows that the

remainder of the site, that has aeolian sand sources, has a low to moderate sand migration rate (Kenney 2017).

4 METHODS

4.1 Desktop Review

Initial analysis was performed with Geographic Information Systems (GIS) using the following digital datasets:

- 7.5' USGS topographic quadrangles;
- National Agriculture Imagery Program (NAIP) 4-band imagery (2020);
- National Wetlands Inventory Wetlands Mapper (USFWS 2020);
- National Vegetation Classification Standard (NVCS) layers from the (DRECP) Data Basin;
- Natural Resource Conservation Service (NRCS) Web Soil Survey (NRCS 2020);
- Eastern Riverside County Soil Mapping (Lancaster et al. 2014);
- Western Regional Climate Center (WRCC 2020);
- USGS National Hydrography Dataset (2020);
- Jurisdictional waters layers for Palen Solar Project
- Jurisdictional water layers for Athos Renewable Energy Project; and
- Jurisdictional waters layers for Desert Harvest Solar Project.

Relevant digital data were incorporated into ESRI ArcGIS Online and made accessible during field investigations via the ESRI Collector application.

4.2 Field Investigations

Field investigations (surveys) were conducted between May 20-21, 2020. Surveyors included Emily Thorn, Dave Kesonie, Lehong Chow, Jason St Pierre and field assistant Samantha Nielson. The former four were qualified with 40-hour jurisdictional waters training and previous experience with jurisdictional resources associated with arid lands of the California deserts, while the latter has some experience with jurisdictional resources associated with arid lands of California deserts only.

Data were collected using a combination of records entered in ESRI ArcGIS Collector® and hand-written field notes. Transects were typically performed perpendicular to flow patterns and conducted within all Project components to obtain sufficient quantity of data points to facilitate GIS digitization of jurisdictional features. Over 30 miles of pedestrian and vehicular transects were performed. Point data were collected at individual features that displayed characteristic sign of episodic flow and, in some cases, upland areas that lacked watercourse features. Data points were taken for each feature that crossed the Project, typically at the center of each feature and the width of the feature was recorded.

California Department Fish and Wildlife (CDFW) Jurisdictional Waters

The field investigation focused on CDFW's definition of jurisdictional waters, which was consistent with the *MESA (Mapping Episodic Stream Activity) Field Guide and Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* ("MESA Guide"; Brady and Vyverberg 2013). The MESA Guide provides a current understanding of fluvial geomorphology and ecohydrology and facilitates mapping of State-jurisdictional waters.

Field investigations were conducted during a dry spring (Table 2). As a result, recent evidence of episodic flow was minimal during the survey; however, historical episodic flow and watercourse features, as defined by the MESA Guide (Brady and Vyverberg 2013), were evident during the surveys and subsequently recorded and photographed when observed. Such features included:

- vegetation channel alignment,
- sand-filled channels,
- levee ridges,
- wrack lines,
- bifurcated flow,
- bar-and-swale topography,
- braided channels,
- cut banks,
- organic drift, and
- low flow and secondary channels.

Upland features including desert pavement, deflated sand sheets, gravel lag deposits, and islands were also recorded. Jurisdictional waters and riparian communities were mapped at a minimum scale of 1:6000, often down to 1:3000, as suggested in the MESA guidance for utility solar projects (Brady and Vyverberg 2013). The field delineation utilized the Holland Code Classification System for vegetation communities (Holland 1986) for identifying xeric riparian vegetation. Where vegetation contained a mixture of upland and wash-dependent indicator species from two or more Holland vegetation communities, the indicator species that appeared with the greatest vegetation coverage (absolute dominance based on percent cover) was used to identify the vegetation community.

Post-field analysis

Post-field analysis was conducted by surveyors and GIS specialists, in tandem, to code, define, designate, and edit all acquired field data representing jurisdictional waters. Acreages were calculated using GIS by referencing collected digital data and aerial photography. The linear path and extent of Unvegetated Ephemeral Dry Washes were digitized using polylines with an accompanying width measurement. The width value was used to convert polylines to polygons. The resulting features were reviewed and further refined based on interpretation of high-resolution aerial imagery. Rainfall data and historical aerial imagery were reviewed to estimate the time that anthropogenic influences may have affected hydrology and determine whether channels downstream of diversions may have been abandoned.

5 RESULTS

Potential RWQCB and CDFW-jurisdictional waters identified within the Project site consisted of streambeds (Unvegetated Ephemeral Dry Wash) and streambeds-riparian (Desert Dry Wash Woodland) - (Figures 5a to 5f).

5.1 Unvegetated Ephemeral Dry Wash

Unvegetated Ephemeral Dry Washes were mapped consistent with the presence of active channels, primarily within the creosote bush scrub. Unvegetated Ephemeral Dry Washes were not dominated by xeric riparian vegetation such as desert ironwood or blue palo verde, yet irregular and isolated occurrences of wash-dependent shrubs and trees may be found within mapped Unvegetated Ephemeral Dry Wash (Figures 5a-5f).

Active channels within the lower alluvial fan, where the Project is situated, showed sign of frequent avulsion (changes in flow direction following surface water flow events) due to patterns of brief, intense surface water flow. The avulsion process results in a network of active and inactive (abandoned) channels. Active channels supported evidence of scour, cut banks, levee ridges, wrack lines, and organic drift. Inactive channels and swales were characterized as discontinuous, shallow depressions with no evidence of recent episodic flow. Areas that had aeolian sand characteristics did not support evidence of active channels. Although some of these features are visible on aerial imagery and may appear to be active, the absence of watercourse indicators, presence of upland indicators (e.g., bioturbation), and isolation from a larger floodplain disqualified these features as being mapped as Unvegetated Ephemeral Dry Wash.

Narrow washes and sheet wash, within hydrological shadow of I-10, and its associated levees, were mapped as Unvegetated Ephemeral Dry Washes if they supported watercourse characteristics. While these washes have been affected by upstream diversions and likely support far less surface flow than under historical conditions, some could become active after sufficient rainfall.

5.2 Desert Dry Wash Woodland

Desert Dry Wash Woodland is a xeric riparian vegetation community (Holland Code 62200). Areas mapped as Desert Dry Wash Woodland were composed of ephemeral dry wash (streambed) and riparian interfluves within a matrix of dominant wash-dependent vegetation (Figures 5a, 5b, 5e). Holland (1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland. Desert Dry Wash Woodland is characterized by braided wash channels that experience regular avulsion. This community is synonymous with blue palo verde (*Parkinsonia florida*) - ironwood (*Olneya tesota*) (microphyll) woodland alliance (Sawyer et. al 2009) and Sonoran - Coloradan Semi Desert Wash Woodland / Scrub (NVCS). Within the Project site, this vegetation community is dominated by an open tree layer of ironwood, blue palo verde, and smoke tree (*Psoralea arguta*) of at least 2-3% cover. The understory is a modified creosote scrub with big galleta grass (*Hilaria rigida*) and occurs only in small areas along the southwestern boundary.

6 JURISDICTIONAL FINDINGS AND RECOMMENDATIONS

The following discussion represents the best effort at determining the jurisdictional boundaries using the most current regulations and guidance from the USACE and CDFW.

6.1 Clean Water Act (§ 401 and § 404)

The Project site is within a closed surface hydrology basin that drains to Ford Dry Lake and does not meet the criteria described for waters of the U.S. described in section 2.1. No territorial seas or navigable waters, their tributaries, lakes/pounds or wetlands were found within the Project site. USACE has determined that no jurisdictional waters of the United States were found within other projects in the same basin (Desert Sunlight, Desert Harvest, and Palen Solar Projects). An Approved Jurisdictional Determination (SPL-2018-00708) was issued by the USACE on October 29, 2018 for the adjacent Athos Renewable Energy Project (Appendix A), The Approved Jurisdictional Determination states the following:

Based on available information, I have determined waters of the United States do not occur on the project site. The aquatic resources identified are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Clean Water Act. Other Federal, State, and local laws may apply to your activities.

Due to the conclusion drawn in the Athos Approved Jurisdictional Determination, as well as other nearby Projects, and the federal jurisdictional criteria identified in Section 2.1 of this report, it is assumed that waters of the U.S. do not occur within the Project and regulations under the Clean Water Act appear to not be applicable.

6.2 California Porter-Cologne Water Quality Act

The RWQCB regulates discharges to jurisdictional waters under the California Porter-Cologne Water Quality Control Act, which is implemented through issuance of National Pollutant Discharge Elimination System permits for point source discharges and WDRs for non-point source discharges.

Table 2. Summary of Colorado River Basin RWQCB Jurisdictional Waters in Acres

Area	Unvegetated Ephemeral Wash (OHWM width)
Project Site	69.3

The California WQCB regulations adopted in April 2020 requires project proponents to apply to the appropriate RWQCB to obtain authorization for dredge or fill in jurisdictional waters of the State. Based on the findings above, an application should be submitted to the Colorado River Basin RWQCB, along with the required supplemental material (including precise impact calculations) and fee, for Project

disturbances located within RWQCB-jurisdictional areas. CEQA review will be required for the effects to jurisdictional waters of the State.

6.3 California Fish and Game Code §§ 1600–1616

The area estimated to meet the definition of CDFW-jurisdictional waters within the Project site are shown in Table 3 below.

Table 3. Summary of CDFW Jurisdictional Water in Acres

Area	Unvegetated Ephemeral Wash (bank to bank)	Desert Dry Wash Woodland	TOTAL
Project Site	91.2	10.9	102.1

California Fish and Game Code § 1602 requires project proponents to notify CDFW prior to any activity that may substantially modify CDFW-jurisdictional streambeds. Based on the findings above, a Notification of Lake or Streambed Alteration form should be submitted to CDFW, along with the required supplemental material (including precise impact calculations) and fee for Project disturbances located within CDFW-jurisdictional areas. CEQA review will be required for the effects CDFW-jurisdictional streambeds and associated riparian habitat.

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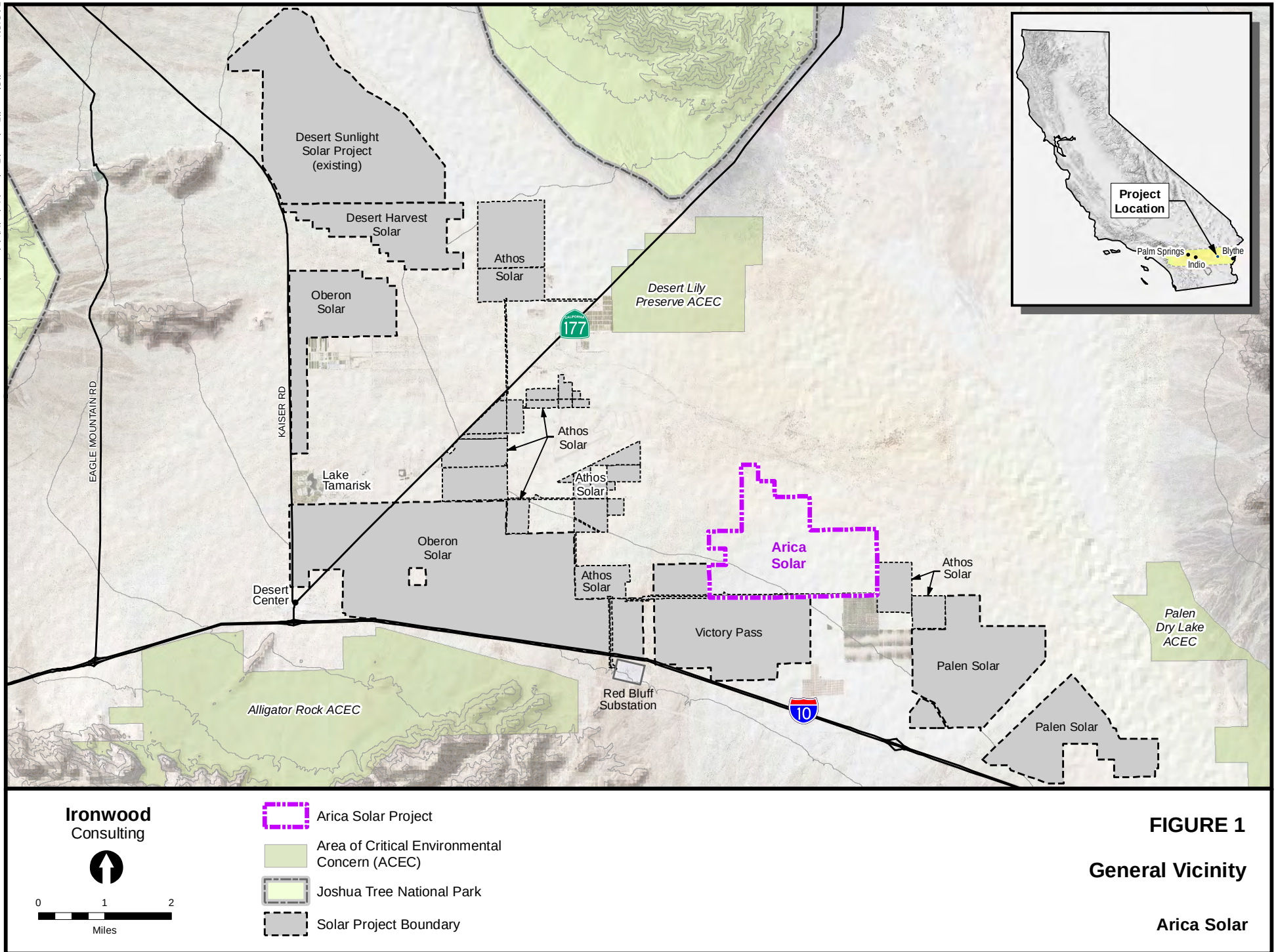
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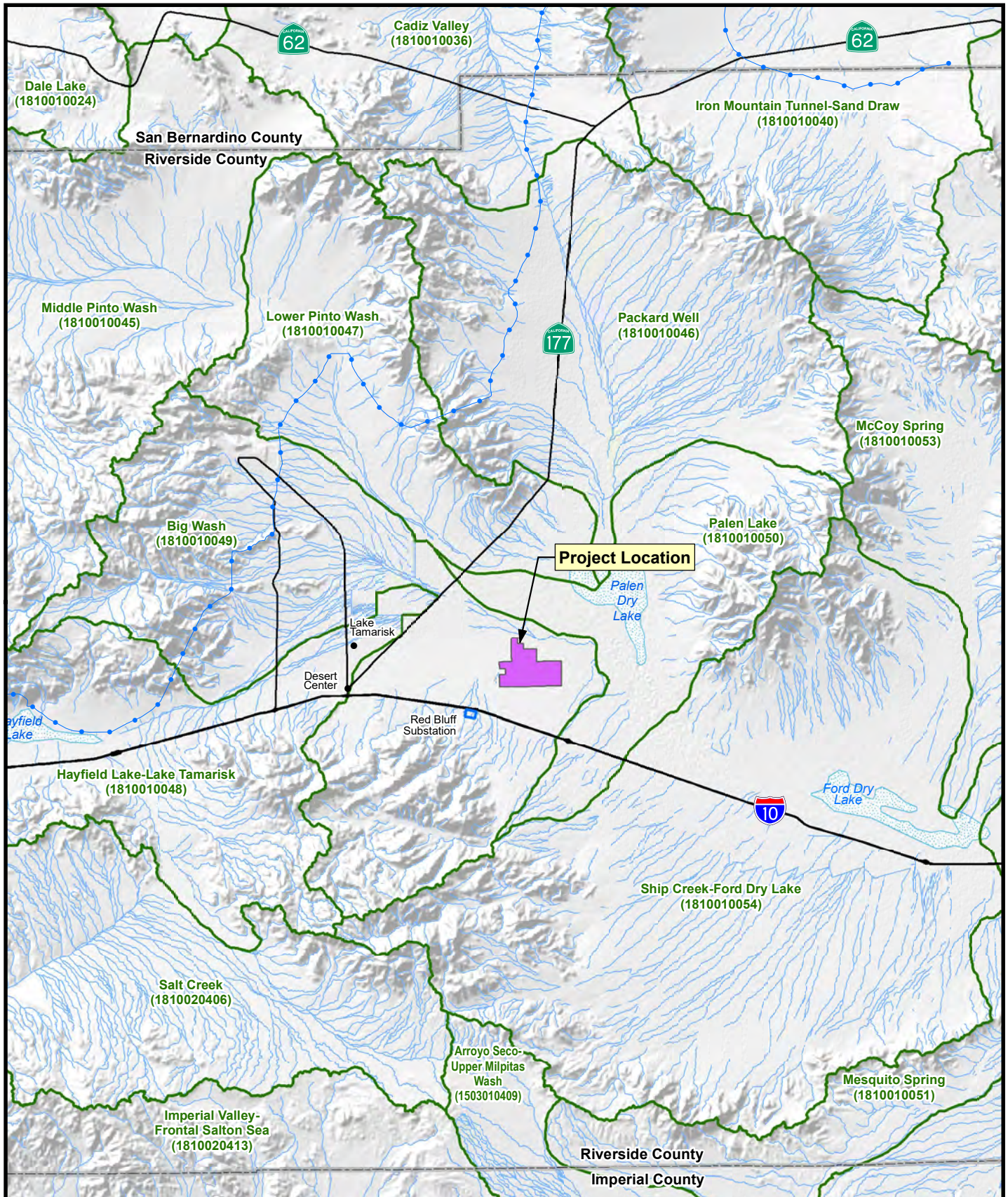
Photo 1. Unvegetated ephemeral wash



Photo 2. Desert Dry Wash Woodland







Ironwood
Consulting



0 4
Miles



Arica Solar Project

Ephemeral Drainage

Aqueduct



Intermittent Water Feature



Watershed Boundary

FIGURE 2

Hydrologic Unit Map

Arica Solar

Ironwood
Consulting



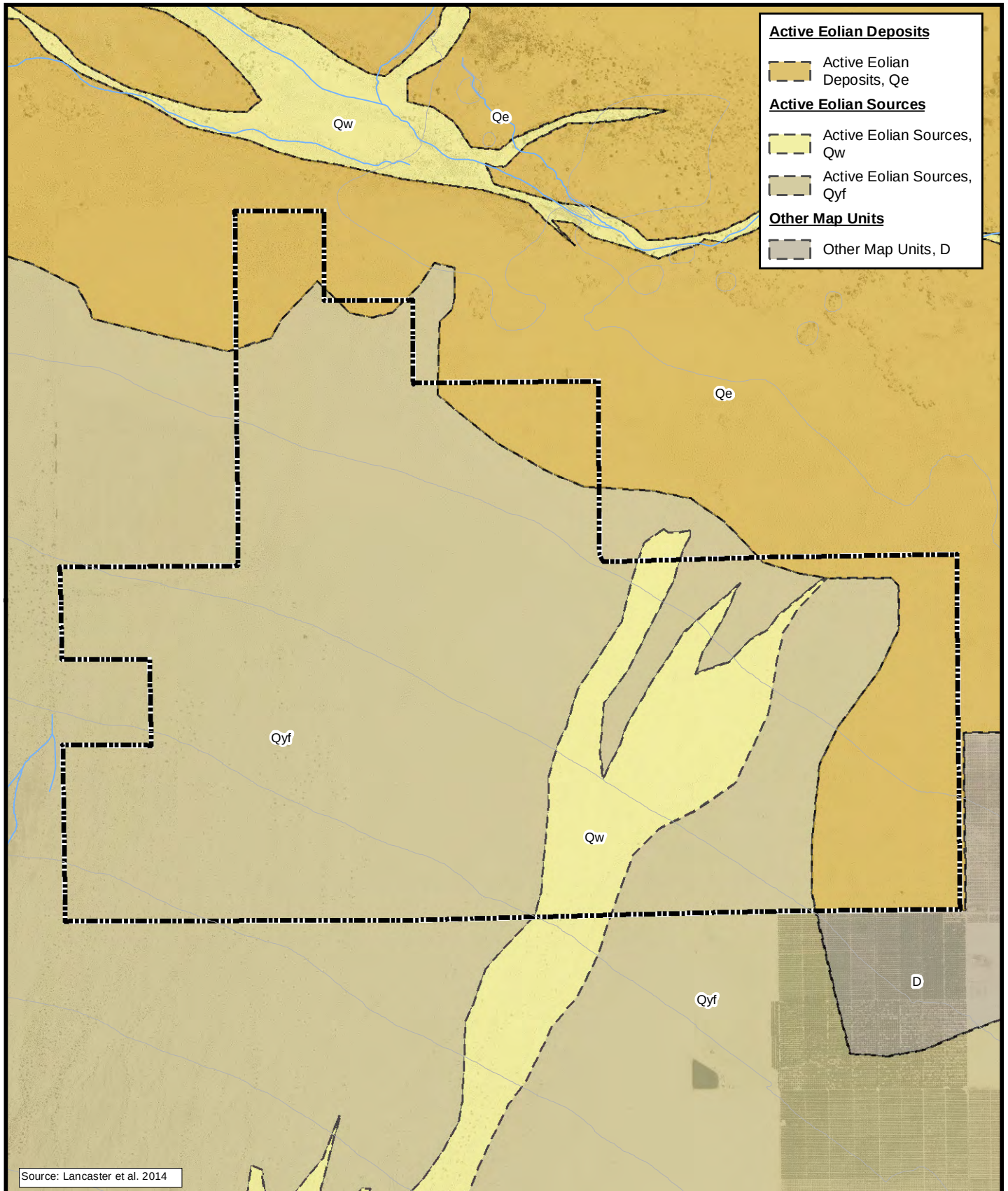
0 1,000 2,000
Feet

Soils

 Rositas-Dune land-Carsitas (s1136)

 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni (s1141)

Arica Solar



Ironwood
Consulting

 Ephemeral Drainage
 Arica Solar Project Boundary

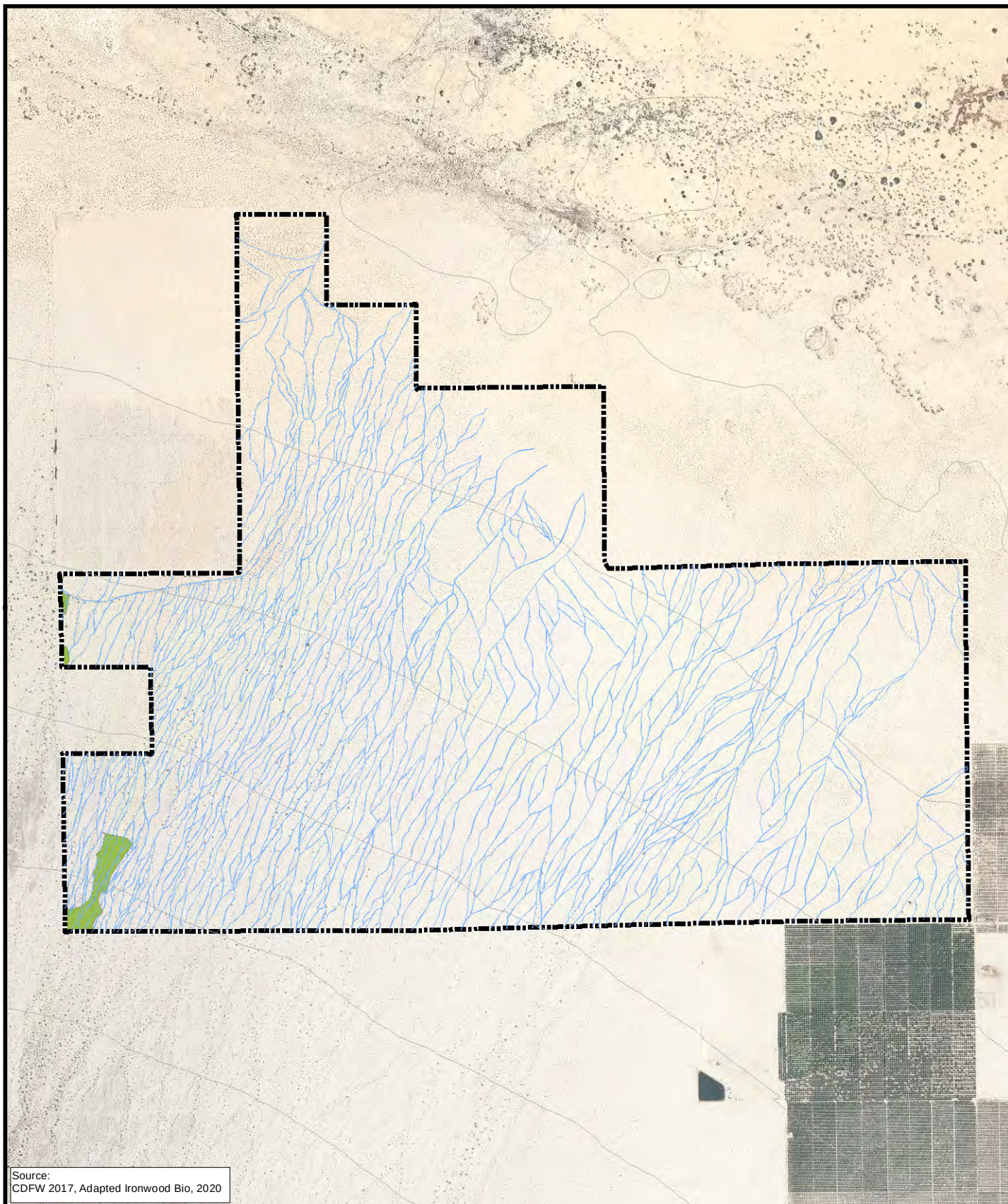


0 1,000 2,000
Feet

FIGURE 4

Aeolian Sand Transport

Arica Solar



Source:
CDFW 2017, Adapted Ironwood Bio, 2020

Ironwood
Consulting



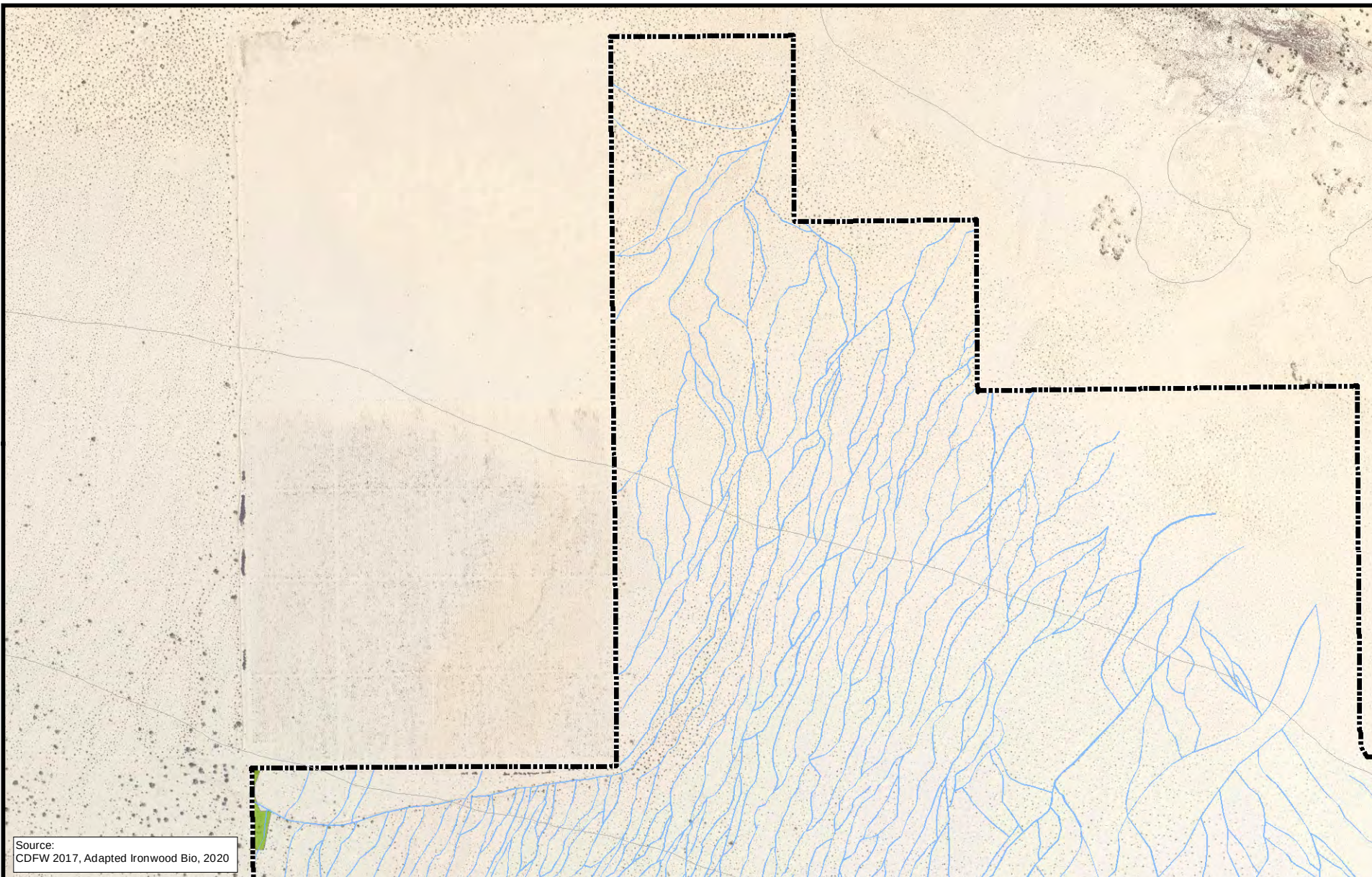
0 1,000 2,000
Feet

-  Unvegetated Ephemeral Wash
(RWQCB Jurisdiction - OHWM Width 69.3 acres)
(CDFW Jurisdiction - Bank to Bank 91.2 acres)
-  Dry Desert Wash Woodland
(10.9 acres)
-  Arica Solar Project
Boundary

FIGURE 5a

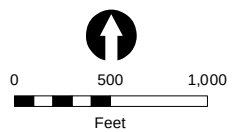
Jurisdictional Areas

Arica Solar



Source:
CDFW 2017, Adapted Ironwood Bio, 2020

Ironwood
Consulting



-  Unvegetated Ephemeral Wash
(RWQCB Jurisdiction - OWHM Width 69.3 acres)
(CDFW Jurisdiction - Bank to Bank 91.2 acres)
-  Dry Desert Wash Woodland
(10.9 acres)
-  Arica Solar Project Boundary

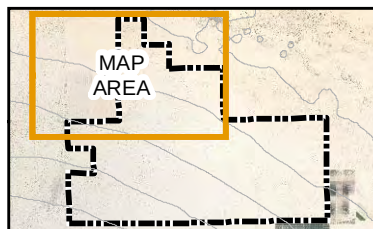
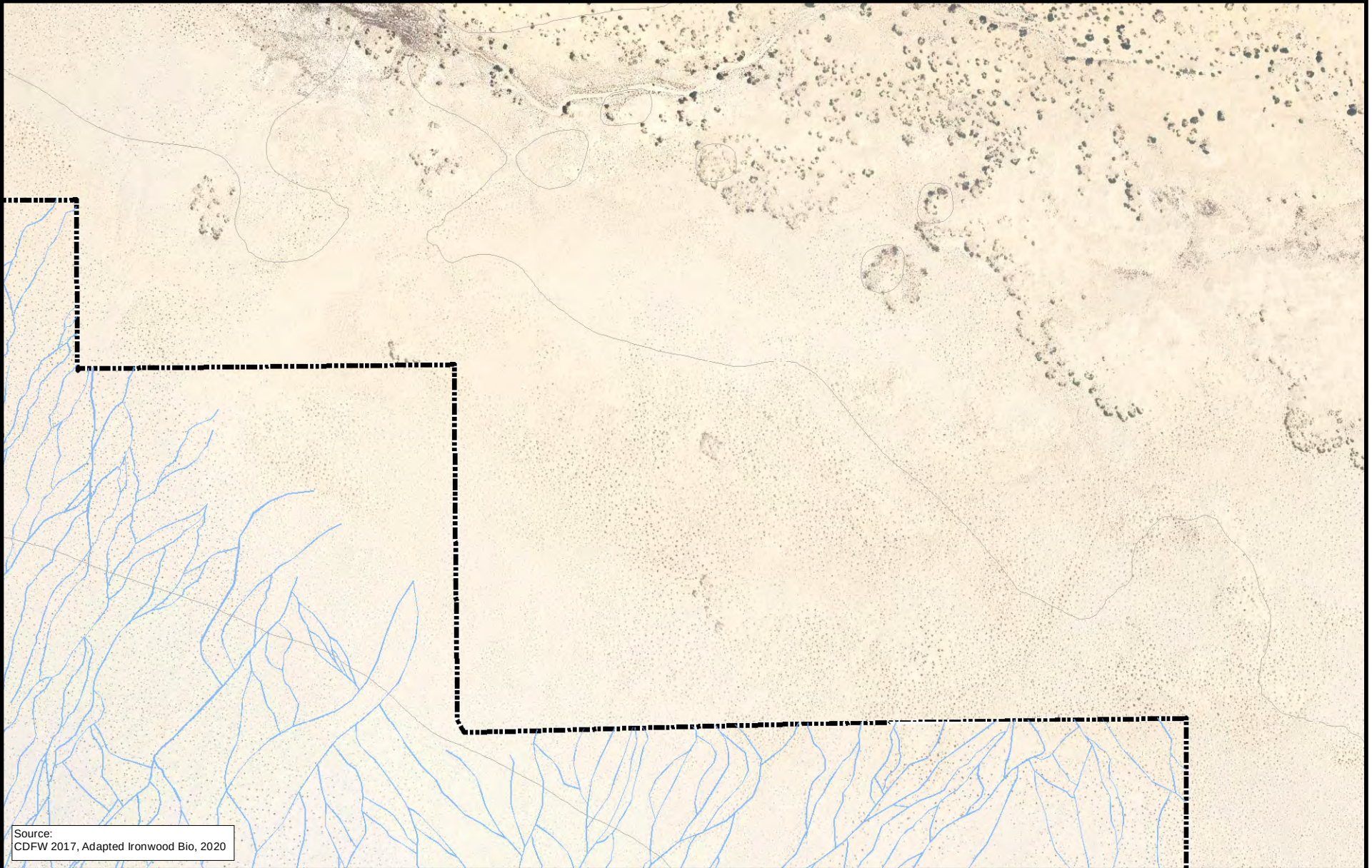


FIGURE 5b

**Jurisdictional Areas
Northwest Quadrant**

Arica Solar



Source:
CDFW 2017, Adapted Ironwood Bio, 2020

Ironwood
Consulting



0 500 1,000
Feet

-  Unvegetated Ephemeral Wash
(RWQCB Jurisdiction - OWHM Width 69.3 acres)
(OHWM Jurisdiction - Bank to Bank 91.2 acres)
-  Arica Solar Project Boundary

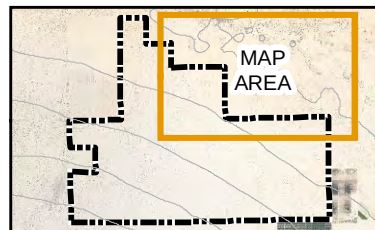


FIGURE 5c

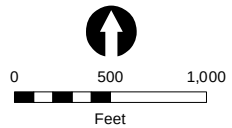
**Jurisdictional Areas
Northeast Quadrant**

Arica Solar



Source:
CDFW 2017, Adapted Ironwood Bio, 2020

Ironwood
Consulting



-  Unvegetated Ephemeral Wash
(RWQCB Jurisdiction - OHWM Width 69.3 acres)
(CDFW Jurisdiction - Bank to Bank 91.2 acres)
-  Arica Solar Project
Boundary

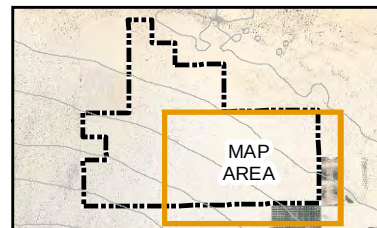
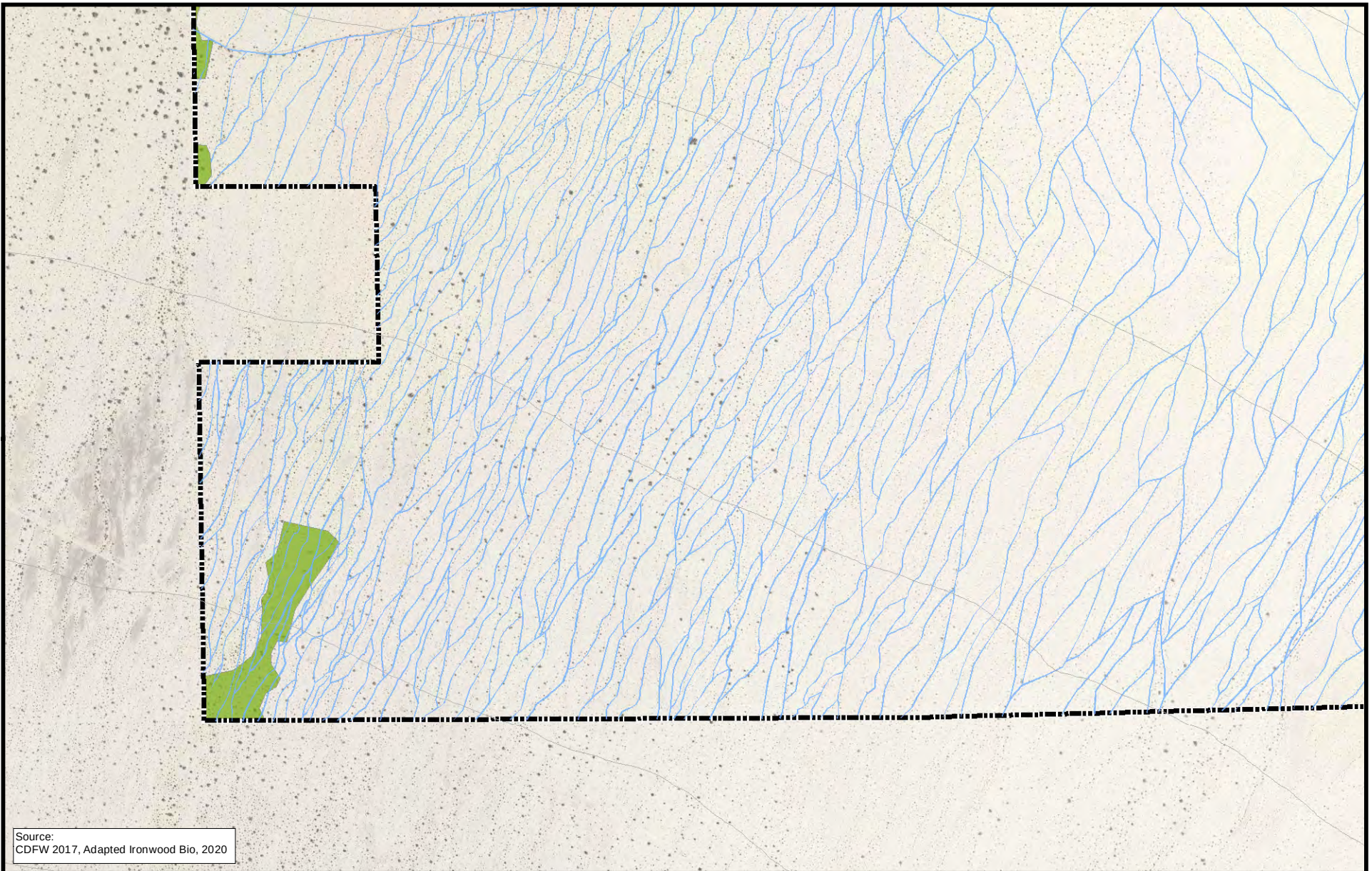


FIGURE 5d

**Jurisdictional Areas
Southeast Quadrant**

Arica Solar



Source:
CDFW 2017, Adapted Ironwood Bio, 2020

Ironwood
Consulting



0 500 1,000
Feet

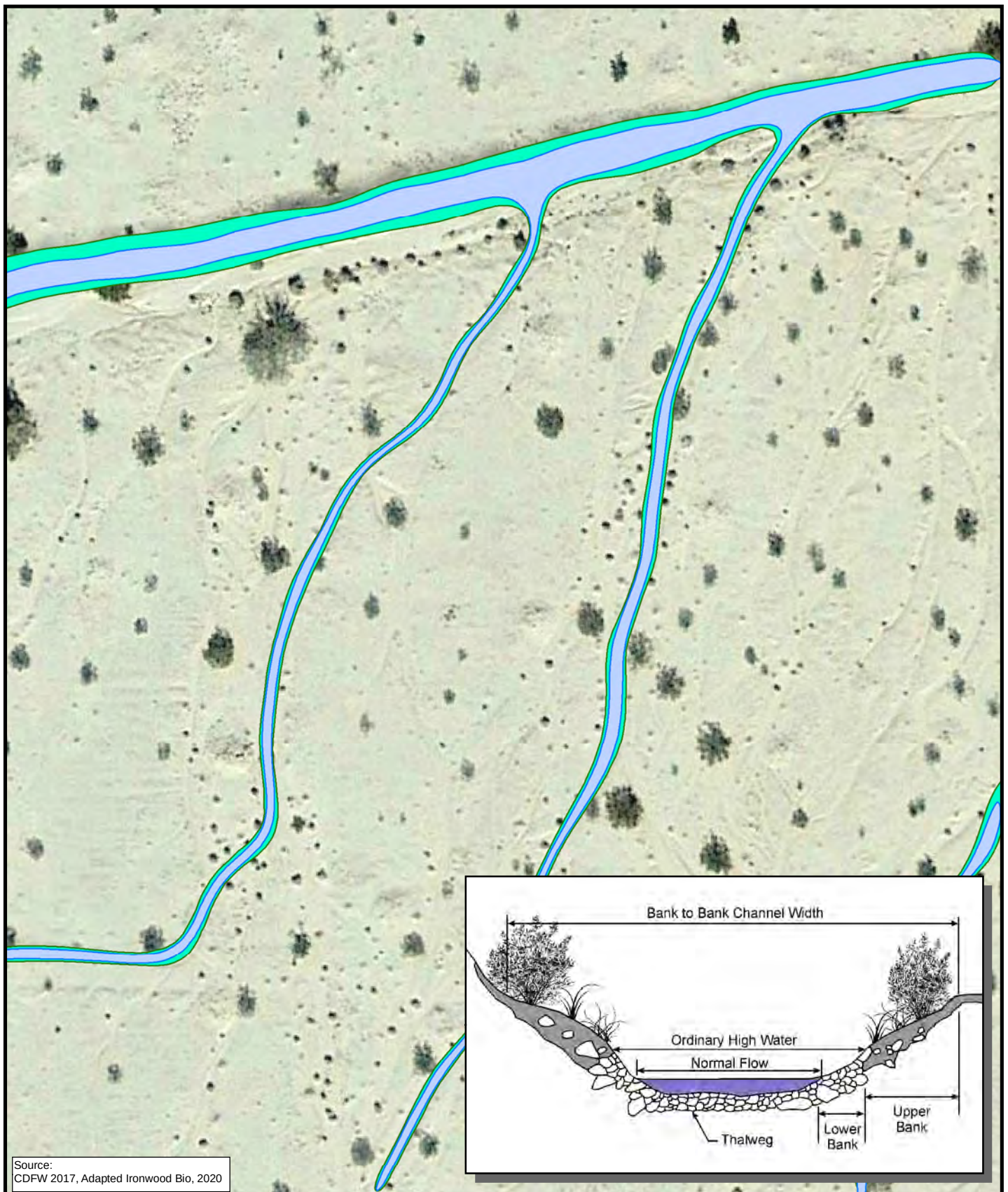
-  Unvegetated Ephemeral Wash
(RWQCB Jurisdiction - OHWM Width 69.3 acres)
(CDFW Jurisdiction - Bank to Bank 91.2 acres)
-  Dry Desert Wash Woodland
(10.9 acres)
-  Arica Solar Project
Boundary



FIGURE 5e

**Jurisdictional Areas
Southwest Quadrant**

Arica Solar



Ironwood
Consulting



0 25 50
Feet

- Ordinary High Water Mark of Wash
- Bank to Bank Width of Wash

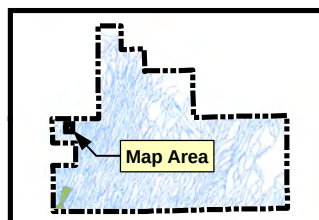


FIGURE 5f
Jurisdictional
Wash Detail
Arica Solar

APPENDIX A

Jurisdictional determination – Athos Renewable Energy Project



**DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017**

March 10, 2021

SUBJECT: Approved Jurisdictional Determination

Scott D. White
Aspen Environmental Group
615 North Benson Ave., Suite E
Upland, California, 91786

Dear Mr. White:

I am responding to your request, on behalf of Arica Solar, LLC (File No. SPL-2021-00035) dated January 12, 2021, for clarification whether a Department of the Army Permit is required for the Arica Solar Development Project (project) site, located near Desert Center, Riverside County, California. The proposed approximately 69.3-acre project site is centered at approximately lat. 33.722244°N, long. -115.290033°W.

The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This evaluation pertains only to geographic jurisdiction.

Based on the information provided and additional review, it appears the project site does not contain water(s) of the United States pursuant to 33 CFR Part 325.9. The basis for our determination can be found in the enclosed Approved Jurisdictional Determination form. In general, the site has been found to drain entirely to Ford Dry Lake, and as such, only contains isolated, intrastate waters, that do not appear to have a connection to interstate commerce. Due to this determination, a Department of the Army permit would not be required for activities on this project site.

This letter includes an approved jurisdictional determination for the Residential Development Project site. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you

wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPDPDO
450 Golden Gate Ave.
San Francisco, CA 94102

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **May 9, 2021**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact Nicole "Nickie" Cammisa, of my team, at 213-280-6653 or via e-mail at Nicole.Cammisa@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

James E. Mace
Lead, Orange and Riverside Counties Team
South Coast Branch
Regulatory Division

Enclosure(s)

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Agent, Scott D. White, Aspen Environmental Group	File Number: SPL-2021-00035	Date: MARCH 10, 2021
Attached is: -3-		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E
SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.		
A: INITIAL PROFFERED PERMIT: You may accept or object to the permit. <ul style="list-style-type: none"> ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit. OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below. 		
B: PROFFERED PERMIT: You may accept or appeal the permit <ul style="list-style-type: none"> ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit. APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice. 		
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.		
D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information. <ul style="list-style-type: none"> ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD. APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice. 		

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Nicole Cammisa
U.S. Army Corps of Engineers
Los Angeles District
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

Phone: 213-280-6653
Email: Nicole.Cammisa@usace.army.mil

If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh

Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Ave.

San Francisco, CA 94102
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

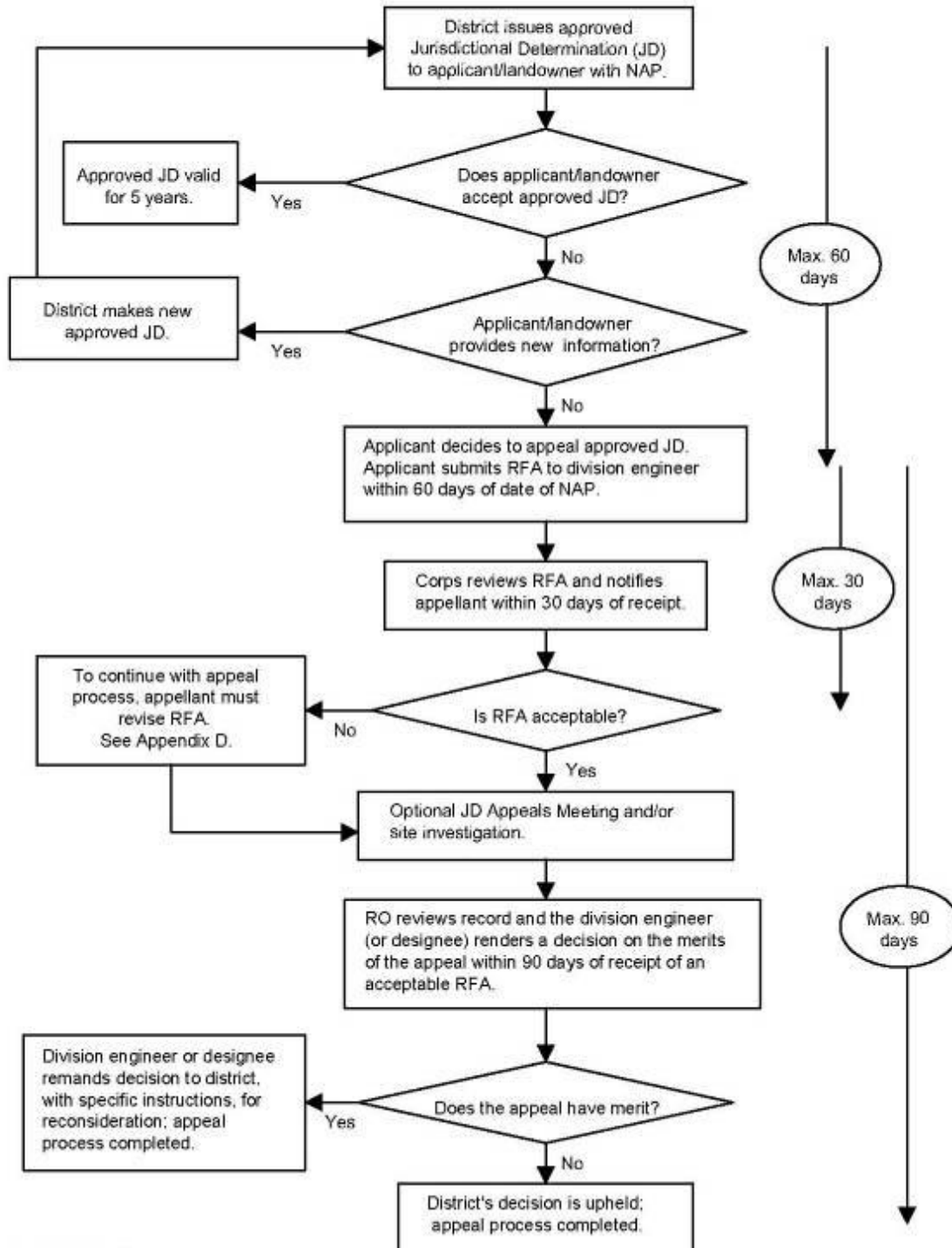
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

Administrative Appeal Process for Approved Jurisdictional Determinations



§ 331.5 Criteria.

(a) *Criteria for appeal* —(1) *Submission of RFA*. The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal*. The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable*. An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

(7) A previously approved JD that has been superseded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.



**DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017**

March 11, 2021

SUBJECT: Approved Jurisdictional Determination

Scott D. White
Aspen Environmental Group
615 North Benson Ave., Suite E
Upland, California, 91786

Dear Mr. White:

I am responding to your request, on behalf of Victory Pass I, LLC (File No. SPL-2021-00036) dated January 12, 2021, for clarification whether a Department of the Army Permit is required for the Victory Pass Solar Project (project) site, located near Desert Center, Riverside County, California. The proposed approximately 43.9-acre project site is centered at approximately lat. 33.7464053°N, long. -115.99396298°W.

The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This evaluation pertains only to geographic jurisdiction.

Based on the information provided and additional review, it appears the project site does not contain water(s) of the United States pursuant to 33 CFR Part 325.9. The basis for our determination can be found in the enclosed Approved Jurisdictional Determination form. In general, the site has been found to drain entirely to Ford Dry Lake, and as such, only contains isolated, intrastate waters, that do not appear to have a connection to interstate commerce. Due to this determination, a Department of the Army permit would not be required for activities on this project site.

This letter includes an approved jurisdictional determination for the Victory Pass Solar Project site. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you

wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPDPDO
450 Golden Gate Ave.
San Francisco, CA 94102

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **May 10, 2021**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact Antonia "Toni" Nino, of my team, at 213-458-2426 or via e-mail at Antonia.R.Nino@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

James E. Mace
Lead, Orange and Riverside Counties Team
South Coast Branch
Regulatory Division

Enclosure(s)

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Agent, Scott D. White, Aspen Environmental Group	File Number: SPL-2021-00036	Date: MARCH 11, 2021
Attached is: -3-		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Antonia Nino
U.S. Army Corps of Engineers
Los Angeles District
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017

Phone: 213-458-2426
Email: Antonia.R.Nino@usace.army.mil

If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh

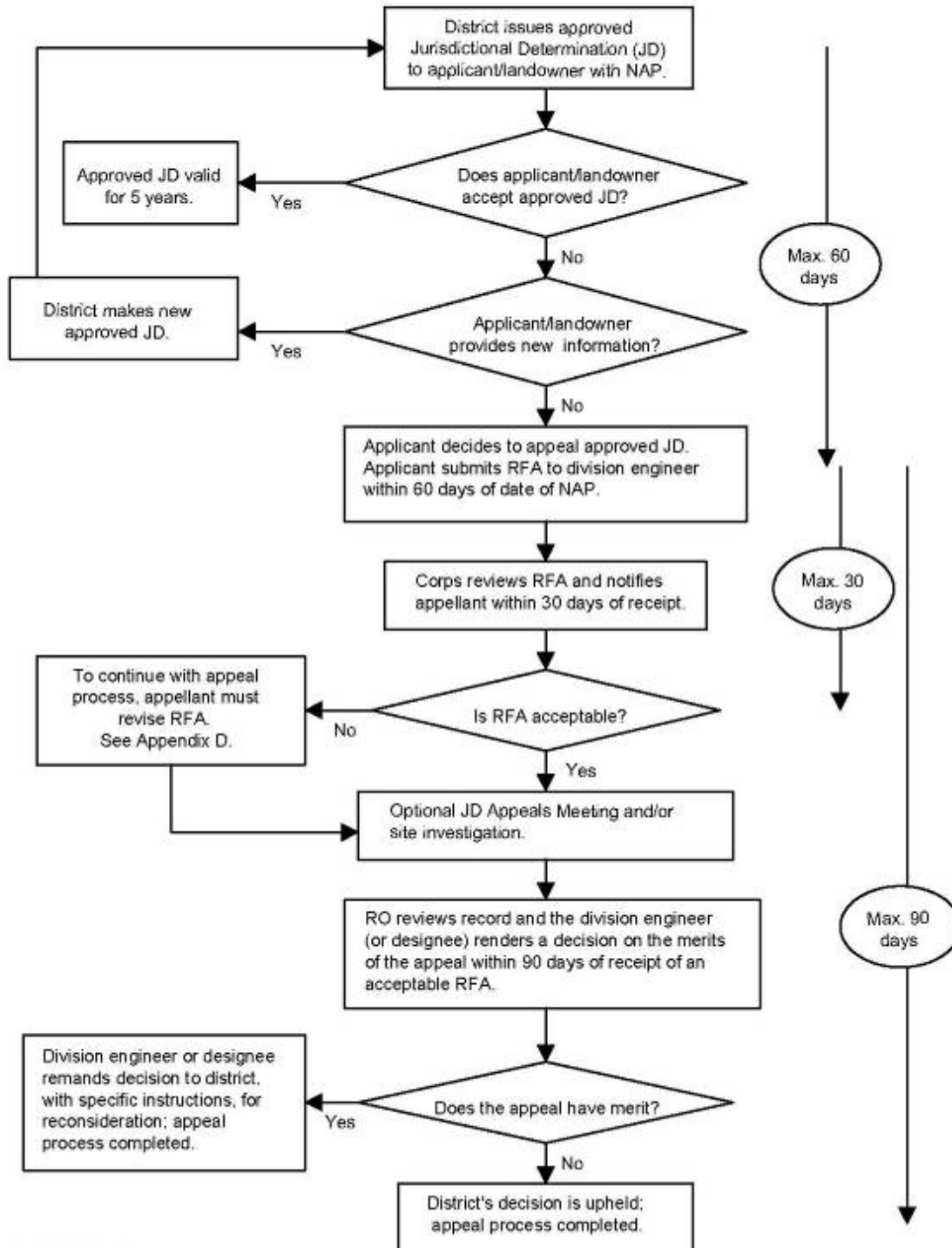
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Ave.

San Francisco, CA 94102
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

<hr/> Signature of appellant or agent.	Date:	Telephone number:
---	-------	-------------------

Administrative Appeal Process for Approved Jurisdictional Determinations



§ 331.5 Criteria.

(a) *Criteria for appeal* —(1) *Submission of RFA*. The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal*. The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable*. An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j)));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

(7) A previously approved JD that has been superseded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.



**U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE**

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 3/11/2021

ORM Number: SPL-2021-00036

Associated JDs: N/A

Review Area Location¹: State/Territory: Ca City: Near Desert Center County/Parish/Borough: Riverside

Center Coordinates of Review Area: Latitude 33.746405 Longitude -115.993963

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)²

§ 10 Name	§ 10 Size	§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters): ³				
(a)(1) Name	(a)(1) Size	(a)(1) Criteria	Rationale for (a)(1) Determination	
N/A.	N/A.	N/A.	N/A.	

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination	
N/A.	N/A.	N/A.	N/A.	

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size	(a)(3) Criteria	Rationale for (a)(3) Determination	
N/A.	N/A.	N/A.	N/A.	

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size	(a)(4) Criteria	Rationale for (a)(4) Determination	
N/A.	N/A.	N/A.	N/A.	

¹ Map(s)/figure(s) are attached to the AJD provided to the requestor.

² If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

³ A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.



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D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)): ⁴				
Exclusion Name	Exclusion Size		Exclusion ⁵	Rationale for Exclusion Determination
Numerous Unvegetated Ephemeral Desert Wash Features	43.9	acre(s)	(b)(1) Surface water channel that does not contribute surface water flow directly or indirectly to an (a)(1) water in a typical year.	The approximately 2,000-acre site contains numerous braided ephemeral, generally unvegetated desert wash features that only convey flow as a direct response to rain. In addition, the area drains entirely to Ford Dry Lake, which has been determined to be an isolated, intrastate water, with no connection to interstate commerce (SPL-2010-00095).

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

☒ Information submitted by, or on behalf of, the applicant/consultant: [Jurisdictional Waters Report Victory Pass Solar Project Riverside County, California, November 2020.](#)

This information is sufficient for purposes of this AJD.

Rationale: [N/A](#)

☐ Data sheets prepared by the Corps: [Title\(s\) and/or date\(s\).](#)

☐ Photographs: [Select. Title\(s\) and/or date\(s\).](#)

☐ Corps site visit(s) conducted on: [Date\(s\).](#)

☒ Previous Jurisdictional Determinations (AJDs or PJDs): [SPL-2010-00095 \(August 5, 2010\)](#)

☐ Antecedent Precipitation Tool: [provide detailed discussion in Section III.B.](#)

☐ USDA NRCS Soil Survey: [Title\(s\) and/or date\(s\).](#)

☐ USFWS NWI maps: [Title\(s\) and/or date\(s\).](#)

☐ USGS topographic maps: [Title\(s\) and/or date\(s\).](#)

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

B. Typical year assessment(s): [N/A or provide typical year assessment for each relevant data source used to support the conclusions in the AJD.](#)

C. Additional comments to support AJD: [The area drains entirely to Ford Dry Lake, a feature previously determined to be a closed basin, an isolated, intrastate water with no connection to interstate commerce.](#)

⁴ Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

⁵ Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.



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