

Earthmoving activities are expected to be limited to the construction of the access roads, any O&M buildings, any substations, and any storm water protection or storage (detention) facilities. Final grading may include revegetation with low lying grass or applying earth-binding materials to disturbed areas.

Once the Project is constructed, maintenance needs are generally limited to:

1. Cleaning of PV panels
2. Monitoring electricity generation
3. Providing Site security
4. Facility maintenance - replacing or repairing inverters, wiring and PV modules

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It is expected that the Cluster as a whole will require an operational staff of up to twenty-four (24) full-time employees, split roughly evenly between the four Projects. As noted earlier, it is possible that two or more Projects would share O&M, substation, and/or transmission facilities. In that scenario, the cooperating Projects c/would share personnel, thereby reducing the staff required. It is also possible that one or more Projects would share another nearby project's facilities (e.g., those of Mount Signal Solar Farm I). In that scenario, the Project(s) c/would also share personnel with that project, thereby reducing or eliminating the on-site staff required.

The Project will operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.

The Project will have minimal levels of materials on-site that have been defined as hazardous under 40CFR, Part 261.

Wastes will be managed in accordance with applicable regulations. The storage, use, and handling of any hazardous materials will be in accordance with applicable regulations. Hazardous materials stored on-site will be in quantities of less than 55 gallons per Project. Spill prevention and containment for construction and operation of the Projects will adhere to the Environmental Protection Agency's ("EPA") guidance on Spill Prevention Control and Countermeasures ("SPCC").

Safety precautions and emergency systems will be implemented as part of the design and construction of the Projects to ensure safe and reliable operation. Administrative controls will include classroom and hands-on training in operating and maintenance procedures, general safety items, and a planned maintenance program. These will work with the system design and monitoring features to enhance safety and reliability.

All employees will be provided with communication devices, cell phones, or walkie-talkies, to provide aid in the event of an emergency.

1.3 Applicable Environmental Regulations

1.3.1 State of California

California Environmental Quality Act (CEQA) Title 14 CA Code of Regulations 15380 requires that endangered, rare or threatened species or subspecies of animals or plants be identified within the influence of the project. If any such species are found, appropriate measures should be identified to avoid, minimize or mitigate to the extent possible the effects of the project.

Native Plant Protection Act CDFW Code Section 1900-1913 prohibits the taking, possessing, or sale within the state of any plant listed by CDFW as rare, threatened or endangered. Landowners may be allowed to take these species if CDFW is notified at least 10 days prior to plant removal or if these plants are found within public right of ways.

CA Fish and Wildlife Codes 3503, 3503.5. 3513 protect migratory birds, bird nests and eggs including raptors (birds of prey) and raptor nests from take unless authorized by CDFG.

CA Fish and Wildlife Code Section 1600, as amended regulates activities that substantially diverts or obstructs the natural flow of any river, stream or lake or uses materials from a streambed. This can include riparian habitat associated with watercourses.

State of CA Fully Protected Species identifies and provides additional protection to species that are rare or face possible extinction. These species may not be taken or possessed at any time except for scientific research or relocation for protection of livestock.

Porter-Cologne Water Quality Control Act, as amended is administered by the State Water Resource Control Board (SWRCB) to protect water quality and is an avenue to implement CA responsibilities under the federal Clean Water Act. This act regulates discharge of waste into a water resource.

1.3.2 Federal

National Environmental Policy Act (NEPA: 42 United States Code (U.S.C.) 4321 et seq) established national environmental policy and goals for the protection, maintenance and enhancement of the environment. A process is available for implementation goals within federal agencies. NEPA requires federal agencies to consider the environment in processing proposed actions.

Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) protects federal listed threatened and endangered species from unlawful take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or significantly modify habitat. If a proposed project would jeopardize a threatened or endangered species, then a Section 7 consultation with a federal agency could be required.

Migratory Bird Treaty Act (50 Code Federal Regulations (CFR) 10.13) is a federal statute with several foreign countries to protect species that migrate between countries. Over 1000 species are listed and may not be disrupted during nesting activities. It is illegal to collect any part (nest, feather, eggs, etc) of a listed species, disturb species while nesting or offer for trade or barter any listed species or parts thereof.

Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) protects bald and golden eagles from take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or interference with breeding, feeding or sheltering activities.

Clean Water Act, 1972 (CWA 33 U.S.C. 1251 et seq.) regulates discharges into waters of the U.S. EPA is given the responsibility to implement programs to prevent pollution.

2.0 BIOLOGICAL SURVEY METHODOLOGIES

The purpose of the study was to determine the inventory of biological resources at the time of the survey; the possibility of the existence of endangered, threatened, sensitive or species of concern within project area: map habitats, and ascertain the probability of the presence of sensitive species on site.

2.1 Field Surveys

2.1.1 General Biological Survey

This survey was not intended to determine the presence/absence of threatened or endangered species except for the burrowing owl *Athene cunicularia*, but only assess the potential for them to occur based on habitat suitability. Other focused surveys to determine presence/absence would be at the discretion of the appropriate State or federal resource agencies.

The California Natural Diversity Database (CNDDB), California Native Plant Society database (CNPS), United States Fish and Wildlife Service (USFWS)/Carlsbad office Sensitive Species list, field guides, personal contacts and other methods to ascertain potential for sensitive species on the site (Appendix A).

Under guidelines from Staff Report on Burrowing Owl Mitigation (March, 2012) pedestrian biological surveys (20 meter transects) of the project area and 500 foot buffer zones to document vegetation and animals were conducted by Marie Barrett, Glenna Barrett, biologists and Dani Figueroa, biologist assistant. Field Survey Schedules are found in each Table 1. Table 1 below summarized hours in Field. These surveys were conducted to develop an inventory of species (plant and animal) present at the time of the surveys, map vegetative communities, if present and ascertain the potential for occurrence of sensitive, endangered or threatened species within the project area and vicinity.

Table 1: Field Survey Schedule Lyons*

Date/Conditions	Surveyors	Survey Purpose
5/2/13 65-83°F 0% cloud cover, 0-2 mph; low humidity	Marie Barrett	6:00 AM-9:30 AM BUOW/General biological
5/31/13 66-75°F clear, calm; low humidity	Marie Barrett Dani Figueroa	6:15 AM-8:15 AM BUOW/General biological
6/13/13 70-77°F clear/calm; low humidity	Glenna Barrett Dani Figueroa	5:45 AM-7:00 AM BUOW/General biological
7/9/13 87-93°F 5% cloud cover, 5-8 mph low humidity	Marie Barrett Glenna Barrett	7:15 AM-8:45 AM BUOW/General biological
Total		13.00 hours (total all surveyors)

* Consultation with CDFW, Ontario office: *If starting after the dates for the first survey please start as soon as possible. If not enough time to separate by 3 weeks before July 15th then do the first two closer together and the last two 3 weeks apart.*

2.1.2 Focused Burrowing Owl Surveys

Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States, Biological Technical Publication (BTP-R6001-2003) state that 71% of the California burrowing owl (*Athene cunicularia hypugea*) population is found in the agricultural areas of Imperial County and is a California species of special concern therefore a focused burrowing owl survey was performed.

Using guidelines from CDFW Staff Report on Burrowing Owl Mitigation (2012) a pedestrian biological survey of burrowing owl habitat for burrowing owl was conducted by Marie Barrett, Glenna Barrett, biologists and Dani Figueroa biologist assistant. Garmin GPSs, a spotting scope, binoculars, thermometer, anemometer and digital cameras were used.

2.1.3 Jurisdictional Delineation

No IID drains, canals, field ditches or field tile will be removed in the construction of this project therefore no waters of the U.S. or streambed alteration will occur.

2.2 Literature Review

Potential occurrence for endangered, threatened, sensitive, species of concern and noxious weeds was determined by perusal of appropriate data bases which included:

- CA Natural Diversity Database (CNDDDB)
- CA Native Plant Society (CNPS) Rare Plant Program
- USFWS Bird Species of Conservation Concern
- USFWS Critical Habitat for Threatened & Endangered Species Website
- CA Food and Agriculture Department Noxious Weed Information Project

3.0 Existing Conditions

3.1 Topography and Soils

Imperial County is found in the southern part of CA adjacent to the Mexican border. Elevations range from 230 below sea level to about 350 feet above sea level. Soils were formed from stratified alluvial materials and vary greatly in texture and thickness of layers. The main irrigated areas are on a lakebed floor. This area is nearly level, sloping north to the Salton Sea approximately 0.1 percent; with an east and west slope of approximately 0.3 percent.

The main soil classifications found in the project area are 80% Imperial silty clay, wet (114) and 20% Imperial- Glenbar silty clay loams, wet, 0-2 percent slopes (115) which are described as:

114: Very deep soil found on flood plains and basins and lakebeds. Color is pinkish gray and light brown silty clay to a depth of 60 inches or more. Permeability is slow; soil is slightly saline. (*Soil Survey of Imperial County California, Imperial Valley Area*, 1981).

115: Very deep soil found on flood plains lakebeds. Color is pinkish gray and light brown silty clay to a depth of 60 inches. Permeability is slow with a very high water capacity with slow surface runoff. Soil is slightly saline. Alfalfa stands can be difficult to maintain due to temporary anaerobic conditions.

The elevation on this site is approximately -21 feet.

3.2 Vegetation

3.2.1 Vegetation

Vegetation has been divided into communities that are groups of plants that usually coexist within the same area. Although this area is considered the Colorado Desert area (*A Manual of California Vegetation*, 2009, Sawyer/Wolf), approximately 500,000 acres of the Colorado Desert in Imperial County has been converted to agricultural use and this 138.4 acres is within that conversion area.

Table 2: Vegetation

Vegetative Communities	Acres
Agricultural Lands	138.4 acres

3.2.2 Agriculture

The project sites are being farmed and the previous crop was wheat.

3.2.3 Ruderal Vegetation

Some sparse vegetation was found on site that would be considered ruderal (listed with scientific names in Appendix C). There are no vegetative communities on site other than agricultural crops.

3.3 Wildlife

3.3.1 Invertebrates

The project site is an agricultural area. Invertebrates were found within ruderal vegetation adjacent to site. Invertebrates would be expected in actively growing agricultural crops. When surveyed this area was wheat stubble and not actively growing.

3.3.2 Amphibians

Reliable moisture is a requirement for a portion of amphibian life cycle. The project site is an agricultural area. No amphibians were observed on site. Due to the lack of available water, none would be expected.

3.3.3 Reptiles

Reptiles utilize habitat dependent upon their dietary requirements. Some species diet includes vegetation while others consume insects. All require vegetation for shelter.

The project site is an agricultural area with sparse ruderal vegetation. Therefore, few reptiles would be expected on site but could be found in ruderal areas adjacent to site.

3.3.4 Birds

Bird species diversity varies with seasons, variety and quality of vegetative communities.

Birds were observed on the borders of the site and in the vicinity. List of species observed in vicinity is found in Appendix C. Birds that could possibly use the site are found in Appendix A.

3.3.5 Mammals

Mammals and signs of mammals were observed on sites. Burrows were observed that showed activity of recent usage.

The following mammals could be expected to be found in the project site: cotton tail (*Sylvilagus audubonii*), feral dogs and cats.

3.3.6 Fish

The project site is an agricultural area with sparse ruderal vegetation. There are no water sources on site; none would be expected.

3.4 Sensitive Biological Resources

3.4.1 Special Status Plant Species

Appendix A (Mt. Signal/Heber Quadrangle (Nine Quadrangle Search) April, 2013) lists all species found in the data search that has been found within the quadrangle of the project and eight quadrangles surrounding the project. Appendix C lists all plants found within the project during surveys and locations of sensitive biological species.

Under *Botanical Survey Guidelines of the California Native Plant Society, 2001*, guidelines state special status plants will be surveyed when any natural vegetation occurs on site. This area is within an agriculture region and no natural vegetation was present so a focused special status plants survey was not required.

Federal guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants field inventories should be followed in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except *developed agricultural lands*. As this entire project is situated on property that has been used for agricultural purposes no botanical inventory is required.

3.4.1.1 Federal Listed Species

No federally listed plant species were found or expected to be found within the project area.

The usage, agriculture, of this project site did not promote a habitat favorable to special status plant species.

3.4.1.2 State Listed Species

No state listed plant species were found or expected to be found within the project area.

The usage, agriculture, of this project site did not promote a habitat favorable to special status plant species.

3.4.2 Special Status Wildlife Species

As a result of the data search, endangered, threatened species and CDFW species of special concern were evaluated for the potential to occur within the project area. This list and discussion are found in Appendix A.

3.4.2.1 Federally Listed Species

No federally listed species were observed on the project. No favorable habitat was found that would support species such as southwestern willow flycatcher (*Empidonax trailii eximius*), Yuma clapper rail (*Rallus longirostris yumanensis*) or least Bell's vireo (*Vireo bellii pusillus*) or desert pupfish (*Cyprinodon macularis*).

The least Bell's vireo (LBV) prefers early successional habitat in riparian areas. LBV is found in structurally diverse woodlands along waterways, including cotton-wood willow forests, mule fat scrub and oak woodlands. In wintering areas, they are thought to prefer mesquite scrub vegetation, palm groves and hedgerows that are associated with agriculture and residential areas in rural areas (Fish and Wildlife Service, 1998).

Yuma Clapper rail typically occupies emergent marsh vegetation such as pickleweed and cordgrass, mature stands of bulrush and cattail and occasionally willow and tamarisk stands around the Salton Sea.

Southwestern willow flycatcher requires riparian habitat with willow (*Salix spp.*) (Grinnell and Miller 1944) with an understory of species such as mule fat (*Baccharis sp.*) and arrow weed (*Pluchea sp.*). They will nest in areas with tamarisk (*Tamarix spp.*) and Russian olive (*Eleagnus angustifolia*) in areas where willows have been replaced. Surface water is also required (Tibbits et al 1994; USFWS 1993). .

The desert pupfish (*Cyprinodon macularis*) is a federal- and California-listed endangered species. Historically, desert pupfish occurred in the lower Colorado River in Arizona and California, from about Needles downstream to the Gulf of Mexico and into its delta in Sonora and Baja. In California, pupfish inhabited springs, seeps, and slow moving streams in the Salton Sink basin and backwaters and sloughs along the Colorado River.

The Salton Sea, its slow moving tributary streams, irrigation drains, and shoreline pools supported large pupfish populations until sharp declines began in the mid- to late 1960s. CDFG surveys show desert pupfish populations currently in drains directly discharging to the Salton Sea, in shoreline pools of the Salton Sea, and in several artificial refugia (Nicol et al. 1991; Black 1980).

There are no streams, irrigation drains or shoreline pools associated with this project; therefore no impact to desert pupfish would be expected

These types of habitats are not found within the project site and therefore no focused surveys were performed.

3.4.2.2 State Listed Species

One state-listed bird was evaluated based on known occurrences in Imperial County and habitat availability in the project area: Greater sandhill crane (*Grus Canadensis tabida*).

The greater sandhill crane is state listed as threatened and is also on the Migratory Bird Treaty list of sensitive birds. Colorado River Valley population is estimated at 1400-2100 and is considered stable. The population breeds in northeastern Nevada and southwestern Idaho, migrates through Nevada and winters along the lower Colorado River in California's Imperial Valley.

The greater sandhill crane is a very large bird with long neck, long legs with a gray body which may be stained reddish. The head has a red forehead, white cheek; another characteristic is tufted feathers over rump.

There are bermuda fields adjacent to the project site and other adjacent fields could rotate to either alfalfa and bermuda. The greater sandhill crane could be found on this

project and could be found in adjacent fields, but not expected as this species has not been observed south of I-8.

3.4.2.3 State Species of Special Concern and Fully Protected Species

Burrowing owl

The project site was searched with a pedestrian survey of habitat for burrowing owls and their sign (burrows, pellets, feathers, scat, litter, and animal dung) by Marie Barrett Glenna Barrett, biologists and Dani Figueroa biological assistant. The burrowing owl (BUOW) is a small, pale, buffy-brown owl that nests in borrowed burrows. The entrances to burrows often have bits of animal dung, prey carcasses, feathers, and litter, among other objects. Up to 12 eggs are laid, primarily from February to May. Survey information is listed in Table 1: Field Survey Schedule.

The Imperial Valley has a majority of the burrowing owl in southern California. Irrigation canals and drains are commonly used as nesting sites in this area. The Burrowing Owl is a California Department of Fish and Wildlife (CDFW) Species of Special Concern, and a Federal Species of Concern and listed on the Migratory Bird Treaty Act. This survey was done using The CDFW Staff Report (CDFW, 2012), which addresses survey and mitigation guidelines for the owl and communications with CDFW wildlife biologists, Bermuda Dunes and Ontario, CA office.

Several BUOWs and active BUOW burrows were observed off site within the Imperial Irrigation District right of way (IIDROW). The Bioresource Map identifies the location of BUOW observations, active burrows and other biological observations on and adjacent to the site. Figure 2 is a map of biological resources found.

One adult owl was observed using three different burrows offsite within the IIDROW.

Table 3, Biological Resources, below lists the locations and types of biological resources found on and adjacent to each site.

Table 3 – Biological Resources Lyons

Location May 2, 2013 survey	Burrowing Owl/Burrow /Biological Resource	2 nd Survey May 31, 2013	3 rd Survey June 13, 2013	4 th Survey July 9, 2013
#1 32°41'50.3" 115°37'51.6" IIDROW	Active burrow East side of Wisteria 5 Drain	Active burrow	Active burrow	Active burrow Pellets, tracks
#2 32°41'54.7" 115°37'51.6" Offsite IIDROW	Active burrow/1 BUOW East side of Wisteria 5 Drain	Active burrow	Active burrow	Active burrow Decorations
#3 32°41'54.8" 115°38'4.0" Offsite	Skunk burrow	Observed	Observed	Observed
#4 32°41'50.6" 115°37'51.0" Offsite IIDROW	Inactive burrow East side of Wisteria 5 Drain	Inactive burrow	Active Whitewash, tracks	Inactive burrow

Location May 2, 2013 survey	Burrowing Owl/Burrow /Biological Resource	2 nd Survey May 31, 2013	3 rd Survey June 13, 2013	4 th Survey July 9, 2013
#5 32°41'57.3" 115°37'51.0" Offsite IIDROW	Active burrow West side of Wisteria 5 Drain	Active burrow/1 BUOW	Active	Active burrow/1 BUOW
#6 32°42'3.1" 115°37'51.0" Offsite IIDROW	Inactive burrow West side of Wisteria 5 Drain	Inactive burrow	Inactive	Inactive
#7 32°42'4.3" 115°37'51.0" Offsite IIDROW	Inactive burrow West side of Wisteria 5 Drain	Inactive burrow	Inactive	Inactive
Total Numbers of Burrows/BUOW	Offsite: 3 active burrows /1 BUOW	Offsite: 3 active burrows /1 BUOW	Offsite: 4 active burrows/no BUOW	Offsite: 3 active burrows /1 BUOW

*Occupied burrow= BUOW seen at burrow; active: signs that burrow is being occupied by BUOW

Figure 2 includes maps of biological resources found (listed above).

Table 4: Summary of Burrowing Owls/Burrows:

Location	Burrowing Owls	Burrows Active
On Property	0	0
IID Drain (off site)	1 adult	3
Total	1	3

There is 1 adult BUOW using 3 active burrows offsite within the IIDROW.

The site contains does support active BUOW foraging habitat. Crickets were heard within the drains (offsite) during the survey.

Burrowing owls are known to utilize a 1.25 mile (radius) foraging area from nest which represents 3142 acres that can be used as foraging habitat (York, Rosenberg and Sturm, 2002). Therefore, they could also be expected to forage in the agricultural fields, canals and drains to the north, south, west and east of the site.

As required by CDFW, 2012 Burrowing Owl Survey Protocol, California Natural Diversity Data field survey forms will be submitted. Field notes are on file.

Golden Eagle (*Aquila chrysaetos*)

This fully protected species is found throughout the United States, but rarely observed in Imperial County and was not found in data base searches for the Mt. Signal/Heber Quadrangle (9 quadrangle search). No suitable habitat was observed.

Therefore this species is not expected to be found within or in the vicinity of the project.

Loggerhead Shrike (*Lanius ludovicianus*)

This species is a CDFW species of special concern and is a year-round resident of Imperial County. They have the interesting habit of impaling prey upon sticks or thorns. Mesquites are often utilized for this activity. They are generally associated with open areas such as agricultural fields for foraging and thickets for nesting.

LeConte's (*Toxostoma lecontei lecontei*) and Crissal (*Toxostoma crissale*) Thrasher

These species are CDFW species of special concern. The crissal thrasher prefers dense thickets of shrubs or low trees. They were not observed or expected on site due to the lack of suitable habitat. The LeConte's thrasher occurs in desert scrub or desert wash areas. They were not observed.

3.4.3 Riparian Habitat or Sensitive Natural Communities

Based upon the level of disturbance or habitat conversion within adjacent areas, vegetative communities are considered rare or sensitive. Rare vegetation types that are converted and degraded can disrupt the integrity of the ecological functions of natural environments. This can lead to the loss of sensitive plant species and a resulting decrease in biodiversity. Wetland or riparian habitat communities are considered sensitive by CDFW. Wetland or riparian habitat communities are considered sensitive by CDFW.

No riparian habitat or sensitive natural communities were observed on site but riparian habitats are found within the IID water conveyance systems which are located adjacent and offsite of the project.

3.4.4 Jurisdictional Waters

Wetlands and other "waters of the United States" that are subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act are under the jurisdiction of the U.S. Army Corps of Engineers (ACOE). Typically, these waters include naturally occurring traditional navigable waters (TNWs), relatively permanent waters (RPWs), and/or ephemeral waters with a significant nexus to a TNW. Agricultural water conveyance systems which are manmade and constructed wholly in uplands are typically only considered jurisdictional if they are RPWs. The most recent guidance on the topic states that "relatively permanent waters typically flow year-round or have continuous flow at least seasonally (e.g. typically three months)" (EPA and ACOE 2008). Conversely, man-made drainages constructed solely in uplands that are not RPWs are generally not federally jurisdictional. IID drains and canals are part of an agricultural system and therefore by definition (USACOE Wetlands Delineation Manual) are not classified as wetlands although typical wetland/riparian plant species are found within canals and drains. Canals and drains do not flow continuously as they are

dependent upon irrigation events. Also, canals are non flowing for three days each month as part of an IID pest control program.

With respect to non-tidal waters, federal jurisdiction over non-wetlands extends to the “Ordinary High Water Mark” (OHWM). 33 C.F.R. § 328.4(c)(1). The Ordinary High Water (OHW) zone in low gradient, alluvial ephemeral/intermittent channel forms in the Arid West is defined as the active floodplain. The dynamics of arid channel forms and the transitory nature of traditional OHWM indicators in arid environments render the limit of the active floodplain the only reliable and repeatable feature in terms of OHW zone delineation. The extent of flood model outputs for effective discharges (5 to 10 year events in arid channels) aligns well with the boundaries of the active floodplain (ACOE 2008). IID canals, drains, farmer head or tail ditches would not be considered an “arid or ephemeral channel” as they are manmade expressly for the conveyance of irrigation waters.

IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site. No IID drains or canals will be removed or relocated, no roads will be widened and no washes are found within the project.

3.4.5 Habitat Connectivity and Wildlife Corridors

The ability for wildlife to freely move about an area and not become isolated is considered connectivity and is important to allow dispersal of a species to maintain exchange genetic characteristics; forage (food and water) and escape from predation.

As no drains or canals will be removed, all species will continue to freely move throughout the general area of the project using these pathways. IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site.

3.4.6 California Desert Conservation Area (CDCA)

This project is not within or immediately adjacent to an Area of Critical Environmental Concern (ACEC) of the CDCA.

4.0 Proposed Project Impact

The proposed impacts are summarized in this section.

4.1 Impact to Special Status Species

If this project has a substantial adverse effect, either directly or through habitat modification or elimination, on any plant or animal species that is considered endangered, threatened, candidate for listing or special status species either through

federal or state regulations, this project would be considered to have a significant impact.

4.1.1 Special Status and Priority Plants

No special status and priority plants were observed or expected with the site therefore there will be no significant impacts. Therefore no avoidance, minimization or mitigation measures will be required.

4.1.2 Sensitive Wildlife

4.1.2.1 Burrowing Owl

Construction Impact

Burrowing owls and burrows were not found onsite. Burrowing owls and burrows were located within a 500 foot buffer zone survey.

CDFW Staff Report on Burrowing Owl (2012) lists impacts to burrowing owl as:

- Disturbance (September through January non nesting season) or (February through August nesting season) in vicinity of active burrows
- Destruction of active burrows
- Destruction/degradation of forage

Section 5 discusses avoidance, minimization and mitigation requirements for burrowing owls found on site or in vicinity during construction.

Project Operations and Maintenance Indirect Impact

Once the project is constructed, minimal operations activities and maintenance needs are required and are generally limited to:

- Typical onsite plant maintenance activities

Noise during operation of the project is not expected to exceed ambient noise produced by other operations in the area.

Lighting will be limited to areas required for operations or safety, will be directed on site to avoid backscatter, and will be shielded from public view to the extent practical. Lighting that is not required to be on during nighttime hours will be controlled with sensors or switches operated such that lighting will be on only when needed.

No significant impact is expected to this species due to noise, lighting or site maintenance and therefore no avoidance, minimization or mitigation measures are required for indirect impacts.

4.1.2.2 Nesting Raptors

Project Construction Impact

There are no tall trees on site that would encourage raptor nesting. There is no opportunity for ground nesting of raptors such as northern harriers (*Circus cyaneus*) within site or the buffer zone of the project. No osprey (*Pandion haliaetus*) nests were observed or expected due to the lack of nesting opportunity.

If construction is planned to begin during nesting season (February 1 through August 31), the project area and a 500 foot buffer area should be surveyed to determine presence/absence of nesting. If nests are found, an appropriate buffer zone for the species should be maintained until juveniles have fledged.

Project Operations and Maintenance Indirect Impact

Electrocution

All electrical components within the project will be protected so that there will be limited exposure to wildlife and potential for electrocution.

Collisions

All electrical components within the project will be protected so that there will be limited exposure to wildlife and potential for collisions.

4.1.2.3 Migratory Birds and Other Sensitive Non-migratory Species

Project Construction Impacts

If construction begins between February 1 through August 31, common breeding season for most migratory birds, a direct impact of destroying nests or disrupting nesting activities might occur. Mitigation in the form of avoidance and impact minimization would be required to reduce the impact to a level of less than significant.

Project Operations and Maintenance Indirect Impact

Once the project is constructed, minimal operations activities and maintenance needs are required and are generally limited to:

- Typical onsite plant maintenance activities

Noise during operation of the project is not expected to exceed ambient noise produced by other operations in the area.

Lighting will be limited to areas required for operations or safety, will be directed on site to avoid backscatter, and will be shielded from public view to the extent practical. Lighting that is not required to be on during nighttime hours will be controlled with sensors or switches operated such that lighting will be on only when needed.

No significant impact is expected to these species due to noise, lighting or site maintenance and therefore no avoidance, minimization or mitigation measures are required for indirect impacts

4.2 Impact to Riparian Habitat or Sensitive Natural Communities

The distribution of riparian plant species is largely driven by hydrological and soil variables and riparian plant communities frequently occur in relatively distinct zone along streamside elevational and soil textural gradients. The only riparian habitat that might be present would be found within IID drains and canals which are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan.

IID drains and canals are part of an agricultural system and therefore by definition (USACOE Wetlands Delineation Manual) are not classified as wetlands although typical wetland/riparian plant species are found within canals and drains.

4.3 Impact to Jurisdictional Waters

IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site.

On-site flows, a result of rare rain events (less than 3 inches of rain a year in this desert area) are to be contained on the project site and not discharged; therefore state certification, a program which is administered by the RWQCB (CWA 401), will not be required.

4.4 Impact to Wildlife Movement and Nursery Sites

This project is in a agricultural vegetative community which is surrounded by agricultural and industrial activities. It will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

4.5 Impact to Airports

This project has no components that will attract avian populations. The project is within 6.0 miles from the Calxico Airport, CA. No impact upon airports is expected.

4.6 CEQA Impacts

Possible CEQA significant impacts that could include the following within the parameters of this project:

Table 5: Expected Impacts

Area	Endangered/threatened/ Species of Concern Habitat	Riparian Habitat	Wetlands	Wildlife Corridors	Local Ordinances	HCP*
Agricultural	None with avoidance/minimization/ mitigation measures	No	No	No	No	No

*Habitat conservation plan

5.0 Recommended Avoidance, Minimization and Mitigation Measures

5.1 Sensitive Wildlife

5.1.1 Burrowing Owl

Avoidance Measures

A preconstruction survey should be done at least 14 days prior to start of construction and report submitted to the appropriate agency.

Since there are burrowing owls in the area, it is recommended that construction foremen and workers and onsite employees be given worker training by a qualified biologist regarding burrowing owl that would include the following:

- Description of owl
- Biology
- Regulations (CDFW/USFWS)
- Wallet card with owl picture/guidelines for protecting owl and wildlife
- Notification procedures if owl (dead, alive, injured) is found on or near site

Minimization Measures

As burrowing owls and occupied burrows were observed offsite within the buffer zone, during non breeding season (September through January) or breeding season

(February – August) a distance determined by a qualified biologist should be maintained between occupied burrows and construction activities. A qualified biologist may also employ the technique of sheltering in place (using hay bales to shelter the burrow from construction activities). If this technique is employed, it is recommended that the sheltered area be monitored weekly by a qualified biologist or daily when construction is within 160 feet (non-breeding season) or 250 feet (breeding season) of shelter. Avoidance and minimization measures would be subject to approval of CDFG. A Burrowing Owl Avoidance, Minimization and Mitigation Plan is attached (Appendix D)

Mitigation Measures

If, in future surveys, occupied/active burrows are found that must be removed, the following guidelines should be followed:

Passive Relocation Plan

1. After consultation with CDFW, artificial burrows (minimum of 50 feet apart) will be installed using the guidelines found in the Imperial Irrigation District Artificial Burrow Installation Manual or other applicable manuals.
2. After consultation with CDFW, owls will be excluded by installation of one way doors into the opening of the burrows. One way doors will be left in place for 48 hours, if scoping indicates occupancy. Burrow will be scoped prior to excavation. Excavation will be done using hand tools and refilled to prevent reoccupation. After burrow is collapsed, contractor will immediately disk down area to prevent reoccupation.
3. Documentation will be made (pictures, note taking) and a report will be sent to CDFW.
4. Foraging habitat is found on site, CDFW's mitigation guidelines for burrowing owl (Staff Report, 2012) requires foraging habitat determined per pair or unpaired resident bird to be provided and protected to offset the loss of foraging and burrow habitat on the project site as determined by a qualified biologist.

5.1.2 Mountain Plover, Long Billed Curlews, Loggerhead Shrike

Alfalfa and other favorable forage fields are found on the Cluster site which could attract mountain plover (*Charadrius montanus*), long billed curlew (*Numenius americanus*), Loggerhead Shrike (*Lanius ludovicianus*).

If these species are observed foraging adjacent to the site during construction, identification of these species and instructions on reducing construction activities in perimeter areas adjacent to crops will be included in a worker training program provided by a qualified biologist.

5.1.3 Nesting Raptors

This site does not appear to support areas of nesting interest to raptors; none were observed nesting. There is no evidence of nesting in the utility poles located in the vicinity which have been in place for decades. As there is no evidence of raptor occupancy, an Avian Protection Plan using guidelines from Avian Power line Interaction Committee (APLIC 2006) will not be necessary.

If in the future, a situation develops that indicate impacts to raptors, upon the recommendation of the overseeing agency, an Avian Protection Plan would be developed by a qualified biologist.

5.1.4 Other Species

The other species listed within this report are common throughout the Imperial Valley. Use of the site would not be expected by avian species due to plant activity and therefore no minimization of avian usage is necessary.

5.1.5 Migratory Birds and Non-migratory Bird Species

If construction is scheduled to begin during nesting season (February-August), a survey for nesting birds should be performed within 7 days of groundbreaking activities. Dependent upon species found, appropriate buffer zones will be established after consultation with the appropriate agencies.

6.0 Works Referenced

Alonso, Juan C., Javier A. Alonso, Rodrigo Munoz-Palido, *Mitigation of Bird Collisions with Transmission Lines through Groundwire Marking*, Biological Conservation, 1994.

Association of Environmental Professionals, *California Environmental Quality Act 2011 Statutes and Guidelines*, AEP, Palm Desert, CA, 2011.

Baldwin, Bruce G., et al, *The Jepson Desert Manual*, Los Angeles, University of California Press, 2002.

Behler, Jack L., and F. Wayne King, *Natural Audubon Society Field Guide to North American Reptiles & Amphibians*, New York, Chanticleer Press, 1996.

Borror, Donald J. and Richard E. White, *Insects*, The Easton Press, Norwalk, Ct. 1970.

Bowers, Nora, Rick Bowers, Kenn Kaufman, *Mammals of North America*, Houghton Mifflin Company, Singapore, 2004.

California Department of Fish and Wildlife, *Staff Report on Burrowing Owl Mitigation*, California Department of Fish and Wildlife, Oct 17, 1995

California Department of Fish and Wildlife, *Staff Report on Burrowing Owl Mitigation*, California Department of Fish and Wildlife, March 7, 2012.

California Native Plant Society, *CNPS Inventory of Rare and Endangered Plants*, online: www.northcoast.com, April, 2013

California Natural Diversity Database, April, 2013. Sacramento, Ca California Department of Fish and Wildlife.

Coulombe, Harry N., *Behavior and Population Ecology of the Burrowing Owl, Speotyto cunicularia, in the Imperial Valley of California*, The Condor, 73:163-176, 1971.

Department of the Army, *Corps of Engineers Wetlands Delineation Manual*, January, 1987. U.S. Department of Commerce.

Fish and Wildlife Service, 1998. *Draft recovery plan for the least Bell's vireo*, U. S. Fish and Wildlife Service, Portland OR, 139 pp.

Griggs, Jack, *American Bird Conservancy's Field Guide, All the Birds of North America*, New York HarpersCollinsPublishers, Inc. 1997.

Grinnell, J., and A. H. Miller. 1944. The distribution of the birds of California. Pac. Coast Avifauna no. 27. Cooper Ornith. Society. 608pp

http://casoilresource.lawr.ucdavis.edu/soilweb_gmap/

Imperial County Planning and Building Department, General Plan, Sept 1, 2004

Jameson, E.W., Hans J. Peeters, *Mammals of California*, Los Angeles, University of California, 2004.

Nicol, K., S. Lau, and C. Boehm. *A Distribution Survey of Desert Pupfish (Cyprinodon macularius) Around the Salton Sea, California*. Final Report for Section 6, Project No. EF90XII-1. California Department of Fish and Game Inland Fisheries Division, 1991.

Rosenberg, Daniel K. and Katherin Haley, *The Ecology of Burrowing Owl in the Agroecosystem of the Imperial Valley, California*, Studies in Avian Biology, No., 27:120-135, 2004.

Sawyer, John O. and Todd Keeler-Wolf, *A Manual of California Vegetation*, California Natural Plant Society, 2009.

Sibley, David Allen, *The Sibley Guide To Birds*, Alfred A. Knopf, New York, 2000.

Shuford W. D., and Gardali, T., editors, *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California and California Department of Fish and Game, Sacramento, CA

Tibbitts, T.J., M.K. Sogge, and S.J. Sferra. 1994. A survey protocol for the southwestern willow flycatcher (*Empidonax traillii extimus*). Technical Report NPS/NAUCPRS/NRTR-94/04. National Park Service Colorado Plateau Research Station, Flagstaff, Arizona. 24 p

United States Department of Agriculture Soil Conservation Service, *Soil Survey of Imperial County California Imperial Valley Area*, October, 1981.

United States Fish and Wildlife Service, *Birds of Conservation Concern 2008*.

U.S. Fish and Wildlife Service. 1993. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico. i-ix + 210 pp.,

United States Fish and Wildlife Service, *Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States BTP-R6001-2003*.

York, Melissa A., Daniel K. Rosenberg, and Ken A. Sturm, *Diet and Food-Niche Breadth of Burrowing Owl (*Athene Cunicularia*) in the Imperial Valley, California*, Western North American Naturalist 62(3), 2002. 280-287.

APPENDIX A SENSITIVE SPECIES

APPENDIX A

SENSITIVE BOTANICAL AND ZOOLOGICAL SPECIES (CNDDDB/CNPS)

Heber/ Mount Signal Quadrangle (Nine Quad Search) April, 2013

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Chaparral sand-verbena <i>Abronia villosa var aurita</i>	State: S2.2 (not very threatened); CNPS list: 1B.2 (rare, threatened in Ca; fairly endangered in Ca.)	Likes full sun, and sandy soil. Sand-verbena has gray foliage with pinkish purple flowers, and the flowers are fragrant. It does not tolerate weeds and needs bare ground. 80-1600m (263-5249ft	Chaparral, Coastal Shrub, and desert dunes/sandy areas.	L No habitat on site; none observed
Baja California ipomopsis <i>Ipomopsis effusa</i>	CNPS: List 2.1	a dicot, is an annual herb that is native to California and to Baja California	Creosote Bush Scrub, Chaparral . Alluvial fans.	L No habitat on site; none observed
Emory's Crucifixion-Thorn <i>Castela emoryi</i>	CNPS: List 2.3	A large sprawling, dense shrub or small tree, up to 3(-3.7) m (to 10[-12] feet) tall, with a round crown often with descending branches heavy with thorns. Gray brown bark has narrow ridges with smooth ridges. The stout twigs are blue, gray or yellow green, may be finely hairy, very rigid, up to 20 cm (8 in) long with numerous stout thorns.	Sonoran Desert of southern Arizona and far southeastern California, south into Baja California and Sonora, Mexico.	L No habitat on site; none observed

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Annual rock-nettle <i>Eucnide rupestris</i>	CNPS List 2.2	is a small, perennial, rounded shrub that grows to at most 3-feet tall. The leaves are about 1/2-inch long, oval, irregularly toothed, and gray-green. The leaves are covered with tiny, needle-like, barbed, stinging hairs that are very difficult to remove from human skin. The flowers are fairly large and open, with five, pale cream-colored petals.	fairly common component of vegetation communities on well-drained sandy, gravelly, and rocky soils in washes and on rocky outcrops in the Upper Sonoran (Mojave Desert Scrub) life zone.	L No habitat on site; none observed
California satintail <i>Imperata brevifolia</i>	CNDDDB Ranks G2, S2.1; CNS: 2.1	This plant can be weedy or invasive. Grass or grass-like plant, including grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), arrow-grasses (Juncaginaceae), and quillworts (Isoetes).	It is native to the southwestern United States from California to Texas and northern Mexico, where it grows in arid regions where water is available.	L No habitat on site; none observed
Hairy Stickleaf <i>Mentzelia hirsutissima</i>	CNDDDB Ranks G3, S2S3; CNPS: 2.3	Annual to shrub; hairs needle-like, stinging, or rough	Creosote Bush Scrub	L No habitat on site; none observed
Brown turbans <i>Malperia tenuis</i>	CNDDDB Ranks G4, S1.3; CNPS: 2.3	is recognized by its annual duration, linear leaves densely arranged along stems or concentrated near bases of stems, loosely arranged heads, and pappi of two kinds of scales.	Sonoran Desert Scrub is the general habitat for Brown Turbans. Near Ocotillo it grows on arid slopes with shallow soils, rocky surface rubble with few large boulders, and little competition from shrubs.	L No habitat on site; none observed

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Thurber's Pilostyles <i>Pilostyles thurberi</i>	CNDDDB Ranks G5, S3.3; CNPS: 4.3	a dicot, is a perennial herb (parasitic) that is native to California and is also found outside of California, but is confined to western North America.	Creosote Bush Scrub	L No indigo bush on site; none observed on indigo bush in buffer zone
Pink Fairy Duster <i>Calliandra eriophylla</i>	CNDDDB Ranks G5, S2S3; CNPS: 2.3	Fairy Duster is a low, densely branched shrub 8 to 48 inches high. The leaves are formed by 2-to-4 pairs of 1/4-inch, oblong leaflets. It is a member of the Pea Family (Fabaceae) which includes acacias and mimosas.	Open hillsides, sandy desert washes and slopes below 5,000 feet.	L No habitat on site; none observed
Abrams's Spurge <i>Chamaesyce abramisiana</i>	CNPS list: 2	Annual herbaceous blooms Sept/Nov. Common spurge in area has large purple spot and is prostrate; Abram's is not as colorful.	Sonoran Desert Shrub	L No habitat on site; no Abrams's spurge found.
Sand Food <i>Pholisma sonora</i>	State: S1.2 (threatened); CNPS list:1B.2	Parasite on species such as <i>Erigeron</i> , <i>/tiqulia</i> , <i>ambrosia</i> , <i>pluchea</i> . White to brown color. Corolla pink to purple.	Sonoran Desert Dunes; loose deep sand	L No deep loose sand available, no habitat; none observed

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Birds				
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	Fed:Endangered Ca: Threatened	A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer. Very shy.	L None observed or heard; Cattails not found in dense stands; no suitable habitat on site or in adjacent drains.
Burrowing Owl <i>Athene cunicularia</i>	CDFG: SC Species of Concern	Small raptors that nest in burrows that have been borrowed from other species in open grassland areas. Have adapted well in Imperial County using canals/drains/ditches to establish burrows and foraging for insects in agricultural fields	Open, dry annual or perennial grasslands; deserts & scrublands	H Owls/burrow found near site. Survey results included in this report

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Vermillion flycatcher <i>Pyrocephalus rubinus</i>	CDFG: SC Species of Concern	Length: 5 inches The adult male has a Bright red cap, throat and underparts; with a Black eyeline, nape, back, wings, and tail The Immature male similar to female but has variable amount of red on underparts. The female and immature has Brown upperparts with White underparts with faint streaks on breast with an undertail coverts tinged pink The adult male Vermilion Flycatcher is very distinctive. The female and immatures are more nondescript but the streaking on the breast and pink tinge to the undertail coverts distinguish them from other flycatchers.	Frequents streams and ponds in arid areas; agricultural areas	L Does not nest in area, no habitat will be remained

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Yellow Warbler <i>Dendroica petechia brewsteri</i>	CNDDDB Rank: G5T3, S2; CDFG: SC	A Family of seed-eating, small to moderately large passerine birds that have strong , stubby beaks , which in some species can be quite large. They have a bouncing flight, alternating flapping with gliding on closed wings. Most sing well.	Yellow warblers in southern California breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland(Garrett and Dunn 1981). During migration, they occur in lowland and foothill woodland habitats such as desert oases, riparian woodlands, oak woodlands, mixed deciduous-coniferous woodlands, suburban and urban gardens and parks, groves of exotic trees, farmyard windbreaks, and orchards (Small 1994).	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging
Le Conte's Thrasher <i>Toxostoma lecontei</i>	CNDDDB Rank: G3, S3; CDFG: SC	Sexes are alike. This sandy-colored, 10-inch long bird blends well with dry desert vegetation. Its black tail contrasts with its gray, unspotted breast and belly.	Le Conte's Thrasher is a widespread, but rare permanent resident in the western and southern San Joaquin Valley, upper Kern River Basin, Owens Valley, Mojave Desert, and Colorado Desert in southwestern United States.	L No habitat; none observed

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Ferruginous hawk <i>Buteo regalis</i>	Species of concern	The male and female have identical markings. The main difference is size, with the female being larger. Perched birds have a white breast and body with dark legs. The back and wings are a brownish rust color. The head is white with a dark streak extending behind the eye. The wing tips almost reach the tip of the tail.	Found in arid to semiarid regions, as well as grasslands and agricultural areas in southwestern Canada, western United States, and northern Mexico.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base
California Black Rail <i>Laterallus jamaicensis coturniculus</i>	CDFG: Threatened	The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.	Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	L None observed; no habitat on site

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Sonoran desert toad <i>Incillius alvarius</i>	CDFG: SC	Large: 7.5 inches or more in length. smooth, typically olive-green/brown skin, cranial crests, and prominent, elongated glands on both sides of the back of the head (parotoid glands) and on the hind legs. Young toads have small dark, orange-tipped spots on the back. Larger tadpoles are gray or brown with a rounded tail tip, and grow to about 2.25 inches.	Sonoran Desert scrub, semi-desert grasslands. Can be tied to permanent water, such as major rivers or the edges of agriculture. May be found many miles from water, particularly during the summer monsoons. Most Sonoran Desert toads are found at night during the monsoon season, but they may emerge a month or more before the summer rains begin, particularly in areas of permanent water. Can be found in rodent burrows or underground retreats.	L None observed. No habitat present on site.
Leopard frog <i>Lithobates yavapaiensis</i>	Species of concern	Tan, gray-brown or light gray-green to green above; yellow below. Vague upper lip stripe, tuberculate skin. Dark network on rear of thighs; yellow groin color often extends onto rear of belly and underside of legs. Male will exhibit a swollen and darkened thumb base.	Find in desert grassland and in woodlands. Uses permanent water sources, stays near water. Breed Feb-April. Bullfrogs are predators	L No permanent water sources on site; not expected on site.
Northern leopard frog <i>Lithobates pipiens</i>	CDFG: SC	2-3½ inches long and has randomly distributed black spots on its back, sides, and legs. Each spot is surrounded by a light halo. The background colors of the frog can range from gold to green. Gold or brown dorsolateral ridges often stand out in contrast.	NLF needs permanent water for overwintering, floodplains and marshes for breeding, and wet meadows and fields for foraging	L No habitat on site or nearby

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Flat-tailed horned lizard <i>Phrynosoma mcallii</i>	CNDDDB Rank: G3; S2 CDFG: SC	A small (up to 87 mm or 3.4" from snout to vent), exceptionally flat and wide lizard with a long (for a horned lizard) broad, flat tail and a dark stripe running down the middle of the back.	occupy a small range in the Sonoran Desert of southwestern California, southwestern Arizona, and extreme northern Mexico.	L No undisturbed sandy habitat. May be found in buffer zones which will not be disturbed
Colorado Desert fringe-toed lizard <i>Uma notata</i>	CNDDDB Rank: G3, S2; CDFG: SC	2 3/4 to 4 4/5 inches long from snout to vent (7 - 12.2 cm). (Stebbins 2003) The tail is about the same length as the body.	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, flats with sandy hummocks formed around the bases of vegetation, washes, and the banks of rivers. Needs fine, loose sand for burrowing.	L No loose sandy habitat for burrowing on site. May use buffer zones which will not be disturbed
American Badger <i>Taxidea taxus</i>	CDFG: Species of Concern	Burrowing animals that feed on ground squirrels, rabbits, gophers and other small animals. Prefer grasslands, agricultural areas.	Found in drier open areas with friable soils	L None seen; no burrows observed with badger characteristics observed. Not expected because of farming activities

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	CNDDDB Rank: G4, S2S3; CDFG: SC	A small fold, or "pocket" in the wing membrane of the free-tailed bat, near its knee, gives this bat its common name. Pocketed free-tailed bats have large ears and long wings, and fly rapidly, generally pursuing insects on the wing. They eat many kinds of insects, but seem to prefer small moths.	It occurs in the arid lowlands of the desert Southwest, and primarily roosts in crevices in rugged cliffs, slopes, and tall rocky outcrops.	L None seen. Not expected; no habitat
Western Mastiff Bat <i>Eumops perotis californicus</i>	CNDDDB Rank: G5T4, S3; CDFG: SC	<i>Eumops perotis</i> can be distinguished from all other North American molossid (free-tail) species based on size. With a forearm of 73-83 mm, it is North America's largest species.	In California, the <i>E. perotis</i> is most frequently encountered in broad open areas. Generally, this bat is found in a variety of habitats, from dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas.	L None seen. Not expected; no habitat
Western Yellow bat <i>Lasiurus xanthinus</i>	CDFG SC:	Consumes small to medium-sized, night flying insects. Yellow color/short ears.	Roosts in leafy vegetation the deserts of the southwestern United States. Roosts among the dead fronds of palm trees and cottonwoods	L Not expected; few palms or cottonwood trees found on site.

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Big free tailed bat <i>Nyctinomops macrotis</i>	CDFG: SC	Body length of 5 1/8 to 5 3/4", with a 17" wingspan, which makes it bigger than other free tailed bats. Fur is reddish brown to dark brown, with hairs white at base. Tail extends past membrane at least an inch. Big ears are joined at base and extend out over face like a hat. Eats mostly moths, some crickets, grasshoppers, ants, various other insects.	Lives in rocky areas of desert scrub or coniferous forests. During day roosts in crevices on cliff faces.	L None seen. Not expected; no habitat.
Colorado Valley woodrat <i>Neotoma albigula venusta</i>	CNDDDB Rank: G5T3T4, S1S2	a small rodent measuring an average of 12.9 inches (32.8 cm) and weighing an average of 188 g for females and 224 g for males	Typically found at an altitude of 0 to 1,966 meters (0 to 6,450 feet). Mesquite-creosotebush	L No desert vegetation on site; may be found in buffer zone which will not be disturbed

Special Status Species that Occur in Imperial County (USFWS)

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Plants				
Peirson's milk-vetch <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	T/E/1B	Silvery, short-lived perennial plant that is somewhat broom like in appearance. A member of the pea and bean family, it can grow to 2.5 feet tall and is notable among milkvetches for its greatly reduced leaves. Peirson's milkvetch produces attractive, small purple flowers , generally in March or April, with 10 to 17 flowers per stalk. It yields inflated fruit similar to yellow-green pea pods with triangular beaks.	Desert dune habitats. In California, known from sand dunes in the Algodones Dunes system of Imperial County. Was known historically from Borrego Valley in San Diego County and at a site southwest of the Salton Sea in Imperial County	L None observed. No dune habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Birds				
California brown pelican <i>Pelecanus occidentalis</i>	E/E/-No longer endangered	Large size and brown color. Adults weigh approximately 9 pounds, and have a wingspan of over 6 feet. They have long, dark bills with big pouches for catching and holding fish. Pelicans breed in nesting colonies on islands without mammal predators. Roosting and loafing sites provide important resting habitat for breeding and non-breeding birds.	Open water, estuaries, beaches; roosts on various structures, such as pilings, boat docks, breakwaters, and mudflats	L None observed. No open water

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	E/-/-	Small; usually a little less than 6 inches in length, including tail. Conspicuous light-colored wingbars. Lacks the conspicuous pale eye-ring of many similar <i>Empidonax</i> species. Overall, body brownish-olive to gray-green above. Throat whitish, breast pale olive, and belly yellowish. Bill relatively large; lower mandible completely pale. The breeding range of <i>extimus</i> includes Arizona and adjacent states.	At low elevations, breeds principally in dense willow, cottonwood, and tamarisk thickets and in woodlands, along streams and rivers. Migrants may occur more widely. Prefers riparian willow/cottonwood but will use salt cedar thickets	L None Observed; no suitable thickets on site
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	E/T/-	A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts. Very shy.	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer.	L None observed or heard; no suitable habitat; not immediately adjacent to Salton Sea.

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C/E/-	Medium-sized cuckoo with gray-brown upperparts and white underparts. Eye-rings are pale yellow. Bill is mostly yellow. Wings are gray-brown with rufous primaries. Tail is long and has white-spotted black edges. Sexes are similar.	Found in forest and open woodlands, especially in areas with dense undergrowth, such as parks, riparian woodlands, and thickets	L None observed; no habitat on site. Thickets are not present.
Bald eagle <i>Haliaeetus leucocephalus</i>	T, PD/E/-	The distinctive white head and tail feathers Beak and eyes yellow. Bald Eagles are about 29 to 42 inches long, can weigh 7 to 15 pounds, and have a wing span of 6 to 8 feet.	Found on shores, lake margins, and near large rivers. Nests in large trees. Winters at lakes, reservoirs, river systems, and some rangelands and coastal wetlands (breeding range is mainly in mountainous habitats near reservoirs, lakes and rivers, mainly in the northern two-thirds of California)	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Least tern <i>Sterna antillarum</i>	E/E/-	Small tern. During breeding, black cap ending at white forehead. Short white eyestripe. Bill yellow with black tip. Back light gray. Underside white. Black leading edge to wing. In nonbreeding plumage has black eyestripe extending to back of head, white top of head, and black bill. Size: 21-23 cm (8-9 in) Wingspan: 48-53 cm (19-21 in) Weight: 30-45 g (1.06-1.59 ounces)	Shallow areas of estuaries, lagoons, and at the joining points between rivers and estuaries	L None observed; no habitat
Least Bell's Vireo <i>Vireo bellii pusillus</i>	E/E/-	Drab gray to green above and white to yellow below. It has a faint white eyering and two pale wingbars; has pale whitish cheeks and forehead and greenish wings and tail. longer tail and subtle wingbars. The song is a varied sequence of sharp, slurred phrases that typically end with an ascending or descending note.	Formerly a common and widespread summer resident below about 2,000 feet in western Sierra Nevada. Also was common in coastal southern California, from Santa Barbara County south, below about 4,000 feet east of the Sierra Nevada. Prefers thickets of willow, and other low shrubs afford nesting and roosting cover	L None observed; no habitat on site. Thickets are present off site. Minimal construction on site should not disturb any occupants of thickets

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Black rail <i>Laterallus jamaicensis coturniculus</i>	-/T/-	The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.	Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Raptors				
Peregrine Falcon <i>Falco peregrinus</i>	D/E/-	Large, powerful falcon; pointed winged falcon silhouette. Strong shallow wingbeats may dive at speeds up to 100 mph. Dark with dark hooded effect. Blue gray below with narrow bars Long-winged, long tailed hawk. Habitually flies low over open fields and marshes watching and listening for prey such as rodents and birds. (I observed Harrier with a white faced ibis as prey). Perches low or on ground. Low slow flight. Nests in reeds. Grey with black wingtips.	Most often found along coastlines or marshy habitats. Nest in cliffs and have been known to nest in tall buildings	L None observed; rare visitors to area outside of the Salton Sea. Few waterfowl for prey or cliffs/tall buildings for nesting
Northern Harrier <i>Circus cyaneus</i>	-/SC/-	Blue gray above pale reddish below; small size. Tip of tail squared off. Nesting occurs in dense tree stands which are cool, moist, well shaded and usually near water. Hunt in openings at the edges of woodlands and also brushy pastures.	Marshes, open fields. Nests in reeds	M Observed. Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Sharp-shinned Hawk <i>Accipiter striatus</i>	-/SC/-	Gray and white with black on shoulders and under bend of wing. Graceful flyer. Adults have bright red eyes. Medium size hawk; about 15 inches long and about 12 ounces. Males pale with with rufous shoulders and thigh feathers. White tail washed with rufous. Wide head wings in shallow v when soaring.	Sharp-shinned hawks may appear in woodland habitats during winter and migration periods and are often common in southern California in the coastal lowlands and desert areas; winters in woodlands and other habitats.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
White tailed Kite <i>Elanus leucurus</i>	/E/		Found in open country; like to perch on treetop. May be seen hovering prior to attack of a rodent.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Ferruginous hawk <i>Buteo regalis</i>	/SC/		Found in arid to semiarid regions, as well as grasslands and agricultural areas in southwestern Canada, western United States, and northern Mexico.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Mammals				
Bighorn sheep <i>Ovis canadensis</i>	E/E/-	Sheep have short hair which is light gray to grayish brown, except around their stomachs and rump, where it is creamy white. Their tails are about four inches long. Full-grown rams weigh between 180 and 240 pounds,	Desert Bighorn sheep occupy a variety of plant communities, ranging from mixed-grass hillsides, shrubs. Avoids dense vegetation	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Reptiles and Amphibians				
Desert tortoise <i>Gopherus agassizii</i>	T/T/-	A herbivore that may attain a length of 9 to 15 inches in upper shell (carapace) length. The tortoise is able to live where ground temperature may exceed 140 degrees F because of its ability to dig underground burrows and escape the heat. At least 95% of its life is spent in burrows. Their shells are high-domed, and greenish-tan to dark brown in color. Desert tortoises can grow from 4–6" in height and weigh 8–15 lb (4–7 kg) when fully grown. The front limbs have heavy, claw-like scales and are flattened for digging. Back legs are more stumpy and elephantine	Dry, flat, and gravelly or sandy ground in desert shrub communities where annual and perennial grasses are abundant. Frequent habitats with a mix of shrubs, forbs, and grasses	L None observed; habitat not favorable
Flat-tailed horn lizard <i>Phrynosoma mcallii</i>	PT/-/-	Closely related to Desert horned lizard (scat indistinguishable); only found in Imperial, Riverside County, Ca and Yuma area, Az. Small round lizard with distinguishing round spots on back. Diet of ants; needs sandy soil, shade bushes to survive.	Desert washes/sandy areas with vegetative cover. Diet of ants	L No habitat; none observed

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Fish				
Desert pupfish <i>Cyprinodon macularius</i>	E/E/-	Small, silvery-colored fish with 6 to 9 dark bands on its sides. Grows to a full average length of only 2.5 inches; develop quickly, sometimes reaching full maturity within 2 to 3 months. Although their average life span is 6 to 9 months, some survive more than one year. Pupfish have a short, scaled head with an upturned mouth. The anal and dorsal fins are rounded with the dorsal sometimes exhibiting a dark blotch. The caudal fin is convex at the rear.	Springs, seeps, and slow-moving streams in Salton Sink basin and backwaters and sloughs of the Colorado River	L None observed; no habitat
Razorback Sucker <i>Xyrauchen texanus</i>	Fed/CA: Endangered	One of the largest suckers in North America, can grow to up to 13 pounds and lengths exceeding 3 feet. The razorback is brownish-green with a yellow to white-colored belly and has an abrupt, bony hump on its back shaped like an upside-down boat keel	Colorado River	L None observed; no habitat

USFWS Birds of Conservation Concern

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Nests on tall trees or on cliffs in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.	Low Not expected. No tall trees; not observed in area	X	X
Swainson's Hawk	<i>Buteo swainsoni</i>	Breeds in open country such as grassland, shrubland, and agricultural areas. Usually migrates in large flocks often with Broad-winged Hawks. Winters in open grasslands and agricultural areas of Southern America.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base		X
Peregrine Falcon	<i>Falco peregrinus</i>	Inhabits open wetlands near cliffs for nesting. Also uses large cities and nests on buildings.	Low No open wetlands or nesting area.	X	X
Black Rail	<i>Laterallus jamaicensis</i>	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Low No salt or freshwater marshes; no vegetation	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Snowy Plover	<i>Chardrius alexandrinus</i>	Barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds.	Low No habitat; not observed	X	X
Mountain Plover	<i>Charadrius montanus</i>	Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed fields, and sandy deserts.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Black Oystercatcher	<i>Haematopus bachmani</i>	Rocky seacoasts and islands, less commonly sandy beaches.	Low No habitat; not observed	X	X
Solitary Sandpiper	<i>Tringa solitaria</i>	Breeds in taiga, nesting in trees in deserted songbird nests. In migration and winter found along freshwater ponds, stream edges, temporary ponds, flooded ditches and fields, more commonly in wooded regions, less frequently on mudflats and open marshes.	Low No habitat; not observed		X
Lesser Yellowlegs	<i>Tringa flavipes</i>	Breeds in open boreal forest with scattered shallow wetlands. Winters in wide variety of shallow fresh and saltwater habitats.	Low No habitat; not observed		X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Upland Sandpiper	<i>Bartramia longicauda</i>	Native prairie and other dry grasslands, including airports and some croplands.	Low No habitat; not observed		X
Whimbrel	<i>Numenius phaeopus</i>	Breeds in various tundra habitat, from wet lowlands to dry heath. In migration, frequents various coastal and inland habitats, including fields and beaches. Winters in tidal flats and shorelines, occasionally visiting inland habitats.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Long-billed Curlew	<i>Numenius americanus</i>	Nests in wet and dry uplands. In migration and winter found on wetlands, grain fields, lake and river shores, marshes, and beaches.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Breeds in muskegs of taiga to timberline, and barely into subarctic tundra. Winters on coastal mud flats and brackish lagoons. In migration prefers saltwater tidal flats, beaches, and salt marshes. Also found in freshwater mud flats and flooded agricultural fields.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Aleutian Tern	<i>Sterna aleutica</i>	Nest on flat vegetated islands on or near the coast. Vegetation includes dwarf-shrub tundra, grass and sedgemoths, and coastal marsh. Migration and winter habitat not known, probably pelagic.	Low No habitat; not observed		X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Least Tern	<i>Sterna antillarum</i>	Seacoasts, beaches, bays, estuaries, lagoons, lakes and rivers, breeding on sandy or gravelly beaches and banks of rivers or lakes, rarely on flat rooftops of buildings.	Low No habitat; not observed		X
Gull-billed Turn	<i>Sterna nilotica</i>	Breeds on gravelly or sandy beaches. Inters in salt marshes, estuaries, lagoons and plowed fields, along rivers, around lakes and in freshwater marshes.	Low No habitat; not observed		X
Black Skimmer	<i>Rynchops niger</i>	Breeds in large colonies on sandbars and beaches. Forages in shallow bays, inlets, and estuaries.	Low No habitat; not observed	X	X
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Open woodlands with clearings, orchards, dense scrubby vegetation, mainly cottonwood, willow, and alder, often along water.	Low No habitat; not observed	X	X
Black Swift	<i>Cypseloides niger</i>	Nests on steep ledges on cliffs or canyons. Migrates and winters over coastal lowlands.	Low No habitat; no swifts observed in area	X	X
Costa's Hummingbird	<i>Calypte costae</i>	Primarily low deserts and arid brushy foothills, but also chaparral and coastal sage scrub closer to the coast. Often visits ornamental plantings and feeders in desert communities. In migration and winter frequents a wider variety of habitats, occasionally ranging into pine-oak woodlands in adjacent mountains.	Low No habitat; not observed – no feeders or nectar sources in area	X	X
Calliope Hummingbird	<i>Stellula calliope</i>	Open montane forest, mountain meadows, and thickets of willow and alder. In migration and winter also in chaparral, oak and pine-oak woodlands, deserts, and gardens.	Low No habitat; not observed	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Rufous Hummingbird	<i>Selasphorus rufus</i>	Breeds in a variety of forested habitats where flowers are found. Frequents montane meadows and just about anywhere else with flowers or feeders during migration. Winters primarily in pine and pine-oak forests in Mexico, but most birds wintering farther north are attracted either to flowers or feeders in gardens.	Low No habitat; not observed – no feeders or nectar in area.		X
Allen's Hummingbird	<i>Selasphorus sasin</i>	Breeds in coastal sage scrub, chaparral, and riparian corridors within coastal forests. In Mexico winters in forest edge and scrub clearings with flowers. The resident population on the mainland of southern California is largely restricted to suburban neighborhoods where feeders and flowers are plentiful.	Low No habitat; not observed. No feeders or nectar in area	X	X
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Breeds in open arid conifer, oak, and riparian woodlands: rare in coastal areas. Winters in breeding habitat, and oak savannas, orchards, and even in towns.	Low No habitat; not observed	X	X
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Montane and northern coniferous forests, at forest edges and openings such as meadows, and at ponds and bogs. Winters at forest edges and clearings where tall trees or snags are present.	Low No habitat; not observed	X	X
Willow Flycatcher	<i>Empidonax trailii</i>	Breeds in moist, shrubby areas, often with standing or running water. Winters in shrubby clearings and early successional growth.	Low No habitat; not observed	X	X
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Open or brushy areas.	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Bell's Vireo	<i>Vireo bellii</i>	Dense, low, shrubby vegetation generally early successional stages in riparian areas, brushy fields, young second-growth forest or woodland, scrub oak, coastal chaparral, and mesquite brushlands, often near water in arid regions.	Low Scant shrubby vegetation on site	X	X
Gray Vireo	<i>Vireo vicinior</i>	Found in desert scrub, mixed oak-juniper and pinyon-juniper woodlands, dry chaparral, and thorn scrub in hot, arid mountains and high-plains.	Low No habitat; not observed	X	X
LeConte's Thrasher	<i>Toxostoma lecontei</i>	Desert scrub, mesquite, tall riparian brush and, locally, chaparral.	Low No habitat; not observed	X	X
Yellow Warbler	<i>Dendroica petechia</i>	Breeds in wet, deciduous thickets, especially in willows and alder. Also in shrubby areas, old fields, gardens and orchards. In southern Florida and farther south, found in mangroves.	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	
Common Yellowthroat	<i>Geothlypis trichas</i>	Thick vegetation from wetlands to prairies to pine forests. Frequently near water.	Low No habitat; not observed	X	
Rufous-winged Sparrow	<i>Aimophila carpalis</i>	Found in flat areas of tall desert grass mixed with brush and cactus, and thorn scrub.	Low No habitat; not observed		X
Brewer's Sparrow	<i>Euphagus cyanocephalus</i>	Found in a variety of habitats, but prefers open, human-modified areas, such as farmland, fields, residential lawns, and urban parks.	Medium Not observed. Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	X
Black-chinned Sparrow	<i>Spizella atrogularis</i>	Arid brush land, commonly in tall and fairly dense sagebrush, and dry chaparral. Often in rocky, rugged country from sea level to around 8,900 ft (2700m).	Low No habitat; not observed	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Tricolored Blackbird	<i>Agelaius tricolor</i>	Breeds in marsh vegetation, particularly cattails, near grain fields, riparian scrubland, and forests, but always near water. Dairies and feedlots also commonly used for foraging. Urban and suburban areas occasionally utilized, particularly park lawns. Cultivated lands also suitable for foraging. Large night-time roosts form during nonbreeding season in cattail marshes near foraging grounds.	Low Not recorded in area	X	X
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	Prefers dry interior foothills, mountain valleys, open woodlands, chaparral, and weedy fields. Often found near isolated water sources such as springs and cattle troughs.	Low No habitat; not observed	X	X
CNPS Species or Community Level					
G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.					
G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.					
G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.					
G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.					
G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.					
State Ranking					
The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.			The R-E-D Code contains information on Rarity, Endangerment, and Distribution, ranked as a 1, 2, or 3 for each value (as below). This code was originally known as the R-E-V-D Code (through the 3rd edition 1980), and the V (Vigor) was removed in the 4th edition (1984).		
S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres			R - Rarity		
S1.1 = very threatened			1 – Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time		

S1.2 = threatened	2 – Distributed in a limited number of occurrences, occasionally more if each occurrence is small
S1.3 = no current threats known	3 – Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres	E - Endangerment
S2.1 = very threatened	1 – Not very endangered in California
S2.2 = threatened	2 – Fairly endangered in California
S2.3 = no current threats known	3 – Seriously endangered in California
S3 = 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres	D - Distribution
S3.1 = very threatened	1 – More or less widespread outside California
S3.2 = threatened	2 – Rare outside California
S3.3 = no current threats known	3 – Endemic to California
S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat. NO THREAT RANK.	
S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.	
Sources: CDFW/CNDDDB 2013, California Wildlife 2010; CNPS 2013; USFWS, 2010	
State/CDFG:	¹Status: Federal:
E = Listed as an endangered species; or previously known as “rare, fully protected”	E = Listed as an endangered species
T = Listed as a threatened species	T = Listed as a threatened species
SC = species of special concern (designation intended for use as a management tool and for information; species of special concern have no legal status (www.dfg.ca.gov/wildlife/species/ssc/birds.html))	C = Candidate for listing
CNPS (California Native Plant Society):	D = Delisted
1B = Rare, threatened, or endangered in California or elsewhere	PD = Proposed for delisting/PT = Proposed for threatened status
2= Plants rare, threatened,or endangered in Ca, but more common elsewhere	
3=Plants about which more information is needed	
Habitat Suitability Codes: H = Habitat is of high suitability for this species M = Habitat is of moderate suitability for this species L = Habitat is of low suitability for this species	

APPENDIX B PHOTOGRAPHS

PHOTOGRAPHS



1. Site looking south; crop stubble



2. Active burrow; west side of Wisteria 5 Drain



3. Southeast corner of site looking north



4. Southwest corner of site looking northwest to adjacent vacant lot



5. Northeast corner of site looking south; bermuda field to left (offsite)



6. South boundary of site looking west; Wisteria 5 Drain and Kubler Road to left

APPENDIX C SPECIES FOUND ON SITE

WILDLIFE SPECIES OBSERVED ON OR NEAR SITE*	
Common name	Scientific name
Birds	
Black Phoebe	<i>Sayornis nigricans</i>
Black neck stilt*	<i>Himantopus mexicanus</i>
Burrowing owl*	<i>Athene cunicularia</i>
Cattle egret	<i>Bubulcus ibis</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
Grackle	<i>Quiscalus mexicanus</i>
Killdeer	<i>Charadrius vociferus</i>
Meadowlark	<i>Sturnella neglecta</i>
Mourning Dove	<i>Zenaida macroura</i>
Nighthawk	<i>Chordeiles acutipennis</i>
Quail	<u><i>Callipepla gambelii</i></u>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red winged Blackbird	<i>Agelaius phoeniceus</i>
Say's Phoebe	<i>Sayornis saya</i>
Turkey buzzard	<i>Cathartes aura</i>

Mammals	
Canine tracks/scat	
Cottontail	<i>Sylvilagus audubonii</i>
Gopher mounds	<i>Thomomys sp.</i>
Raccoon*	<i>Procyon lator</i>
Rodent tracks	<i>unknown</i>
Round tailed ground squirrel*	<i>Xerospermophilus tereticaudus</i>
Sheep tracks*	<i>Ovis aries</i>
Skunk	<i>Mephitis mephitis</i>
Insects	
Ants	<i>various</i>
Bees	<i>Aphis sp.</i>
Crickets	<i>Gryllidae</i>
Damselfly/dragonflies	<i>various</i>
Gnats	<i>various</i>
Grasshopper	<i>various</i>
House fly	<i>Musca domestica</i>
Mosquito	<i>Culiseta longiareolata</i>
Reptiles	
Collared lizard	<i>Crotaphytus collaris</i>
Amphibians	
Bullfrog*	<i>Rana catesbeiana</i>
Fish	
Mosquitofish*	<i>Gambusia affinis</i>

BOTANICAL SPECIES OBSERVED ON OR NEAR SITE		
Common name	Scientific name	CNPS Classification
5 hook bassia	<i>Bassia hyssopifolia</i>	None
Alkali heliotrope	<i>Heliotropium curassavicum</i>	None
Alkali mallow	<i>Malvella leprosa</i>	None
Arrowweed	<i>Pluchea sericea</i>	None
Bermuda	<i>Cynodon dactylon</i>	None
Curly dock*	<i>Rumex crispus</i>	None
Goosefoot	<i>Chenopodium sp.</i>	None
Nutgrass*	<i>Cyperus rotundus</i>	None
Palm*	<i>Washingtonia filifera</i>	None
Quailbush*	<i>Atriplex sp.</i>	None
Saltbush*	<i>Atriplex sp.</i>	None
Saltcedar*	<i>Tamarix sp.</i>	Invasive
Salt grass*	<i>Distichlis spicata</i>	None
Spiny aster*	<i>Chloracantha spinosa</i>	None
Sprangletop*	<i>Leptochloa sp.</i>	None
Sunflower	<i>Helianthus annuus</i>	None
Watergrass*	<i>Echinochloa oryzicola</i>	None

* found in drains/canals (IID right of way) only

◇ found on site only

APPENDIX D

QUALIFICATIONS

MARIE S. BARRETT

2035 Forrester Road, El Centro, CA 92243 (760) 352 4159 mariebarrett@roadrunner.com

LICENSES/CERTIFICATES

Flat Tailed Horn Lizard Surveyor CDFG/BLM
Burrowing Owl Surveyor (CDFG/USFWS)
USFW Desert Tortoise Egg Handling
Desert Tortoise Council Survey Techniques Workshop Certificate
BCI Bat Conservation and Management Workshop (Acoustic) Certificate
Southwestern Willow Flycatcher Workshop Kernville, CA 2010
California Pest Control Advisor #70373 California Pest Control Operator #103123

CAREER HISTORY

Barrett's Biological Surveys, El Centro, California *BIOLOGIST* 3/95 -present

Helped established protocol and perform Vegetative Baseline Studies and Biological Surveys for Mining Reclamation Plans in Imperial County. Have performed numerous (over 20,000 acres) surveys involving varied wildlife including burrowing owl and plant species and writing reports and biological assessments. Certified to perform Flat Tailed Horned Lizard Surveys; completed Desert Tortoise workshops; approved to handle desert tortoise (American Girl Mine/BLM project, 1/2013). Work closely with governmental agencies such as Bureau of Land Management, State Office of Mining Reclamation, California Department of Fish and Game. Written over ten Environmental Assessments for BLM, El Centro office. Over 150 days spent in field monitoring/surveying for FTHL; 92 days in field monitoring/surveying for desert tortoise and 21,000 acres surveyed for burrowing owl; 2 IID Burrowing owl surveys with AECOM (2011/12- 226 hrs). Wrote Imperial Irrigation District Artificial Burrow Installation Manual (2009). Over 25 active burrowing owl burrows passively relocated and 50 artificial burrows installed. Volunteered for desert tortoise work (20 hrs) with Dr. Jeff Lovich.

Blythe Water System: desert tortoise monitoring approved by USFWS, Carlsbad office

John Deer MetTower Installation: desert tortoise survey and monitoring approved by BLM, El Centro office

Black Mt. MetTower Installation: desert tortoise survey and monitoring approved by BLM, El Centro office

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours) Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours) All American Aggregates, FTHL surveys, Boyd Road Mine Environmental Assessment, BLM El Centro, 2007. (9.5 hours) All American Aggregates, FTHL surveys, Wheeler Road Mine Environmental Assessment, BLM, El Centro, 2006. (8.5 hours) ;ValRock, FTHL surveys, Ocotillo ByPass Road Environmental Assessment, County of Imperial/BLM, El Centro, 2004. (7 hours)

Citizens' Congressional Task Force on the New River, Brawley, Ca *OUTREACH PROGRAM COORDINATOR* 1/00 - present

Responsible for coordinating activities relating to student and public outreach education to promote the water quality opportunities of wetlands ponding systems on the New River.

Imperial Valley College, Imperial, California *ENVIRONMENTAL MANAGEMENT PROJECT COORDINATOR* 9/95-12/99

Responsible for establishing an Environmental Technology curriculum, presenting public forums, short courses and certificate courses in hazardous materials and safety areas. In conjunction with Division Chairman, established a budget for 96-98 program and obtained funding of \$131,000 based on 95-96 program performance. Established short courses that trained over 700 people in hazardous materials safety programs. Compiled a survey of employers, which provided direction for the program.

VOLUNTEER ORGANIZATIONS

CALIFORNIA NATIVE PLANT SOCIETY: Imperial Valley Coordinator, 2006-2013.

SALTON SEA INTERNATIONAL BIRD FESTIVAL: Coordinator: 2001-2010. Organize bird festival in the Imperial Valley that attracts over 300 birders.

COLORADO RIVER CITIZENS FORUM : Co-Chair 2004-2005. Preside over meetings that disseminate information regarding issues and projects along the Colorado River.

COLORADO RIVER WATER QUALITY CONTROL BOARD: Board member Dec 05-Sept 06.

CALIFORNIA WOMEN FOR AGRICULTURE. President 91-93; Co-President: 93-00. Raised over \$15,000 for video promoting agriculture in Imperial Valley and a gallery in the Pioneer Museum. Compiled and published cookbook and organized two community dinner/dances. *IMPERIAL COUNTY 4-H*. Imperial 4-H Community Leader: 95-96. Project Leader: 89-95.

EDUCATION

University of Arizona, Tucson, Arizona

Masters of Science Degree – AGRICULTURAL EDUCATION

Thesis: Survey and training protocol for documenting burrowing owls and habitat in Imperial County, California

California State Polytechnic College, Kellogg-Voorhis Campus, Pomona, California

Bachelor of Science Degree - AGRICULTURAL BIOLOGY

Imperial Valley College, Imperial, California

Associate of Science Degree. AGRICULTURE

COURSES/SEMINARS/WORKSHOPS

Bat Conservation Workshop, Portal, AZ, 2008, 2009, Southwestern willow Flycatcher Workshop, 2010

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WORK EXPERIENCE

Principal Consultant, Barrett Enterprises. El Centro, December 2001-currently.

Compile information and complete local, state and federal government forms; such as conditional use permits, reclamation plan applications, zone changes, Environmental Evaluation committee responses, and 501 (c)(3) tax exemption applications. Act as liaison between local businesses and local, state, and federal government agencies. Certified to survey for Flat-Tailed Horned Lizards in California and Arizona. Experienced in surveying for Burrowing Owls and the Desert Tortoise.

Project work has been successfully completed for the following agencies and businesses:

Agencies: Bureau of Land Management (BLM) El Centro; Imperial Irrigation District (IID); County of Imperial, Caltrans. Businesses: Superior Redimix, ValRock and Gibson Schaeffer, All American Aggregates.

1996 to present: Ms. Barrett has done the field work and contributed to the required reports for the following projects:

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours)

Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours)

All American Aggregates, FTHL surveys, Boyd Road Mine Environmental Assessment, BLM El Centro, 2007. (9.5 hours)

All American Aggregates, FTHL surveys, Wheeler Road Mine Environmental Assessment, BLM, El Centro, 2006. (8.5 hours)

ValRock, FTHL surveys, Ocotillo ByPass Road Environmental Assessment, County of Imperial/BLM, El Centro, 2004. (7 hours)

RFB Consulting, Burrowing Owl and Biological/Botanical Resource Survey, Imperial County Road Resurfacing 17 miles. (9 hours)

Burrowing Owl and Biological/Botanical Resource Surveys, County of Imperial and Caltrans, 2010. (15 hours)

RECON, Tessoro Solar Project FTHL Monitoring, Plaster City, CA, Imperial County. (242 hours)

Conservation Science: Presence/ absence desert tortoise surveys in Mojave, CA (100 hours)

LSI: Construction monitoring for UNEV underground pipeline project Mesquite, Nevada (183 hours)

ICF: Construction monitoring for TRTP Tehachapi Power line project Palmdale, CA (85 hours)

AECOM: Burrowing Owl surveys along IID right-of-ways Imperial County, CA (96.75 hours)

RECON: Bird counts Imperial County, CA (68 hours)

The Holt Group: Blythe, CA Desert Tortoise monitoring (170 hours)

Cal Tech: FTHL monitoring Plaster City, CA (50 hours)

RES: Desert Tortoise monitoring project Black Mountain, CA (101 hours)

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours)

Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours)

EDUCATION AND TRAINING

Received **Bachelor of Science in Business** with a focus on Management, along with Economics and Leadership minors, December 2000. Humboldt State University, Arcata, CA. Courses included:

Legal Environment of Business

Computer Information Systems

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Accounting
International Business
Business Communication
Quantitative Methods

Managerial Economics
Theory of Leadership
Finance

Classes: FTHL Workshop, 2008 El Centro BLM office. CDFG Certificate; USFW Desert Tortoise Egg Handling Desert Tortoise Council Survey Techniques Workshop Certificate, 2008 and 2010. Anza Borrego State Park Wildflower Identification Workshop, 2010. Willow Flycatcher Workshop Kernville, CA 2010.

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SUMMARY OF QUALIFICATIONS:

- Ability to work well with others and with a variety of different personalities.
- Compassionate and dedicated to helping others.
- Dependable and reliable.

SKILLS AND ABILITIES:

- Over three years of experience in biological surveying and construction monitor for Burrowing Owls, Flat tail horned lizard, MBTA species, and general biological surveys.

EXPERIENCE

- Burrtec FTHL Clearance Survey. Completed a FTHL clearance survey of 320 acres in Imperial County.
- Worthington Road Bridge MBTA Construction Monitoring- Monitored construction activities to protect swallows in Imperial County. June-2013.
- Carter Road MBTA Construction Monitoring- Monitored construction activities to protect swallows in Imperial County. May- 2013.
- 8Minute Energy Iris Cluster- Biological technical survey to identify zoological and botanical species. April-July 2013
- 8Minute Energy Mount Signal/ Calexico Solar Farm Cluster- Field assistant for surveys for BUOW and MBTA species. Dec 2010- Jan 2011

EDUCATION

- California Nurses Educational Institute – Palm Springs, CA Certified Nursing Assistant 4/2012 – 6/2012
- Imperial Valley College – El Centro, CA 8/2012 – 3/2013

FIGURE 1
REGIONAL LOCATION
PROJECT VICINITY MAP

PROJECT STATEWIDE LOCATION



PROJECT REGIONAL LOCATION



FIGURE 2
BIORESOURCE MAP

LYONS SITE BIOLOGICAL RESOURCES MAP



LEGEND: ACTIVE BURROW (1,2); OCCUPIED BURROW WITH 1 BUOW (5); INACTIVE BURROWS (4,6,7); OTHER BIOLOGICAL RESOURCES (3)

IRIS SOLAR FARM

Biological Resources Evaluation Technical Report El Centro, California

OCTOBER, 2013

Prepared for:

8minutenergy Renewables LLC
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Los Angeles, CA 90036

Prepared by:

Barrett's Biological Surveys

Certified as performed in accordance with established biological practices by:



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TABLE OF CONTENTS

Executive Summary

1.0	Introduction	5
1.1	Location	5
1.2	Project Description	5
1.2.1	Facility Description	5
1.2.2	Construction Work Force and Schedule	6
1.2.3	Plant Operations Work Force and Schedule	6
1.2.4	Site Construction and Operations Environmental Protection	6
1.3	Applicable Environmental Regulations	7
1.3.1	State of CA	7
1.3.2	Federal	7
2.0	Biological Survey Methodologies	8
2.1	Field Surveys	8
2.1.1	General Biological Survey Table 1: Field Survey Schedule	8 9
2.1.2	Focused Burrowing Owl Surveys	9
2.1.3	Jurisdictional Delineation	10
2.2	Literature Review	10
3.0	Existing Conditions	10
3.1	Topology and Soils	10
3.2	Vegetation	11
3.2.1	Vegetation Table 2: Vegetation	11 11
3.2.2	Agriculture	11
3.2.3	Ruderal Vegetation	11
3.3	Wildlife	11
3.3.1	Invertebrates	11
3.3.2	Amphibians	11
3.3.3	Reptiles	12
3.3.4	Birds	12
3.3.5	Mammals	12
3.3.6	Fish	12
3.4	Sensitive Biological Resources	12
3.4.1	Special Status Plant Species	12
3.4.1.1	Federal Listed Species	13
3.4.1.2	State Listed Species	13
3.4.2	Special Status Wildlife Species	13
3.4.2.1	Federal Listed Species	13
3.4.2.2	State Listed Species	14
3.4.2.3	State Species of Special Concern and Fully Protected Species	15

	Table 3: Biological Resources	17
	Table 4: Summary of Biological Resources	17
3.4.3	Riparian Habitat or Sensitive Natural Communities	18
3.4.4	Jurisdictional Waters	18
3.4.5	Habitat Connectivity and Wildlife Corridors	18
3.4.6	California Desert Conservation Area	18
4.0	Proposed Project Impact	19
4.1	Impacts to Special Status Species	19
4.1.1	Special Status and Priority Plants	19
4.1.2	Sensitive Wildlife	19
4.1.2.1	Burrowing Owl	19
4.1.2.2	Nesting Raptors	20
4.1.2.3	Migratory Birds and Other Sensitive Non-migratory Species	20
4.2	Impact to Riparian Habitat or Sensitive Natural Communities	21
4.3	Impact to Jurisdictional Waters	21
4.4	Impact to Wildlife Movement and Activities	22
4.5	Impact to Airports	22
4.6	CEQA Impacts	22
	Table 5: Expected Impacts	22
5.0	Recommended Avoidance, Minimization and Mitigation Measures	22
5.1	Sensitive Wildlife	22
5.1.1	Burrowing owl	22
5.1.2	Mountain Plover, Long Billed Curlew, Loggerhead Shrike	24
5.1.3	Nesting Raptors	24
5.1.4	Other Species	24
5.1.5	Migratory Birds and Other Sensitive Non-migratory Species	24
6.0	Works Referenced	24
Appendices		
Appendix A	Sensitive Species	
Appendix B	Photographs	
Appendix C	Species Found Onsite and Vicinity Biological Resources Iris	
Appendix D	Qualifications	
Figures		
Figure 1	Regional Location/ Project Vicinity Maps	
Figure 2	Biological Resources Map	

Executive Summary

General biological surveys, a focused burrowing owl survey and a preliminary jurisdictional delineation were conducted in the spring/summer 2013 within the proposed site. The project site is located within the Colorado Desert area. Approximately 500,000 acres of the Colorado Desert in Imperial County has been converted to agricultural use and this project is within that conversion area. The Project's 521 acres are currently being used for agricultural purposes. No sensitive plants or animals other than burrowing owls were observed.

California Department of Fish and Wildlife (CDFW) species of concern, burrowing owl (*Athene cunicularia*) was observed onsite, offsite and within the 500 foot buffer survey zone. No federal or state botanical or zoological endangered or threatened were found within the Iris site or 500 foot survey zone.

No Imperial Irrigation District (IID) water conveyance systems will be removed through construction activities, no washes were observed on site and no road widening is planned, therefore no jurisdictional waters of the U. S. (Army Corp of Engineers – Section 404 Clean Water Act or California Regional Water Quality Control Board Section 401) will be impacted.

1.0 Introduction

1.1 Location

The Iris Project (“Project”) is located approximately 2.5 miles west of the City of Calexico, California in southern Imperial County. The site is bound on the west side by Ferrell Road and on the east side by Weed Road. Agricultural fields lie to the north, south and east. Solar fields are being constructed to the west.

The Project acreage is currently zoned for agriculture.

1.2 Project Description

1.2.1 Facility Description

85JP 8MME, LLC, known herein as the “Applicant”, is seeking approval of a Conditional Use Permit (“CUP”) for the construction of the Iris Project, a utility scale solar farm in Imperial County, California which will be a part of the Iris Cluster (the “Cluster” or the “Projects”). The four projects (each a “Project”) are as follows: Ferrell Solar Farm (“Ferrell”), Rockwood Solar Farm (“Rockwood”), Iris Solar Farm (“Iris”), and Lyons Solar Farm (“Lyons”). Projects may cooperate if necessary to meet power production requirements. Each Project is intended to have O&M facilities and an on-site substation, but may also utilize shared facilities.

The Project has historically been used for agriculture. The topography of the Project is relatively flat. APN’s include: Iris: 059-050-002 (188 acres), 059-050-003 (166 acres) and 052-120-001(163 acres) for a total of 521 acres.

1.2.2 Construction Work Force and Schedule

The construction period for the Cluster, from site preparation through construction, testing, and commercial operation, is expected to commence as early as Q2 2014 and will extend for approximately 12 months.

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may continue 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging material for the following day’s construction activities, quality assurance/control, and commissioning.

1.2.3 Plant Operations Work Force and Schedule

Up to twenty-four (24) full-time employees will operate the Cluster, split roughly evenly between the four Projects. Typically, up to half of the staff will work during the day shift and the remainder during the night shifts and weekend. As noted earlier, it is possible at two or more Projects would share O&M, substation, and/or transmission facilities. In such a scenario, the cooperating Projects c/would share personnel, thereby reducing the total staff required. It is also possible that one or more Projects would share another nearby project's facilities (e.g. , those of Mount Signal Solar Farm I). In that scenario, the Lyons Project c/would also share personnel with that nearby project, thereby reducing or eliminating the Project's on-site staff.

1.2.4 Site Construction and Operations Environmental Protection

Construction of the Projects will include the following activities:

- Site preparation
- Grading and earthwork
- Concrete foundations
- Structural steel work
- Electrical/instrumentation work
- Gen-tie installation
- Architecture and landscaping work

No roadways will be affected by the Projects, except during the construction period. Construction traffic will access the Site via State Route 98, Ferrell Road, Weed Road, and Kubler Road, to varying degrees. It is estimated that up to 400 workers per day (during peak construction periods) will be required during the construction period.

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may continue 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning.

Materials and supplies will be delivered to the Site by truck. Truck deliveries will normally occur during daylight hours. However, there will be offloading and/or transporting to the Site on weekends and during evening hours. Earthmoving activities are expected to be limited to the construction of the access roads, any O&M buildings, any substations, and any storm water protection or storage (detention) facilities. Final grading may include revegetation with low lying grass or applying earth-binding materials to disturbed areas.

Once the Project is constructed, maintenance needs are generally limited to:

1. Cleaning of PV panels
2. Monitoring electricity generation
3. Providing Site security
4. Facility maintenance - replacing or repairing inverters, wiring and PV modules

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1. Cleaning of PV panels
2. Monitoring electricity generation
3. Providing Site security
4. Facility maintenance - replacing or repairing inverters, wiring and PV modules

It is expected that the Cluster as a whole will require an operational staff of up to twenty-four (24) full-time employees, split roughly evenly between the four Projects. As noted earlier, it is possible that two or more Projects would share O&M, substation, and/or transmission facilities. In that scenario, the cooperating Projects c/would share personnel, thereby reducing the staff required. It is also possible that one or more Projects would share another nearby project's facilities (e.g., those of Mount Signal Solar Farm I). In that scenario, the Projects(s) c/would also share personnel with that project, thereby reducing or eliminating the on-site staff required.

The Project will operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.

The Project will have minimal levels of materials on-site that have been defined as hazardous under 40CFR, Part 261.

Wastes will be managed in accordance with applicable regulations. The storage, use, and handling of any hazardous materials will be in accordance with applicable

regulations. Hazardous materials stored on-site will be in quantities of less than 55 gallons per Project. Spill prevention and containment for construction and operation of the Projects will adhere to the Environmental Protection Agency's ("EPA") guidance on Spill Prevention Control and Countermeasures ("SPCC").

Safety precautions and emergency systems will be implemented as part of the design and construction of the Projects to ensure safe and reliable operation. Administrative controls will include classroom and hands-on training in operating and maintenance procedures, general safety items, and a planned maintenance program. These will work with the system design and monitoring features to enhance safety and reliability.

All employees will be provided with communication devices, cell phones, or walkie-talkies, to provide aid in the event of an emergency.

1.3 Applicable Environmental Regulations

1.3.1 State of California

California Environmental Quality Act (CEQA) Title 14 CA Code of Regulations 15380 requires that endangered, rare or threatened species or subspecies of animals or plants be identified within the influence of the project. If any such species are found, appropriate measures should be identified to avoid, minimize or mitigate to the extent possible the effects of the project.

Native Plant Protection Act CDFW Code Section 1900-1913 prohibits the taking, possessing, or sale within the state of any plant listed by CDFW as rare, threatened or endangered. Landowners may be allowed to take these species if CDFW is notified at least 10 days prior to plant removal or if these plants are found within public right of ways.

CA Fish and Wildlife Codes 3503, 3503.5, 3513 protect migratory birds, bird nests and eggs including raptors (birds of prey) and raptor nests from take unless authorized by CDFG.

CA Fish and Wildlife Code Section 1600, as amended regulates activities that substantially diverts or obstructs the natural flow of any river, stream or lake or uses materials from a streambed. This can include riparian habitat associated with watercourses.

State of CA Fully Protected Species identifies and provides additional protection to species that are rare or face possible extinction. These species may not be taken or possessed at any time except for scientific research or relocation for protection of livestock.

Porter-Cologne Water Quality Control Act, as amended is administered by the State Water Resource Control Board (SWRCB) to protect water quality and is an avenue to

implement CA responsibilities under the federal Clean Water Act. This act regulates discharge of waste into a water resource.

1.3.2 Federal

National Environmental Policy Act (NEPA: 42 United States Code (U.S.C.) 4321 et seq) established national environmental policy and goals for the protection, maintenance and enhancement of the environment. A process is available for implementation goals within federal agencies. NEPA requires federal agencies to consider the environment in processing proposed actions.

Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) protects federal listed threatened and endangered species from unlawful take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or significantly modify habitat. If a proposed project would jeopardize a threatened or endangered species, then a Section 7 consultation with a federal agency could be required.

Migratory Bird Treaty Act (50 Code Federal Regulations (CFR) 10.13) is a federal statute with several foreign countries to protect species that migrate between countries. Over 1000 species are listed and may not be disrupted during nesting activities. It is illegal to collect any part (nest, feather, eggs, etc) of a listed species, disturb species while nesting or offer for trade or barter any listed species or parts thereof.

Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) protects bald and golden eagles from take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or interference with breeding, feeding or sheltering activities.

Clean Water Act, 1972 (CWA 33 U.S.C. 1251 et seq.) regulates discharges into waters of the U.S. EPA is given the responsibility to implement programs to prevent pollution.

2.0 BIOLOGICAL SURVEY METHODOLOGIES

The purpose of the study was to determine the inventory of biological resources at the time of the survey; the possibility of the existence of endangered, threatened, sensitive or species of concern within project area: map habitats, and ascertain the probability of the presence of sensitive species on site.

2.1 Field Surveys

2.1.1 General Biological Survey

This survey was not intended to determine the presence/absence of threatened or endangered species except for the burrowing owl *Athene cunicularia*, but only assess the potential for them to occur based on habitat suitability. Other focused surveys to determine presence/absence would be at the discretion of the appropriate State or federal resource agencies.

The California Natural Diversity Database (CNDDB), California Native Plant Society database (CNPS), United States Fish and Wildlife Service (USFWS)/Carlsbad office Sensitive Species list, field guides, personal contacts and other methods to ascertain potential for sensitive species on the site (Appendix A).

Under guidelines from Staff Report on Burrowing Owl Mitigation (March, 2012) pedestrian biological surveys (20 meter transects) of the project area and 500 foot buffer zones to document vegetation and animals were conducted by Marie Barrett, Glenna Barrett, biologists and Dani Figueroa, biologist assistant. Field Survey Schedules are found in Table 1. Table 1 below summarized hours in field. These surveys were conducted to develop an inventory of species (plant and animal) present at the time of the surveys, map vegetative communities, if present and ascertain the potential for occurrence of sensitive, endangered or threatened species within the project area and vicinity.

Table 1: Field Survey Schedule Iris*

Date/Conditions	Surveyors	Survey Purpose
3 May 13 56-90°F 0% cloud cover, 0-3 mph; low humidity	Marie Barrett	6:00 AM-11:00 AM BUOW/General biological
4 May 13 60-68°F clear, calm; low humidity	Marie Barrett	6:15 AM-8:00 AM BUOW/General biological
1 June 13 70-77°F clear/calm; low humidity	Marie Barrett Dani Figueroa	5:20 AM-7:15 AM BUOW/General biological
3 June 13 65-85°F 0% cloud cover, calm low humidity	Marie Barrett Dani Figueroa	7:15 AM-9:45 AM BUOW/General biological
11 June 13 74-91°F 0% cloud cover, calm low humidity	Glenna Barrett Dani Figueroa	5:30 AM-10:30 AM BUOW/General biological
13 July 13 93-98°F 0% cloud cover, calm low humidity	Marie Barrett Glenna Barrett	7:10 AM-10:00AM BUOW/General biological
Total		31.50 hours (total all surveyors)

* Consultation with CDFW, Ontario office: *If starting after the dates for the first survey please start as soon as possible. If not enough time to separate by 3 weeks before July 15th then do the first two closer together and the last two 3 weeks apart.*

2.1.2 Focused Burrowing Owl Surveys

Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States, Biological Technical Publication (BTP-R6001-2003) state that 71% of the California burrowing owl (*Athene cunicularia hypugea*) population is found in the agricultural areas of Imperial County and is a California species of special concern therefore a focused burrowing owl survey was performed.

Using guidelines from CDFW Staff Report on Burrowing Owl Mitigation (2012) a pedestrian biological survey of burrowing owl habitat for burrowing owl was conducted by Marie Barrett, Glenna Barrett, biologists and Dani Figueroa biologist assistant. Garmin GPSs, a spotting scope, binoculars, thermometer, anemometer and digital cameras were used.

2.1.3 Jurisdictional Delineation

No IID drains, canals, field ditches or field tile will be removed in the construction of this project therefore no waters of the U.S. or streambed alteration will occur.

2.2 Literature Review

Potential occurrence for endangered, threatened, sensitive, species of concern and noxious weeds was determined by perusal of appropriate data bases which included:

- CA Natural Diversity Database (CNDDB)
- CA Native Plant Society (CNPS) Rare Plant Program
- USFWS Bird Species of Conservation Concern
- USFWS Critical Habitat for Threatened & Endangered Species Website
- CA Food and Agriculture Department Noxious Weed Information Project

3.0 Existing Conditions

3.1 Topography and Soils

Imperial County is found in the southern part of CA adjacent to the Mexican border. Elevations range from 230 below sea level to about 350 feet above sea level. Soils were formed from stratified alluvial materials and vary greatly in texture and thickness of layers. The main irrigated areas are on a lakebed floor. This area is nearly level, sloping north to the Salton Sea approximately 0.1 percent; with an east and west slope of approximately 0.3 percent.

The predominant soil classifications found in the project area are 60% Imperial silty clay, wet (114) and 40% Imperial- Glenbar silty clay loams, wet, 0-2 percent slopes (115) which are described as:

114: Very deep soil found on flood plains and basins and lakebeds. Color is pinkish gray and light brown silty clay to a depth of 60 inches or more. Permeability is slow; soil is slightly saline. (*Soil Survey of Imperial County California, Imperial Valley Area*, 1981).

115: Very deep soil found on flood plains lakebeds. Color is pinkish gray and light brown silty clay to a depth of 60 inches. Permeability is slow with a very high water capacity with slow surface runoff. Soil is slightly saline. Alfalfa stands can be difficult to maintain due to temporary anaerobic conditions.

The elevation on this site is approximately -4 feet.

3.2 Vegetation

3.2.1 Vegetation

Vegetation has been divided into communities that are groups of plants that usually coexist within the same area. Although this area is considered the Colorado Desert area (*A Manual of California Vegetation*, 2009, Sawyer/Wolf), approximately 500,000 acres of the Colorado Desert in Imperial County has been converted to agricultural use and this 521 acres is within that conversion area.

Table 2: Vegetation

Vegetative Communities	Acres
Agricultural Lands	521 acres

3.2.2 Agriculture

The project site is being farmed and crops included alfalfa, melons, sweet corn and seed onions.

3.2.3 Ruderal Vegetation

Some sparse vegetation was found on site that would be considered ruderal (listed with scientific names in Appendix C). There are no vegetative communities on site other than agricultural crops.

3.3 Wildlife

3.3.1 Invertebrates

The project site is an agricultural area. Invertebrates were found within ruderal vegetation adjacent to site. Invertebrates would be expected in actively growing agricultural crops. When surveyed, this area was actively cultivated and crops were growing and being harvested.

3.3.2 Amphibians

Reliable moisture is a requirement for a portion of amphibian life cycle. The project site is an agricultural area. No amphibians were observed on site. Due to the lack of available water, none would be expected.

3.3.3 Reptiles

Reptiles utilize habitat dependent upon their dietary requirements. Some species diet includes vegetation while others consume insects. All require vegetation for shelter.

The project site is an agricultural area with sparse ruderal vegetation. Therefore, few reptiles would be expected on site but could be found in ruderal areas adjacent to site.

3.3.4 Birds

Bird species diversity varies with seasons, variety and quality of vegetative communities.

Birds were observed on the borders of the site and in the vicinity. List of species observed in vicinity is found in Appendix C. Birds that could possibly use the site are found in Appendix A.

3.3.5 Mammals

Mammals and signs of mammals were observed on sites. Burrows were observed that showed activity of recent usage.

The following mammals could be expected to be found in the project site: cotton tail (*Sylvilagus audubonii*), feral dogs and cats.

3.3.6 Fish

The project site is an agricultural area with sparse ruderal vegetation. There are no water sources on site; none would be expected.

3.4 Sensitive Biological Resources

3.4.1 Special Status Plant Species

Appendix A (Mt. Signal/Heber Quadrangle (Nine Quadrangle Search) April, 2013) lists all species found in the data search that has been found within the quadrangle of the project and eight quadrangles surrounding the project. Appendix C lists all plants found within the project during surveys and locations of sensitive biological species.

Under *Botanical Survey Guidelines of the California Native Plant Society, 2001*, guidelines state special status plants will be surveyed when any natural vegetation occurs on site. This area is within an agriculture region and no natural vegetation was present so a focused special status plants survey was not required.

Federal guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants field inventories should be followed in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except *developed agricultural lands*. As this entire project is situated on property that has been used for agricultural purposes no botanical inventory is required.

3.4.1.1 Federal Listed Species

No federally listed plant species were found or expected to be found within the project area.

The usage, agriculture, of this project site did not promote a habitat favorable to special status plant species.

3.4.1.2 State Listed Species

No state listed plant species were found or expected to be found within the project area.

The usage, agriculture, of this project site did not promote a habitat favorable to special status plant species.

3.4.2 Special Status Wildlife Species

As a result of the data search, endangered, threatened species and CDFW species of special concern were evaluated for the potential to occur within the project area. This list and discussion are found in Appendix A.

3.4.2.1 Federally Listed Species

No federally listed species were observed on the project. No favorable habitat was found that would support species such as southwestern willow flycatcher (*Empidonax trailii eximius*), Yuma clapper rail (*Rallus longirostris yumanensis*) or least Bell's vireo (*Vireo bellii pusillus*) or desert pupfish (*Cyprinodon macularis*).

The least Bell's vireo (LBV) prefers early successional habitat in riparian areas. LBV is found in structurally diverse woodlands along waterways, including cotton-wood willow forests, mule fat scrub and oak woodlands. In wintering areas, they are thought to prefer mesquite scrub vegetation, palm groves and hedgerows that are associated with agriculture and residential areas in rural areas (Fish and Wildlife Service, 1998).

Yuma Clapper rail typically occupies emergent marsh vegetation such as pickleweed and cordgrass, mature stands of bulrush and cattail and occasionally willow and tamarisk stands around the Salton Sea.

Southwestern willow flycatcher requires riparian habitat with willow (*Salix spp.*) (Grinnell and Miller 1944) with an understory of species such as mule fat (*Baccharis sp.*) and arrow weed (*Pluchea sp.*). They will nest in areas with tamarisk (*Tamarix spp.*) and Russian olive (*Eleagnus angustifolia*) in areas where willows have been replaced. Surface water is also required (Tibbits et al 1994; USFWS 1993). .

The desert pupfish (*Cyprinodon macularis*) is a federal- and California-listed endangered species. Historically, desert pupfish occurred in the lower Colorado River in Arizona and California, from about Needles downstream to the Gulf of Mexico and into its delta in Sonora and Baja. In California, pupfish inhabited springs, seeps, and slow moving streams in the Salton Sink basin and backwaters and sloughs along the Colorado River.

The Salton Sea, its slow moving tributary streams, irrigation drains, and shoreline pools supported large pupfish populations until sharp declines began in the mid- to late 1960s. CDFG surveys show desert pupfish populations currently in drains directly discharging to the Salton Sea, in shoreline pools of the Salton Sea, and in several artificial refugia (Nicol et al. 1991; Black 1980).

There are no streams, irrigation drains or shoreline pools associated with this project; therefore no impact to desert pupfish would be expected

These types of habitats are not found within the project site and therefore no focused surveys were performed.

3.4.2.2 State Listed Species

One state-listed bird was evaluated based on known occurrences in Imperial County and habitat availability in the project area: Greater sandhill crane (*Grus Canadensis tabida*).

The greater sandhill crane is state listed as threatened and is also on the Migratory Bird Treaty list of sensitive birds. Colorado River Valley population is estimated at 1400-2100 and is considered stable. The population breeds in northeastern Nevada and southwestern Idaho, migrates through Nevada and winters along the lower Colorado River in California's Imperial Valley.

The greater sandhill crane is a very large bird with long neck, long legs with a gray body which may be stained reddish. The head has a red forehead, white cheek; another characteristic is tufted feathers over rump.

There are bermuda fields adjacent to the project site and other adjacent fields could rotate to either alfalfa and bermuda. The greater sandhill crane could be found on this

project and could be found in adjacent fields, but not expected as this species has not been observed south of I-8.

3.4.2.3 State Species of Special Concern and Fully Protected Species

Burrowing owl

The project site was searched with a pedestrian survey of habitat for burrowing owls and their sign (burrows, pellets, feathers, scat, litter, and animal dung) by Marie Barrett Glenna Barrett, biologists and Dani Figueroa biological assistant. The burrowing owl (BUOW) is a small, pale, buffy-brown owl that nests in borrowed burrows. The entrances to burrows often have bits of animal dung, prey carcasses, feathers, and litter, among other objects. Up to 12 eggs are laid, primarily from February to May. Survey information is listed in Table 1: Field Survey Schedule.

The Imperial Valley has a majority of the burrowing owl in southern California. Irrigation canals and drains are commonly used as nesting sites in this area. The Burrowing Owl is a California Department of Fish and Wildlife (CDFW) Species of Special Concern, and a Federal Species of Concern and listed on the Migratory Bird Treaty Act. This survey was done using The CDFW Staff Report (CDFW, 2012), which addresses survey and mitigation guidelines for the owl and communications with CDFW wildlife biologists, Bermuda Dunes and Ontario, CA office.

BUOWs and occupied/active BUOW burrows were observed onsite and offsite within the Imperial Irrigation District right of way (IIDROW). The Bioresource Map identifies the location of BUOW observations, occupied/ active burrows and other biological observations on and adjacent to the site. Figure 2 is a map of biological resources found.

Table 3, Biological Resources, below lists the locations and types of biological resources found on and adjacent to each site.

Table 3 – Biological Resources Iris

Location May 3,4 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1,3, 2012	3 rd Survey June 11, 2013	4 th Survey July 13, 2013
#1 32°40'55.9" 115°35'18.4" Onsite	Not a BUOW burrow East side of field ditch			
#2 32°40'39.3" 115°34'7.0" Offsite IIDROW	Occupied burrow with 1 BUOW West side of Wisteria Canal	Occupied; 2 BUOW adults; 2 juveniles	Occupied; 2 BUOW adults; 1 juvenile	Occupied; 2 adults; 1 juvenile
#3 32°40'58.0" 115°34'6.9" Offsite IIDROW	Occupied burrow with 1 BUOW East side of Wisteria Canal	Occupied; 2 BUOW	Occupied; 2 BUOW	Occupied ; 2 adults
#4 32°40'59.9"	Occupied burrow with	Occupied ; 1	Occupied ; 2	Occupied ; 2

Location May 3,4 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1,3, 2012	3 rd Survey June 11, 2013	4 th Survey July 13, 2013
115°34'6.9" Offsite IIDROW	1 BUOW East side of Wisteria Canal	BUOW	BUOW	adults; 3 juveniles
#5 32°41'0.4" 115°34'6.8" Offsite IIDROW	Active burrow 2 entrances West side of Wisteria Canal	Occupied ; 1 BUOW	Occupied ; 2 BUOW	Occupied ; 2 adults
#6 32°41'1.9" 115°34'6.8" Offsite IIDROW	Occupied burrow; 1 BUOW East side of Wisteria Canal	Occupied ; 1 BUOW	Active	Occupied ; 1 adult
#7 32°41'9.6" 115°34'6.9" Offsite IIDROW	Occupied burrow; 1 BUOW East side of Wisteria Canal	Active	This burrow is unusable; owls appear to have moved to new burrow listed below as #14	No new activity
#8 32°41'12.0" 115°34'6.9" Offsite IIDROW	Active burrow East side of Wisteria Canal	Active	Occupied ; 1 BUOW	Active
#9 32°41'12.1" 115°34'43.3" Onsite	Occupied burrow; 1 BUOW North side of field ditch	Active	Active	Active
#10 32°41'12.0" 115°34'47.1" Offsite IIDROW	Inactive burrow North side of field ditch	Inactive	Inactive	Inactive
#11 32°41'11.7" 115°35'5.0" Offsite	Not a BUOW burrow			
#12 32°41'38.2" 115°34'19.9" Offsite IIDROW	Not a BUOW burrow			
#13 32°41'38.2" 115°34'29.5" Offsite	Occupied burrow with 2 BUOW IIDROW/county road ROW	Occupied; 1 BUOW	Occupied; 1 BUOW	Inactive, filled in with trash and rocks
#14 32°41'0.5" 115°34'6.9" Offsite IIDROW			Occupied burrow; 2 BUOW Whitewash and tracks	Occupied ; 2 adults
#15 32°40'46.4" 115°34'12.2" Offsite IIDROW	North side of Wisteria Canal along SR 98			Occupied burrow; 2 BUOW
#16 32°40'51.8" 115°34'6.9" Offsite IIDROW	East side of Wisteria Canal			Active burrow
#17 32°41'12.9	North side of Wisteria			Occupied ; one

Location May 3,4 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1,3, 2012	3 rd Survey June 11, 2013	4 th Survey July 13, 2013
115°34'8.8" Offsite IIDROW	Canal			adult
#18 32°40'46.4" 115°34'26.2" Offsite IIDROW	North side of Wisteria Canal along SR 98			Occupied ; two adult /1 juvenile Mortality indicated; buow wing observed
#19 32°40'46.4" 115°34'29.2" Offsite IIDROW	North side of Wisteria Canal along SR 98			Occupied ; 3 adults/1 juvenile
#20 32°40'46.4" 115°34'29.2" Offsite IIDROW	North side of Wisteria Canal along SR 98 on north side of road bank			Occupied ; 2 adults Observed digging out burrow
Total Numbers of Burrows/BUOW	Offsite: 2 active burrows; 6 occupied burrows /7 BUOW Onsite: 1 active burrow/1 BUOW	Offsite: 2 active burrows; 6 occupied burrows /8 Adult BUOW; 2 juveniles Onsite: 1 active burrow	Offsite: 1 active burrows; 7 occupied burrows/12 adult BUOW;1 juvenile Onsite: 1 active burrow	Offsite: 2 active burrows; 10 occupied burrows/21 adults; 6 juveniles Onsite: 1 active burrow

*Occupied burrow= buow seen at burrow; active: signs that burrow is being occupied by buow

Figure 2 includes maps of biological resources found (listed above).

Table 4: Summary of Burrowing Owls/Burrows:

Location	Burrowing Owls	Burrows Active/Occupied
On Property	1 adult	1/0
IID Drain (off site)	21 adult; 6 juveniles	2/10
Total	22 adults; 6 juveniles	13

The site contains does support active BUOW foraging habitat.

Burrowing owls are known to utilize a 1.25 mile (radius) foraging area from nest which represents 3142 acres that can be used as foraging habitat (York, Rosenberg and Sturm, 2002). Therefore, they could also be expected to forage in the agricultural fields, canals and drains to the north, south, west and east of the site.

As required by CDFW, 2012 Burrowing Owl Survey Protocol, California Natural Diversity Data field survey forms will be submitted. Field notes are on file.

Golden Eagle (*Aquila chrysaetos*)

This fully protected species is found throughout the United States, but rarely observed in Imperial County and was not found in data base searches for the Mt. Signal/Heber Quadrangle (9 quadrangle search). No suitable habitat was observed.

Therefore this species is not expected to be found within or in the vicinity of the project.

Loggerhead Shrike (*Lanius ludovicianus*)

This species is a CDFW species of special concern and is a year-round resident of Imperial County. They have the interesting habit of impaling prey upon sticks or thorns. Mesquites are often utilized for this activity. They are generally associated with open areas such as agricultural fields for foraging and thickets for nesting.

LeConte's (*Toxostoma lecontei lecontei*) and Crissal (*Toxostoma crissale*) Thrasher

These species are CDFW species of special concern. The crissal thrasher prefers dense thickets of shrubs or low trees. They were not observed or expected on site due to the lack of suitable habitat. The Leconte's thrasher occurs in desert scrub or desert wash areas. They were not observed.

3.4.3 Riparian Habitat or Sensitive Natural Communities

Based upon the level of disturbance or habitat conversion within adjacent areas, vegetative communities are considered rare or sensitive. Rare vegetation types that are converted and degraded can disrupt the integrity of the ecological functions of natural environments. This can lead to the loss of sensitive plant species and a resulting decrease in biodiversity. Wetland or riparian habitat communities are considered sensitive by CDFW. Wetland or riparian habitat communities are considered sensitive by CDFW.

No riparian habitat or sensitive natural communities were observed on site but riparian habitats are found within the IID water conveyance systems which are located adjacent and offsite of the project.

3.4.4 Jurisdictional Waters

Wetlands and other "waters of the United States" that are subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act are under the jurisdiction of the U.S. Army Corps of Engineers (ACOE). Typically, these waters include naturally occurring traditional navigable waters (TNWs), relatively permanent

waters (RPWs), and/or ephemeral waters with a significant nexus to a TNW. Agricultural water conveyance systems which are manmade and constructed wholly in uplands are typically only considered jurisdictional if they are RPWs. The most recent guidance on the topic states that “relatively permanent waters typically flow year-round or have continuous flow at least seasonally (e.g. typically three months)” (EPA and ACOE 2008). Conversely, man-made drainages constructed solely in uplands that are not RPWs are generally not federally jurisdictional. IID drains and canals are part of an agricultural system and therefore by definition (USACOE Wetlands Delineation Manual) are not classified as wetlands although typical wetland/riparian plant species are found within canals and drains. Canals and drains do not flow continuously as they are dependent upon irrigation events. Also, canals are non flowing for three days each month as part of an IID pest control program.

With respect to non-tidal waters, federal jurisdiction over non-wetlands extends to the “Ordinary High Water Mark” (OHWM). 33 C.F.R. § 328.4(c)(1). The Ordinary High Water (OHW) zone in low gradient, alluvial ephemeral/intermittent channel forms in the Arid West is defined as the active floodplain. The dynamics of arid channel forms and the transitory nature of traditional OHWM indicators in arid environments render the limit of the active floodplain the only reliable and repeatable feature in terms of OHW zone delineation. The extent of flood model outputs for effective discharges (5 to 10 year events in arid channels) aligns well with the boundaries of the active floodplain (ACOE 2008). IID canals, drains, farmer head or tail ditches would not be considered an “arid or ephemeral channel” as they are manmade expressly for the conveyance of irrigation waters.

IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site. No IID drains or canals will be removed or relocated, no roads will be widened and no washes are found within the project.

3.4.5 Habitat Connectivity and Wildlife Corridors

The ability for wildlife to freely move about an area and not become isolated is considered connectivity and is important to allow dispersal of a species to maintain exchange genetic characteristics; forage (food and water) and escape from predation.

As no drains or canals will be removed, all species will continue to freely move throughout the general area of the project using these pathways. IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site.

3.4.6 California Desert Conservation Area (CDCA)

This project is not within or immediately adjacent to an Area of Critical Environmental Concern (ACEC) of the CDCA.

4.0 Proposed Project Impact

The proposed impacts are summarized in this section.

4.1 Impact to Special Status Species

If this project has a substantial adverse effect, either directly or through habitat modification or elimination, on any plant or animal species that is considered endangered, threatened, candidate for listing or special status species either through federal or state regulations, this project would be considered to have a significant impact.

4.1.1 Special Status and Priority Plants

No special status and priority plants were observed or expected with the site therefore there will be no significant impacts. Therefore no avoidance, minimization or mitigation measures will be required.

4.1.2 Sensitive Wildlife

4.1.2.1 Burrowing Owl

Construction Impact

Burrowing owls and burrows were found onsite. Burrowing owls and burrows were located within a 500 foot buffer zone survey.

CDFW Staff Report on Burrowing Owl (2012) lists impacts to burrowing owl as:

- Disturbance (September through January non nesting season) or (February through August nesting season) in vicinity of active burrows
- Destruction of active burrows
- Destruction/degradation of forage

Section 5 discusses avoidance, minimization and mitigation requirements for burrowing owls found on site or in vicinity during construction.

Project Operations and Maintenance Indirect Impact

Once the project is constructed, minimal operations activities and maintenance needs are required and are generally limited to:

- Typical onsite plant maintenance activities

Noise during operation of the project is not expected to exceed ambient noise produced by other operations in the area.

Lighting will be limited to areas required for operations or safety, will be directed on site to avoid backscatter, and will be shielded from public view to the extent practical. Lighting that is not required to be on during nighttime hours will be controlled with sensors or switches operated such that lighting will be on only when needed.

No significant impact is expected to this species due to noise, lighting or site maintenance and therefore no avoidance, minimization or mitigation measures are required for indirect impacts.

4.1.2.2 Nesting Raptors

Project Construction Impact

There are no tall trees on site that would encourage raptor nesting. There is no opportunity for ground nesting of raptors such as northern harriers (*Circus cyaneus*) within site or the buffer zone of the project. No osprey (*Pandion haliaetus*) nests were observed or expected due to the lack of nesting opportunity.

If construction is planned to begin during nesting season (February 1 through August 31), the project area and a 500 foot buffer area should be surveyed to determine presence/absence of nesting. If nests are found, an appropriate buffer zone for the species should be maintained until juveniles have fledged.

Project Operations and Maintenance Indirect Impact

Electrocution

All electrical components within the project will be protected so that there will be limited exposure to wildlife and potential for electrocution.

Collisions

All electrical components within the project will be protected so that there will be limited exposure to wildlife and potential for collisions.

4.1.2.3 Migratory Birds and Other Sensitive Non-migratory Species

Project Construction Impacts

If construction begins between February 1 through August 31, common breeding season for most migratory birds, a direct impact of destroying nests or disrupting nesting activities might occur. Mitigation in the form of avoidance and impact minimization would be required to reduce the impact to a level of less than significant.

Project Operations and Maintenance Indirect Impact

Once the project is constructed, minimal operations activities and maintenance needs are required and are generally limited to:

- Typical onsite plant maintenance activities

Noise during operation of the project is not expected to exceed ambient noise produced by other operations in the area.

Lighting will be limited to areas required for operations or safety, will be directed on site to avoid backscatter, and will be shielded from public view to the extent practical. Lighting that is not required to be on during nighttime hours will be controlled with sensors or switches operated such that lighting will be on only when needed.

No significant impact is expected to these species due to noise, lighting or site maintenance and therefore no avoidance, minimization or mitigation measures are required for indirect impacts

4.2 Impact to Riparian Habitat or Sensitive Natural Communities

The distribution of riparian plant species is largely driven by hydrological and soil variables and riparian plant communities frequently occur in relatively distinct zone along streamside elevational and soil textural gradients. The only riparian habitat that might be present would be found within IID drains and canals which are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan.

IID drains and canals are part of an agricultural system and therefore by definition (USACOE Wetlands Delineation Manual) are not classified as wetlands although typical wetland/riparian plant species are found within canals and drains.

4.3 Impact to Jurisdictional Waters

IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site.

On-site flows, a result of rare rain events (less than 3 inches of rain a year in this desert area) are to be contained on the project site and not discharged; therefore state certification, a program which is administered by the RWQCB (CWA 401), will not be required.

4.4 Impact to Wildlife Movement and Nursery Sites

This project is in a agricultural vegetative community which is surrounded by agricultural and industrial activities. It will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

4.5 Impact to Airports

This project has no components that will attract avian populations. The project is within 2.5 miles from the Calexico Airport, CA. No impact upon airports is expected.

4.6 CEQA Impacts

Possible CEQA significant impacts that could include the following within the parameters of this project:

Table 5: Expected Impacts

Area	Endangered/threatened/ Species of Concern Habitat	Riparian Habitat	Wetlands	Wildlife Corridors	Local Ordinances	HCP*
Agricultural	None with avoidance/minimization/ mitigation measures	No	No	No	No	No

*Habitat conservation plan

5.0 Recommended Avoidance, Minimization and Mitigation Measures

5.1 Sensitive Wildlife

5.1.1 Burrowing Owl

Avoidance Measures

A preconstruction survey should be done at least 14 days prior to start of construction and report submitted to the appropriate agency.

Since there are burrowing owls in the area, it is recommended that construction foremen and workers and onsite employees be given worker training by a qualified biologist regarding burrowing owl that would include the following:

- Description of owl
- Biology
- Regulations (CDFW/USFWS)

- Wallet card with owl picture/guidelines for protecting owl and wildlife
- Notification procedures if owl (dead, alive, injured) is found on or near site

Minimization Measures

As burrowing owls and occupied burrows were observed onsite and offsite within the buffer zone, during non breeding season (September through January) or breeding season (February – August) a distance determined by a qualified biologist should be maintained between occupied burrows and construction activities. A qualified biologist may also employ the technique of sheltering in place (using hay bales to shelter the burrow from construction activities). If this technique is employed, it is recommended that the sheltered area be monitored weekly by a qualified biologist or daily when construction is within 160 feet (non-breeding season) or 250 feet (breeding season) of shelter. Avoidance and minimization measures would be subject to approval of CDFW

Mitigation Measures

If, in future surveys, occupied/active burrows are found that must be removed, the following guidelines should be followed:

Passive Relocation Plan

1. After consultation with CDFW, artificial burrows (minimum of 50 feet apart) will be installed using the guidelines found in the Imperial Irrigation District Artificial Burrow Installation Manual or other applicable manuals.
2. After consultation with CDFW, owls will be excluded by installation of one way doors into the opening of the burrows. One way doors will be left in place for 48 hours, if scoping indicates occupancy. Burrow will be scoped prior to excavation. Excavation will be done using hand tools and refilled to prevent reoccupation. After burrow is collapsed, contractor will immediately disk down area to prevent reoccupation.
3. Documentation will be made (pictures, note taking) and a report will be sent to CDFW.
4. Foraging habitat is found on site, CDFW's mitigation guidelines for burrowing owl (Staff Report,2012) requires foraging habitat determined per pair or unpaired resident bird to be provided and protected to offset the loss of foraging and burrow habitat on the project site as determined by a qualified biologist.

5.1.2 Mountain Plover, Long Billed Curlews, Loggerhead Shrike

Alfalfa and other favorable forage fields are found on the Cluster site which could attract mountain plover (*Charadrius montanus*), long billed curlew (*Numenius americanus*), Loggerhead Shrike (*Lanius ludovicianus*).

If these species are observed foraging adjacent to the site during construction, identification of these species and instructions on reducing construction activities in perimeter areas adjacent to crops will be included in a worker training program provided by a qualified biologist.

5.1.3 Nesting Raptors

This site does not appear to support areas of nesting interest to raptors; none were observed nesting. There is no evidence of nesting in the utility poles located in the vicinity which have been in place for decades. As there is no evidence of raptor occupancy, an Avian Protection Plan using guidelines from Avian Power Line Interaction Committee (APLIC 2006) will not be necessary.

If in the future, a situation develops that indicate impacts to raptors, upon the recommendation of the overseeing agency, an Avian Protection Plan would be developed by a qualified biologist.

5.1.4 Other Species

The other species listed within this report are common throughout the Imperial Valley. Use of the site would not be expected by avian species due to plant activity and therefore no minimization of avian usage is necessary.

5.1.5 Migratory Birds and Non-migratory Bird Species

If construction is scheduled to begin during nesting season (February-August), a survey for nesting birds should be performed within 7 days of groundbreaking activities. Dependent upon species found, appropriate buffer zones will be established after consultation with the appropriate agencies.

6.0 Works Referenced

Alonso, Juan C., Javier A. Alonso, Rodrigo Munoz-Palido, *Mitigation of Bird Collisions with Transmission Lines through Groundwire Marking*, Biological Conservation, 1994.

Association of Environmental Professionals, *California Environmental Quality Act 2011 Statutes and Guidelines*, AEP, Palm Desert, CA, 2011.

Baldwin, Bruce G., et al, *The Jepson Desert Manual*, Los Angeles, University of California Press, 2002.

Behler, Jack L., and F. Wayne King, *Natural Audubon Society Field Guide to North American Reptiles & Amphibians*, New York, Chanticleer Press, 1996.

Borror, Donald J. and Richard E. White, *Insects*, The Easton Press, Norwalk, Ct. 1970.

Bowers, Nora, Rick Bowers, Kenn Kaufman, *Mammals of North America*, Houghton Mifflin Company, Singapore, 2004.

California Department of Fish and Wildlife, *Staff Report on Burrowing Owl Mitigation*, California Department of Fish and Wildlife, Oct 17, 1995

California Department of Fish and Wildlife, *Staff Report on Burrowing Owl Mitigation*, California Department of Fish and Wildlife, March 7, 2012.

California Native Plant Society, *CNPS Inventory of Rare and Endangered Plants*, online: [www. Northcoast.com](http://www.northcoast.com), April, 2013

California Natural Diversity Database, April, 2013. Sacramento, Ca California Department of Fish and Wildlife.

Coulombe, Harry N., *Behavior and Population Ecology of the Burrowing Owl, Speotyto cunicularia, in the Imperial Valley of California*, The Condor, 73:163-176, 1971.

Department of the Army, *Corps of Engineers Wetlands Delineation Manual*, January, 1987. U.S. Department of Commerce.

Fish and Wildlife Service, 1998. *Draft recovery plan for the least Bell's vireo*, U. S. Fish and Wildlife Service, Portland OR, 139 pp.

Griggs, Jack, *American Bird Conservancy's Field Guide, All the Birds of North America*, New York HarpersCollinsPublishers, Inc. 1997.

Grinnell, J., and A. H. Miller. 1944. The distribution of the birds of California. Pac. Coast Avifauna no. 27. Cooper Ornith. Society. 608pp

http://casoilresource.lawr.ucdavis.edu/soilweb_gmap/

Imperial County Planning and Building Department, General Plan, Sept 1, 2004

Jameson, E.W., Hans J. Peeters, *Mammals of California*, Los Angeles, University of California, 2004.

Nicol, K., S. Lau, and C. Boehm. *A Distribution Survey of Desert Pupfish (Cyprinodon macularius) Around the Salton Sea, California*. Final Report for Section 6, Project No. EF90XII-1. California Department of Fish and Game Inland Fisheries Division, 1991.

Rosenberg, Daniel K. and Katherin Haley, *The Ecology of Burrowing Owl in the Agroecosystem of the Imperial Valley, California*, Studies in Avian Biology, No., 27:120-135, 2004.

Sawyer, John O. and Todd Keeler-Wolf, *A Manual of California Vegetation*, California Natural Plant Society, 2009.

Sibley, David Allen, *The Sibley Guide To Birds*, Alfred A. Knopf, New York, 2000.

Shuford W. D., and Gardali, T., editors, *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California and California Department of Fish and Game, Sacramento, CA

Tibbitts, T.J., M.K. Sogge, and S.J. Sferra. 1994. A survey protocol for the southwestern willow flycatcher (*Empidonax traillii extimus*). Technical Report NPS/NAUCPRS/NRTR-94/04. National Park Service Colorado Plateau Research Station, Flagstaff, Arizona. 24 p

United States Department of Agriculture Soil Conservation Service, *Soil Survey of Imperial County California Imperial Valley Area*, October, 1981.

United States Fish and Wildlife Service, *Birds of Conservation Concern 2008*.

U.S. Fish and Wildlife Service. 1993. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico. i-ix + 210 pp.,

United States Fish and Wildlife Service, *Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States BTP-R6001-2003*.

York, Melissa A., Daniel K. Rosenberg, and Ken A. Sturm, *Diet and Food-Niche Breadth of Burrowing Owl (*Athene Cunicularia*) in the Imperial Valley, California*, Western North American Naturalist 62(3), 2002. 280-287.

APPENDIX A SENSITIVE SPECIES

APPENDIX A

SENSITIVE BOTANICAL AND ZOOLOGICAL SPECIES (CNDDDB/CNPS)

Heber/ Mount Signal Quadrangle (Nine Quad Search) April, 2013

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Chaparral sand-verbena <i>Abronia villosa var aurita</i>	State: S2.2 (not very threatened); CNPS list: 1B.2 (rare, threatened in Ca; fairly endangered in Ca.)	Likes full sun, and sandy soil. Sand-verbena has gray foliage with pinkish purple flowers, and the flowers are fragrant. It does not tolerate weeds and needs bare ground. 80-1600m (263-5249ft	Chaparral, Coastal Shrub, and desert dunes/sandy areas.	L No habitat on site; none observed
Baja California ipomopsis <i>Ipomopsis effusa</i>	CNPS: List 2.1	a dicot, is an annual herb that is native to California and to Baja California	Creosote Bush Scrub, Chaparral . Alluvial fans.	L No habitat on site; none observed
Emory's Crucifixion-Thorn <i>Castela emoryi</i>	CNPS: List 2.3	A large sprawling, dense shrub or small tree, up to 3(-3.7) m (to 10[-12] feet) tall, with a round crown often with descending branches heavy with thorns. Gray brown bark has narrow ridges with smooth ridges. The stout twigs are blue, gray or yellow green, may be finely hairy, very rigid, up to 20 cm (8 in) long with numerous stout thorns.	Sonoran Desert of southern Arizona and far southeastern California, south into Baja California and Sonora, Mexico.	L No habitat on site; none observed

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Annual rock-nettle <i>Eucnide rupestris</i>	CNPS List 2.2	is a small, perennial, rounded shrub that grows to at most 3-feet tall. The leaves are about 1/2-inch long, oval, irregularly toothed, and gray-green. The leaves are covered with tiny, needle-like, barbed, stinging hairs that are very difficult to remove from human skin. The flowers are fairly large and open, with five, pale cream-colored petals.	fairly common component of vegetation communities on well-drained sandy, gravelly, and rocky soils in washes and on rocky outcrops in the Upper Sonoran (Mojave Desert Scrub) life zone.	L No habitat on site; none observed
California satintail <i>Imperata brevifolia</i>	CNDDDB Ranks G2, S2.1; CNS: 2.1	This plant can be weedy or invasive. Grass or grass-like plant, including grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), arrow-grasses (Juncaginaceae), and quillworts (Isoetes).	It is native to the southwestern United States from California to Texas and northern Mexico, where it grows in arid regions where water is available.	L No habitat on site; none observed
Hairy Stickleaf <i>Mentzelia hirsutissima</i>	CNDDDB Ranks G3, S2S3; CNPS: 2.3	Annual to shrub; hairs needle-like, stinging, or rough	Creosote Bush Scrub	L No habitat on site; none observed
Brown turbans <i>Malperia tenuis</i>	CNDDDB Ranks G4, S1.3; CNPS: 2.3	is recognized by its annual duration, linear leaves densely arranged along stems or concentrated near bases of stems, loosely arranged heads, and pappi of two kinds of scales.	Sonoran Desert Scrub is the general habitat for Brown Turbans. Near Ocotillo it grows on arid slopes with shallow soils, rocky surface rubble with few large boulders, and little competition from shrubs.	L No habitat on site; none observed

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Thurber's Pilostyles <i>Pilostyles thurberi</i>	CNDDDB Ranks G5, S3.3; CNPS: 4.3	a dicot, is a perennial herb (parasitic) that is native to California and is also found outside of California, but is confined to western North America.	Creosote Bush Scrub	L No indigo bush on site; none observed on indigo bush in buffer zone
Pink Fairy Duster <i>Calliandra eriophylla</i>	CNDDDB Ranks G5, S2S3; CNPS: 2.3	Fairy Duster is a low, densely branched shrub 8 to 48 inches high. The leaves are formed by 2-to-4 pairs of 1/4-inch, oblong leaflets. It is a member of the Pea Family (Fabaceae) which includes acacias and mimosas.	Open hillsides, sandy desert washes and slopes below 5,000 feet.	L No habitat on site; none observed
Abrams's Spurge <i>Chamaesyce abramisiana</i>	CNPS list: 2	Annual herbaceous blooms Sept/Nov. Common spurge in area has large purple spot and is prostrate; Abram's is not as colorful.	Sonoran Desert Shrub	L No habitat on site; no Abrams's spurge found.
Sand Food <i>Pholisma sonora</i>	State: S1.2 (threatened); CNPS list:1B.2	Parasite on species such as <i>Erigonum</i> , <i>/tiqulia</i> , <i>ambrosia</i> , <i>pluchea</i> . White to brown color. Corolla pink to purple.	Sonoran Desert Dunes; loose deep sand	L No deep loose sand available, no habitat; none observed

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Birds				
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	Fed:Endangered Ca: Threatened	A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer. Very shy.	L None observed or heard; Cattails not found in dense stands; no suitable habitat on site or in adjacent drains.
Burrowing Owl <i>Athene cunicularia</i>	CDFG: SC Species of Concern	Small raptors that nest in burrows that have been borrowed from other species in open grassland areas. Have adapted well in Imperial County using canals/drains/ditches to establish burrows and foraging for insects in agricultural fields	Open, dry annual or perennial grasslands; deserts & scrublands	H Owls/burrow found on and near site. Survey results included in this report

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Vermillion flycatcher <i>Pyrocephalus rubinus</i>	CDFG: SC Species of Concern	Length: 5 inches The adult male has a Bright red cap, throat and underparts; with a Black eyeline, nape, back, wings, and tail The Immature male similar to female but has variable amount of red on underparts. The female and immature has Brown upperparts with White underparts with faint streaks on breast with an undertail coverts tinged pink The adult male Vermilion Flycatcher is very distinctive. The female and immatures are more nondescript but the streaking on the breast and pink tinge to the undertail coverts distinguish them from other flycatchers.	Frequents streams and ponds in arid areas; agricultural areas	L Does not nest in area, no habitat will be remained

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Yellow Warbler <i>Dendroica petechia brewsteri</i>	CNDDDB Rank: G5T3, S2; CDFG: SC	A Family of seed-eating, small to moderately large passerine birds that have strong , stubby beaks , which in some species can be quite large. They have a bouncing flight, alternating flapping with gliding on closed wings. Most sing well.	Yellow warblers in southern California breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland(Garrett and Dunn 1981). During migration, they occur in lowland and foothill woodland habitats such as desert oases, riparian woodlands, oak woodlands, mixed deciduous-coniferous woodlands, suburban and urban gardens and parks, groves of exotic trees, farmyard windbreaks, and orchards (Small 1994).	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging
Le Conte's Thrasher <i>Toxostoma lecontei</i>	CNDDDB Rank: G3, S3; CDFG: SC	Sexes are alike. This sandy-colored, 10-inch long bird blends well with dry desert vegetation. Its black tail contrasts with its gray, unspotted breast and belly.	Le Conte's Thrasher is a widespread, but rare permanent resident in the western and southern San Joaquin Valley, upper Kern River Basin, Owens Valley, Mojave Desert, and Colorado Desert in southwestern United States.	L No habitat; none observed

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
<p>Ferruginous hawk</p> <p><i>Buteo regalis</i></p>	Species of concern	The male and female have identical markings. The main difference is size, with the female being larger. Perched birds have a white breast and body with dark legs. The back and wings are a brownish rust color. The head is white with a dark streak extending behind the eye. The wing tips almost reach the tip of the tail.	Found in arid to semiarid regions, as well as grasslands and agricultural areas in southwestern Canada, western United States, and northern Mexico.	<p>M</p> <p>Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base</p>
<p>California Black Rail</p> <p><i>Laterallus jamaicensis coturniculus</i></p>	CDFG: Threatened	The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.	Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	<p>L</p> <p>None observed; no habitat on site</p>

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Sonoran desert toad <i>Incillius alvarius</i>	CDFG: SC	Large: 7.5 inches or more in length. smooth, typically olive-green/brown skin, cranial crests, and prominent, elongated glands on both sides of the back of the head (parotoid glands) and on the hind legs. Young toads have small dark, orange-tipped spots on the back. Larger tadpoles are gray or brown with a rounded tail tip, and grow to about 2.25 inches.	Sonoran Desert scrub, semi-desert grasslands. Can be tied to permanent water, such as major rivers or the edges of agriculture. May be found many miles from water, particularly during the summer monsoons. Most Sonoran Desert toads are found at night during the monsoon season, but they may emerge a month or more before the summer rains begin, particularly in areas of permanent water. Can be found in rodent burrows or underground retreats.	L None observed. No habitat present on site.
Leopard frog <i>Lithobates yavapaiensis</i>	Species of concern	Tan, gray-brown or light gray-green to green above; yellow below. Vague upper lip stripe, tuberculate skin. Dark network on rear of thighs; yellow groin color often extends onto rear of belly and underside of legs. Male will exhibit a swollen and darkened thumb base.	Find in desert grassland and in woodlands. Uses permanent water sources, stays near water. Breed Feb-April. Bullfrogs are predators	L No permanent water sources on site; not expected on site.
Northern leopard frog <i>Lithobates pipiens</i>	CDFG: SC	2-3½ inches long and has randomly distributed black spots on its back, sides, and legs. Each spot is surrounded by a light halo. The background colors of the frog can range from gold to green. Gold or brown dorsolateral ridges often stand out in contrast.	NLF needs permanent water for overwintering, floodplains and marshes for breeding, and wet meadows and fields for foraging	L No habitat on site or nearby

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Flat-tailed horned lizard <i>Phrynosoma mcallii</i>	CNDDDB Rank: G3; S2 CDFG: SC	A small (up to 87 mm or 3.4" from snout to vent), exceptionally flat and wide lizard with a long (for a horned lizard) broad, flat tail and a dark stripe running down the middle of the back.	occupy a small range in the Sonoran Desert of southwestern California, southwestern Arizona, and extreme northern Mexico.	L No undisturbed sandy habitat. May be found in buffer zones which will not be disturbed
Colorado Desert fringe-toed lizard <i>Uma notata</i>	CNDDDB Rank: G3, S2; CDFG: SC	2 3/4 to 4 4/5 inches long from snout to vent (7 - 12.2 cm). (Stebbins 2003) The tail is about the same length as the body.	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, flats with sandy hummocks formed around the bases of vegetation, washes, and the banks of rivers. Needs fine, loose sand for burrowing.	L No loose sandy habitat for burrowing on site. May use buffer zones which will not be disturbed
American Badger <i>Taxidea taxus</i>	CDFG: Species of Concern	Burrowing animals that feed on ground squirrels, rabbits, gophers and other small animals. Prefer grasslands, agricultural areas.	Found in drier open areas with friable soils	L None seen; no burrows observed with badger characteristics observed. Not expected because of farming activities

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	CNDDDB Rank: G4, S2S3; CDFG: SC	A small fold, or "pocket" in the wing membrane of the free-tailed bat, near its knee, gives this bat its common name. Pocketed free-tailed bats have large ears and long wings, and fly rapidly, generally pursuing insects on the wing. They eat many kinds of insects, but seem to prefer small moths.	It occurs in the arid lowlands of the desert Southwest, and primarily roosts in crevices in rugged cliffs, slopes, and tall rocky outcrops.	L None seen. Not expected; no habitat
Western Mastiff Bat <i>Eumops perotis californicus</i>	CNDDDB Rank: G5T4, S3; CDFG: SC	<i>Eumops perotis</i> can be distinguished from all other North American molossid (free-tail) species based on size. With a forearm of 73-83 mm, it is North America's largest species.	In California, the <i>E. perotis</i> is most frequently encountered in broad open areas. Generally, this bat is found in a variety of habitats, from dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas.	L None seen. Not expected; no habitat
Western Yellow bat <i>Lasiurus xanthinus</i>	CDFG SC:	Consumes small to medium-sized, night flying insects. Yellow color/short ears.	Roosts in leafy vegetation the deserts of the southwestern United States. Roosts among the dead fronds of palm trees and cottonwoods	L Not expected; few palms or cottonwood trees found on site.

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Big free tailed bat <i>Nyctinomops macrotis</i>	CDFG: SC	Body length of 5 1/8 to 5 3/4", with a 17" wingspan, which makes it bigger than other free tailed bats. Fur is reddish brown to dark brown, with hairs white at base. Tail extends past membrane at least an inch. Big ears are joined at base and extend out over face like a hat. Eats mostly moths, some crickets, grasshoppers, ants, various other insects.	Lives in rocky areas of desert scrub or coniferous forests. During day roosts in crevices on cliff faces.	L None seen. Not expected; no habitat.
Colorado Valley woodrat <i>Neotoma albigula venusta</i>	CNDDDB Rank: G5T3T4, S1S2	a small rodent measuring an average of 12.9 inches (32.8 cm) and weighing an average of 188 g for females and 224 g for males	Typically found at an altitude of 0 to 1,966 meters (0 to 6,450 feet). Mesquite-creosotebush	L No desert vegetation on site; may be found in buffer zone which will not be disturbed

Special Status Species that Occur in Imperial County (USFWS)

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Plants				
Peirson's milk-vetch <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	T/E/1B	Silvery, short-lived perennial plant that is somewhat broom like in appearance. A member of the pea and bean family, it can grow to 2.5 feet tall and is notable among milkvetches for its greatly reduced leaves. Peirson's milkvetch produces attractive, small purple flowers , generally in March or April, with 10 to 17 flowers per stalk. It yields inflated fruit similar to yellow-green pea pods with triangular beaks.	Desert dune habitats. In California, known from sand dunes in the Algodones Dunes system of Imperial County. Was known historically from Borrego Valley in San Diego County and at a site southwest of the Salton Sea in Imperial County	L None observed. No dune habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Birds				
California brown pelican <i>Pelecanus occidentalis</i>	E/E/-No longer endangered	Large size and brown color. Adults weigh approximately 9 pounds, and have a wingspan of over 6 feet. They have long, dark bills with big pouches for catching and holding fish. Pelicans breed in nesting colonies on islands without mammal predators. Roosting and loafing sites provide important resting habitat for breeding and non-breeding birds.	Open water, estuaries, beaches; roosts on various structures, such as pilings, boat docks, breakwaters, and mudflats	L None observed. No open water

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	E/-/-	Small; usually a little less than 6 inches in length, including tail. Conspicuous light-colored wingbars. Lacks the conspicuous pale eye-ring of many similar <i>Empidonax</i> species. Overall, body brownish-olive to gray-green above. Throat whitish, breast pale olive, and belly yellowish. Bill relatively large; lower mandible completely pale. The breeding range of <i>extimus</i> includes Arizona and adjacent states.	At low elevations, breeds principally in dense willow, cottonwood, and tamarisk thickets and in woodlands, along streams and rivers. Migrants may occur more widely. Prefers riparian willow/cottonwood but will use salt cedar thickets	L None Observed; no suitable thickets on site
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	E/T/-	A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts. Very shy.	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer.	L None observed or heard; no suitable habitat; not immediately adjacent to Salton Sea.

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C/E/-	Medium-sized cuckoo with gray-brown upperparts and white underparts. Eye-rings are pale yellow. Bill is mostly yellow. Wings are gray-brown with rufous primaries. Tail is long and has white-spotted black edges. Sexes are similar.	Found in forest and open woodlands, especially in areas with dense undergrowth, such as parks, riparian woodlands, and thickets	L None observed; no habitat on site. Thickets are not present.
Bald eagle <i>Haliaeetus leucocephalus</i>	T, PD/E/-	The distinctive white head and tail feathers Beak and eyes yellow. Bald Eagles are about 29 to 42 inches long, can weigh 7 to 15 pounds, and have a wing span of 6 to 8 feet.	Found on shores, lake margins, and near large rivers. Nests in large trees. Winters at lakes, reservoirs, river systems, and some rangelands and coastal wetlands (breeding range is mainly in mountainous habitats near reservoirs, lakes and rivers, mainly in the northern two-thirds of California)	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Least tern <i>Sterna antillarum</i>	E/E/-	Small tern. During breeding, black cap ending at white forehead. Short white eyestripe. Bill yellow with black tip. Back light gray. Underside white. Black leading edge to wing. In nonbreeding plumage has black eyestripe extending to back of head, white top of head, and black bill. Size: 21-23 cm (8-9 in) Wingspan: 48-53 cm (19-21 in) Weight: 30-45 g (1.06-1.59 ounces)	Shallow areas of estuaries, lagoons, and at the joining points between rivers and estuaries	L None observed; no habitat
Least Bell's Vireo <i>Vireo bellii pusillus</i>	E/E/-	Drab gray to green above and white to yellow below. It has a faint white eyering and two pale wingbars; has pale whitish cheeks and forehead and greenish wings and tail. longer tail and subtle wingbars. The song is a varied sequence of sharp, slurred phrases that typically end with an ascending or descending note.	Formerly a common and widespread summer resident below about 2,000 feet in western Sierra Nevada. Also was common in coastal southern California, from Santa Barbara County south, below about 4,000 feet east of the Sierra Nevada. Prefers thickets of willow, and other low shrubs afford nesting and roosting cover	L None observed; no habitat on site. Thickets are present off site. Minimal construction on site should not disturb any occupants of thickets

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Black rail <i>Laterallus jamaicensis coturniculus</i>	-/T/-	The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.	Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Raptors				
Peregrine Falcon <i>Falco peregrinus</i>	D/E/-	Large, powerful falcon; pointed winged falcon silhouette. Strong shallow wingbeats may dive at speeds up to 100 mph. Dark with dark hooded effect. Blue gray below with narrow bars Long-winged, long tailed hawk. Habitually flies low over open fields and marshes watching and listening for prey such as rodents and birds. (I observed Harrier with a white faced ibis as prey). Perches low or on ground. Low slow flight. Nests in reeds. Grey with black wingtips.	Most often found along coastlines or marshy habitats. Nest in cliffs and have been known to nest in tall buildings	L None observed; rare visitors to area outside of the Salton Sea. Few waterfowl for prey or cliffs/tall buildings for nesting
Northern Harrier <i>Circus cyaneus</i>	-/SC/-	Blue gray above pale reddish below; small size. Tip of tail squared off. Nesting occurs in dense tree stands which are cool, moist, well shaded and usually near water. Hunt in openings at the edges of woodlands and also brushy pastures.	Marshes, open fields. Nests in reeds	M Observed. Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Sharp-shinned Hawk <i>Accipiter striatus</i>	-/SC/-	Gray and white with black on shoulders and under bend of wing. Graceful flyer. Adults have bright red eyes. Medium size hawk; about 15 inches long and about 12 ounces. Males pale with with rufous shoulders and thigh feathers. White tail washed with rufous. Wide head wings in shallow v when soaring.	Sharp-shinned hawks may appear in woodland habitats during winter and migration periods and are often common in southern California in the coastal lowlands and desert areas; winters in woodlands and other habitats.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
White tailed Kite <i>Elanus leucurus</i>	/E/		Found in open country; like to perch on treetop. May be seen hovering prior to attack of a rodent.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Ferruginous hawk <i>Buteo regalis</i>	/SC/		Found in arid to semiarid regions, as well as grasslands and agricultural areas in southwestern Canada, western United States, and northern Mexico.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Mammals				
Bighorn sheep <i>Ovis canadensis</i>	E/E/-	Sheep have short hair which is light gray to grayish brown, except around their stomachs and rump, where it is creamy white. Their tails are about four inches long. Full-grown rams weigh between 180 and 240 pounds,	Desert Bighorn sheep occupy a variety of plant communities, ranging from mixed-grass hillsides, shrubs. Avoids dense vegetation	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Reptiles and Amphibians				
Desert tortoise <i>Gopherus agassizii</i>	T/T/-	A herbivore that may attain a length of 9 to 15 inches in upper shell (carapace) length. The tortoise is able to live where ground temperature may exceed 140 degrees F because of its ability to dig underground burrows and escape the heat. At least 95% of its life is spent in burrows. Their shells are high-domed, and greenish-tan to dark brown in color. Desert tortoises can grow from 4–6" in height and weigh 8–15 lb (4–7 kg) when fully grown. The front limbs have heavy, claw-like scales and are flattened for digging. Back legs are more stumpy and elephantine	Dry, flat, and gravelly or sandy ground in desert shrub communities where annual and perennial grasses are abundant. Frequent habitats with a mix of shrubs, forbs, and grasses	L None observed; habitat not favorable
Flat-tailed horn lizard <i>Phrynosoma mcallii</i>	PT/-/-	Closely related to Desert horned lizard (scat indistinguishable); only found in Imperial, Riverside County, Ca and Yuma area, Az. Small round lizard with distinguishing round spots on back. Diet of ants; needs sandy soil, shade bushes to survive.	Desert washes/sandy areas with vegetative cover. Diet of ants	L No habitat; none observed

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Fish				
Desert pupfish <i>Cyprinodon macularius</i>	E/E/-	Small, silvery-colored fish with 6 to 9 dark bands on its sides. Grows to a full average length of only 2.5 inches; develop quickly, sometimes reaching full maturity within 2 to 3 months. Although their average life span is 6 to 9 months, some survive more than one year. Pupfish have a short, scaled head with an upturned mouth. The anal and dorsal fins are rounded with the dorsal sometimes exhibiting a dark blotch. The caudal fin is convex at the rear.	Springs, seeps, and slow-moving streams in Salton Sink basin and backwaters and sloughs of the Colorado River	L None observed; no habitat
Razorback Sucker <i>Xyrauchen texanus</i>	Fed/CA: Endangered	One of the largest suckers in North America, can grow to up to 13 pounds and lengths exceeding 3 feet. The razorback is brownish-green with a yellow to white-colored belly and has an abrupt, bony hump on its back shaped like an upside-down boat keel	Colorado River	L None observed; no habitat

USFWS Birds of Conservation Concern

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Nests on tall trees or on cliffs in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.	Low Not expected. No tall trees; not observed in area	X	X
Swainson's Hawk	<i>Buteo swainsoni</i>	Breeds in open country such as grassland, shrubland, and agricultural areas. Usually migrates in large flocks often with Broad-winged Hawks. Winters in open grasslands and agricultural areas of Southern America.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base		X
Peregrine Falcon	<i>Falco peregrinus</i>	Inhabits open wetlands near cliffs for nesting. Also uses large cities and nests on buildings.	Low No open wetlands or nesting area.	X	X
Black Rail	<i>Laterallus jamaicensis</i>	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Low No salt or freshwater marshes; no vegetation	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Snowy Plover	<i>Chardrius alexandrinus</i>	Barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds.	Low No habitat; not observed	X	X
Mountain Plover	<i>Charadrius montanus</i>	Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed fields, and sandy deserts.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Black Oystercatcher	<i>Haematopus bachmani</i>	Rocky seacoasts and islands, less commonly sandy beaches.	Low No habitat; not observed	X	X
Solitary Sandpiper	<i>Tringa solitaria</i>	Breeds in taiga, nesting in trees in deserted songbird nests. In migration and winter found along freshwater ponds, stream edges, temporary ponds, flooded ditches and fields, more commonly in wooded regions, less frequently on mudflats and open marshes.	Low No habitat; not observed		X
Lesser Yellowlegs	<i>Tringa flavipes</i>	Breeds in open boreal forest with scattered shallow wetlands. Winters in wide variety of shallow fresh and saltwater habitats.	Low No habitat; not observed		X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Upland Sandpiper	<i>Bartramia longicauda</i>	Native prairie and other dry grasslands, including airports and some croplands.	Low No habitat; not observed		X
Whimbrel	<i>Numenius phaeopus</i>	Breeds in various tundra habitat, from wet lowlands to dry heath. In migration, frequents various coastal and inland habitats, including fields and beaches. Winters in tidal flats and shorelines, occasionally visiting inland habitats.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Long-billed Curlew	<i>Numenius americanus</i>	Nests in wet and dry uplands. In migration and winter found on wetlands, grain fields, lake and river shores, marshes, and beaches.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Breeds in muskegs of taiga to timberline, and barely into subarctic tundra. Winters on coastal mud flats and brackish lagoons. In migration prefers saltwater tidal flats, beaches, and salt marshes. Also found in freshwater mud flats and flooded agricultural fields.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Aleutian Tern	<i>Sterna aleutica</i>	Nest on flat vegetated islands on or near the coast. Vegetation includes dwarf-shrub tundra, grass and sedgemoths, and coastal marsh. Migration and winter habitat not known, probably pelagic.	Low No habitat; not observed		X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Least Tern	<i>Sterna antillarum</i>	Seacoasts, beaches, bays, estuaries, lagoons, lakes and rivers, breeding on sandy or gravelly beaches and banks of rivers or lakes, rarely on flat rooftops of buildings.	Low No habitat; not observed		X
Gull-billed Turn	<i>Sterna nilotica</i>	Breeds on gravelly or sandy beaches. Inters in salt marshes, estuaries, lagoons and plowed fields, along rivers, around lakes and in freshwater marshes.	Low No habitat; not observed		X
Black Skimmer	<i>Rynchops niger</i>	Breeds in large colonies on sandbars and beaches. Forages in shallow bays, inlets, and estuaries.	Low No habitat; not observed	X	X
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Open woodlands with clearings, orchards, dense scrubby vegetation, mainly cottonwood, willow, and adler, often along water.	Low No habitat; not observed	X	X
Black Swift	<i>Cypseloides niger</i>	Nests on steep ledges on cliffs or canyons. Migrates and winters over coastal lowlands.	Low No habitat; no swifts observed in area	X	X
Costa's Hummingbird	<i>Calypte costae</i>	Primarily low deserts and arid brushy foothills, but also chaparral and coastal sage scrub closer to the coast. Often visits ornamental plantings and feeders in desert communities. In migration and winter frequents a wider variety of habitats, occasionally ranging into pine-oak woodlands in adjacent mountains.	Low No habitat; not observed – no feeders or nectar sources in area	X	X
Calliope Hummingbird	<i>Stellula calliope</i>	Open montane forest, mountain meadows, and thickets of willow and alder. In migration and winter also in chaparral, oak and pine-oak woodlands, deserts, and gardens.	Low No habitat; not observed	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Rufous Hummingbird	<i>Selasphorus rufus</i>	Breeds in a variety of forested habitats where flowers are found. Frequents montane meadows and just about anywhere else with flowers or feeders during migration. Winters primarily in pine and pine-oak forests in Mexico, but most birds wintering farther north are attracted either to flowers or feeders in gardens.	Low No habitat; not observed – no feeders or nectar in area.		X
Allen's Hummingbird	<i>Selasphorus sasin</i>	Breeds in coastal sage scrub, chaparral, and riparian corridors within coastal forests. In Mexico winters in forest edge and scrub clearings with flowers. The resident population on the mainland of southern California is largely restricted to suburban neighborhoods where feeders and flowers are plentiful.	Low No habitat; not observed. No feeders or nectar in area	X	X
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Breeds in open arid conifer, oak, and riparian woodlands: rare in coastal areas. Winters in breeding habitat, and oak savannas, orchards, and even in towns.	Low No habitat; not observed	X	X
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Montane and northern coniferous forests, at forest edges and openings such as meadows, and at ponds and bogs. Winters at forest edges and clearings where tall trees or snags are present.	Low No habitat; not observed	X	X
Willow Flycatcher	<i>Empidonax trailii</i>	Breeds in moist, shrubby areas, often with standing or running water. Winters in shrubby clearings and early successional growth.	Low No habitat; not observed	X	X
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Open or brushy areas.	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Bell's Vireo	<i>Vireo bellii</i>	Dense, low, shrubby vegetation generally early successional stages in riparian areas, brushy fields, young second-growth forest or woodland, scrub oak, coastal chaparral, and mesquite brushlands, often near water in arid regions.	Low Scant shrubby vegetation on site	X	X
Gray Vireo	<i>Vireo vicinior</i>	Found in desert scrub, mixed oak-juniper and pinyon-juniper woodlands, dry chaparral, and thorn scrub in hot, arid mountains and high-plains.	Low No habitat; not observed	X	X
LeConte's Thrasher	<i>Toxostoma lecontei</i>	Desert scrub, mesquite, tall riparian brush and, locally, chaparral.	Low No habitat; not observed	X	X
Yellow Warbler	<i>Dendroica petechia</i>	Breeds in wet, deciduous thickets, especially in willows and alder. Also in shrubby areas, old fields, gardens and orchards. In southern Florida and farther south, found in mangroves.	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	
Common Yellowthroat	<i>Geothlypis trichas</i>	Thick vegetation from wetlands to prairies to pine forests. Frequently near water.	Low No habitat; not observed	X	
Rufous-winged Sparrow	<i>Aimophila carpalis</i>	Found in flat areas of tall desert grass mixed with brush and cactus, and thorn scrub.	Low No habitat; not observed		X
Brewer's Sparrow	<i>Euphagus cyanocephalus</i>	Found in a variety of habitats, but prefers open, human-modified areas, such as farmland, fields, residential lawns, and urban parks.	Medium Not observed. Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	X
Black-chinned Sparrow	<i>Spizella atrogularis</i>	Arid brush land, commonly in tall and fairly dense sagebrush, and dry chaparral. Often in rocky, rugged country from sea level to around 8,900 ft (2700m).	Low No habitat; not observed	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Tricolored Blackbird	<i>Agelaius tricolor</i>	Breeds in marsh vegetation, particularly cattails, near grain fields, riparian scrubland, and forests, but always near water. Dairies and feedlots also commonly used for foraging. Urban and suburban areas occasionally utilized, particularly park lawns. Cultivated lands also suitable for foraging. Large night-time roosts form during nonbreeding season in cattail marshes near foraging grounds.	Low Not recorded in area	X	X
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	Prefers dry interior foothills, mountain valleys, open woodlands, chaparral, and weedy fields. Often found near isolated water sources such as springs and cattle troughs.	Low No habitat; not observed	X	X
CNPS Species or Community Level					
G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.					
G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.					
G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.					
G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.					
G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.					
State Ranking					
The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.			The R-E-D Code contains information on Rarity, Endangerment, and Distribution, ranked as a 1, 2, or 3 for each value (as below). This code was originally known as the R-E-V-D Code (through the 3rd edition 1980), and the V (Vigor) was removed in the 4th edition (1984).		
S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres			R - Rarity		
S1.1 = very threatened			1 – Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time		

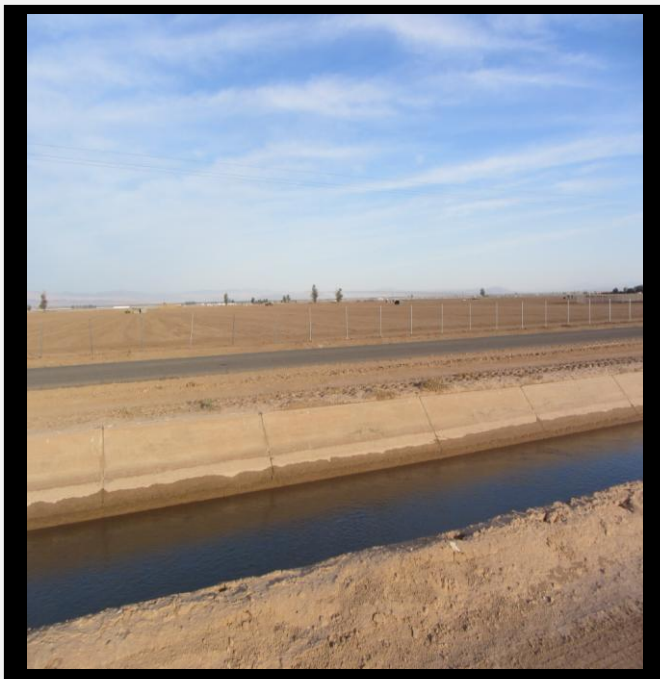
S1.2 = threatened	2 – Distributed in a limited number of occurrences, occasionally more if each occurrence is small
S1.3 = no current threats known	3 – Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres	E - Endangerment
S2.1 = very threatened	1 – Not very endangered in California
S2.2 = threatened	2 – Fairly endangered in California
S2.3 = no current threats known	3 – Seriously endangered in California
S3 = 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres	D - Distribution
S3.1 = very threatened	1 – More or less widespread outside California
S3.2 = threatened	2 – Rare outside California
S3.3 = no current threats known	3 – Endemic to California
S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat. NO THREAT RANK.	
S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.	
Sources: CDFW/CNDDDB 2013, California Wildlife 2010; CNPS 2013; USFWS, 2010	
State/CDFG:	¹Status: Federal:
E = Listed as an endangered species; or previously known as “rare, fully protected”	E = Listed as an endangered species
T = Listed as a threatened species	T = Listed as a threatened species
SC = species of special concern (designation intended for use as a management tool and for information; species of special concern have no legal status (www.dfg.ca.gov/wildlife/species/ssc/birds.html))	C = Candidate for listing
CNPS (California Native Plant Society):	D = Delisted
1B = Rare, threatened, or endangered in California or elsewhere	PD = Proposed for delisting/PT = Proposed for threatened status
2= Plants rare, threatened,or endangered in Ca, but more common elsewhere	
3=Plants about which more information is needed	
Habitat Suitability Codes: H = Habitat is of high suitability for this species M = Habitat is of moderate suitability for this species L = Habitat is of low suitability for this species	

APPENDIX B PHOTOGRAPHS

PHOTOGRAPHS



1. North boundary of site looking east; disked field to right



2. Solar field construction to west of site; Ferrell Road, Wisteria Canal



3. BUOW/burrow on IIDROW; west boundary of property, looking west. Wisteria Canal and Ferrell Road in background



4. Wisteria Drain looking east; site with alfalfa to right



5. Field ditch on site; alfalfa to left; seed onions and sweet corn to right; looking north



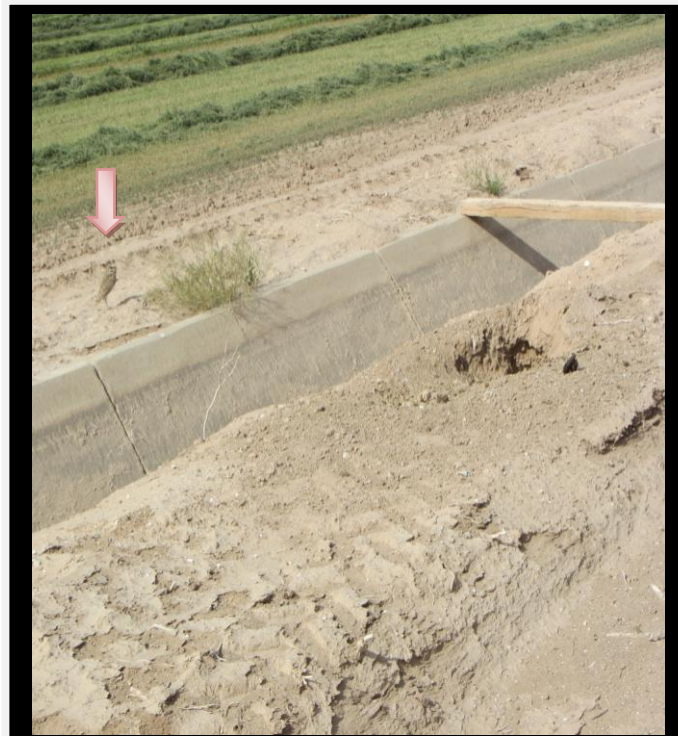
6. Site looking north; sweet corn to left; Wisteria Lat 2 and Weed Road to right; east boundary of site



7. Wisteria Lat 2; burrow on IIDROW; BUOW perching on hay stack to east of site



8. Burrow located offsite in IIDROW; looking east



9. BUOW and burrow on site along field ditch (May survey)



10. BUOW in alfafa field



11. Burrow with decorations and two entrances along IIDROW



12. New River river bottom looking north; off site of northern boundary

APPENDIX C SPECIES FOUND ON SITE

WILDLIFE SPECIES OBSERVED ON OR NEAR SITE*	
Common name	Scientific name
Birds	
Black Phoebe	<i>Sayornis nigricans</i>
Burrowing owl*	<i>Athene cunicularia</i>
Grackle	<i>Quiscalus mexicanus</i>
Horned lark	<i>Eremophila alpestris</i>
Killdeer	<i>Charadrius vociferus</i>
Kingbird	<i>Tyrannus verticalis</i>
Meadowlark	<i>Sturnella neglecta</i>
Mourning Dove	<i>Zenaida macroura</i>
Pheasant	<i>Phasianus colchicus</i>
Pigeon	<i>Columba livia</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red winged Blackbird	<i>Agelaius phoeniceus</i>
Rough winged swallow	<i>Stelgidopteryx serripennis</i>
Snowy egret	<i>Egretta thula</i>
White egret	<i>Ardea alba</i>

Mammals	
Canine/feline tracks/scat	<i>various</i>
Cottontail	<i>Sylvilagus audubonii</i>
Gopher mounds	<i>Thomomys sp.</i>
Round tailed ground squirrel*	<i>Xerospermophilus tereticaudus</i>
Insects	
Alfalfa butterfly	
Ants	<i>various</i>
Assassin bug	<i>Reduviidae</i>
Bees	<i>Aphis sp.</i>
Crickets	<i>Gryllidae</i>
Gnats	<i>various</i>
Grasshopper	<i>various</i>
House fly	<i>Musca domestica</i>
Ladybug	<i>Hippodamia spp.</i>
Mosquito	<i>Culiseta longiareolata</i>

BOTANICAL SPECIES OBSERVED ON OR NEAR SITE		
Common name	Scientific name	CNPS Classification
Alkali heliotrope*	<i>Heliotropium curassavicum</i>	None
Alkali mallow	<i>Malvella leprosa</i>	C°
Alkali weed	<i>Cressa tryillensis</i>	None
Bermuda	<i>Cynodon dactylon</i>	None
Cattails (sparse)*	<i>Typha spp.</i>	None
Desert mistletoe	<i>Phoradendron californicum</i>	None
Goosefoot	<i>Chenopodium sp.</i>	None
Malva	<i>Malva spp.</i>	None
Mesquite*	<i>Prosopis glandulosa</i>	None
Mustards	<i>various</i>	None
Prostrate knotweed	<i>Polygonum arenastrum</i>	None
Russian thistle	<i>Salsola tragus</i>	C°
Saltbush*	<i>Atriplex sp.</i>	None
Saltcedar*	<i>Tamarix sp.</i>	Invasive (USDA)
Salt grass*	<i>Distichlis spicata</i>	None
Sowthistle		None
Spiny aster*	<i>Chloracantha spinosa</i>	None
Sprangletop*	<i>Leptochloa sp.</i>	None
Sunflower	<i>Helianthus annuus</i>	None
Watergrass*	<i>Echinochloa oryzicola</i>	None
White horse nettle	<i>Solanum eleagnifolium</i>	

* found in drains/canals (IID right of way) only

◇ found on site only

°CDFA formal definition - Action to retard spread outside of nurseries at the discretion of the commissioner; reject only when found in a cropseed for planting or at the discretion of the commissioner

APPENDIX D

QUALIFICATIONS

MARIE S. BARRETT

2035 Forrester Road, El Centro, CA 92243 (760) 352 4159 mariebarrett@roadrunner.com

LICENSES/CERTIFICATES

Flat Tailed Horn Lizard Surveyor CDFG/BLM
Burrowing Owl Surveyor (CDFG/USFWS)
USFW Desert Tortoise Egg Handling
Desert Tortoise Council Survey Techniques Workshop Certificate
BCI Bat Conservation and Management Workshop (Acoustic) Certificate
Southwestern Willow Flycatcher Workshop Kernville, CA 2010
California Pest Control Advisor #70373 California Pest Control Operator #103123

CAREER HISTORY

Barrett's Biological Surveys, El Centro, California *BIOLOGIST* 3/95 -present

Helped established protocol and perform Vegetative Baseline Studies and Biological Surveys for Mining Reclamation Plans in Imperial County. Have performed numerous (over 20,000 acres) surveys involving varied wildlife including burrowing owl and plant species and writing reports and biological assessments. Certified to perform Flat Tailed Horned Lizard Surveys; completed Desert Tortoise workshops; approved to handle desert tortoise (American Girl Mine/BLM project, 1/2013). Work closely with governmental agencies such as Bureau of Land Management, State Office of Mining Reclamation, California Department of Fish and Game. Written over ten Environmental Assessments for BLM, El Centro office. Over 150 days spent in field monitoring/surveying for FTHL; 92 days in field monitoring/surveying for desert tortoise and 21,000 acres surveyed for burrowing owl; 2 IID Burrowing owl surveys with AECOM (2011/12- 226 hrs). Wrote Imperial Irrigation District Artificial Burrow Installation Manual (2009). Over 25 active burrowing owl burrows passively relocated and 50 artificial burrows installed. Volunteered for desert tortoise work (20 hrs) with Dr. Jeff Lovich.

Blythe Water System: desert tortoise monitoring approved by USFWS, Carlsbad office

John Deer MetTower Installation: desert tortoise survey and monitoring approved by BLM, El Centro office

Black Mt. MetTower Installation: desert tortoise survey and monitoring approved by BLM, El Centro office

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours) Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours) All American Aggregates, FTHL surveys, Boyd Road Mine Environmental Assessment, BLM El Centro, 2007. (9.5 hours) All American Aggregates, FTHL surveys, Wheeler Road Mine Environmental Assessment, BLM, El Centro, 2006. (8.5 hours) ;ValRock, FTHL surveys, Ocotillo ByPass Road Environmental Assessment, County of Imperial/BLM, El Centro, 2004. (7 hours)

Citizens' Congressional Task Force on the New River, Brawley, Ca *OUTREACH PROGRAM COORDINATOR* 1/00 - present

Responsible for coordinating activities relating to student and public outreach education to promote the water quality opportunities of wetlands ponding systems on the New River.

Imperial Valley College, Imperial, California *ENVIRONMENTAL MANAGEMENT PROJECT COORDINATOR* 9/95-12/99

Responsible for establishing an Environmental Technology curriculum, presenting public forums, short courses and certificate courses in hazardous materials and safety areas. In conjunction with Division Chairman, established a budget for 96-98 program and obtained funding of \$131,000 based on 95-96 program performance. Established short courses that trained over 700 people in hazardous materials safety programs. Compiled a survey of employers, which provided direction for the program.

VOLUNTEER ORGANIZATIONS

CALIFORNIA NATIVE PLANT SOCIETY: Imperial Valley Coordinator, 2006-2013.

SALTON SEA INTERNATIONAL BIRD FESTIVAL: Coordinator: 2001-2010. Organize bird festival in the Imperial Valley that attracts over 300 birders.

COLORADO RIVER CITIZENS FORUM : Co-Chair 2004-2005. Preside over meetings that disseminate information regarding issues and projects along the Colorado River.

COLORADO RIVER WATER QUALITY CONTROL BOARD: Board member Dec 05-Sept 06.

CALIFORNIA WOMEN FOR AGRICULTURE. President 91-93; Co-President: 93-00. Raised over \$15,000 for video promoting agriculture in Imperial Valley and a gallery in the Pioneer Museum. Compiled and published cookbook and organized two community dinner/dances. *IMPERIAL COUNTY 4-H*. Imperial 4-H Community Leader: 95-96. Project Leader: 89-95.

EDUCATION

University of Arizona, Tucson, Arizona

Masters of Science Degree – AGRICULTURAL EDUCATION

Thesis: Survey and training protocol for documenting burrowing owls and habitat in Imperial County, California

California State Polytechnic College, Kellogg-Voorhis Campus, Pomona, California

Bachelor of Science Degree - AGRICULTURAL BIOLOGY

Imperial Valley College, Imperial, California

Associate of Science Degree. AGRICULTURE

COURSES/SEMINARS/WORKSHOPS

Bat Conservation Workshop, Portal, AZ, 2008, 2009, Southwestern willow Flycatcher Workshop, 2010

GLENNA MARIE BARRETT

POB 636, Imperial, CA 92251 (760) 425-0688

glenna@glennabarrett.com

WORK EXPERIENCE

Principal Consultant, Barrett Enterprises. El Centro, December 2001-currently.

Compile information and complete local, state and federal government forms; such as conditional use permits, reclamation plan applications, zone changes, Environmental Evaluation committee responses, and 501 (c)(3) tax exemption applications. Act as liaison between local businesses and local, state, and federal government agencies. Certified to survey for Flat-Tailed Horned Lizards in California and Arizona. Experienced in surveying for Burrowing Owls and the Desert Tortoise.

Project work has been successfully completed for the following agencies and businesses:

Agencies: Bureau of Land Management (BLM) El Centro; Imperial Irrigation District (IID); County of Imperial, Caltrans. Businesses: Superior Redimix, ValRock and Gibson Schaeffer, All American Aggregates.

1996 to present: Ms. Barrett has done the field work and contributed to the required reports for the following projects:

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours)

Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours)

All American Aggregates, FTHL surveys, Boyd Road Mine Environmental Assessment, BLM El Centro, 2007. (9.5 hours)

All American Aggregates, FTHL surveys, Wheeler Road Mine Environmental Assessment, BLM, El Centro, 2006. (8.5 hours)

ValRock, FTHL surveys, Ocotillo ByPass Road Environmental Assessment, County of Imperial/BLM, El Centro, 2004. (7 hours)

RFB Consulting, Burrowing Owl and Biological/Botanical Resource Survey, Imperial County Road Resurfacing 17 miles. (9 hours)

Burrowing Owl and Biological/Botanical Resource Surveys, County of Imperial and Caltrans, 2010. (15 hours)

RECON, Tessora Solar Project FTHL Monitoring, Plaster City, CA, Imperial County. (242 hours)

Conservation Science: Presence/ absence desert tortoise surveys in Mojave, CA (100 hours)

LSI: Construction monitoring for UNEV underground pipeline project Mesquite, Nevada (183 hours)

ICF: Construction monitoring for TRTP Tehachapi Power line project Palmdale, CA (85 hours)

AECOM: Burrowing Owl surveys along IID right-of-ways Imperial County, CA (96.75 hours)

RECON: Bird counts Imperial County, CA (68 hours)

The Holt Group: Blythe, CA Desert Tortoise monitoring (170 hours)

Cal Tech: FTHL monitoring Plaster City, CA (50 hours)

RES: Desert Tortoise monitoring project Black Mountain, CA (101 hours)

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours)

Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours)

EDUCATION AND TRAINING

Received **Bachelor of Science in Business** with a focus on Management, along with Economics and Leadership minors, December 2000. Humboldt State University, Arcata, CA. Courses included:

Legal Environment of Business

Computer Information Systems

Accounting
International Business
Business Communication
Quantitative Methods

Managerial Economics
Theory of Leadership
Finance

Classes: FTHL Workshop, 2008 El Centro BLM office. CDFG Certificate; USFW Desert Tortoise Egg Handling Desert Tortoise Council Survey Techniques Workshop Certificate, 2008 and 2010. Anza Borrego State Park Wildflower Identification Workshop, 2010. Willow Flycatcher Workshop Kernville, CA 2010.

Danielle Figueroa

1120 Ocotillo Drive El Centro, CA
danifigueroa17@hotmail.com (760) 791-9509

SUMMARY OF QUALIFICATIONS:

- Ability to work well with others and with a variety of different personalities.
- Compassionate and dedicated to helping others.
- Dependable and reliable.

SKILLS AND ABILITIES:

- Over three years of experience in biological surveying and construction monitor for Burrowing Owls, Flat tail horned lizard, MBTA species, and general biological surveys.

EXPERIENCE

- Burrtec FTHL Clearance Survey. Completed a FTHL clearance survey of 320 acres in Imperial County.
- Worthington Road Bridge MBTA Construction Monitoring- Monitored construction activities to protect swallows in Imperial County. June-2013.
- Carter Road MBTA Construction Monitoring- Monitored construction activities to protect swallows in Imperial County. May- 2013.
- 8Minute Energy Iris Cluster- Biological technical survey to identify zoological and botanical species. April-July 2013
- 8Minute Energy Mount Signal/ Calexico Solar Farm Cluster- Field assistant for surveys for BUOW and MBTA species. Dec 2010- Jan 2011

EDUCATION

- California Nurses Educational Institute – Palm Springs, CA Certified Nursing Assistant 4/2012 – 6/2012
- Imperial Valley College – El Centro, CA 8/2012 – 3/2013

FIGURE 1
REGIONAL LOCATION
PROJECT VICINITY MAP

PROJECT STATEWIDE LOCATION



PROJECT REGIONAL LOCATION



FIGURE 2
BIORESOURCE MAP

IRIS SITE BIOLOGICAL RESOURCES MAP



LEGEND: ACTIVE BURROW (8,9,16); OCCUPIED BURROW WITH 1 BUOW (6,17); OCCUPIED BURROW WITH 2 BUOW (3,5,14,15) INACTIVE BURROWS (1,7,10,12,13) OCCUPIED BURROW WITH ADULT/JUVENILE

FERRELL SOLAR FARM

Biological Resources Evaluation Technical Report El Centro, California

OCTOBER, 2013

Prepared for:

8minutenergy Renewables LLC
Thomas Buttgenbach, President
5455 Wilshire Blvd Suite 2010
Los Angeles, CA 90036

Prepared by:

Barrett's Biological Surveys

Certified as performed in accordance with established biological practices by:



Marie S. Barrett, Biologist
2035 Forrester Road
El Centro, Ca 92243
760.352.4159

TABLE OF CONTENTS

Executive Summary

1.0	Introduction	5
1.1	Location	5
1.2	Project Description	5
1.2.1	Facility Description	5
1.2.2	Construction Work Force and Schedule	6
1.2.3	Plant Operations Work Force and Schedule	6
1.2.4	Site Construction and Operations Environmental Protection	6
1.3	Applicable Environmental Regulations	7
1.3.1	State of CA	7
1.3.2	Federal	7
2.0	Biological Survey Methodologies	8
2.1	Field Surveys	8
2.1.1	General Biological Survey	8
	Table 1: Field Survey Schedule	9
2.1.2	Focused Burrowing Owl Surveys	9
2.1.3	Jurisdictional Delineation	10
2.2	Literature Review	10
3.0	Existing Conditions	10
3.1	Topology and Soils	10
3.2	Vegetation	11
3.2.1	Vegetation	11
	Table 2: Vegetation	11
3.2.2	Agriculture	11
3.2.3	Ruderal Vegetation	11
3.3	Wildlife	11
3.3.1	Invertebrates	11
3.3.2	Amphibians	11
3.3.3	Reptiles	12
3.3.4	Birds	12
3.3.5	Mammals	12
3.3.6	Fish	12
3.4	Sensitive Biological Resources	12
3.4.1	Special Status Plant Species	12
3.4.1.1	Federal Listed Species	13
3.4.1.2	State Listed Species	13
3.4.2	Special Status Wildlife Species	13
3.4.2.1	Federal Listed Species	13
3.4.2.2	State Listed Species	14
3.4.2.3	State Species of Special Concern and Fully Protected Species	15

	Table 3: Biological Resources	17
	Table 4: Summary of Biological Resources	17
3.4.3	Riparian Habitat or Sensitive Natural Communities	18
3.4.4	Jurisdictional Waters	18
3.4.5	Habitat Connectivity and Wildlife Corridors	18
3.4.6	California Desert Conservation Area	18
4.0	Proposed Project Impact	19
4.1	Impacts to Special Status Species	19
4.1.1	Special Status and Priority Plants	19
4.1.2	Sensitive Wildlife	19
4.1.2.1	Burrowing Owl	19
4.1.2.2	Nesting Raptors	20
4.1.2.3	Migratory Birds and Other Sensitive Non-migratory Species	20
4.2	Impact to Riparian Habitat or Sensitive Natural Communities	21
4.3	Impact to Jurisdictional Waters	21
4.4	Impact to Wildlife Movement and Activities	22
4.5	Impact to Airports	22
4.6	CEQA Impacts	22
	Table 5: Expected Impacts	22
5.0	Recommended Avoidance, Minimization and Mitigation Measures	22
5.1	Sensitive Wildlife	22
5.1.1	Burrowing owl	22
5.1.2	Mountain Plover, Long Billed Curlew, Loggerhead Shrike	24
5.1.3	Nesting Raptors	24
5.1.4	Other Species	24
5.1.5	Migratory Birds and Other Sensitive Non-migratory Species	24
6.0	Works Referenced	24
Appendices		
Appendix A	Sensitive Species	
Appendix B	Photographs	
Appendix C	Species Found Onsite and Vicinity Biological Resources Iris	
Appendix D	Qualifications	
Figures		
Figure 1	Regional Location/ Project Vicinity Maps	
Figure 2	Biological Resources Map	

Executive Summary

General biological surveys, a focused burrowing owl survey and a preliminary jurisdictional delineation were conducted in the spring/summer 2013 within the proposed site. The project site is located within the Colorado Desert area. Approximately 500,000 acres of the Colorado Desert in Imperial County has been converted to agricultural use and this project is within that conversion area. The Project's 367 acres are currently being used for agricultural purposes. No sensitive plants or animals other than burrowing owls were observed.

California Department of Fish and Wildlife (CDFW) species of concern, burrowing owl (*Athene cunicularia*) was observed onsite, offsite and within the 500 foot buffer survey zone. No federal or state botanical or zoological endangered or threatened were found within the Ferrell site or 500 foot survey zone.

No Imperial Irrigation District (IID) water conveyance systems will be removed through construction activities, no washes were observed on site and no road widening is planned, therefore no jurisdictional waters of the U. S. (Army Corp of Engineers – Section 404 Clean Water Act or California Regional Water Quality Control Board Section 401) will be impacted.

1.0 Introduction

1.1 Location

The Ferrell Project (“Project”) is located approximately 3.1 miles west of the City of Calexico, California in southern Imperial County. The site is bound on the west and east side by Ferrell Road and on the north and south side by Kubler Road. Agricultural fields lie to the north, south and east. Solar fields are being constructed to the south.

The Project acreage is currently zoned for agriculture.

1.2 Project Description

1.2.1 Facility Description

85JP 8MME, LLC, known herein as the “Applicant”, is seeking approval of a Conditional Use Permit (“CUP”) for the construction of the Ferrell Project, a utility scale solar farm in Imperial County, California which will be a part of the Iris Cluster (the “Cluster” or the “Projects”). The four projects (each a “Project”) are as follows: Ferrell Solar Farm (“Ferrell”), Rockwood Solar Farm (“Rockwood”), Iris Solar Farm (“Iris”), and Lyons Solar Farm (“Lyons”). Projects may cooperate if necessary to meet power production requirements. Each Project is intended to have O&M facilities and an on-site substation, but may also utilize shared facilities.

The Project has historically been used for agriculture. The topography of the Project is relatively flat. APN’s include: Ferrell: 052-180-042 (204 acres), 059-050-001(163 acres for a total of 367 acres.

1.2.2 Construction Work Force and Schedule

The construction period for the Cluster, from site preparation through construction, testing, and commercial operation, is expected to commence as early as Q2 2014 and will extend for approximately 12 months.

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may continue 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging material for the following day’s construction activities, quality assurance/control, and commissioning.

1.2.3 Plant Operations Work Force and Schedule

Up to twenty-four (24) full-time employees will operate the Cluster, split roughly evenly between the four Projects. Typically, up to half of the staff will work during the day shift and the remainder during the night shifts and weekend. As noted earlier, it is possible at two or more Projects would share O&M, substation, and/or transmission facilities. In such a scenario, the cooperating Projects c/would share personnel, thereby reducing the total staff required. It is also possible that one or more Projects would share another nearby project's facilities (e.g. , those of Mount Signal Solar Farm I). In that scenario, the Lyons Project c/would also share personnel with that nearby project, thereby reducing or eliminating the Project's on-site staff.

1.2.4 Site Construction and Operations Environmental Protection

Construction of the Project will include the following activities:

- Site preparation
- Grading and earthwork
- Concrete foundations
- Structural steel work
- Electrical/instrumentation work
- Gen-tie installation
- Architecture and landscaping work

No roadways will be affected by the Projects, except during the construction period. Construction traffic will access the Site via State Route 98, Ferrell Road, Weed Road, and Kubler Road, to varying degrees. It is estimated that up to 400 workers per day (during peak construction periods) will be required during the construction period.

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may continue 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning.

Materials and supplies will be delivered to the Site by truck. Truck deliveries will normally occur during daylight hours. However, there will be offloading and/or transporting to the Site on weekends and during evening hours. Earthmoving activities are expected to be limited to the construction of the access roads, any O&M buildings, any substations, and any storm water protection or storage (detention) facilities. Final grading may include revegetation with low lying grass or applying earth-binding materials to disturbed areas.

Once the Project is constructed, maintenance needs are generally limited to:

1. Cleaning of PV panels
2. Monitoring electricity generation
3. Providing Site security
4. Facility maintenance - replacing or repairing inverters, wiring and PV modules

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1. Cleaning of PV panels
2. Monitoring electricity generation
3. Providing Site security
4. Facility maintenance - replacing or repairing inverters, wiring and PV modules

It is expected that the Cluster as a whole will require an operational staff of up to twenty-four (24) full-time employees, split roughly evenly between the four Projects. As noted earlier, it is possible that two or more Projects would share O&M, substation, and/or transmission facilities. In that scenario, the cooperating Projects c/would share personnel, thereby reducing the staff required. It is also possible that one or more Projects would share another nearby project's facilities (e.g., those of Mount Signal Solar Farm I). In that scenario, the Projects(s) c/would also share personnel with that project, thereby reducing or eliminating the on-site staff required.

The Project will operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.

The Project will have minimal levels of materials on-site that have been defined as hazardous under 40CFR, Part 261.

Wastes will be managed in accordance with applicable regulations. The storage, use, and handling of any hazardous materials will be in accordance with applicable regulations. Hazardous materials stored on-site will be in quantities of less than 55 gallons per Project. Spill prevention and containment for construction and operation of the Projects will adhere to the Environmental Protection Agency's ("EPA") guidance on Spill Prevention Control and Countermeasures ("SPCC").

Safety precautions and emergency systems will be implemented as part of the design and construction of the Projects to ensure safe and reliable operation. Administrative controls will include classroom and hands-on training in operating and maintenance procedures, general safety items, and a planned maintenance program. These will work with the system design and monitoring features to enhance safety and reliability.

All employees will be provided with communication devices, cell phones, or walkie-talkies, to provide aid in the event of an emergency.

1.3 Applicable Environmental Regulations

1.3.1 State of California

California Environmental Quality Act (CEQA) Title 14 CA Code of Regulations 15380 requires that endangered, rare or threatened species or subspecies of animals or plants be identified within the influence of the project. If any such species are found, appropriate measures should be identified to avoid, minimize or mitigate to the extent possible the effects of the project.

Native Plant Protection Act CDFW Code Section 1900-1913 prohibits the taking, possessing, or sale within the state of any plant listed by CDFW as rare, threatened or endangered. Landowners may be allowed to take these species if CDFW is notified at least 10 days prior to plant removal or if these plants are found within public right of ways.

CA Fish and Wildlife Codes 3503, 3503.5, 3513 protect migratory birds, bird nests and eggs including raptors (birds of prey) and raptor nests from take unless authorized by CDFG.

CA Fish and Wildlife Code Section 1600, as amended regulates activities that substantially diverts or obstructs the natural flow of any river, stream or lake or uses materials from a streambed. This can include riparian habitat associated with watercourses.

State of CA Fully Protected Species identifies and provides additional protection to species that are rare or face possible extinction. These species may not be taken or possessed at any time except for scientific research or relocation for protection of livestock.

Porter-Cologne Water Quality Control Act, as amended is administered by the State Water Resource Control Board (SWRCB) to protect water quality and is an avenue to implement CA responsibilities under the federal Clean Water Act. This act regulates discharge of waste into a water resource.

1.3.2 Federal

National Environmental Policy Act (NEPA: 42 United States Code (U.S.C.) 4321 et seq) established national environmental policy and goals for the protection, maintenance and enhancement of the environment. A process is available for implementation goals within federal agencies. NEPA requires federal agencies to consider the environment in processing proposed actions.

Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) protects federal listed threatened and endangered species from unlawful take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or significantly modify habitat. If a proposed project would jeopardize a threatened or endangered species, then a Section 7 consultation with a federal agency could be required.

Migratory Bird Treaty Act (50 Code Federal Regulations (CFR) 10.13) is a federal statute with several foreign countries to protect species that migrate between countries. Over 1000 species are listed and may not be disrupted during nesting activities. It is illegal to collect any part (nest, feather, eggs, etc) of a listed species, disturb species while nesting or offer for trade or barter any listed species or parts thereof.

Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) protects bald and golden eagles from take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or interference with breeding, feeding or sheltering activities.

Clean Water Act, 1972 (CWA 33 U.S.C. 1251 et seq.) regulates discharges into waters of the U.S. EPA is given the responsibility to implement programs to prevent pollution.

2.0 BIOLOGICAL SURVEY METHODOLOGIES

The purpose of the study was to determine the inventory of biological resources at the time of the survey; the possibility of the existence of endangered, threatened, sensitive or species of concern within project area: map habitats, and ascertain the probability of the presence of sensitive species on site.

2.1 Field Surveys

2.1.1 General Biological Survey

This survey was not intended to determine the presence/absence of threatened or endangered species except for the burrowing owl *Athene cunicularia*, but only

assess the potential for them to occur based on habitat suitability. Other focused surveys to determine presence/absence would be at the discretion of the appropriate State or federal resource agencies.

The California Natural Diversity Database (CNDDB), California Native Plant Society database (CNPS), United States Fish and Wildlife Service (USFWS)/Carlsbad office Sensitive Species list, field guides, personal contacts and other methods to ascertain potential for sensitive species on the site (Appendix A).

Under guidelines from Staff Report on Burrowing Owl Mitigation (March, 2012) pedestrian biological surveys (20 meter transects) of the project area and 500 foot buffer zones to document vegetation and animals were conducted by Marie Barrett, Glenna Barrett, biologists and Dani Figueroa, biologist assistant. Field Survey Schedules are found in each project report. Table 1 below summarized hour in field for each project. These surveys were conducted to develop an inventory of species (plant and animal) present at the time of the surveys, map vegetative communities, if present and ascertain the potential for occurrence of sensitive, endangered or threatened species within the project area and vicinity.

Table 1: Field Survey Schedule Ferrell*

Date/Conditions	Surveyors	Survey Purpose
5 May 13 71-66°F 100% cloud cover, 0 mph; low humidity	Marie Barrett	6:00 AM-10:30 AM BUOW/General biological
June 1, 2013 75-85°F clear, 0 mph; low humidity	Marie Barrett Dani Figueroa	7:50 AM-9:45 AM BUOW/General biological
12 June 13 70-77°F 25% cloud cover/calm; low humidity	Glenna Barrett Dani Figueroa Marie Barrett	6:00 AM-7:30 AM BUOW/General biological
11 July 13 81-84°F 90% cloud cover, 0-3 mph low humidity	Marie Barrett Glenna Barrett	7:10 AM-9:05AM BUOW/General biological
Total		17.0 hours (total all surveyors)

* Consultation with CDFW, Ontario office: *If starting after the dates for the first survey please start as soon as possible. If not enough time to separate by 3 weeks before July 15th then do the first two closer together and the last two 3 weeks apart.*

2.1.2 Focused Burrowing Owl Surveys

Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States, Biological Technical Publication (BTP-R6001-2003) state that 71% of the California burrowing owl (*Athene cunicularia hypugea*) population is found in the agricultural areas of Imperial County and is a California species of special concern therefore a focused burrowing owl survey was performed.

Using guidelines from CDFW Staff Report on Burrowing Owl Mitigation (2012) a pedestrian biological survey of burrowing owl habitat for burrowing owl was conducted by Marie Barrett, Glenna Barrett, biologists and Dani Figueroa biologist assistant. Garmin GPSs, a spotting scope, binoculars, thermometer, anemometer and digital cameras were used.

2.1.3 Jurisdictional Delineation

No IID drains, canals, field ditches or field tile will be removed in the construction of this project therefore no waters of the U.S. or streambed alteration will occur.

2.2 Literature Review

Potential occurrence for endangered, threatened, sensitive, species of concern and noxious weeds was determined by perusal of appropriate data bases which included:

- CA Natural Diversity Database (CNDDDB)
- CA Native Plant Society (CNPS) Rare Plant Program
- USFWS Bird Species of Conservation Concern
- USFWS Critical Habitat for Threatened & Endangered Species Website
- CA Food and Agriculture Department Noxious Weed Information Project

3.0 Existing Conditions

3.1 Topography and Soils

Imperial County is found in the southern part of CA adjacent to the Mexican border. Elevations range from 230 below sea level to about 350 feet above sea level. Soils were formed from stratified alluvial materials and vary greatly in texture and thickness of layers. The main irrigated areas are on a lakebed floor. This area is nearly level, sloping north to the Salton Sea approximately 0.1 percent; with an east and west slope of approximately 0.3 percent.

The predominant soil classifications found in the project area are 80% Imperial- Glenbar silty clay loams, wet, 0-2 percent slopes (115) and 20% Holtville silty clay, wet (110) which are described as:

110: Very deep soil found on flood plains and alluvial basin floors. Color is light brown silty clay about 17 inches thick with an underlying light brown and very pale brown silty clay and siltloam about 18 inches thick. Below this is up to 60 inches of a very pale brown loamy very fine sand. Permeability is slow in clayey layer and moderately rapid in the underlying material. Soil is nonsaline or slightly saline. Surface runoff is slow and hazard of erosion is slight. (*Soil Survey of Imperial County California, Imperial Valley Area*, 1981).

115: Very deep soil found on flood plains and lakebeds. Color is pinkish gray and light brown silty clay to a depth of 60 inches. Permeability is slow with a very high water capacity with slow surface runoff. Soil is slightly saline. Alfalfa stands can be difficult to maintain due to temporary anaerobic conditions.

The elevation on this site is approximately -4 feet.

3.2 Vegetation

3.2.1 Vegetation

Vegetation has been divided into communities that are groups of plants that usually coexist within the same area. Although this area is considered the Colorado Desert area (*A Manual of California Vegetation*, 2009, Sawyer/Wolf), approximately 500,000 acres of the Colorado Desert in Imperial County has been converted to agricultural use and this 367 acres is within that conversion area.

Table 2: Vegetation

Vegetative Communities	Acres
Agricultural Lands	367 acres

3.2.2 Agriculture

The project site is being farmed and crops included alfalfa, melons, sweet corn and seed onions.

3.2.3 Ruderal Vegetation

Some sparse vegetation was found on site that would be considered ruderal (listed with scientific names in Appendix C). There are no vegetative communities on site other than agricultural crops.

3.3 Wildlife

3.3.1 Invertebrates

The project site is an agricultural area. Invertebrates were found within ruderal vegetation adjacent to site. Invertebrates would be expected in actively growing agricultural crops. When surveyed, this area was actively cultivated and crops were growing and being harvested.

3.3.2 Amphibians

Reliable moisture is a requirement for a portion of amphibian life cycle. The project site is an agricultural area. No amphibians were observed on site. Due to the lack of available water, none would be expected.

3.3.3 Reptiles

Reptiles utilize habitat dependent upon their dietary requirements. Some species diet includes vegetation while others consume insects. All require vegetation for shelter.

The project site is an agricultural area with sparse ruderal vegetation. Therefore, few reptiles would be expected on site but could be found in ruderal areas adjacent to site.

3.3.4 Birds

Bird species diversity varies with seasons, variety and quality of vegetative communities.

Birds were observed on the borders of the site and in the vicinity. List of species observed in vicinity is found in Appendix C. Birds that could possibly use the site are found in Appendix A.

3.3.5 Mammals

Mammals and signs of mammals were observed on sites. Burrows were observed that showed activity of recent usage.

The following mammals could be expected to be found in the project site: cotton tail (*Sylvilagus audubonii*), feral dogs and cats.

3.3.6 Fish

The project site is an agricultural area with sparse ruderal vegetation. There are no water sources on site; none would be expected.

3.4 Sensitive Biological Resources

3.4.1 Special Status Plant Species

Appendix A (Mt. Signal/Heber Quadrangle (Nine Quadrangle Search) April, 2013) lists all species found in the data search that has been found within the quadrangle of the project and eight quadrangles surrounding the project. Appendix C lists all plants found within the project during surveys and locations of sensitive biological species.

Under *Botanical Survey Guidelines of the California Native Plant Society, 2001*, guidelines state special status plants will be surveyed when any natural vegetation occurs on site. This area is within an agriculture region and no natural vegetation was present so a focused special status plants survey was not required.

Federal guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants field inventories should be followed in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except *developed agricultural lands*. As this entire project is situated on property that has been used for agricultural purposes no botanical inventory is required.

3.4.1.1 Federal Listed Species

No federally listed plant species were found or expected to be found within the project area.

The usage, agriculture, of this project site did not promote a habitat favorable to special status plant species.

3.4.1.2 State Listed Species

No state listed plant species were found or expected to be found within the project area.

The usage, agriculture, of this project site did not promote a habitat favorable to special status plant species.

3.4.2 Special Status Wildlife Species

As a result of the data search, endangered, threatened species and CDFW species of special concern were evaluated for the potential to occur within the project area. This list and discussion are found in Appendix A.

3.4.2.1 Federally Listed Species

No federally listed species were observed on the project. No favorable habitat was found that would support species such as southwestern willow flycatcher (*Empidonax traillii eximius*), Yuma clapper rail (*Rallus longirostris yumanensis*) or least Bell's vireo (*Vireo bellii pusillus*) or desert pupfish (*Cyprinodon macularis*).

The least Bell's vireo (LBV) prefers early successional habitat in riparian areas. LBV is found in structurally diverse woodlands along waterways, including cotton-wood willow forests, mule fat scrub and oak woodlands. In wintering areas, they are thought to prefer mesquite scrub vegetation, palm groves and hedgerows that are associated with agriculture and residential areas in rural areas (Fish and Wildlife Service, 1998).

Yuma Clapper rail typically occupies emergent marsh vegetation such as pickleweed and cordgrass, mature stands of bulrush and cattail and occasionally willow and tamarisk stands around the Salton Sea.

Southwestern willow flycatcher requires riparian habitat with willow (*Salix spp.*) (Grinnell and Miller 1944) with an understory of species such as mule fat (*Baccharis sp.*) and arrow weed (*Pluchea sp.*). They will nest in areas with tamarisk (*Tamarix ssp.*) and Russian olive (*Eleagnus angustifolia*) in areas where willows have been replaced. Surface water is also required (Tibbits et al 1994; USFWS 1993). .

The desert pupfish (*Cyprinodon macularis*) is a federal- and California-listed endangered species. Historically, desert pupfish occurred in the lower Colorado River in Arizona and California, from about Needles downstream to the Gulf of Mexico and into its delta in Sonora and Baja. In California, pupfish inhabited springs, seeps, and slow moving streams in the Salton Sink basin and backwaters and sloughs along the Colorado River.

The Salton Sea, its slow moving tributary streams, irrigation drains, and shoreline pools supported large pupfish populations until sharp declines began in the mid- to late 1960s. CDFG surveys show desert pupfish populations currently in drains directly discharging to the Salton Sea, in shoreline pools of the Salton Sea, and in several artificial refugia (Nicol et al. 1991; Black 1980).

There are no streams, irrigation drains or shoreline pools associated with this project; therefore no impact to desert pupfish would be expected

These types of habitats are not found within the project site and therefore no focused surveys were performed.

3.4.2.2 State Listed Species

One state-listed bird was evaluated based on known occurrences in Imperial County and habitat availability in the project area: Greater sandhill crane (*Grus Canadensis tabida*).

The greater sandhill crane is state listed as threatened and is also on the Migratory Bird Treaty list of sensitive birds. Colorado River Valley population is estimated at 1400-2100 and is considered stable. The population breeds in northeastern Nevada and southwestern Idaho, migrates through Nevada and winters along the lower Colorado River in California's Imperial Valley.

The greater sandhill crane is a very large bird with long neck, long legs with a gray body which may be stained reddish. The head has a red forehead, white cheek; another characteristic is tufted feathers over rump.

There are bermuda fields adjacent to the project site and other adjacent fields could rotate to either alfalfa and bermuda. The greater sandhill crane could be found on this project and could be found in adjacent fields, but not expected as this species has not been observed south of I-8.

3.4.2.3 State Species of Special Concern and Fully Protected Species

Burrowing owl

The project site was searched with a pedestrian survey of habitat for burrowing owls and their sign (burrows, pellets, feathers, scat, litter, and animal dung) by Marie Barrett Glenna Barrett, biologists and Dani Figueroa biological assistant. The burrowing owl (BUOW) is a small, pale, buffy-brown owl that nests in borrowed burrows. The entrances to burrows often have bits of animal dung, prey carcasses, feathers, and litter, among other objects. Up to 12 eggs are laid, primarily from February to May. Survey information is listed in Table 1: Field Survey Schedule.

The Imperial Valley has a majority of the burrowing owl in southern California. Irrigation canals and drains are commonly used as nesting sites in this area. The Burrowing Owl is a California Department of Fish and Wildlife (CDFW) Species of Special Concern, and a Federal Species of Concern and listed on the Migratory Bird Treaty Act. This survey was done using The CDFW Staff Report (CDFW, 2012), which addresses survey and mitigation guidelines for the owl and communications with CDFW wildlife biologists, Bermuda Dunes and Ontario, CA office.

Several BUOWs and active BUOW burrows were observed onsite and offsite within the Imperial Irrigation District right of way (IIDROW). The Bioresource Map identifies the location of BUOW observations, occupied/active burrows and other biological observations on and adjacent to the site. Figure 2 is a map of biological resources found.

Table 3, Biological Resources, below lists the locations and types of biological resources found on and adjacent to each site.

Table 3 – Biological Resources Ferrell

Location May 5, 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1, 2013	3 rd survey June 12, 2013	4 th Survey July 11, 2013
#1 32°41'39.3" 115°35'18.4" Offsite IIDROW	Occupied burrow with 2 BUOW North side of Wisteria Canal	Occupied burrow with 2 BUOW	Occupied burrow with 1 BUOW	Active burrow
#2 32°41'39.3" 115°35'19.9" Offsite IIDROW	Occupied burrow - owl from #1 flew to this burrow North side of Wisteria Canal	Occupied burrow with 1 BUOW	Active burrow	Occupied burrow with 1 BUOW
#3 32°41'39.6" 115°35'26.7" Offsite IIDROW	Inactive burrow with perch	Inactive	Inactive	Inactive

Location May 5, 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1, 2013	3 rd survey June 12, 2013	4 th Survey July 11, 2013
#4 32°41'14.0" 115°36'17.5" Offsite IIDROW	Occupied burrow with 1 BUOW Many entrances to burrow Tracks/whitewash North side of Wisteria Canal	Occupied burrow with 2 BUOW	Occupied with 1 BUOW	Occupied burrow with 1 BUOW
#5 32°41'19.3" 115°35'8.3" Offsite IIDROW	Occupied burrow with 1 BUOW West side of Wisteria Canal	Occupied burrow with 1 BUOW	Occupied burrow with 2 BUOW	Occupied burrow with 3 BUOW 2 adults; 1 juvenile
#6 32°41'12.9" 115°35'4.1" Offsite IIDROW	Inactive burrow South side of Wisteria Drain	Inactive burrow	Inactive burrow	Inactive burrow
#7 32°41'13.0" 115°35'2.9" Offsite IIDROW	Active burrow Tracks, whitewash, feathers South side of Wisteria Drain	Active burrow	Active burrow	Inactive burrow
#8 32°41'13.1" 115°34'51.8" Offsite IIDROW	Inactive burrow South side of Wisteria Drain	Inactive burrow	Inactive burrow	Inactive burrow
#9 32°41'13.2" 115°34'49.7" Offsite IIDROW	Active burrow Tracks South side of Wisteria Drain	Active burrow	Active burrow	Inactive burrow
#10 32°41'13.3" 115°34'39.2" Offsite IIDROW	Inactive burrow South side of Wisteria Drain	Inactive burrow	Occupied burrow; 1 BUOW	Occupied burrow with 2 BUOW
#11 32°41'18.5" 115°34'7.6" Offsite IIDROW	Occupied burrow with 1 BUOW West side Wisteria Lat 3	Active burrow	Occupied burrow; 2 BUOW	Occupied burrow with 1 BUOW
#12 32°41'37.7" 115°34'41.3" Onsite	Active burrow 2 entrances Tracks, bones, pellets, decorations, whitewash	Burrow crushed by tractor	No change	No change

Location May 5, 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1, 2013	3 rd survey June 12, 2013	4 th Survey July 11, 2013
	North side of field ditch			
#13 32°41'37.8" 115°34'45.7" Onsite	Occupied burrow with 1 BUOW Decorations North side of field ditch	Raptor strike on BUOW; BUOW feathers observed at burrow	No change	No change
#14 32°41'37.8" 115°34'49.6" Onsite	Occupied burrow/1 BUOW Tracks, pellets North side of field ditch	Occupied burrow/ 2 BUOW very vocal	Active burrow	Occupied burrow with 2 BUOW
#15 32°41'37.8" 115°34'53.1" Onsite	Occupied burrow/1 BUOW Tracks, pellets, dung, feathers North side of field ditch	Active burrow	Occupied burrow; 1 BUOW	Active burrow Decorations
#16 32°41'25.6" 115°34'41.0" Onsite	Active burrow Decorations, tracks Field ditch	Active burrow	Active burrow	Active burrow
#17 32°41'25.6" 115°34'42.5" Onsite	Active burrow Decorations, tracks Field ditch	Occupied burrow/2 BUOW	Occupied burrow; 1 BUOW	Occupied burrow with 2 BUOW
#18 32°41'44.3" 115°35'44.1" Offsite		Occupied burrow/2 BUOW and 1 juvenile	Active burrow	Active burrow
#19 32°41'37.8" 115°34'54.6" Onsite		Active burrow	Active burrow	Active burrow
#20 32°41'37.7" 115°34'47.2" Onsite		Occupied burrow/2 BUOW – flew to #19	Active burrow	Occupied burrow with 1 BUOW
#21 32°41'25.7" 115°35'1.0" Onsite		Occupied burrow/2 BUOW North side of field ditch	Occupied burrow/ 2 BUOW	Occupied burrow with 3 BUOW 2 adults, 1 juvenile

Location May 5, 2013 survey	Burrowing Owl/Burrow/Biological Resource	2 nd survey June 1, 2013	3 rd survey June 12, 2013	4 th Survey July 11, 2013
#22 32°41'25.6" 115°34'2.5" Onsite		Occupied burrow with several entrances/2 BUOW north side of field ditch	Occupied burrow/2 BUOW	Occupied burrow with 2 BUOW
Total Numbers of Burrows/BUOW	Offsite: 5 Occupied/2 active burrows /5 BUOW Onsite: 3 Occupied/3 active burrows/3 BUOW	Offsite: 5 Occupied/ 3 active burrows/8 BUOW; and 1 juvenile Onsite: 5 Occupied/3 active burrows/8 adult BUOW	Offsite: 5 Occupied/4 active burrows/7 Adult BUOW Onsite: 4 Occupied/4 active burrows/6 adult BUOW	Offsite: 5 Occupied/2 active burrows/8 BUOW (7 adults/1 juvenile) Onsite: 5 Occupied/3 active burrows/10 BUOW (9 adults/1 juvenile)

*Occupied burrow= BUOW seen at burrow; active: signs that burrow is being occupied by BUOW

Figure 2 includes maps of biological resources found (listed above).

Table 4: Summary of Burrowing Owls/Burrows:

Location	Burrowing Owls	Burrows Active/Occupied
On Property	9 adults;1 juvenile	3/5
IID Drain (off site)	7 adult; 1 juvenile	2/10
Total	16 adults; 2 juveniles	5/15

The site contains does support active BUOW foraging habitat.

Burrowing owls are known to utilize a 1.25 mile (radius) foraging area from nest which represents 3142 acres that can be used as foraging habitat (York, Rosenberg and Sturm, 2002). Therefore, they could also be expected to forage in the agricultural fields, canals and drains to the north, south, west and east of the site.

As required by CDFW, 2012 Burrowing Owl Survey Protocol, California Natural Diversity Data field survey forms will be submitted. Field notes are on file.

Golden Eagle (*Aquila chrysaetos*)

This fully protected species is found throughout the United States, but rarely observed in Imperial County and was not found in data base searches for the Mt. Signal/Heber Quadrangle (9 quadrangle search). No suitable habitat was observed.

Therefore this species is not expected to be found within or in the vicinity of the project.

Loggerhead Shrike (*Lanius ludovicianus*)

This species is a CDFW species of special concern and is a year-round resident of Imperial County. They have the interesting habit of impaling prey upon sticks or thorns. Mesquites are often utilized for this activity. They are generally associated with open areas such as agricultural fields for foraging and thickets for nesting.

LeConte's (*Toxostoma lecontei lecontei*) and Crissal (*Toxostoma crissale*) Thrasher

These species are CDFW species of special concern. The crissal thrasher prefers dense thickets of shrubs or low trees. They were not observed or expected on site due to the lack of suitable habitat. The Leconte's thrasher occurs in desert scrub or desert wash areas. They were not observed.

3.4.3 Riparian Habitat or Sensitive Natural Communities

Based upon the level of disturbance or habitat conversion within adjacent areas, vegetative communities are considered rare or sensitive. Rare vegetation types that are converted and degraded can disrupt the integrity of the ecological functions of natural environments. This can lead to the loss of sensitive plant species and a resulting decrease in biodiversity. Wetland or riparian habitat communities are considered sensitive by CDFW. Wetland or riparian habitat communities are considered sensitive by CDFW.

No riparian habitat or sensitive natural communities were observed on site but riparian habitats are found within the IID water conveyance systems which are located adjacent and offsite of the project.

3.4.4 Jurisdictional Waters

Wetlands and other "waters of the United States" that are subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act are under the jurisdiction of the U.S. Army Corps of Engineers (ACOE). Typically, these waters include naturally occurring traditional navigable waters (TNWs), relatively permanent

waters (RPWs), and/or ephemeral waters with a significant nexus to a TNW. Agricultural water conveyance systems which are manmade and constructed wholly in uplands are typically only considered jurisdictional if they are RPWs. The most recent guidance on the topic states that “relatively permanent waters typically flow year-round or have continuous flow at least seasonally (e.g. typically three months)” (EPA and ACOE 2008). Conversely, man-made drainages constructed solely in uplands that are not RPWs are generally not federally jurisdictional. IID drains and canals are part of an agricultural system and therefore by definition (USACOE Wetlands Delineation Manual) are not classified as wetlands although typical wetland/riparian plant species are found within canals and drains. Canals and drains do not flow continuously as they are dependent upon irrigation events. Also, canals are non flowing for three days each month as part of an IID pest control program.

With respect to non-tidal waters, federal jurisdiction over non-wetlands extends to the “Ordinary High Water Mark” (OHWM). 33 C.F.R. § 328.4(c)(1). The Ordinary High Water (OHW) zone in low gradient, alluvial ephemeral/intermittent channel forms in the Arid West is defined as the active floodplain. The dynamics of arid channel forms and the transitory nature of traditional OHWM indicators in arid environments render the limit of the active floodplain the only reliable and repeatable feature in terms of OHW zone delineation. The extent of flood model outputs for effective discharges (5 to 10 year events in arid channels) aligns well with the boundaries of the active floodplain (ACOE 2008). IID canals, drains, farmer head or tail ditches would not be considered an “arid or ephemeral channel” as they are manmade expressly for the conveyance of irrigation waters.

IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site. No IID drains or canals will be removed or relocated, no roads will be widened and no washes are found within the project.

3.4.5 Habitat Connectivity and Wildlife Corridors

The ability for wildlife to freely move about an area and not become isolated is considered connectivity and is important to allow dispersal of a species to maintain exchange genetic characteristics; forage (food and water) and escape from predation.

As no drains or canals will be removed, all species will continue to freely move throughout the general area of the project using these pathways. IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site.

3.4.6 California Desert Conservation Area (CDCA)

This project is not within or immediately adjacent to an Area of Critical Environmental Concern (ACEC) of the CDCA.

4.0 Proposed Project Impact

The proposed impacts are summarized in this section.

4.1 Impact to Special Status Species

If this project has a substantial adverse effect, either directly or through habitat modification or elimination, on any plant or animal species that is considered endangered, threatened, candidate for listing or special status species either through federal or state regulations, this project would be considered to have a significant impact.

4.1.1 Special Status and Priority Plants

No special status and priority plants were observed or expected with the site therefore there will be no significant impacts. Therefore no avoidance, minimization or mitigation measures will be required.

4.1.2 Sensitive Wildlife

4.1.2.1 Burrowing Owl

Construction Impact

Burrowing owls and burrows were found onsite. Burrowing owls and burrows were located within a 500 foot buffer zone survey.

CDFW Staff Report on Burrowing Owl (2012) lists impacts to burrowing owl as:

- Disturbance (September through January non nesting season) or (February through August nesting season) in vicinity of active burrows
- Destruction of active burrows
- Destruction/degradation of forage

Section 5 discusses avoidance, minimization and mitigation requirements for burrowing owls found on site or in vicinity during construction.

Project Operations and Maintenance Indirect Impact

Once the project is constructed, minimal operations activities and maintenance needs are required and are generally limited to:

- Typical onsite plant maintenance activities

Noise during operation of the project is not expected to exceed ambient noise produced by other operations in the area.

Lighting will be limited to areas required for operations or safety, will be directed on site to avoid backscatter, and will be shielded from public view to the extent practical. Lighting that is not required to be on during nighttime hours will be controlled with sensors or switches operated such that lighting will be on only when needed.

No significant impact is expected to this species due to noise, lighting or site maintenance and therefore no avoidance, minimization or mitigation measures are required for indirect impacts.

4.1.2.2 Nesting Raptors

Project Construction Impact

There are no tall trees on site that would encourage raptor nesting. There is no opportunity for ground nesting of raptors such as northern harriers (*Circus cyaneus*) within site or the buffer zone of the project. No osprey (*Pandion haliaetus*) nests were observed or expected due to the lack of nesting opportunity.

If construction is planned to begin during nesting season (February 1 through August 31), the project area and a 500 foot buffer area should be surveyed to determine presence/absence of nesting. If nests are found, an appropriate buffer zone for the species should be maintained until juveniles have fledged.

Project Operations and Maintenance Indirect Impact

Electrocution

All electrical components within the project will be protected so that there will be limited exposure to wildlife and potential for electrocution.

Collisions

All electrical components within the project will be protected so that there will be limited exposure to wildlife and potential for collisions.

4.1.2.3 Migratory Birds and Other Sensitive Non-migratory Species

Project Construction Impacts

If construction begins between February 1 through August 31, common breeding season for most migratory birds, a direct impact of destroying nests or disrupting

nesting activities might occur. Mitigation in the form of avoidance and impact minimization would be required to reduce the impact to a level of less than significant.

Project Operations and Maintenance Indirect Impact

Once the project is constructed, minimal operations activities and maintenance needs are required and are generally limited to:

- Typical onsite plant maintenance activities

Noise during operation of the project is not expected to exceed ambient noise produced by other operations in the area.

Lighting will be limited to areas required for operations or safety, will be directed on site to avoid backscatter, and will be shielded from public view to the extent practical. Lighting that is not required to be on during nighttime hours will be controlled with sensors or switches operated such that lighting will be on only when needed.

No significant impact is expected to these species due to noise, lighting or site maintenance and therefore no avoidance, minimization or mitigation measures are required for indirect impacts

4.2 Impact to Riparian Habitat or Sensitive Natural Communities

The distribution of riparian plant species is largely driven by hydrological and soil variables and riparian plant communities frequently occur in relatively distinct zone along streamside elevational and soil textural gradients. The only riparian habitat that might be present would be found within IID drains and canals which are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan.

IID drains and canals are part of an agricultural system and therefore by definition (USACOE Wetlands Delineation Manual) are not classified as wetlands although typical wetland/riparian plant species are found within canals and drains.

4.3 Impact to Jurisdictional Waters

IID drains and canals are right of ways maintained by the IID and are covered by the draft Water Conservation and Transfer Project Habitat Conservation Plan and are not part of the project site.

On-site flows, a result of rare rain events (less than 3 inches of rain a year in this desert area) are to be contained on the project site and not discharged; therefore state certification, a program which is administered by the RWQCB (CWA 401), will not be required.

4.4 Impact to Wildlife Movement and Nursery Sites

This project is in a agricultural vegetative community which is surrounded by agricultural and industrial activities. It will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

4.5 Impact to Airports

This project has no components that will attract avian populations. The project is within 2.5 miles from the Calexico Airport, CA. No impact upon airports is expected.

4.6 CEQA Impacts

Possible CEQA significant impacts that could include the following within the parameters of this project:

Table 5: Expected Impacts

Area	Endangered/threatened/ Species of Concern Habitat	Riparian Habitat	Wetlands	Wildlife Corridors	Local Ordinances	HCP*
Agricultural	None with avoidance/minimization/ mitigation measures	No	No	No	No	No

*Habitat conservation plan

5.0 Recommended Avoidance, Minimization and Mitigation Measures

5.1 Sensitive Wildlife

5.1.1 Burrowing Owl

Avoidance Measures

A preconstruction survey should be done at least 14 days prior to start of construction and report submitted to the appropriate agency.

Since there are burrowing owls in the area, it is recommended that construction foremen and workers and onsite employees be given worker training by a qualified biologist regarding burrowing owl that would include the following:

- Description of owl
- Biology
- Regulations (CDFW/USFWS)

- Wallet card with owl picture/guidelines for protecting owl and wildlife
- Notification procedures if owl (dead, alive, injured) is found on or near site

Minimization Measures

As burrowing owls and occupied burrows were observed onsite and offsite within the buffer zone, during non breeding season (September through January) or breeding season (February – August) a distance determined by a qualified biologist should be maintained between occupied burrows and construction activities. A qualified biologist may also employ the technique of sheltering in place (using hay bales to shelter the burrow from construction activities). If this technique is employed, it is recommended that the sheltered area be monitored weekly by a qualified biologist or daily when construction is within 160 feet (non-breeding season) or 250 feet (breeding season) of shelter. Avoidance and minimization measures would be subject to approval of CDFW.

Mitigation Measures

If, in future surveys, occupied/active burrows are found that must be removed, the following guidelines should be followed:

Passive Relocation Plan

1. After consultation with CDFW, artificial burrows (minimum of 50 feet apart) will be installed using the guidelines found in the Imperial Irrigation District Artificial Burrow Installation Manual or other applicable manuals.
2. After consultation with CDFW, owls will be excluded by installation of one way doors into the opening of the burrows. One way doors will be left in place for 48 hours, if scoping indicates occupancy. Burrow will be scoped prior to excavation. Excavation will be done using hand tools and refilled to prevent reoccupation. After burrow is collapsed, contractor will immediately disk down area to prevent reoccupation.
3. Documentation will be made (pictures, note taking) and a report will be sent to CDFW.
4. Foraging habitat is found on site; CDFW's mitigation guidelines for burrowing owl (Staff Report,2012) requires foraging habitat determined per pair or unpaired resident bird to be provided and protected to offset the loss of foraging and burrow habitat on the project site as determined by a qualified biologist.

5.1.2 Mountain Plover, Long Billed Curlews, Loggerhead Shrike

Alfalfa and other favorable forage fields are found on the Cluster site which could attract mountain plover (*Charadrius montanus*), long billed curlew (*Numenius americanus*), Loggerhead Shrike (*Lanius ludovicianus*).

If these species are observed foraging adjacent to the site during construction, identification of these species and instructions on reducing construction activities in perimeter areas adjacent to crops will be included in a worker training program provided by a qualified biologist.

5.1.3 Nesting Raptors

This site does not appear to support areas of nesting interest to raptors; none were observed nesting. There is no evidence of nesting in the utility poles located in the vicinity which have been in place for decades. As there is no evidence of raptor occupancy, an Avian Protection Plan using guidelines from Avian Power Line Interaction Committee (APLIC 2006) will not be necessary.

If in the future, a situation develops that indicate impacts to raptors, upon the recommendation of the overseeing agency, an Avian Protection Plan would be developed by a qualified biologist.

5.1.4 Other Species

The other species listed within this report are common throughout the Imperial Valley. Use of the site would not be expected by avian species due to plant activity and therefore no minimization of avian usage is necessary.

5.1.5 Migratory Birds and Non-migratory Bird Species

If construction is scheduled to begin during nesting season (February-August), a survey for nesting birds should be performed within 7 days of groundbreaking activities. Dependent upon species found, appropriate buffer zones will be established after consultation with the appropriate agencies.

6.0 Works Referenced

Alonso, Juan C., Javier A. Alonso, Rodrigo Munoz-Palido, *Mitigation of Bird Collisions with Transmission Lines through Groundwire Marking*, Biological Conservation, 1994.

Association of Environmental Professionals, *California Environmental Quality Act 2011 Statutes and Guidelines*, AEP, Palm Desert, CA, 2011.

Baldwin, Bruce G., et al, *The Jepson Desert Manual*, Los Angeles, University of California Press, 2002.

Behler, Jack L., and F. Wayne King, *Natural Audubon Society Field Guide to North American Reptiles & Amphibians*, New York, Chanticleer Press, 1996.

Borror, Donald J. and Richard E. White, *Insects*, The Easton Press, Norwalk, Ct. 1970.

Bowers, Nora, Rick Bowers, Kenn Kaufman, *Mammals of North America*, Houghton Mifflin Company, Singapore, 2004.

California Department of Fish and Wildlife, *Staff Report on Burrowing Owl Mitigation*, California Department of Fish and Wildlife, Oct 17, 1995

California Department of Fish and Wildlife, *Staff Report on Burrowing Owl Mitigation*, California Department of Fish and Wildlife, March 7, 2012.

California Native Plant Society, *CNPS Inventory of Rare and Endangered Plants*, online: [www. Northcoast.com](http://www.northcoast.com), April, 2013

California Natural Diversity Database, April, 2013. Sacramento, Ca California Department of Fish and Wildlife.

Coulombe, Harry N., *Behavior and Population Ecology of the Burrowing Owl, Speotyto cunicularia, in the Imperial Valley of California*, The Condor, 73:163-176, 1971.

Department of the Army, *Corps of Engineers Wetlands Delineation Manual*, January, 1987. U.S. Department of Commerce.

Fish and Wildlife Service, 1998. *Draft recovery plan for the least Bell's vireo*, U. S. Fish and Wildlife Service, Portland OR, 139 pp.

Griggs, Jack, *American Bird Conservancy's Field Guide, All the Birds of North America*, New York HarpersCollinsPublishers, Inc. 1997.

Grinnell, J., and A. H. Miller. 1944. The distribution of the birds of California. Pac. Coast Avifauna no. 27. Cooper Ornith. Society. 608pp

http://casoilresource.lawr.ucdavis.edu/soilweb_gmap/

Imperial County Planning and Building Department, General Plan, Sept 1, 2004

Jameson, E.W., Hans J. Peeters, *Mammals of California*, Los Angeles, University of California, 2004.

Nicol, K., S. Lau, and C. Boehm. *A Distribution Survey of Desert Pupfish (Cyprinodon macularius) Around the Salton Sea, California*. Final Report for Section 6, Project No. EF90XII-1. California Department of Fish and Game Inland Fisheries Division, 1991.

Rosenberg, Daniel K. and Katherin Haley, *The Ecology of Burrowing Owl in the Agroecosystem of the Imperial Valley, California*, Studies in Avian Biology, No., 27:120-135, 2004.

Sawyer, John O. and Todd Keeler-Wolf, *A Manual of California Vegetation*, California Natural Plant Society, 2009.

Sibley, David Allen, *The Sibley Guide To Birds*, Alfred A. Knopf, New York, 2000.

Shuford W. D., and Gardali, T., editors, *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California and California Department of Fish and Game, Sacramento, CA

Tibbitts, T.J., M.K. Sogge, and S.J. Sferra. 1994. A survey protocol for the southwestern willow flycatcher (*Empidonax traillii extimus*). Technical Report NPS/NAUCPRS/NRTR-94/04. National Park Service Colorado Plateau Research Station, Flagstaff, Arizona. 24 p

United States Department of Agriculture Soil Conservation Service, *Soil Survey of Imperial County California Imperial Valley Area*, October, 1981.

United States Fish and Wildlife Service, *Birds of Conservation Concern 2008*.

U.S. Fish and Wildlife Service. 1993. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico. i-ix + 210 pp.,

United States Fish and Wildlife Service, *Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States BTP-R6001-2003*.

York, Melissa A., Daniel K. Rosenberg, and Ken A. Sturm, *Diet and Food-Niche Breadth of Burrowing Owl (*Athene Cunicularia*) in the Imperial Valley, California*, Western North American Naturalist 62(3), 2002. 280-287.

APPENDIX A SENSITIVE SPECIES

APPENDIX A

SENSITIVE BOTANICAL AND ZOOLOGICAL SPECIES (CNDDDB/CNPS)

Heber/ Mount Signal Quadrangle (Nine Quad Search) April, 2013

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Chaparral sand-verbena <i>Abronia villosa var aurita</i>	State: S2.2 (not very threatened); CNPS list: 1B.2 (rare, threatened in Ca; fairly endangered in Ca.)	Likes full sun, and sandy soil. Sand-verbena has gray foliage with pinkish purple flowers, and the flowers are fragrant. It does not tolerate weeds and needs bare ground. 80-1600m (263-5249ft	Chaparral, Coastal Shrub, and desert dunes/sandy areas.	L No habitat on site; none observed
Baja California ipomopsis <i>Ipomopsis effusa</i>	CNPS: List 2.1	a dicot, is an annual herb that is native to California and to Baja California	Creosote Bush Scrub, Chaparral . Alluvial fans.	L No habitat on site; none observed
Emory's Crucifixion-Thorn <i>Castela emoryi</i>	CNPS: List 2.3	A large sprawling, dense shrub or small tree, up to 3(-3.7) m (to 10[-12] feet) tall, with a round crown often with descending branches heavy with thorns. Gray brown bark has narrow ridges with smooth ridges. The stout twigs are blue, gray or yellow green, may be finely hairy, very rigid, up to 20 cm (8 in) long with numerous stout thorns.	Sonoran Desert of southern Arizona and far southeastern California, south into Baja California and Sonora, Mexico.	L No habitat on site; none observed

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Annual rock-nettle <i>Eucnide rupestris</i>	CNPS List 2.2	is a small, perennial, rounded shrub that grows to at most 3-feet tall. The leaves are about 1/2-inch long, oval, irregularly toothed, and gray-green. The leaves are covered with tiny, needle-like, barbed, stinging hairs that are very difficult to remove from human skin. The flowers are fairly large and open, with five, pale cream-colored petals.	fairly common component of vegetation communities on well-drained sandy, gravelly, and rocky soils in washes and on rocky outcrops in the Upper Sonoran (Mojave Desert Scrub) life zone.	L No habitat on site; none observed
California satintail <i>Imperata brevifolia</i>	CNDDDB Ranks G2, S2.1; CNS: 2.1	This plant can be weedy or invasive. Grass or grass-like plant, including grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), arrow-grasses (Juncaginaceae), and quillworts (Isoetes).	It is native to the southwestern United States from California to Texas and northern Mexico, where it grows in arid regions where water is available.	L No habitat on site; none observed
Hairy Stickleaf <i>Mentzelia hirsutissima</i>	CNDDDB Ranks G3, S2S3; CNPS: 2.3	Annual to shrub; hairs needle-like, stinging, or rough	Creosote Bush Scrub	L No habitat on site; none observed
Brown turbans <i>Malperia tenuis</i>	CNDDDB Ranks G4, S1.3; CNPS: 2.3	is recognized by its annual duration, linear leaves densely arranged along stems or concentrated near bases of stems, loosely arranged heads, and pappi of two kinds of scales.	Sonoran Desert Scrub is the general habitat for Brown Turbans. Near Ocotillo it grows on arid slopes with shallow soils, rocky surface rubble with few large boulders, and little competition from shrubs.	L No habitat on site; none observed

BOTANICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Thurber's Pilostyles <i>Pilostyles thurberi</i>	CNDDDB Ranks G5, S3.3; CNPS: 4.3	a dicot, is a perennial herb (parasitic) that is native to California and is also found outside of California, but is confined to western North America.	Creosote Bush Scrub	L No indigo bush on site; none observed on indigo bush in buffer zone
Pink Fairy Duster <i>Calliandra eriophylla</i>	CNDDDB Ranks G5, S2S3; CNPS: 2.3	Fairy Duster is a low, densely branched shrub 8 to 48 inches high. The leaves are formed by 2-to-4 pairs of 1/4-inch, oblong leaflets. It is a member of the Pea Family (Fabaceae) which includes acacias and mimosas.	Open hillsides, sandy desert washes and slopes below 5,000 feet.	L No habitat on site; none observed
Abrams's Spurge <i>Chamaesyce abramisiana</i>	CNPS list: 2	Annual herbaceous blooms Sept/Nov. Common spurge in area has large purple spot and is prostrate; Abram's is not as colorful.	Sonoran Desert Shrub	L No habitat on site; no Abrams's spurge found.
Sand Food <i>Pholisma sonorae</i>	State: S1.2 (threatened); CNPS list:1B.2	Parasite on species such as <i>Erigeron</i> , <i>/tiqulia</i> , <i>ambrosia</i> , <i>pluchea</i> . White to brown color. Corolla pink to purple.	Sonoran Desert Dunes; loose deep sand	L No deep loose sand available, no habitat; none observed

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Birds				
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	Fed:Endangered Ca: Threatened	A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer. Very shy.	L None observed or heard; Cattails not found in dense stands; no suitable habitat on site or in adjacent drains.
Burrowing Owl <i>Athene cunicularia</i>	CDFG: SC Species of Concern	Small raptors that nest in burrows that have been borrowed from other species in open grassland areas. Have adapted well in Imperial County using canals/drains/ditches to establish burrows and foraging for insects in agricultural fields	Open, dry annual or perennial grasslands; deserts & scrublands	H Owls/burrow found on and near site. Survey results included in this report

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Vermillion flycatcher <i>Pyrocephalus rubinus</i>	CDFG: SC Species of Concern	Length: 5 inches The adult male has a Bright red cap, throat and underparts; with a Black eyeline, nape, back, wings, and tail The Immature male similar to female but has variable amount of red on underparts. The female and immature has Brown upperparts with White underparts with faint streaks on breast with an undertail coverts tinged pink The adult male Vermilion Flycatcher is very distinctive. The female and immatures are more nondescript but the streaking on the breast and pink tinge to the undertail coverts distinguish them from other flycatchers.	Frequents streams and ponds in arid areas; agricultural areas	L Does not nest in area, no habitat will be remained

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Yellow Warbler <i>Dendroica petechia brewsteri</i>	CNDDDB Rank: G5T3, S2; CDFG: SC	A Family of seed-eating, small to moderately large passerine birds that have strong , stubby beaks , which in some species can be quite large. They have a bouncing flight, alternating flapping with gliding on closed wings. Most sing well.	Yellow warblers in southern California breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland(Garrett and Dunn 1981). During migration, they occur in lowland and foothill woodland habitats such as desert oases, riparian woodlands, oak woodlands, mixed deciduous-coniferous woodlands, suburban and urban gardens and parks, groves of exotic trees, farmyard windbreaks, and orchards (Small 1994).	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging
Le Conte's Thrasher <i>Toxostoma lecontei</i>	CNDDDB Rank: G3, S3; CDFG: SC	Sexes are alike. This sandy-colored, 10-inch long bird blends well with dry desert vegetation. Its black tail contrasts with its gray, unspotted breast and belly.	Le Conte's Thrasher is a widespread, but rare permanent resident in the western and southern San Joaquin Valley, upper Kern River Basin, Owens Valley, Mojave Desert, and Colorado Desert in southwestern United States.	L No habitat; none observed

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Ferruginous hawk <i>Buteo regalis</i>	Species of concern	The male and female have identical markings. The main difference is size, with the female being larger. Perched birds have a white breast and body with dark legs. The back and wings are a brownish rust color. The head is white with a dark streak extending behind the eye. The wing tips almost reach the tip of the tail.	Found in arid to semiarid regions, as well as grasslands and agricultural areas in southwestern Canada, western United States, and northern Mexico.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base
California Black Rail <i>Laterallus jamaicensis coturniculus</i>	CDFG: Threatened	The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.	Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	L None observed; no habitat on site

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Sonoran desert toad <i>Incillius alvarius</i>	CDFG: SC	Large: 7.5 inches or more in length. smooth, typically olive-green/brown skin, cranial crests, and prominent, elongated glands on both sides of the back of the head (parotoid glands) and on the hind legs. Young toads have small dark, orange-tipped spots on the back. Larger tadpoles are gray or brown with a rounded tail tip, and grow to about 2.25 inches.	Sonoran Desert scrub, semi-desert grasslands. Can be tied to permanent water, such as major rivers or the edges of agriculture. May be found many miles from water, particularly during the summer monsoons. Most Sonoran Desert toads are found at night during the monsoon season, but they may emerge a month or more before the summer rains begin, particularly in areas of permanent water. Can be found in rodent burrows or underground retreats.	L None observed. No habitat present on site.
Leopard frog <i>Lithobates yavapaiensis</i>	Species of concern	Tan, gray-brown or light gray-green to green above; yellow below. Vague upper lip stripe, tuberculate skin. Dark network on rear of thighs; yellow groin color often extends onto rear of belly and underside of legs. Male will exhibit a swollen and darkened thumb base.	Find in desert grassland and in woodlands. Uses permanent water sources, stays near water. Breed Feb-April. Bullfrogs are predators	L No permanent water sources on site; not expected on site.
Northern leopard frog <i>Lithobates pipiens</i>	CDFG: SC	2-3½ inches long and has randomly distributed black spots on its back, sides, and legs. Each spot is surrounded by a light halo. The background colors of the frog can range from gold to green. Gold or brown dorsolateral ridges often stand out in contrast.	NLF needs permanent water for overwintering, floodplains and marshes for breeding, and wet meadows and fields for foraging	L No habitat on site or nearby

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Flat-tailed horned lizard <i>Phrynosoma mcallii</i>	CNDDDB Rank: G3; S2 CDFG: SC	A small (up to 87 mm or 3.4" from snout to vent), exceptionally flat and wide lizard with a long (for a horned lizard) broad, flat tail and a dark stripe running down the middle of the back.	occupy a small range in the Sonoran Desert of southwestern California, southwestern Arizona, and extreme northern Mexico.	L No undisturbed sandy habitat. May be found in buffer zones which will not be disturbed
Colorado Desert fringe-toed lizard <i>Uma notata</i>	CNDDDB Rank: G3, S2; CDFG: SC	2 3/4 to 4 4/5 inches long from snout to vent (7 - 12.2 cm). (Stebbins 2003) The tail is about the same length as the body.	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, flats with sandy hummocks formed around the bases of vegetation, washes, and the banks of rivers. Needs fine, loose sand for burrowing.	L No loose sandy habitat for burrowing on site. May use buffer zones which will not be disturbed
American Badger <i>Taxidea taxus</i>	CDFG: Species of Concern	Burrowing animals that feed on ground squirrels, rabbits, gophers and other small animals. Prefer grasslands, agricultural areas.	Found in drier open areas with friable soils	L None seen; no burrows observed with badger characteristics observed. Not expected because of farming activities

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	CNDDDB Rank: G4, S2S3; CDFG: SC	A small fold, or "pocket" in the wing membrane of the free-tailed bat, near its knee, gives this bat its common name. Pocketed free-tailed bats have large ears and long wings, and fly rapidly, generally pursuing insects on the wing. They eat many kinds of insects, but seem to prefer small moths.	It occurs in the arid lowlands of the desert Southwest, and primarily roosts in crevices in rugged cliffs, slopes, and tall rocky outcrops.	L None seen. Not expected; no habitat
Western Mastiff Bat <i>Eumops perotis californicus</i>	CNDDDB Rank: G5T4, S3; CDFG: SC	<i>Eumops perotis</i> can be distinguished from all other North American molossid (free-tail) species based on size. With a forearm of 73-83 mm, it is North America's largest species.	In California, the <i>E. perotis</i> is most frequently encountered in broad open areas. Generally, this bat is found in a variety of habitats, from dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas.	L None seen. Not expected; no habitat
Western Yellow bat <i>Lasiurus xanthinus</i>	CDFG SC:	Consumes small to medium-sized, night flying insects. Yellow color/short ears.	Roosts in leafy vegetation the deserts of the southwestern United States. Roosts among the dead fronds of palm trees and cottonwoods	L Not expected; few palms or cottonwood trees found on site.

ZOOLOGICAL SPECIES	STATUS ¹	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Big free tailed bat <i>Nyctinomops macrotis</i>	CDFG: SC	Body length of 5 1/8 to 5 3/4", with a 17" wingspan, which makes it bigger than other free tailed bats. Fur is reddish brown to dark brown, with hairs white at base. Tail extends past membrane at least an inch. Big ears are joined at base and extend out over face like a hat. Eats mostly moths, some crickets, grasshoppers, ants, various other insects.	Lives in rocky areas of desert scrub or coniferous forests. During day roosts in crevices on cliff faces.	L None seen. Not expected; no habitat.
Colorado Valley woodrat <i>Neotoma albigula venusta</i>	CNDDDB Rank: G5T3T4, S1S2	a small rodent measuring an average of 12.9 inches (32.8 cm) and weighing an average of 188 g for females and 224 g for males	Typically found at an altitude of 0 to 1,966 meters (0 to 6,450 feet). Mesquite-creosotebush	L No desert vegetation on site; may be found in buffer zone which will not be disturbed

Special Status Species that Occur in Imperial County (USFWS)

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Plants				
Peirson's milk-vetch <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	T/E/1B	Silvery, short-lived perennial plant that is somewhat broom like in appearance. A member of the pea and bean family, it can grow to 2.5 feet tall and is notable among milkvetches for its greatly reduced leaves. Peirson's milkvetch produces attractive, small purple flowers , generally in March or April, with 10 to 17 flowers per stalk. It yields inflated fruit similar to yellow-green pea pods with triangular beaks.	Desert dune habitats. In California, known from sand dunes in the Algodones Dunes system of Imperial County. Was known historically from Borrego Valley in San Diego County and at a site southwest of the Salton Sea in Imperial County	L None observed. No dune habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Birds				
California brown pelican <i>Pelecanus occidentalis</i>	E/E/-No longer endangered	Large size and brown color. Adults weigh approximately 9 pounds, and have a wingspan of over 6 feet. They have long, dark bills with big pouches for catching and holding fish. Pelicans breed in nesting colonies on islands without mammal predators. Roosting and loafing sites provide important resting habitat for breeding and non-breeding birds.	Open water, estuaries, beaches; roosts on various structures, such as pilings, boat docks, breakwaters, and mudflats	L None observed. No open water

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	E/-/-	Small; usually a little less than 6 inches in length, including tail. Conspicuous light-colored wingbars. Lacks the conspicuous pale eye-ring of many similar <i>Empidonax</i> species. Overall, body brownish-olive to gray-green above. Throat whitish, breast pale olive, and belly yellowish. Bill relatively large; lower mandible completely pale. The breeding range of <i>extimus</i> includes Arizona and adjacent states.	At low elevations, breeds principally in dense willow, cottonwood, and tamarisk thickets and in woodlands, along streams and rivers. Migrants may occur more widely. Prefers riparian willow/cottonwood but will use salt cedar thickets	L None Observed; no suitable thickets on site
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	E/T/-	A chickenlike marsh bird with a long, slightly drooping bill and an often upturned tail. Light brownish with dark streaks above. Rust-colored breast; bold, vertical gray and white bars on the flanks; white undertail coverts. Very shy.	Lives in freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation. Nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub. Prefers denser cover in winter than in summer.	L None observed or heard; no suitable habitat; not immediately adjacent to Salton Sea.

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C/E/-	Medium-sized cuckoo with gray-brown upperparts and white underparts. Eye-rings are pale yellow. Bill is mostly yellow. Wings are gray-brown with rufous primaries. Tail is long and has white-spotted black edges. Sexes are similar.	Found in forest and open woodlands, especially in areas with dense undergrowth, such as parks, riparian woodlands, and thickets	L None observed; no habitat on site. Thickets are not present.
Bald eagle <i>Haliaeetus leucocephalus</i>	T, PD/E/-	The distinctive white head and tail feathers. Beak and eyes yellow. Bald Eagles are about 29 to 42 inches long, can weigh 7 to 15 pounds, and have a wing span of 6 to 8 feet.	Found on shores, lake margins, and near large rivers. Nests in large trees. Winters at lakes, reservoirs, river systems, and some rangelands and coastal wetlands (breeding range is mainly in mountainous habitats near reservoirs, lakes and rivers, mainly in the northern two-thirds of California)	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Least tern <i>Sterna antillarum</i>	E/E/-	Small tern. During breeding, black cap ending at white forehead. Short white eyestripe. Bill yellow with black tip. Back light gray. Underside white. Black leading edge to wing. In nonbreeding plumage has black eyestripe extending to back of head, white top of head, and black bill. Size: 21-23 cm (8-9 in) Wingspan: 48-53 cm (19-21 in) Weight: 30-45 g (1.06-1.59 ounces)	Shallow areas of estuaries, lagoons, and at the joining points between rivers and estuaries	L None observed; no habitat
Least Bell's Vireo <i>Vireo bellii pusillus</i>	E/E/-	Drab gray to green above and white to yellow below. It has a faint white eyering and two pale wingbars; has pale whitish cheeks and forehead and greenish wings and tail. longer tail and subtle wingbars. The song is a varied sequence of sharp, slurred phrases that typically end with an ascending or descending note.	Formerly a common and widespread summer resident below about 2,000 feet in western Sierra Nevada. Also was common in coastal southern California, from Santa Barbara County south, below about 4,000 feet east of the Sierra Nevada. Prefers thickets of willow, and other low shrubs afford nesting and roosting cover	L None observed; no habitat on site. Thickets are present off site. Minimal construction on site should not disturb any occupants of thickets

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Black rail <i>Laterallus jamaicensis coturniculus</i>	-/T/-	The smallest of all rails, the black rail is slate-colored, with a black bill, red eyes and a white-speckled back. The legs are moderately long and the toes are unwebbed. The sexes are similar.	Most commonly occurs in tidal emergent wetlands dominated by pickleweed or in brackish marshes with bulrushes in association with pickleweed. In freshwater, usually found in bulrushes, cattails, and saltgrass and in immediate vicinity of tidal sloughs. Typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual or daily fluctuations in water levels. Nests are concealed in dense vegetation, often pickleweed, near upper limits of tidal flooding	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Raptors				
Peregrine Falcon <i>Falco peregrinus</i>	D/E/-	Large, powerful falcon; pointed winged falcon silhouette. Strong shallow wingbeats may dive at speeds up to 100 mph. Dark with dark hooded effect. Blue gray below with narrow bars Long-winged, long tailed hawk. Habitually flies low over open fields and marshes watching and listening for prey such as rodents and birds. (I observed Harrier with a white faced ibis as prey). Perches low or on ground. Low slow flight. Nests in reeds. Grey with black wingtips.	Most often found along coastlines or marshy habitats. Nest in cliffs and have been known to nest in tall buildings	L None observed; rare visitors to area outside of the Salton Sea. Few waterfowl for prey or cliffs/tall buildings for nesting
Northern Harrier <i>Circus cyaneus</i>	-/SC/-	Blue gray above pale reddish below; small size. Tip of tail squared off. Nesting occurs in dense tree stands which are cool, moist, well shaded and usually near water. Hunt in openings at the edges of woodlands and also brushy pastures.	Marshes, open fields. Nests in reeds	M Observed. Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Sharp-shinned Hawk <i>Accipiter striatus</i>	-/SC/-	Gray and white with black on shoulders and under bend of wing. Graceful flyer. Adults have bright red eyes. Medium size hawk; about 15 inches long and about 12 ounces. Males pale with with rufous shoulders and thigh feathers. White tail washed with rufous. Wide head wings in shallow v when soaring.	Sharp-shinned hawks may appear in woodland habitats during winter and migration periods and are often common in southern California in the coastal lowlands and desert areas; winters in woodlands and other habitats.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
White tailed Kite <i>Elanus leucurus</i>	/E/		Found in open country; like to perch on treetop. May be seen hovering prior to attack of a rodent.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Ferruginous hawk <i>Buteo regalis</i>	/SC/		Found in arid to semiarid regions, as well as grasslands and agricultural areas in southwestern Canada, western United States, and northern Mexico.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base. No nesting habitat
Mammals				
Bighorn sheep <i>Ovis canadensis</i>	E/E/-	Sheep have short hair which is light gray to grayish brown, except around their stomachs and rump, where it is creamy white. Their tails are about four inches long. Full-grown rams weigh between 180 and 240 pounds,	Desert Bighorn sheep occupy a variety of plant communities, ranging from mixed-grass hillsides, shrubs. Avoids dense vegetation	L None observed; no habitat

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Reptiles and Amphibians				
Desert tortoise <i>Gopherus agassizii</i>	T/T/-	A herbivore that may attain a length of 9 to 15 inches in upper shell (carapace) length. The tortoise is able to live where ground temperature may exceed 140 degrees F because of its ability to dig underground burrows and escape the heat. At least 95% of its life is spent in burrows. Their shells are high-domed, and greenish-tan to dark brown in color. Desert tortoises can grow from 4–6" in height and weigh 8–15 lb (4–7 kg) when fully grown. The front limbs have heavy, claw-like scales and are flattened for digging. Back legs are more stumpy and elephantine	Dry, flat, and gravelly or sandy ground in desert shrub communities where annual and perennial grasses are abundant. Frequent habitats with a mix of shrubs, forbs, and grasses	L None observed; habitat not favorable
Flat-tailed horn lizard <i>Phrynosoma mcallii</i>	PT/-/-	Closely related to Desert horned lizard (scat indistinguishable); only found in Imperial, Riverside County, Ca and Yuma area, Az. Small round lizard with distinguishing round spots on back. Diet of ants; needs sandy soil, shade bushes to survive.	Desert washes/sandy areas with vegetative cover. Diet of ants	L No habitat; none observed

Common Name Scientific Name	Status1 Federal/CDFG /CNPS	DESCRIPTION OF SPECIES	Habitat	Suitability Of Habitat In Survey Area
Fish				
Desert pupfish <i>Cyprinodon macularius</i>	E/E/-	Small, silvery-colored fish with 6 to 9 dark bands on its sides. Grows to a full average length of only 2.5 inches; develop quickly, sometimes reaching full maturity within 2 to 3 months. Although their average life span is 6 to 9 months, some survive more than one year. Pupfish have a short, scaled head with an upturned mouth. The anal and dorsal fins are rounded with the dorsal sometimes exhibiting a dark blotch. The caudal fin is convex at the rear.	Springs, seeps, and slow-moving streams in Salton Sink basin and backwaters and sloughs of the Colorado River	L None observed; no habitat
Razorback Sucker <i>Xyrauchen texanus</i>	Fed/CA: Endangered	One of the largest suckers in North America, can grow to up to 13 pounds and lengths exceeding 3 feet. The razorback is brownish-green with a yellow to white-colored belly and has an abrupt, bony hump on its back shaped like an upside-down boat keel	Colorado River	L None observed; no habitat

USFWS Birds of Conservation Concern

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Nests on tall trees or on cliffs in forested areas near large bodies of water. Winters in coastal areas, along large rivers, and large unfrozen lakes.	Low Not expected. No tall trees; not observed in area	X	X
Swainson's Hawk	<i>Buteo swainsoni</i>	Breeds in open country such as grassland, shrubland, and agricultural areas. Usually migrates in large flocks often with Broad-winged Hawks. Winters in open grasslands and agricultural areas of Southern America.	M Could hunt in area; some habitat will be removed but sufficient in vicinity will remain to support prey base		X
Peregrine Falcon	<i>Falco peregrinus</i>	Inhabits open wetlands near cliffs for nesting. Also uses large cities and nests on buildings.	Low No open wetlands or nesting area.	X	X
Black Rail	<i>Laterallus jamaicensis</i>	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Low No salt or freshwater marshes; no vegetation	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Snowy Plover	<i>Chardrius alexandrinus</i>	Barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds.	Low No habitat; not observed	X	X
Mountain Plover	<i>Charadrius montanus</i>	Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed fields, and sandy deserts.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Black Oystercatcher	<i>Haematopus bachmani</i>	Rocky seacoasts and islands, less commonly sandy beaches.	Low No habitat; not observed	X	X
Solitary Sandpiper	<i>Tringa solitaria</i>	Breeds in taiga, nesting in trees in deserted songbird nests. In migration and winter found along freshwater ponds, stream edges, temporary ponds, flooded ditches and fields, more commonly in wooded regions, less frequently on mudflats and open marshes.	Low No habitat; not observed		X
Lesser Yellowlegs	<i>Tringa flavipes</i>	Breeds in open boreal forest with scattered shallow wetlands. Winters in wide variety of shallow fresh and saltwater habitats.	Low No habitat; not observed		X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Upland Sandpiper	<i>Bartramia longicauda</i>	Native prairie and other dry grasslands, including airports and some croplands.	Low No habitat; not observed		X
Whimbrel	<i>Numenius phaeopus</i>	Breeds in various tundra habitat, from wet lowlands to dry heath. In migration, frequents various coastal and inland habitats, including fields and beaches. Winters in tidal flats and shorelines, occasionally visiting inland habitats.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Long-billed Curlew	<i>Numenius americanus</i>	Nests in wet and dry uplands. In migration and winter found on wetlands, grain fields, lake and river shores, marshes, and beaches.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Breeds in muskegs of taiga to timberline, and barely into subarctic tundra. Winters on coastal mud flats and brackish lagoons. In migration prefers saltwater tidal flats, beaches, and salt marshes. Also found in freshwater mud flats and flooded agricultural fields.	High Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support prey base	X	X
Aleutian Tern	<i>Sterna aleutica</i>	Nest on flat vegetated islands on or near the coast. Vegetation includes dwarf-shrub tundra, grass and sedgemoths, and coastal marsh. Migration and winter habitat not known, probably pelagic.	Low No habitat; not observed		X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Least Tern	<i>Sterna antillarum</i>	Seacoasts, beaches, bays, estuaries, lagoons, lakes and rivers, breeding on sandy or gravelly beaches and banks of rivers or lakes, rarely on flat rooftops of buildings.	Low No habitat; not observed		X
Gull-billed Turn	<i>Sterna nilotica</i>	Breeds on gravelly or sandy beaches. Inters in salt marshes, estuaries, lagoons and plowed fields, along rivers, around lakes and in freshwater marshes.	Low No habitat; not observed		X
Black Skimmer	<i>Rynchops niger</i>	Breeds in large colonies on sandbars and beaches. Forages in shallow bays, inlets, and estuaries.	Low No habitat; not observed	X	X
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Open woodlands with clearings, orchards, dense scrubby vegetation, mainly cottonwood, willow, and alder, often along water.	Low No habitat; not observed	X	X
Black Swift	<i>Cypseloides niger</i>	Nests on steep ledges on cliffs or canyons. Migrates and winters over coastal lowlands.	Low No habitat; no swifts observed in area	X	X
Costa's Hummingbird	<i>Calypte costae</i>	Primarily low deserts and arid brushy foothills, but also chaparral and coastal sage scrub closer to the coast. Often visits ornamental plantings and feeders in desert communities. In migration and winter frequents a wider variety of habitats, occasionally ranging into pine-oak woodlands in adjacent mountains.	Low No habitat; not observed – no feeders or nectar sources in area	X	X
Calliope Hummingbird	<i>Stellula calliope</i>	Open montane forest, mountain meadows, and thickets of willow and alder. In migration and winter also in chaparral, oak and pine-oak woodlands, deserts, and gardens.	Low No habitat; not observed	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Rufous Hummingbird	<i>Selasphorus rufus</i>	Breeds in a variety of forested habitats where flowers are found. Frequents montane meadows and just about anywhere else with flowers or feeders during migration. Winters primarily in pine and pine-oak forests in Mexico, but most birds wintering farther north are attracted either to flowers or feeders in gardens.	Low No habitat; not observed – no feeders or nectar in area.		X
Allen's Hummingbird	<i>Selasphorus sasin</i>	Breeds in coastal sage scrub, chaparral, and riparian corridors within coastal forests. In Mexico winters in forest edge and scrub clearings with flowers. The resident population on the mainland of southern California is largely restricted to suburban neighborhoods where feeders and flowers are plentiful.	Low No habitat; not observed. No feeders or nectar in area	X	X
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Breeds in open arid conifer, oak, and riparian woodlands: rare in coastal areas. Winters in breeding habitat, and oak savannas, orchards, and even in towns.	Low No habitat; not observed	X	X
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Montane and northern coniferous forests, at forest edges and openings such as meadows, and at ponds and bogs. Winters at forest edges and clearings where tall trees or snags are present.	Low No habitat; not observed	X	X
Willow Flycatcher	<i>Empidonax trailii</i>	Breeds in moist, shrubby areas, often with standing or running water. Winters in shrubby clearings and early successional growth.	Low No habitat; not observed	X	X
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Open or brushy areas.	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Bell's Vireo	<i>Vireo bellii</i>	Dense, low, shrubby vegetation generally early successional stages in riparian areas, brushy fields, young second-growth forest or woodland, scrub oak, coastal chaparral, and mesquite brushlands, often near water in arid regions.	Low Scant shrubby vegetation on site	X	X
Gray Vireo	<i>Vireo vicinior</i>	Found in desert scrub, mixed oak-juniper and pinyon-juniper woodlands, dry chaparral, and thorn scrub in hot, arid mountains and high-plains.	Low No habitat; not observed	X	X
LeConte's Thrasher	<i>Toxostoma lecontei</i>	Desert scrub, mesquite, tall riparian brush and, locally, chaparral.	Low No habitat; not observed	X	X
Yellow Warbler	<i>Dendroica petechia</i>	Breeds in wet, deciduous thickets, especially in willows and alder. Also in shrubby areas, old fields, gardens and orchards. In southern Florida and farther south, found in mangroves.	Medium Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	
Common Yellowthroat	<i>Geothlypis trichas</i>	Thick vegetation from wetlands to prairies to pine forests. Frequently near water.	Low No habitat; not observed	X	
Rufous-winged Sparrow	<i>Aimophila carpalis</i>	Found in flat areas of tall desert grass mixed with brush and cactus, and thorn scrub.	Low No habitat; not observed		X
Brewer's Sparrow	<i>Euphagus cyanocephalus</i>	Found in a variety of habitats, but prefers open, human-modified areas, such as farmland, fields, residential lawns, and urban parks.	Medium Not observed. Could forage in area; some habitat will be removed but sufficient in vicinity will remain to support foraging	X	X
Black-chinned Sparrow	<i>Spizella atrogularis</i>	Arid brush land, commonly in tall and fairly dense sagebrush, and dry chaparral. Often in rocky, rugged country from sea level to around 8,900 ft (2700m).	Low No habitat; not observed	X	X

Common Name	Species Name	Habitat	Potential Onsite	Region 8 Imperial County	National Rating
Tricolored Blackbird	<i>Agelaius tricolor</i>	Breeds in marsh vegetation, particularly cattails, near grain fields, riparian scrubland, and forests, but always near water. Dairies and feedlots also commonly used for foraging. Urban and suburban areas occasionally utilized, particularly park lawns. Cultivated lands also suitable for foraging. Large night-time roosts form during nonbreeding season in cattail marshes near foraging grounds.	Low Not recorded in area	X	X
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	Prefers dry interior foothills, mountain valleys, open woodlands, chaparral, and weedy fields. Often found near isolated water sources such as springs and cattle troughs.	Low No habitat; not observed	X	X
CNPS Species or Community Level					
G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.					
G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.					
G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.					
G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.					
G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.					
State Ranking					
The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.			The R-E-D Code contains information on Rarity, Endangerment, and Distribution, ranked as a 1, 2, or 3 for each value (as below). This code was originally known as the R-E-V-D Code (through the 3rd edition 1980), and the V (Vigor) was removed in the 4th edition (1984).		
S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres			R - Rarity		
S1.1 = very threatened			1 – Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time		

S1.2 = threatened	2 – Distributed in a limited number of occurrences, occasionally more if each occurrence is small
S1.3 = no current threats known	3 – Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres	E - Endangerment
S2.1 = very threatened	1 – Not very endangered in California
S2.2 = threatened	2 – Fairly endangered in California
S2.3 = no current threats known	3 – Seriously endangered in California
S3 = 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres	D - Distribution
S3.1 = very threatened	1 – More or less widespread outside California
S3.2 = threatened	2 – Rare outside California
S3.3 = no current threats known	3 – Endemic to California
S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat. NO THREAT RANK.	
S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.	
Sources: CDFW/CNDDDB 2013, California Wildlife 2010; CNPS 2013; USFWS, 2010	
State/CDFG:	¹Status: Federal:
E = Listed as an endangered species; or previously known as “rare, fully protected”	E = Listed as an endangered species
T = Listed as a threatened species	T = Listed as a threatened species
SC = species of special concern (designation intended for use as a management tool and for information; species of special concern have no legal status (www.dfg.ca.gov/wildlife/species/ssc/birds.html))	C = Candidate for listing
CNPS (California Native Plant Society):	D = Delisted
1B = Rare, threatened, or endangered in California or elsewhere	PD = Proposed for delisting/PT = Proposed for threatened status
2= Plants rare, threatened,or endangered in Ca, but more common elsewhere	
3=Plants about which more information is needed	
Habitat Suitability Codes: H = Habitat is of high suitability for this species M = Habitat is of moderate suitability for this species L = Habitat is of low suitability for this species	

APPENDIX B PHOTOGRAPHS

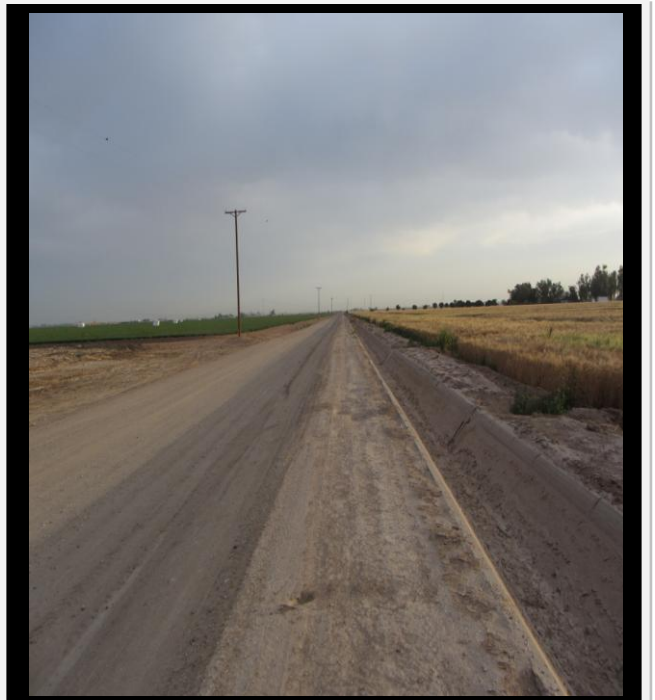
PHOTOGRAPHS



1. Site on right, looking north; Ferrell Road on left and Wisteria Canal on right



2. Active BUOW burrow offsite along Wisteria Canal (IIDROW) adjacent to site



3. Looking north on Corda Road; site to right; field ditch and wheat crop on site



4. Site north of Kubler Road planted in alfalfa



5. New River river bottom to north of site; roadrunner offsite



6. Active BUOW burrow on site next to field ditch; alfalfa in background

APPENDIX C
SPECIES FOUND ON/NEAR
SITE

WILDLIFE SPECIES OBSERVED ON OR NEAR SITE*	
Common name	Scientific name
Birds	
American kestrel	<i>Falco sparverius</i>
Burrowing owl	<i>Athene cunicularia</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
Grackle	<i>Quiscalus mexicanus</i>
House sparrow	<i>Passer domesticus</i>
Mourning Dove	<i>Zenaida macroura</i>
Pigeon	<i>Columba livia</i>
Red winged Blackbird	<i>Agelaius phoeniceus</i>
Roadrunner	<i>Geococcyx californianus</i>
Quail	<i>Callipepla gambelii</i>
White winged dove	<i>Zenaida asiatica</i>

Mammals	
Canine/feline tracks/scat	<i>various</i>
Cottontail	<i>Sylvilagus audubonii</i>
Gopher mounds	<i>Thomomys sp.</i>
Raccoon tracks	<i>Procyon lotor</i>
Round tailed ground squirrel*	<i>Xerospermophilus tereticaudus</i>
Insects	
Alfalfa butterfly	<i>Colias eurytheme</i>
Ants	<i>various</i>
Bees/Leafcutter bee boxes	<i>Aphis sp./ Megachile rotundata</i>
Cabbage butterfly	<i>Pieris rapae</i>
Carpenter bee	<i>Xylocopa spp.</i>
Crickets	<i>Gryllidae</i>
Gnats	<i>various</i>
Grasshopper	<i>various</i>
House fly	<i>Musca domestica</i>
Ladybug	<i>Hippodamia spp.</i>
Mosquito	<i>Culiseta longiareolata</i>
Velvet ant	Mutillidae (family)

BOTANICAL SPECIES OBSERVED ON OR NEAR SITE		
Common name	Scientific name	CNPS Classification
Alkali mallow	<i>Malvella leprosa</i>	C ^o
Alkali weed ^Δ	<i>Cressa tryillensis</i>	None
Bermuda	<i>Cynodon dactylon</i>	None
Creosote ^Δ	<i>Larrea tridentata</i>	None
Desert mistletoe ^Δ	<i>Phoradendron californicum</i>	None
Goosefoot	<i>Chenopodium sp.</i>	None
Iodine bush ^Δ	<i>Allenrolfea occidentalis</i>	None
Malva	<i>Malva spp.</i>	None
Mesquite* ^Δ	<i>Prosopis glandulosa</i>	None
Mustards	<i>various</i>	None
Nutgrass	<i>Cyperus spp.</i>	None
Quail bush	<i>Atriplex lentiformis</i>	None
Russian thistle	<i>Salsola tragus</i>	C ^o
Saltbush ^Δ	<i>Atriplex sp.</i>	None
Saltcedar*	<i>Tamarix sp.</i>	Invasive (USDA)
Silver sheath knotweed	<i>Polygonum argyrocoleon</i>	None
Sowthistle	<i>Sonchus oleraceus</i>	None
Spurge	<i>Euphorbia spp.</i>	None
Wild oats	<i>Avena spp.</i>	None
White horse nettle	<i>Solanum eleagnifolium</i>	

* found in drains/canals (IID right of way) only

◇ found on site only

Δ observed offsite in New River bottom

^oCDFA formal definition - Action to retard spread outside of nurseries at the discretion of the commissioner; reject only when found in a cropseed for planting or at the discretion of the commissioner

APPENDIX D

QUALIFICATIONS

MARIE S. BARRETT

2035 Forrester Road, El Centro, CA 92243 (760) 352 4159 mariebarrett@roadrunner.com

LICENSES/CERTIFICATES

Flat Tailed Horn Lizard Surveyor CDFG/BLM
Burrowing Owl Surveyor (CDFG/USFWS)
USFW Desert Tortoise Egg Handling
Desert Tortoise Council Survey Techniques Workshop Certificate
BCI Bat Conservation and Management Workshop (Acoustic) Certificate
Southwestern Willow Flycatcher Workshop Kernville, CA 2010
California Pest Control Advisor #70373 California Pest Control Operator #103123

CAREER HISTORY

Barrett's Biological Surveys, El Centro, California *BIOLOGIST* 3/95 -present

Helped established protocol and perform Vegetative Baseline Studies and Biological Surveys for Mining Reclamation Plans in Imperial County. Have performed numerous (over 20,000 acres) surveys involving varied wildlife including burrowing owl and plant species and writing reports and biological assessments. Certified to perform Flat Tailed Horned Lizard Surveys; completed Desert Tortoise workshops; approved to handle desert tortoise (American Girl Mine/BLM project, 1/2013). Work closely with governmental agencies such as Bureau of Land Management, State Office of Mining Reclamation, California Department of Fish and Game. Written over ten Environmental Assessments for BLM, El Centro office. Over 150 days spent in field monitoring/surveying for FTHL; 92 days in field monitoring/surveying for desert tortoise and 21,000 acres surveyed for burrowing owl; 2 IID Burrowing owl surveys with AECOM (2011/12- 226 hrs). Wrote Imperial Irrigation District Artificial Burrow Installation Manual (2009). Over 25 active burrowing owl burrows passively relocated and 50 artificial burrows installed. Volunteered for desert tortoise work (20 hrs) with Dr. Jeff Lovich.

Blythe Water System: desert tortoise monitoring approved by USFWS, Carlsbad office

John Deer MetTower Installation: desert tortoise survey and monitoring approved by BLM, El Centro office

Black Mt. MetTower Installation: desert tortoise survey and monitoring approved by BLM, El Centro office

Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours) Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours) All American Aggregates, FTHL surveys, Boyd Road Mine Environmental Assessment, BLM El Centro, 2007. (9.5 hours) All American Aggregates, FTHL surveys, Wheeler Road Mine Environmental Assessment, BLM, El Centro, 2006. (8.5 hours) ;ValRock, FTHL surveys, Ocotillo ByPass Road Environmental Assessment, County of Imperial/BLM, El Centro, 2004. (7 hours)

Citizens' Congressional Task Force on the New River, Brawley, Ca *OUTREACH PROGRAM COORDINATOR* 1/00 - present

Responsible for coordinating activities relating to student and public outreach education to promote the water quality opportunities of wetlands ponding systems on the New River.

Imperial Valley College, Imperial, California *ENVIRONMENTAL MANAGEMENT PROJECT COORDINATOR* 9/95-12/99

Responsible for establishing an Environmental Technology curriculum, presenting public forums, short courses and certificate courses in hazardous materials and safety areas. In conjunction with Division Chairman, established a budget for 96-98 program and obtained funding of \$131,000 based on 95-96 program performance. Established short courses that trained over 700 people in hazardous materials safety programs. Compiled a survey of employers, which provided direction for the program.

VOLUNTEER ORGANIZATIONS

CALIFORNIA NATIVE PLANT SOCIETY: Imperial Valley Coordinator, 2006-2013.

SALTON SEA INTERNATIONAL BIRD FESTIVAL: Coordinator: 2001-2010. Organize bird festival in the Imperial Valley that attracts over 300 birders.

COLORADO RIVER CITIZENS FORUM : Co-Chair 2004-2005. Preside over meetings that disseminate information regarding issues and projects along the Colorado River.

COLORADO RIVER WATER QUALITY CONTROL BOARD: Board member Dec 05-Sept 06.

CALIFORNIA WOMEN FOR AGRICULTURE. President 91-93; Co-President: 93-00. Raised over \$15,000 for video promoting agriculture in Imperial Valley and a gallery in the Pioneer Museum. Compiled and published cookbook and organized two community dinner/dances. *IMPERIAL COUNTY 4-H*. Imperial 4-H Community Leader: 95-96. Project Leader: 89-95.

EDUCATION

University of Arizona, Tucson, Arizona

Masters of Science Degree – AGRICULTURAL EDUCATION

Thesis: Survey and training protocol for documenting burrowing owls and habitat in Imperial County, California

California State Polytechnic College, Kellogg-Voorhis Campus, Pomona, California

Bachelor of Science Degree - AGRICULTURAL BIOLOGY

Imperial Valley College, Imperial, California

Associate of Science Degree. AGRICULTURE

COURSES/SEMINARS/WORKSHOPS

Bat Conservation Workshop, Portal, AZ, 2008, 2009, Southwestern willow Flycatcher Workshop, 2010

GLENNA MARIE BARRETT

PO Box 636 Imperial, California 92251 (760) 425-0688 glenna@glennabarrett.com

PROFILE

Organized and focused individual, adept at implementing multifaceted projects while working alone or as an integral part of a team. Skilled in client/employee communications, report preparation, program analyses and development. Cost conscious, safety oriented and empathetic. A strong communicator with excellent interpersonal skills, which allows development of rapport with individuals on all levels. A sound professional attitude, strong work ethic and pride in personal performance.

WORK EXPERIENCE

Principal Business Consultant, Barrett Enterprises. Imperial, CA December 2001-currently.

Compile information and complete local, state and federal government forms; such as conditional use permits, reclamation plan applications, zone changes, CEQA, Environmental Evaluation committee responses, and 501 (c)(3) tax exemption applications. Act as liaison between local businesses and local, state, and federal government agencies. Certified to survey for Flat-Tailed Horned Lizards in California and Arizona. Certified to survey for Burrowing Owls and the Desert Tortoise.

Extensive knowledge in southwestern United States, non-migratory and migratory avian biology and ecology. Strong knowledge of common Flora and Fauna communities associated with Southern California and surrounding environs. CEQA, NEPA, 401/404, 1600/1601 permit compliance, California Endangered Species Act (CESA) and Federal Endangered Species Act (ESA) knowledge gained through work experience. I have excellent analytical skills, multi-tasking and writing abilities. My past work experience has provided me with many years of hands on experience working with and managing others to find practical solutions to solve problems and achieve common goals. Special Status/listed species observed/identified, surveyed, monitored, trapped and/or relocated: Mohave desert tortoise, Coachella valley milkvetch, American Badger, Desert kit fox, Mountain lion, Coachella valley fringe toed lizard, Mohave fringe toed lizard, Stephen's kangaroo rat, Mohave ground squirrel, Coast horned lizard, Flat-tailed horned lizard, Orange-throated whiptail, burrowing owl.

Project work has been successfully completed for the following agencies and businesses:

Agencies: Bureau of Land Management (BLM) El Centro; Imperial Irrigation District (IID); County of Imperial, Caltrans. Businesses: Superior Redimix, ValRock and Gibson Schaeffer, All American Aggregates, RECON.

Ms. Barrett has done the field work and contributed to the required reports for the following projects:

Burrtec: Team leader for eight people to complete a FTHL clearance site sweep for 320 acres.

Applied Biological Consulting: Pre-construction surveying and construction monitoring for DPV2 a transmission line project for SCE. Blythe, CA to Menifee, CA (November 2011 to May 31, 2013)

LSI: Construction monitoring for UNEV underground pipeline project Mesquite, Nevada (253 hours)

Conservation Science: Presence/ Absence survey for Desert Tortoise Mojave, CA (92 hours)

ICF: Construction monitoring for TRTP Tehachapi Power line project Palmdale, CA (85 hours)

AECOM: Burrowing Owl surveys along IID right-of-ways Imperial County, CA (96.75 hours)

RECON: Bird counts Imperial County, CA (68 hours)

The Holt Group: Blythe, CA Desert Tortoise monitoring (170 hours)

Caltech: Construction monitoring for FTHL and Desert Tortoise Imperial County, CA (50 hours)

CSolar solar project: Construction monitoring for FTHL and Burrowing owl Imperial County, CA (18 hours)

Tessera Imperial Valley Solar Project Water Quality Monitoring: Construction monitoring for FTHL and Burrowing owl Imperial County, CA (33.5 hours)

Imperial Irrigation District Midway to Hudson Transmission Line: Construction monitoring for burrowing owl Imperial County, CA (5 months)

Burrtec Landfill grading: Construction clearance and monitoring for FTHL Imperial County, CA (15.5 hours)

MET Tower construction: Construction Monitoring 2 MET Towers Ocotillo, CA (86 hours)

Mesa Verde Water System Improvement Project: Construction monitoring for FTHL and burrowing owl Riverside County, CA (144 hours)
RES: Desert Tortoise monitoring project Black Mountain, CA (101 hours)
Superior Redi Mix: FTHL surveys, Oat Pit Environmental Assessment for BLM, El Centro, 2009. (5 hours)
Imperial County Department of Public Works, FTHL surveys for Coyote Mine Environmental Assessment, BLM, El Centro, 2008. (10 hours)
All American Aggregates, FTHL surveys, Boyd Road Mine Environmental Assessment, BLM El Centro, 2007. (9.5 hours)
All American Aggregates, FTHL surveys, Wheeler Road Mine Environmental Assessment, BLM, El Centro, 2006. (8.5 hours)
ValRock, FTHL surveys, Ocotillo ByPass Road Environmental Assessment, County of Imperial/BLM, El Centro, 2004. (7 hours)
RFB Consulting, Burrowing Owl and Biological/Botanical Resource Survey, Imperial County Road Resurfacing 17 miles. (9 hours)
Burrowing Owl and Biological/Botanical Resource Surveys, County of Imperial and Caltrans, 2010. (15 hours)
RECON: Burrowing Owl/FTHL Surveys, Plaster City, CA, Imperial County. (242 hours)

Executive Assistant, BMLA, Inc. Assist President with scheduling, proposal writing, marketing, OSHA regulations, profitability projections, scheduling, tracking billable hours, and coordinating landscaping jobs in the field with onsite crews. Run multiple meetings (Project Managers, Executive, Quarterly Goal, Work in Progress/Finance, and Team meetings), created agendas, prepared appropriate information and recorded minutes. Assist CFO with billing, billing recovery, profitability, staff net utilization, projected monthly revenue and aging reports in Excel as well as the accounting program Deltek. Created a more efficient process for starting project tracking and writing proposals in Word as well as the marketing program Vision. Track Requests for Clarification and Submittals on specific projects by using a log as well as communicating with consultants and construction administration firm to make sure documents were answered and received in a timely fashion. Corona, CA September 2006 - August 2008

Business Development Manager, BJ Engineering & Surveying, Inc. Attend Environmental Evaluation Committee meetings and Planning Commission meetings on behalf of clients. Complete applications and submit to according agencies. Draft proposals to prospective clients as well as respond to requests for qualifications and bids. Negotiated with respective city, county, school, IID, etc. officials on behalf of client. Update clients on project status. Completed various city, county, and state applications applicable to projects. Projects consisted of lot mergers, lot splits, parcel maps, ALTA surveys, property surveys, minor and major subdivisions, etc. Contacted various subcontractors for reports such as biological, traffic, archeological, endangered species, possible tribal interest, etc.
El Centro, CA April 2005- April 2006.

EDUCATION AND TRAINING

Received **Bachelor of Science in Business** with a focus on Management, along with Economics and Leadership minors, December 2000. Humboldt State University, Arcata, CA. Courses included:

Legal Environment of Business	Computer Information Systems
Accounting	Managerial Economics
International Business	Theory of Leadership
Business Communication	Finance
Quantitative Methods	

Certifications: FTHL Workshop, 2008 El Centro BLM office. CDFG Certificate; USFW Desert Tortoise Egg Handling Desert Tortoise Council Survey Techniques Workshop Certificate, 2008 and 2010. Anza Borrego State Park Wildflower Identification Workshop, 2010. Southwest Willow Flycatcher Workshop Kernville, CA 2010. SCE TRTP Construction Monitoring Training Class and WEAP Redlands, CA 2011. DPV2 Construction Monitoring Training Class and WEAP Santa Ana, CA 2011. Helicopter/ flight trained on DPV2. Certified to handle/ move venomous snakes on DPV2.

Danielle Figueroa

1120 Ocotillo Drive El Centro, CA
danifigueroa17@hotmail.com (760) 791-9509

SUMMARY OF QUALIFICATIONS:

- Ability to work well with others and with a variety of different personalities.
- Compassionate and dedicated to helping others.
- Dependable and reliable.

SKILLS AND ABILITIES:

- Over three years of experience in biological surveying and construction monitor for Burrowing Owls, Flat tail horned lizard, MBTA species, and general biological surveys.

EXPERIENCE

- Burrtec FTHL Clearance Survey. Completed a FTHL clearance survey of 320 acres in Imperial County.
- Worthington Road Bridge MBTA Construction Monitoring- Monitored construction activities to protect swallows in Imperial County. June-2013.
- Carter Road MBTA Construction Monitoring- Monitored construction activities to protect swallows in Imperial County. May- 2013.
- 8Minute Energy Iris Cluster- Biological technical survey to identify zoological and botanical species. April-July 2013
- 8Minute Energy Mount Signal/ Calexico Solar Farm Cluster- Field assistant for surveys for BUOW and MBTA species. Dec 2010- Jan 2011

EDUCATION

- California Nurses Educational Institute – Palm Springs, CA Certified Nursing Assistant 4/2012 – 6/2012
- Imperial Valley College – El Centro, CA 8/2012 – 3/2013

FIGURE 1
REGIONAL LOCATION
PROJECT VICINITY MAP

PROJECT STATEWIDE LOCATION



PROJECT REGIONAL LOCATION



FIGURE 2
BIORESOURCE MAP

FERRELL SITE BIOLOGICAL RESOURCES MAP



LEGEND: **ACTIVE BURRROW (1,12,15,16,18,19); OCCUPIED BURROW WITH 1 BUOW (2,4,13,20); OCCUPIED BURROW WITH 2 BUOW (5,10,11,14,17,21,22) INACTIVE BURROWS (3,6,7,8,9); OCCUPIED BURROW 2 ADULTS, 1 JUVENILE (5,21)**

FIGURE 1
REGIONAL LOCATION
PROJECT VICINITY MAP

PROJECT STATEWIDE LOCATION



PROJECT REGIONAL LOCATION

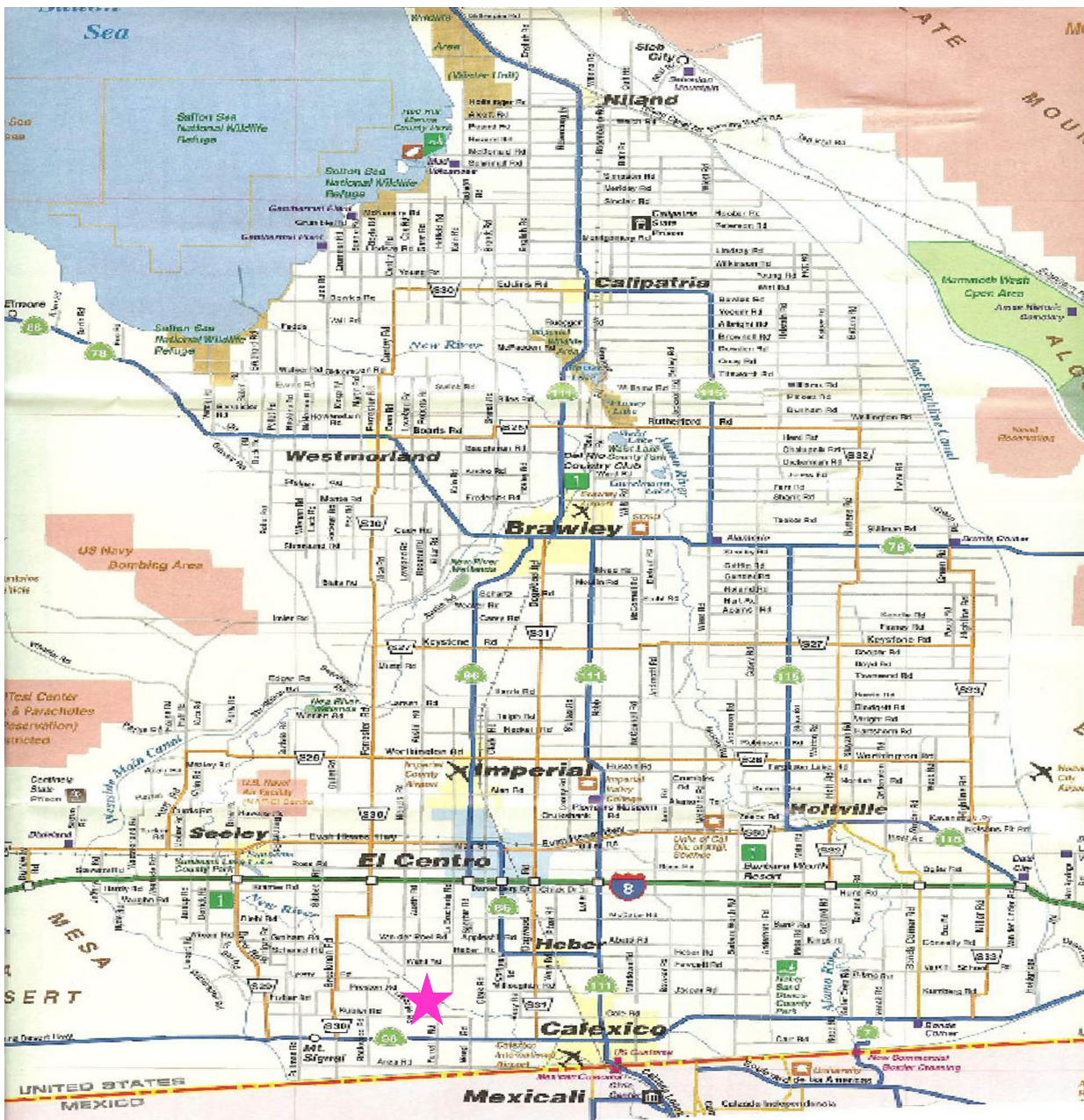


FIGURE 2
BIORESOURCE MAPS

FERRELL SITE BIOLOGICAL RESOURCES MAP



LEGEND: ACTIVE BURROW (1,12,15,16,18,19); OCCUPIED BURROW WITH 1 BUOW (2,4,13,20); OCCUPIED BURROW WITH 2 BUOW (5,10,11,14,17,21,22) INACTIVE BURROWS (3,6,7,8,9); OCCUPIED BURROW 2 ADULTS, 1 JUVENILE (5,21)

IRIS SITE BIOLOGICAL RESOURCES MAP



LEGEND: ACTIVE BURROW (8,9,16); OCCUPIED BURROW WITH 1 BUOW (6,17); OCCUPIED BURROW WITH 2 BUOW (3,5,14,15) INACTIVE BURROWS (1,7,10,12,13) OCCUPIED BURROW WITH ADULT/JUVENILE

LYONS SITE BIOLOGICAL RESOURCES MAP



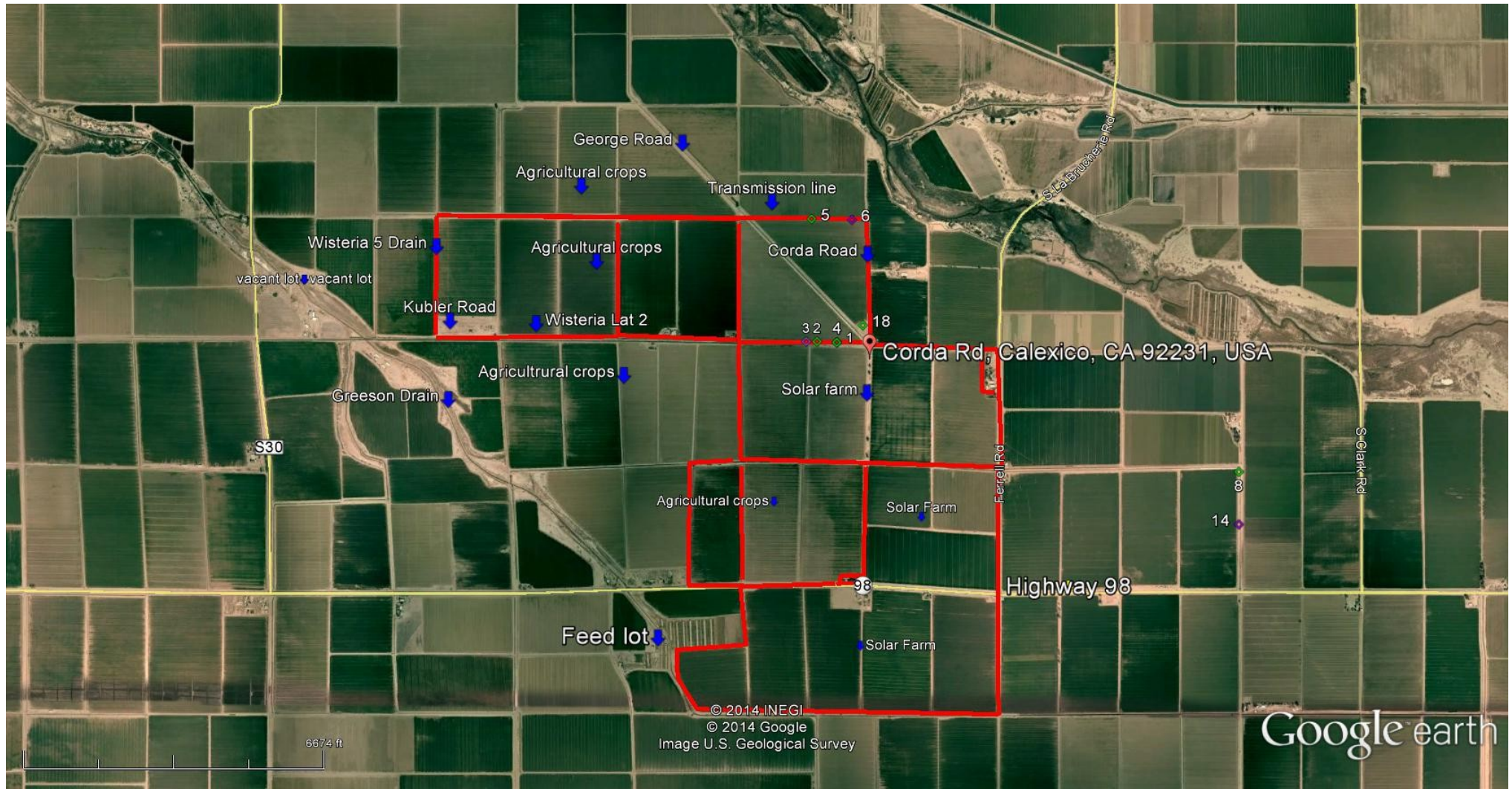
LEGEND: ACTIVE BURROW (1,2); OCCUPIED BURROW WITH 1 BUOW (5); INACTIVE BURROWS (4,6,7); OTHER BIOLOGICAL RESOURCES (3)

ROCKWOOD BIOLOGICAL RESOURCES MAP



LEGEND: ACTIVE BURROW (7); OCCUPIED BURROW WITH 1 BUOW (12);
 OCCUPIED BURROW 2 BUOW (4,8,13,15) INACTIVE BURROWS (1,2,14); OTHER BIO-
 LOGICAL RESOURCES (3,5,6,9,10,11)

TRANSMISSION LINE BIOLOGICAL RESOURCES MAP



LEGEND: ACTIVE BURROWS (1,2,4,5,18); OCCUPIED BURROW WITH 2 ADULTS (3,6)