



**Wister Solar Project Imperial
County, California**

Biological Resources Technical Report

March 20, 2019

Rev. January 27, 2020

Prepared for:


Orni 33 LLC.

Prepared by:

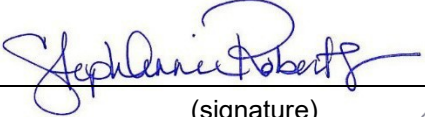
Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

This document entitled Wister Solar Project Biological Resources Technical Report was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Orni 33 LLC. (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by  _____
(signature)

Rocky Brown, Associate Biologist

Reviewed by  _____
(signature)

Stephannie Roberts, Senior Project Manager

Approved by  _____
(signature)

Jared Varonin, Principal Biologist

Table of Contents

ABBREVIATIONS	III
1.0 INTRODUCTION.....	1.1
1.1 PURPOSE OF THE REPORT	1.1
1.2 PROJECT LOCATION	1.1
1.3 PROJECT DESCRIPTION	1.1
2.0 METHODOLOGIES.....	2.1
2.1 LITERATURE REVIEW	2.1
2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENTS	2.1
2.2.1 Site Reconnaissance and Wildlife Surveys.....	2.1
2.2.2 VEGETATION MAPPING.....	2.2
2.2.3 JURISDICTIONAL DELINEATION	2.3
3.0 REGULATORY FRAMEWORK.....	3.1
3.1 FEDERAL REGULATIONS	3.1
3.1.1 Federal Endangered Species Act.....	3.1
3.1.2 Migratory Bird Treaty Act.....	3.1
3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)	3.2
3.1.4 Federally Regulated Habitats	3.2
3.1.5 National Environmental Policy Act.....	3.3
3.2 STATE REGULATIONS	3.3
3.2.1 California Environmental Quality Act	3.3
3.2.2 California Endangered Species Act.....	3.3
3.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913).....	3.4
3.2.4 Section 3503 & 3503.5 of the Fish and Game Code.....	3.4
3.2.5 Porter-Cologne Water Quality Control Act	3.4
3.2.6 State-Regulated Habitats	3.4
3.3 LOCAL REGULATIONS	3.5
3.3.1 Imperial County General Plan – Conservation and Open Space Element.....	3.5
3.4 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS	3.7
3.4.1 California Native Plant Society Rare Plant Program	3.7
4.0 EXISTING CONDITIONS	4.1
4.1 SETTING.....	4.1
4.2 VEGETATION AND LAND COVERS	4.1
4.2.1 Vegetation Communities and Land Cover Types.....	4.2
4.2.2 Common Plant Species Observed.....	4.3
4.3 COMMON WILDLIFE	4.4
4.3.1 Invertebrates and Gastropods	4.4
4.3.2 Fish.....	4.5
4.3.3 Amphibians	4.5
4.3.4 Reptiles	4.5
4.3.5 Birds.....	4.6



4.3.6 Mammals4.6

4.4 JURISDICTIONAL WATERS/WETLANDS4.7

4.5 SOILS.....4.7

5.0 SPECIAL STATUS BIOLOGICAL RESOURCES5.1

5.1 SPECIAL STATUS NATURAL COMMUNITIES.....5.1

5.2 DESIGNATED CRITICAL HABITAT5.1

5.3 SPECIAL STATUS PLANTS5.1

5.4 SPECIAL STATUS WILDLIFE5.3

5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES5.13

5.5.1 Wildlife Movement in the Project Area.....5.14

6.0 REFERENCES.....6.1

LIST OF TABLES

Table 1 Vegetation Communities and Land Cover Types Occurring within the BSA and Impacts.....4.3

Table 2 Plant Species Observed within the BSA4.3

Table 3 Wildlife Species Observed in the BSA4.7

Table 4 Jurisdictional Features Occurring within the BSA and Impacts4.7

Table 5 Historic Soils Occurring within the BSA4.8

Table 6 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA5.2

Table 7 Known and Potential Occurrences of Special-Status Wildlife within the BSA5.5

LIST OF APPENDICES

APPENDIX A FIGURES.....A.1

APPENDIX B FLAT TAILED HORNED LIZARD SURVEY RESULTS.....B.1

APPENDIX C PHOTOGRAPHIC LOGC.1



Abbreviations

BSA	Biological Study Area
CCH	Consortium of California Herbaria
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
GPS	Global Positioning System
IID	Imperial Irrigation District
km/hr	Kilometers per hour
MW	Megawatt
MBTA	Migratory Bird Treaty Act
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
PPA	Power Purchase Agreement
Project	Wister Solar Project
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirement



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Introduction
January 28, 2020

1.0 INTRODUCTION

This report is intended to document the biological resources that are associated with the Wister Solar Project (Project) in Imperial County, California (refer to Appendix A, Figure 1). The surveys and discussions presented in this report were conducted/prepared to support regulatory agency permitting and California Environmental Quality Act (CEQA) documentation. Surveys were conducted within the approximately 123-acre Project site and a 300-ft buffer (where accessible), defined as the Biological Study Area (BSA) (refer to Appendix A, Figure 1).

1.1 PURPOSE OF THE REPORT

The goal of this report is to document the current environmental conditions that occur within the BSA. This document will provide an emphasis on special-status plant and wildlife species, wildlife corridors, and special-status/sensitive natural communities, and in addition, evaluate the potential for these species to occur within the BSA.

1.2 PROJECT LOCATION

The Project is situated on Assessor's Parcel No. 003-240-001 within northern Imperial County, California, approximately two to three miles northeast of the community of Niland, approximately five miles east of the Salton Sea, and 0.5 miles southwest of the Coachella Canal (Appendix A, Figure 1). It is situated in Township 10 South, Range 14 East, Section 27 of the U.S. Geological Survey (USGS) Wister 7.5-minute topographic quadrangle. The BSA consists of a relatively undeveloped, square parcel of land with its southwest corner near the intersection of Weist and Wilkins Roads (Appendix A, Figure 2). The unpaved Gas Line Road runs north/south, relatively parallel inside the eastern Project boundary. The majority of the BSA is undisturbed with exception of the aforementioned Gas Line Road and an approximately five-acre area of previously graded land in the northwest portion of the site, adjacent to the western Project boundary. There is a transmission line extending from outside the northern boundary to outside the eastern Project boundary with an associated unpaved access road.

1.3 PROJECT DESCRIPTION

Orni 33 LLC., Inc. (Client) is proposing to construct, operate, and maintain a 20-Megawatt (MW) photovoltaic solar farm on the approximately 123-acre Project site. The project location is within a 640-acre Section (T10S, R14E, Section 27) owned by the Client. The Client is developing the Wister Solar Energy Facility in order to reasonably maximize the Project's generating capacity, taking into account land and environmental constraints. A Power Purchase Agreement (PPA) for 20-MW to San Diego Gas & Electric has been secured by the Client.



2.0 METHODOLOGIES

Stantec conducted a habitat assessment and biological resource survey within the BSA on January 30, 2019. This investigation included a reconnaissance-level survey, a non-protocol survey to detect the presence of special-status plant and wildlife species, and a non-protocol avian survey to detect the presence of listed songbirds. The survey was designed to encompass all habitat and terrain types present within the BSA. Activities were conducted throughout the BSA via vehicle or on-foot where accessible based on terrain and vegetative cover. Literature review and survey details are described in detail below.

2.1 LITERATURE REVIEW

A literature search focused on the BSA was conducted prior to field surveys. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) was conducted for the Wister 7.5-minute topographic quadrangle to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the BSA (CDFW, 2019a). The following eight adjacent quadrangles were also included in the database search to encompass potential occurrences of special-status species in the region surrounding the BSA:

- Frink NW
- Frink NE;
- Iris Pass;
- Frink;
- Iris Wash;
- Obsidian Butte;
- Niland; and
- Iris

Additional data regarding the potential occurrence of special-status species and policies relating to these special- status natural resources were gathered from the following sources:

- State and Federally Listed Endangered and Threatened Animals of California (CDFW, 2018b); Special Animals List (CDFW, 2018c);
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW, 2018d);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2019);
- California Sensitive Natural Communities (CDFW, 2018e); and Consortium of California Herbaria (CCH, 2018).
- Flat Tailed Horned Lizard Survey. Barrett's Biological Surveys, August 2018.

2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENTS

2.2.1 Site Reconnaissance and Wildlife Surveys

In order to document the existing biological resources that are present in and adjacent to the BSA, on January 30, 2019, Stantec conducted a habitat assessment and reconnaissance-level survey, which included focused non-protocol surveys for special-status plant and wildlife species. The primary goals of the reconnaissance survey were to identify and assess habitat that may be capable of supporting special-status wildlife species and to document the presence/absence of special-status biological resources.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Methodologies
January 28, 2020

The BSA was investigated via vehicle and on-foot by experienced field biologists. Biologists conducted the survey by driving throughout the BSA and walking meandering transects through representative areas at an average pace of approximately 1.5 kilometers per hour (km/hr) while visually searching and listening for wildlife songs, calls, or other signs. Biologists ensured that all habitat and topographic conditions were encompassed during the walking surveys. Surveying was halted periodically to listen for wildlife and to identify, record, or enumerate any detected species. Terrestrial insects and other invertebrates were searched for on flowers and leaves, under loose bark, and under stones and logs on the ground throughout the BSA. Randomly selected areas within appropriate micro habitats (e.g., leaf litter, woody debris piles, etc.) were hand raked or visually inspected to determine the presence/absence of gastropods, reptiles, small mammals, and amphibians. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.) and all potential refugia sites searched were returned to their original state upon completion of inspection. Species identifications conform to the most up-to-date field guides and technical literature.

To the extent possible, surveys were conducted during a season and time of day where migratory birds were expected to be present, resident bird species were nesting and fledging, small mammals were active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and/or individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. Surveys were conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 75-95° Fahrenheit).

All plant species identified during the survey are listed in Table 2, and a list of wildlife observed within the BSA is presented in Table 3. Known and potential occurrences of special status plant taxa are discussed in Table 6, and known and potential occurrences of special status wildlife species are discussed in Table 7.

2.2.2 Vegetation Mapping

Vegetation descriptions and names are based on Sawyer et al. (2009) and have been defined at least to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the Esri® Collector for ArcGIS app on an Apple® iPad® coupled with a Bad Elf® GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ArcGIS (version 10.4) with aerial photograph base maps with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however, boundaries between some vegetation types are less precise due to difficulties interpreting aerial imagery and accessing stands of vegetation. Vegetation communities are discussed further in Section 4.2 and are depicted in Figure 2 included in Appendix A.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Methodologies
January 28, 2020

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type. For this Study Area, the minimum mapping unit was approximately three feet, and smaller inclusions are described in the text but are not visible on the maps.

2.2.3 Jurisdictional Delineation

Prior to performing the general biological evaluation, Stantec conducted a formal jurisdictional waters delineation on April 12, 2018, per US Army Corps of Engineers (USACE). During that survey, the BSA was evaluated for potential wetlands and/or waters subject to federal and/or state jurisdiction pursuant to Section 404 and 401 of the Clean Water Act (CWA). The jurisdictional assessment also included an investigation of areas that could be jurisdictional pursuant to Section 1600 et seq. of the California Fish and Game Code. Prior to conducting the jurisdictional delineation, Stantec reviewed current and historic aerial imagery, topographic maps, soil maps (USDA, 2018), local and state hydric soils lists, and the National Wetlands Inventory (USFWS, 2006) to evaluate the potential active channels and wetland features that occur within the BSA. During the field assessment, hydrologic features were mapped using the same data collection equipment described above for vegetation mapping. Field data were further manipulated in the office using GIS and total jurisdictional area for each regulatory jurisdiction calculated. The results of the jurisdictional survey were presented in the Wister Solar Project Preliminary Jurisdictional Waters/Wetlands Delineation Report, dated June 12, 2018 and revised January 27, 2020, are summarized in Section 4.4, and depicted in Figure 3 included in Appendix A.



3.0 REGULATORY FRAMEWORK

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (ESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wild-life.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3).

Critical habitat is defined in Section 3(5)(A) of the ESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.”

The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the Ninth Circuit juridical opinion, *Gifford Pinchot Task Force v. USFWS*. Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter, or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs.

Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Regulatory Framework
January 28, 2020

3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required if this project affects such resources. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940.

All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

3.1.4 Federally Regulated Habitats

Areas meeting the regulatory definition of “Waters of the U.S.” (Jurisdictional Waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3).

Wetlands on non-agricultural lands are identified using the Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The Project Area falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Regulatory Framework
January 28, 2020

permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources.

3.1.5 National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and utilize public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans/documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 U.S.C. 4321- 4327) (40 CFR 1500-1508).

3.2 STATE REGULATIONS

3.2.1 California Environmental Quality Act

CEQA establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by public agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

3.2.2 California Endangered Species Act

Provisions of the California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is “unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Regulatory Framework
January 28, 2020

Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

3.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913)

California’s Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

3.2.4 Section 3503 & 3503.5 of the Fish and Game Code

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non- game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

3.2.5 Porter-Cologne Water Quality Control Act

Regional water quality control boards (RWQCBs) regulate the “discharge of waste” to “waters of the State.” All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both of the terms “discharge of waste” and “waters of the State” are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered “waters of the United States” as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act. The Project Area falls under the jurisdiction of the Colorado River RWQCB.

3.2.6 State-Regulated Habitats

The State Water Resources Control Board is the State agency (together with the RWQCBs) charged with implementing water quality certification in California.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Regulatory Framework
January 28, 2020

streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project Applicant enter into a Streambed Alteration Agreement with the CDFW.

3.3 LOCAL REGULATIONS

3.3.1 Imperial County General Plan – Conservation and Open Space Element

The Conservation and Open Space Element of the Imperial County General Plan contains policies and programs that are designed to protect and conserve environmental resources in the County while encouraging economic development and growth. Resources covered under the Conservation and Open Space Element consist of the following: biological resources, cultural resources, geology and soils, mineral resources, regional aesthetics, air quality and climate change, and open space and recreation.

The Goals and Objectives relative to natural resources that apply to the Project are as follows:

Conservation of Environmental Resources for Future Generations

Goal 1 Environmental resources shall be conserved for future generations by minimizing environmental impacts in all land use decisions and educating the public on their value.

- **Objective 1.1** Encourage uses and activities that are compatible with the fragile desert environment and foster conservation.
- **Objective 1.2** Coordinate the acquisition, designation, and management of important natural and cultural resource areas in Imperial County with other governmental agencies as appropriate.
- **Objective 1.4** Ensure the conservation and management of the County’s natural and cultural resources.
- **Objective 1.6** Promote the conservation of ecological sites and preservation of cultural resource sites through scientific investigation and public education.

Conservation of Biological Resources

Goal 2 The County will integrate programmatic strategies for the conservation of critical habitats to manage their integrity, function, productivity, and long-term viability.

- **Objective 2.1** Designate critical habitats for Federally and State-listed species.
- **Objective 2.2** Develop management programs, including preservation of habitat for flat-tailed horned lizard, desert pupfish, and burrowing owl.
- **Objective 2.4** Use the CEQA and NEPA process to identify, conserve, and restore sensitive vegetation and wildlife resources.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Regulatory Framework
January 28, 2020

- **Objective 2.6** Attempt to identify, reduce, and eliminate all forms of pollution; including air, noise, soil, and water.

The Policies and Programs relative to natural resources that apply to the Project are as follows:

Biological Resource Conservation

Policy – Provide a framework for the conservation and enhancement of natural and created open space which provides wildlife habitat values.

Programs

- Identify Resource Areas to conserve and enhance native vegetation and wildlife. These areas include agency designated sensitive habitats with the USFWS, Bureau of Land Management Areas of Critical Environmental Concern, and CDFW. These designated lands are designed for the protection and perpetuation of rare, endangered, and threatened species and areas important for scientific study.
- Projects within or in the vicinity of a Resource Area should be designed to minimize adverse impacts on the biological resources it was created to protect.
- Develop an environmental mitigation program that protects and restores Salton Sea wildlife habitats as offsets to biological disturbances identified through the CEQA review process for development projects. The program would allow the County and/or Salton Sea Joint Powers Authority to restore habitat through financing mechanisms including land banks and/or direct financial contributions from the developers to mitigate their impacts.
- Protect riparian habitat and other types of wetlands from loss or modification by dedicating open space easements with adequate buffer zones, and by other means to avoid impacts from adjacent land uses. Road crossings or other disturbances of riparian habitat should be minimized and only allowed when alternatives have been considered and determined infeasible.
- Preserve existing California fan palms in natural settings and other individual specimen trees which contribute to the community character and provide wildlife habitat.
- Preserve and encourage the open space designation of wildlife corridors which are essential to the long-term viability of wildlife populations.
- Integrate open space dedications in private developments with surrounding uses to maximize a functional open space/recreation and wildlife management system.

Policy – Landscaping should be required in all developments to prevent erosion on graded sites and, if the area is contiguous with undisturbed wildlife habitat, the plan should include revegetation with native plant species.

Programs

- Revegetation plans shall be submitted and approved by the Imperial County Planning and Development Services Department and relevant resource agencies for the mitigation of sensitive habitat lost, and for disturbed areas created by roads or installation of facilities adjacent to native habitat. Such plans shall mitigate for the loss of sensitive habitat and habitat value based on a ratio consistent with accepted policy, as recommended by the State and Federal resource agencies.



3.4 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS

3.4.1 California Native Plant Society Rare Plant Program

The mission of the California Native Plant Society (CNPS) Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

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



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions
January 28, 2020

4.0 EXISTING CONDITIONS

4.1 SETTING

As depicted in Figures 1 and 2, the BSA is located in the northern portion of Imperial County, approximately two- miles northeast of the community of Niland, approximately five-miles east of the Salton Sea, and 0.5-mile southwest of the Coachella Canal. It is situated within Section 27 of Township 10S, Range 14E of the Wister U.S. Geological Survey (USGS) 7.5-minute quadrangle. Positioned within the Imperial Valley at the base of the foothills of the Chocolate Mountains to the northeast, the BSA is relatively flat, though there are slopes slightly from northeast to southwest with elevations ranging from approximately 20 feet above mean sea level (MSL) to approximately 30 feet below MSL.

The BSA is considered “Recreational Open Space” by Imperial County. It is bordered largely by open space to the north, east, and south, with agricultural lands (orchards) occurring to the west and northwest. An existing solar generating facility occurs approximately 0.5 mile south and a County landfill is located to the east of the BSA. While it is largely undeveloped, the unpaved Gas Line Road passes roughly parallel to the eastern boundary of the BSA and a transmission line and associated unpaved access road run from outside the eastern boundary from north to south. The East Highline Canal, an Imperial Irrigation District (IID) water delivery conveyance passes through the extreme southwestern corner of the BSA.

The region experiences a desert climate characterized by hot, dry summers and warm winters. Average annual temperatures range from 42 degrees Fahrenheit in December to 107 degrees Fahrenheit in July, and average annual precipitation measures 2.87 inches (US Climate Data, 2018).

4.2 VEGETATION AND LAND COVERS

Biological resources observed within the BSA during the field survey were comprised primarily of common plant species and vegetation communities characteristic of the Colorado Desert habitat prevalent throughout Imperial County. Habitat conditions within the BSA were noted to be of generally good quality, with well-established communities comprised primarily of native shrub and tree species. Within the BSA, Stantec biologists mapped three plant communities defined by Sawyer et al. (2009) and one additional land cover type. These are described in Section 4.2.1 below, summarized in Table 1, and depicted in Figure 2 included in Appendix A. Small, localized areas occupied by other plant communities were also observed within the BSA; however, the areas were less than the minimum mapping unit dictated by the size of the survey area and thus, were not mapped.



Existing Conditions
January 28, 2020

4.2.1 Vegetation Communities and Land Cover Types

4.2.1.1 Vegetation Communities

Creosote Bush – White Bursage Scrub

This is the primary land cover type occurring throughout most of the BSA. Creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) are the co-dominant species, though vegetative cover throughout the BSA. Other shrub species present within this community include a number of saltbush species (*Atriplex* spp.) and desert thorn (*Lyceum brevipes*). The sparse understory consists of native and non-native herbaceous species such as desert dandelion (*Malacothrix glabrata*) and desert plantain (*Plantago ovata*) and non-native grasses, primarily bromes (*Bromus* spp.) and Mediterranean grass (*Schismus barbatus*).

Arrow Weed Thickets

This is the dominant vegetation along the small section of the East Highline Canal in the southwestern corner of the BSA. Arrow weed thickets within the BSA are dominated by arrow weed (*Pluchea sericea*). Other species such as cattails (*Typha* spp.), common reed (*Phragmites australis*), and saltcedar (*Tamarix ramosissima*) are also present, but much less common. Arrow weed thickets are recognized by CDFW as a sensitive vegetation type.

Blue Palo Verde – Ironwood Woodland

This vegetation community occurs along the margins of some of the larger drainage features within the BSA, particularly in the southeast portion of the site. This community is dominated by desert ironwood (*Olneya tesota*) trees, though a few blue palo verde (*Parkinsonia florida*) and honey mesquite (*Prosopis glandulosa*) trees are sparsely interspersed throughout the community. Understory consists of white bursage, creosote bush, and brome grasses.

Tamarisk Thickets

This vegetation community occurs along the small section of the East Highline Canal in the southwestern corner of the BSA. It is comprised of a monoculture of mature tamarisk trees (*Tamarix ramosissima*) up to approximately 40 feet tall with no appreciable understory.

4.2.1.2 Other Land Cover Types

Disturbed/Developed

This land cover type was used to map portions of the BSA that are developed, primarily unpaved roadways. Where vegetated, these areas are generally composed of scarce occurrences of native and non-native herbaceous species common to the vegetation communities through which they pass.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions
January 28, 2020

Agriculture

This land cover type was used to map areas of active agriculture. Within the BSA, areas mapped as Agriculture were limited to citrus farms located within and adjacent to the northwest corner of the BSA.

Table 1 Vegetation Communities and Land Cover Types Occurring within the BSA and Impacts

Vegetation Community/Land Cover Type	Acreage within BSA	Acreage of Permanent Project Impacts	Acreage of Temporary Project Impacts
Creosote bush – White Bursage Scrub	279.83	115.30	0.14
Arrow Weed Thickets	0.41	--	--
Blue Palo Verde – Iron Woodland	9.87	0.19	0.00
Tamarisk Thickets	0.29	--	--
Disturbed/Developed	21.80	4.95	2.05
Agriculture	7.92	--	--
Total	320.12	120.44	2.19

4.2.2 Common Plant Species Observed

Plants observed during the January 2019 reconnaissance-level survey, were recorded; however, a focused, floristic-level survey was not conducted. The survey resulted in the documentation of 38 species of native and non-native plants within the BSA, a list of which is provided in Table 2, below.

Table 2 Plant Species Observed within the BSA

Scientific Name	Common Name
<i>Acacia greggii</i>	cat's claw
<i>Acmispon</i> sp.	--
<i>Ambrosia dumosa</i>	white bursage
<i>Astragalus</i> sp.	--
<i>Atriplex canescens</i>	fourwing saltbush
<i>Atriplex hymenelytra</i>	desert holly
<i>Atriplex lentiformis</i>	Quailbush
<i>Brassica tournefortii</i> **	Sahara mustard
<i>Chaenactis stevioides</i>	Esteve pincushion
<i>Chenopodium</i> sp.	--
<i>Chorizanthe rigida</i>	Devil's spineflower
<i>Chylismia claviformis</i>	Primrose



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions

January 28, 2020

Scientific Name	Common Name
<i>Cryptantha</i> sp.	--
<i>Cylindropuntia</i> sp.	Cholla
<i>Datura stramonium</i>	Jimson weed
<i>Distichlis spicata</i>	Saltgrass
<i>Encelia farinose</i>	Brittlebush
<i>Eriogonum</i> sp.	Buckwheat
<i>Erodium</i> sp.	--
<i>Galium angustifolium</i>	narrow-leaved bedstraw
<i>Hilaria rigida</i>	big galleta
<i>Larrea tridentata</i>	creosote bush
<i>Lycium brevipes</i>	desert thorn
<i>Malacothrix glabrata</i>	desert dandelion
<i>Melilotus officinalis</i> **	sweet clover
<i>Olneya tesota</i>	Ironwood
<i>Palafoxia arida</i> var. <i>arida</i>	desert needle
<i>Parkinsonia florida</i>	blue palo verde
<i>Phoenix dactylifera</i> **	date palm
<i>Phragmites australis</i> **	common reed
<i>Plantago ovata</i>	desert plantain
<i>Polypogon monspeliensis</i> **	rabbit's foot grass
<i>Prosopis glandulosa</i>	honey mesquite
<i>Psoralea fremontii</i>	indigo bush
<i>Schismus barbatus</i> **	old han schismus
<i>Sesuvium verrucosum</i>	western sea purslane
<i>Sisymbrium irio</i> **	London rocket
<i>Suaeda nigra</i>	bush seepweed
<i>Tamarix ramosissima</i> **	salt cedar

* No special-status plant species were observed in the BSA

** Non-native Species

4.3 COMMON WILDLIFE

4.3.1 Invertebrates and Gastropods

While a focused survey for insects was not conducted within the BSA during the January 2019 survey event; randomly selected areas within the appropriate micro habitats (e.g., leaf litter, woody debris piles, etc.) were hand raked or visually inspected to determine the presence/absence of invertebrates and gastropods, as a variety of common insects are known to occur in the area. Conditions in the BSA provide a suite of microhabitat variations for a wide variety of terrestrial insects and other invertebrates.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions
January 28, 2020

As in all ecological systems, invertebrates in the BSA play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. The hand raked and visually inspected areas of the BSA detected a wide variety of common and non-native invertebrates. Some of the orders identified in the BSA included beetles (*Coleoptera* sp.), flies (*Diptera* sp.), grasshoppers (*Orthoptera* sp.), moths and butterflies (*Lepidoptera* sp.), wasps, bees, and ants (*Hymenoptera* sp.), and dragonflies and damselflies (*Odonata* sp.).

4.3.2 Fish

Though ephemeral drainages occur throughout much of the BSA, these remain dry under normal circumstances and would not support aquatic species. IID irrigation canals such as the East Highline Canal, which traverses the extreme southwestern corner of the BSA, are known to support fish species including channel catfish (*Ictalurus punctatus*), bass (*Micropterus* sp.), and sunfish (*Lepomis* sp.).

4.3.3 Amphibians

According to the Imperial County General Plan Environmental Impact Report (County of Imperial, 1993), 31 species of amphibians are known to occur within the County. Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments or by burrowing into the soil. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), resources which are largely absent from the BSA, likely provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988).

These species are highly cryptic and often difficult to detect. Amphibians all require aquatic habitat for all or part of their life cycle, which may only be present within the BSA (except for the East Highline Canal) for a short period time during and immediately after substantial rain events. Therefore, amphibians are not expected to occur throughout the vast majority of the BSA. Common species known to occur in the region associated with more permanent sources of water provided by irrigation infrastructure include the Rio Grande leopard frog (*Lithobates berlandieri*), American bullfrog (*L. catesbeianus*), and Great Plains toad (*Anaxyrus cognatus*).

4.3.4 Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

No reptile species were observed in the BSA at the time of the reconnaissance survey. Although not observed, several common reptiles known to occur in the region are likely to occur in the BSA. Many



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions

January 28, 2020

reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Although these species were not detected, suitable habitat conditions for a number of common reptiles were observed within the BSA, including sidewinder (*Crotalus cerastes*), Sonoran gopher snake (*Pituophis catenifer affinis*), western whiptail (*Aspidoscelis tigris*), desert iguana (*Dipsosaurus dorsalis*), and zebra-tailed lizard (*Callisaurus draconoides*).

4.3.5 Birds

Birds were identified by sight and sound and were infrequently observed throughout the BSA. The most common bird species observed was sagebrush sparrow (*Artemisiospiza nevadensis*), though mourning dove (*Zenaidura macroura*) and flyovers by turkey vulture (*Cathartes aura*) and American kestrel (*Falco sparverius*) were also noted. It is possible that many other birds use the BSA at different periods, either as wintering habitat, seasonal breeding, or as occasional migrants. Although not detected in the BSA suitable habitat conditions for a number of common birds known to occur in the region were observed at the time of the survey. These including greater roadrunner (*Geococcyx californianus*), ladder-backed woodpecker (*Dryobates scalaris*), Gambel's quail (*Callipepla gambelii*), and phainopepla (*Phainopepla nitens*).

4.3.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). Signs of mammal species (tracks, scat, etc.) were detected, but no individuals were observed during the January 2019 reconnaissance survey, a number of common mammals are expected to occur within the BSA given the habitat conditions and species that are known to occur in the region. These may include round-tailed ground squirrel (*Xerospermophilus tereticaudus*), desert cottontail (*Sylvilagus audubonii*), kangaroo rats (*Genus Dipodomys*), coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), and raccoon (*Procyon lotor*). No special-status mammal species were observed in the BSA.

Although bats were not detected in the BSA, they likely forage and roost in the region, particularly associated with riparian/irrigation canal corridors. Many bats tend to concentrate foraging activities in riparian habitats similar to those occurring within IID irrigation canals adjacent to the BSA where insect abundance is high (CDFW, 2000).



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions
January 28, 2020

Table 3 Wildlife Species Observed in the BSA

Scientific Name	Common Name
<i>Artemisospiza nevadensis</i>	sagebrush sparrow
<i>Cathartes aura</i>	turkey vulture (flyover)
<i>Falco sparverius</i>	American kestrel (flyover)
<i>Vulpes macrotis arsipus</i>	desert kit fox
<i>Zenaida macroura</i>	mourning dove

*No special-status species were observed in the BSA at the time of the survey.

4.4 JURISDICTIONAL WATERS/WETLANDS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal CWA; the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Two types of jurisdictional features were documented within the BSA: USACE non-wetland Waters of the U.S. and CDFW State Waters. The site is bisected from northeast to southwest by numerous braided ephemeral drainage channels, which contain surface water only during heavy storm events, draining the mountains to the northeast.

These drainages ultimately flow into the Salton Sea, which is considered a Traditionally Navigable Water. As such, these drainage features would likely be considered federally and state jurisdictional. Representative photographs are provided in Appendix C. The extent of jurisdictional features within the BSA is summarized in Table 4, below, and depicted in Figure 3 included in Appendix A; refer to the Preliminary Jurisdictional Wetlands/Waters Delineation Report for additional information.

Table 4 Jurisdictional Features Occurring within the BSA and Impacts

Wetland Waters of the U.S. (acres)			Non-Wetland Waters of the U.S. (acres)			CDFW Jurisdictional Waters (acres)		
Survey Area	Project Temporary Impact Area	Project Permanent Impact Area	Survey Area	Project Temporary Impact Area	Project Permanent Impact Area	Survey Area	Project Temporary Impact Area	Project Permanent Impact Area
0.00	0.00	0.00	19.15	0.07	6.00	25.83	0.10	8.20

4.5 SOILS

Prior to conducting the field reconnaissance, historic soils data from the Natural Resources Conservation Service (NRCS) was used to determine potential soil types that may occur within the BSA, including where hydric soils may have historically occurred (refer to Figure 4, included in Appendix A). Table 5



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Existing Conditions
January 28, 2020

below summarizes the characteristics of soils present on the site. Of the soils listed below, “Niland gravelly sand” appears on the NRCS hydric soils list

Table 5 Historic Soils Occurring within the BSA

Map Unit Symbol	Map Unit Name	Description
124	Niland gravelly sand	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 300 feet; parent material consists of alluvium derived from mixed sources; gravelly sand (0-23”), silty clay (23-60”)
128	Niland-Imperial complex, wet	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 300 feet; parent material consists of alluvium derived from mixed sources; low runoff; gravelly sand (0-23”), silty clay (23-60”)
144	Vint and Indio very fine sandy loams, wet	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 300 feet parent material consists of alluvium derived from mixed sources and/or eolian deposits derived from mixed sources; very low runoff; very fine sandy loam (0-10”), loamy fine sand (10-40”), silty clay (40-60”)
NOTCOM	No Digital Data Available	N/A



5.0 SPECIAL STATUS BIOLOGICAL RESOURCES

The background information presented above, combined with field observations taken during the survey, was used to generate a list of special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and/or adjacent habitats. For the purposes of this report, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California or Federal ESAs;
- Are candidate species being considered or proposed for listing under these same acts;
- Are recognized as Species of Special Concern by the CDFW;
- Are ranked as CRPR 1, 2, 3 or 4 plant species;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions

5.1 SPECIAL STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Arrow weed thickets are listed with a rank of S3 and approximately 0.47 acres of this habitat type occurs within the BSA.

5.2 DESIGNATED CRITICAL HABITAT

Literature review conducted prior to conducting field surveys determined that the nearest critical habitat to the BSA is for desert tortoise (*Gopherus agassizii*), which occurs approximately 4 miles to the northeast of the BSA. Marginally suitable habitat for this species was present within and adjacent to the BSA.

5.3 SPECIAL STATUS PLANTS

No special-status plants were observed within the BSA during the January 2019 reconnaissance survey. Table 6 presents a list of special-status plants, including federally- and state-listed species and CRPR 1-4 species that are known to occur in the region surrounding the BSA (within 10 miles). A records search of the CNDDDB, the CNPS Online Inventory, and the Consortium of California Herbaria (CCH) was performed for special-status plant taxa and non-protocol plant surveys were conducted within the BSA (refer to Figures 5A and 5B included in Appendix A). Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present:** Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources

January 28, 2020

- **High:** Both a documented recent record (within 10 years) exists of the taxa within the BSA or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate:** Both a documented recent record (within 10 years) exists of the taxa within the BSA or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the BSA; the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Low:** A historical record (over 10 years) exists of the taxa within the BSA or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

Table 6 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Astragalus insularis</i> <i>var. hardwoodii</i> Harwood's milk-vetch	2B.2	Sandy or gravelly. Desert dunes, Mojavean desert scrub. <500 m.	Jan-May	High: Suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is from 2005, approximately 3 miles to the northwest.
<i>Astragalus sabulorum</i> Gravel milk-vetch	2B.2	Usually sandy, sometimes gravelly. Flats, washes, and roadsides. Desert dunes, Mojavean desert scrub, Sonoran Desert scrub. -60 to 885 m.	Feb-Jun	Moderate: Suitable habitat occurs within the BSA and the nearest occurrence to the BSA is less than a mile to the south, though it is from 1906.
<i>Chylismia arenaria</i> Sand evening-primrose	2B.2	Rocky, steep slopes. Sonoran Desert scrub, (sandy or rocky). <430 m.	Nov-May	Low: Suitable habitat does not occur within the BSA. The nearest occurrence to the BSA is approximately 9 miles northeast.
<i>Cylindropuntia munzii</i> Munz's cholla	1B.3	Sonoran Desert scrub, (sandy or gravelly). 150 to -600 m.	May	Moderate: Suitable habitat occurs within the BSA. The nearest occurrences to the BSA are approximately 6 miles east and 6 miles to the northeast.
<i>Ditaxis claryana</i> Glandular ditaxis	2B.2	In sandy wash, in creosote bush scrub. Mojavean desert scrub, Sonoran Desert scrub. <100 m.	Oct, Dec, Jan, Feb, Mar	Low: Suitable habitat occurs in the BSA; however, the most recent recorded occurrence dates from 1978 and the nearest occurrence to the BSA is approximately 6 miles southeast.
<i>Koeberlinia spinosa</i> <i>var. tenuispina</i> Slender-spined all thorn	2B.2	Riparian woodland, Sonoran Desert scrub. 400 m.	May-Jul	Low: Marginally suitable habitat occurs in the BSA; however, the nearest occurrence to the BSA is approximately 8 miles northeast.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur
<i>Senna covesii</i> Cove's cassia	2B.2	Dry, sandy desert washes and slopes. Sonoran Desert scrub. 330 to -760 m.	Mar-Jun (Aug)	Low: Suitable habitat occurs within the BSA; however, the nearest occurrence to the BSA is approximately 9 miles northeast.
Source: Baldwin et al. 2012; CDFW, 2018a; CNPS, 2018.				
* Months appearing in parenthesis listed under blooming periods above indicates and additional but uncommon blooming period for that specific species.				
Status Codes				
California Rare Plant Rank (CRPR) designation				
1B	Plants rare, threatened, or endangered in California and elsewhere.			
2B	Plants presumed extinct in California but more common elsewhere.			
.2	Fairly threatened in California (moderate degree/immediacy of threat).			
.3	Not very threatened in California (low degree/immediacy of threats or no current threats known).			

5.4 SPECIAL STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA. No special-status wildlife species were either observed within or immediately adjacent to the BSA during the reconnaissance survey conducted in January 2019.

The CNDDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the eight surrounding quadrangles, as discussed above in Section 2.0 (refer to Figures 5A and 5B, included in Appendix A). The specific habitat requirements and the locations of known occurrences of each special-status wildlife taxa were the principal criteria used for inclusion in the list of taxa potentially occurring within the BSA. Table 7 summarizes the special-status wildlife taxa known to regionally occur (within 10 miles) and their potential for occurrence in the BSA; refer to Figures 5A and 5B, included in Appendix A for a graphical depiction of species locations. Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the taxa occurs on site and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources

January 28, 2020

amounts of habitat occurs on site; or the taxa's range includes the geographic area and suitable habitat exists.

- **Low:** Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Table 7 Known and Potential Occurrences of Special-Status Wildlife within the BSA

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	Common Name				
Amphibians					
<i>Incilius alvarius</i>	Sonoran Desert toad	SSC	Inhabits grasslands, arid desert lowlands, mountain canyons with oaks and sycamores, and pinyon-oak-juniper mountain forests. Found near washes, river bottoms, springs, reservoirs, canals, irrigation ditches, stock ponds, streams, temporary pools, and sometimes away from water sources.	Suitable habitat occurs within the East Highline Canal in the extreme southwest corner of the BSA. The nearest recorded occurrence to the BSA is less than 1 mile to the southwest; however, this record is from 1916.	Moderate (in IID canal only)
<i>Lithobates yavapaiensis</i>	Lowland leopard frog	SSC	Found in streams, river side channels, springs, ponds, stock ponds in desert scrub, grassland, woodland, and pinyon juniper habitats. Has been observed in canals, roadside ditches, and ponds in the Imperial Valley during the first quarter of this century (Storer 1925), but the context of its occurrence in those areas is not well understood because that era was a period of extensive habitat alteration. Lowland leopard frogs may have simply been transitory in those areas.	Suitable habitat occurs within the East Highline Canal in the extreme southwest corner of the BSA. The nearest recorded occurrence to the BSA is approximately 1.5 miles to the southwest; however, this record is from 1940.	Moderate (in IID canal only)
<i>Scaphiopus couchii</i>	Couch's spadefoot	SSC	Desert and arid regions of grassland, prairie, mesquite, creosote bush, thorn forest, sandy washes. Temporary desert rainpools that last at least 7 days, with water temps >15°C and with subterranean refuge sites close by. An insect food base, especially termites, must be available.	Moderately suitable dispersal habitat occurs within the BSA, but formation of temporary desert pools for breeding and gestation would occur infrequently. The nearest recorded occurrence to the BSA is approximately 3 miles to the west.	Moderate
REPTILES					
<i>Gopherus agassizii</i>	Desert tortoise	FT, ST,	A desert species that needs firm ground in order to dig burrows, or rocks to shelter among. In California it is found in arid sandy or gravelly locations along riverbanks, washes, sandy dunes, alluvial fans, canyon bottoms, desert oases, rocky hillsides, creosote flats and hillsides.	Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 4.3 miles to the northeast	Moderate



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	Common Name				
BIRDS					
<i>Athene cunicularia</i>	burrowing owl	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low- growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is less than a mile to the southwest.	High
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	FT, SSC, BCC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	No suitable nesting or foraging habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 4.5 miles to the west.	Low (as a transient)
<i>Charadrius montanus</i>	mountain plover	SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	No suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 1.4 miles south.	Moderate (as a transient)
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	FE, SE	Riparian woodlands in southern California	No suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 2.2 miles northwest.	Low (as a transient)
<i>Falco columbarius</i>	merlin	WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.	Suitable foraging habitat occurs within the BSA, but no roosting habitat. The nearest recorded occurrence to the BSA is approximately 2 miles south.	Moderate (foraging)
<i>Gelochelidon nilotica</i>	gull-billed tern	SSC	Breeds on gravelly or sandy beaches. Winters in salt marshes, estuaries, lagoons and plowed fields, less frequently along rivers, around lakes and in fresh-water marshes.	No suitable permanent aquatic habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 6 miles southwest.	Low



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Hydroprogne caspia</i>	Caspian tern	SA	Breeds in wide variety of habitats along water, such as salt marshes, barrier islands, dredge spoil islands, freshwater lake islands, and river islands. During migration and winter found along coastlines, large rivers and lakes. Roosts on islands and isolated spits.	No suitable permanent aquatic habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 8 miles southwest.	Low (as a transient)
<i>Icteria virens</i>	yellow-breasted chat	SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests, in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft. of ground.	No suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 6 miles northwest.	Low (as a transient)
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC	Loggerhead shrikes inhabit open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Often seen along mowed roadsides with access to fence lines and utility poles.	Suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 7 miles southeast.	Moderate
<i>Larus californicus</i>	California gull	WL	California gulls primarily breed on sparsely vegetated islands and levees in inland lakes and rivers, but they also breed in salt ponds in the San Francisco Bay. Breeding colonies range from sea level to 9,000 feet elevation and are usually surrounded by water to prevent predators from reaching the nests. During the breeding season they may forage up to 40 miles away from the breeding colony in open areas including farm fields, garbage dumps, meadows, scrublands, yards, orchards, and pastures. They tend to avoid heavily forested areas. In the winter they forage along the Pacific coast, using mudflats, rocky shorelines, beaches, estuaries, and river deltas.	No suitable permanent aquatic habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 10 miles southwest.	Low (as a transient)



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST, FP	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	No suitable permanent aquatic habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 4 miles west.	Low (as a transient)
<i>Melanerpes uropygialis</i>	Gila woodpecker	SE	Found in deserts that have large cacti or trees suitable for nesting (especially saguaro cactus), dry subtropical forests, riparian woodlands, and residential areas.	No suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 9 miles southwest.	Low
<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delist., FP	Brown pelicans live year-round in estuaries and coastal marine habitats along both the east and west coasts. They breed between Maryland and Venezuela, and between southern California and southern Ecuador—often wandering farther north after breeding as far as British Columbia or New York. On the Atlantic and Gulf coasts they breed mostly on barrier islands, natural islands in estuaries, and islands made of refuse from dredging, but in Florida and southern Louisiana they primarily use mangrove islets. On the west coast they breed on dry, rocky offshore islands. When not feeding or nesting, they rest on sandbars, pilings, jetties, breakwaters, mangrove islets, and offshore rocks.	No suitable permanent aquatic habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 5 miles west.	Not expected to occur
<i>Polioptila melanura</i>	black-tailed gnatcatcher	WL	Live year-round in semiarid and desert thorn scrub at elevations up to 7,000 feet, often among creosote bush, salt bush, mesquite, palo verde, ocotillo, and spiny hackberry, as well as cacti such as saguaro, prickly pear, cholla, and barrel cactus. Along the lower Colorado River they may use willows as well as the invasive species tamarisk (salt cedar). They are well adapted to dry habitats and tend to be most common in areas with less than 8 inches of annual rainfall. They often live far away from streams and other bodies of water.	Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 6 miles southwest.	Moderate



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Rallus obsoletus yumanensis</i>	Yuma Ridgway's rail	FE, ST, FP	Live in saltmarsh swamps with extensive vegetation, which they use as refuges, especially at high tide. These birds live in low portions of coastal saltmarshes dominated by cordgrass and pickleweed, or in mangroves. The Yuma form of Ridgway's rail lives inland, in the Salton Sea and in freshwater marshes along tributaries of the Colorado River.	No suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 2 miles northwest.	Low (as a transient)
<i>Rynchops niger</i>	black simmer	SSC	Open sandy beaches, on gravel or shell bars with sparse vegetation, or on mats of sea wrack (tide-stranded debris) in saltmarsh. Occasionally seen at inland lakes such as the Salton Sea of California. Much of this species' original beach habitat has been developed as houses and attractions for beachgoers. Particularly in the southeastern U.S., artificial islands made from dredge spoils are an important nesting habitat for this and other species.	No suitable permanent aquatic habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 6 miles southwest.	Low (as a transient)
<i>Setophaga petechia</i>	yellow warbler	SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets and in other riparian plants including cottonwoods, sycamores, ash, and alders.	No suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 3 miles southwest.	Moderate (as a transient)
<i>Toxostoma crissale</i>	Crissal thrasher	SSC	Found in dense, low scrubby vegetation, such as desert and foothill scrub and riparian brush.	Suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 6 miles southwest.	Moderate
<i>Toxostoma lecontei</i>	Le Conte's thrasher	SSC	Desert scrub, mesquite, tall riparian brush and, locally, chaparral.	Suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 9 miles	Moderate



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Taxa		Status	Habitat Types	Comments	Taxa
Scientific Name	Common Name				
Mammals					
<i>Antrozous pallidus</i>	pallid bat	SSC	Desert, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sits.	Marginally suitable habitat occurs within the BSA, but no roosting habitat. The nearest recorded occurrence to the BSA is approximately 7 miles northeast.	Low
<i>Eumops perotis californicus</i>	western mastiff bat	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Suitable foraging habitat occurs within the BSA, but no roosting habitat. The nearest recorded occurrence to the BSA is approximately 1 mile northeast.	High (foraging only)
<i>Macrotus californicus</i>	California leaf-nosed bat	SSC	Found in the caves and abandoned mines in Sonoran and Mojavean Desert scrub habitats in the Colorado River Valley in southern California, Nevada, and Arizona. In the winter, they choose roosts that are geothermically heated (Tuttle, 2019). Forages near roosts.	No suitable roosting habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 8 miles northeast.	Low
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	SSC	Variety of arid areas in southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. rocky areas with high cliffs.	Marginally suitable foraging habitat occurs within the BSA, but no roosting habitat. The nearest recorded occurrence to the BSA is approximately 1 mile northeast.	High (foraging only)
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	FP	Throughout North America, bighorn sheep distribution is associated with steep, rugged mountainous terrain. Prefer areas with high visibility and avoid habitat with dense vegetation, such as chaparral, which is found at the higher elevational extent of their habitat in the Peninsular Ranges.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence to the BSA is approximately 8 miles northeast.	Not likely to occur



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Sigmodon hispidus eremicus</i>	Yuma hispid cotton rat	SSC	Along the Colorado River and in grass and agricultural areas near irrigation waters. Wetlands and uplands with dense grass and herbaceous plants. Makes runways through vegetation. Nests on surface and in burrows.	Very limited marginally suitable habitat occurs in the extreme southwest corner of the BSA. The nearest recorded occurrence to the BSA is approximately 2 miles west.	Low
<i>Taxidea taxus</i>	American badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Suitable habitat occurs within the BSA. The nearest recorded occurrence to the BSA is approximately 6 miles southwest.	Moderate
Federal Rankings: FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate for Listing BCC = USFWS Bird of Conservation Concern Delist. = removed from federal listing			State Rankings: FP = Fully Protected SE= State Endangered ST = State Threatened SA = CDFW Special Animal WL = CDFW Watch List SSC = Species of Special Concern Delist. = removed from state listing		



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources
January 28, 2020

Page Intentionally Left Blank



5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian “movement corridor” (Hunt, 1993; Rathbun et al., 1992; Bulger et al., 2002; Trentham, 2002; Ramirez, 2002, 2003a, 2003b). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark, 1995; Beier, 1993, 1995; Noss, et al., 1996; Noss et al., no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.
- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Special Status Biological Resources

January 28, 2020

- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

5.5.1 Wildlife Movement in the Project Area

The BSA is located at the edge of a vast area of generally undeveloped open space that facilitates unimpeded wildlife movement and provides “live-in habitat” for a variety of species. Due to the lack of significant development to the north, northeast, and west of the BSA, wildlife movement is generally unconstrained throughout that area. Lands to the west, southwest, and south are more developed, generally with agriculture to the west and southwest separating the BSA from the Salton Sea and solar power generating facility to the south. In addition, California State Route 111 runs to the southwest of the BSA and likely serves as some level of barrier to habitat movement. For the most part, these areas contain few structures that would significantly impact wildlife movement.

Within the BSA, the lack of structures or other significant development and the presence of relatively intact habitat and features such as desert washes and unpaved roads all facilitate wildlife passage. However, the BSA does not occur within any known wildlife movement corridor or habitat linkage (Penrod et al, 2001).



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

References

January 28, 2020

6.0 REFERENCES

Aubry, K. B., L. L. C. Jones, and P. A. Hall. 1988. Use of woody debris by plethodontid salamanders in Douglas-fir in Washington. Pages 32-37 in R. C. Szabo, K. E. Severson, and D. R. Patton, technical coordinators.

Management of amphibians, reptiles and small mammals in North America. General technical report RM-166. U.S. Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, D.H. Wilken (eds.) 2012. The Jepson Manual: Vascular Plants of California, 2nd ed. University Press, Berkeley, California.

Beier, P. and S. Loe. 1992. A checklist for evaluating impacts to wildlife movement corridors. Wildlife Society Bulletin 20: 434-440.

Beier, P. 1993. Determining minimum habitat areas and habitat corridors for cougars. Conservation Biology, 7: 94- 108.

Beier, P. 1995. Dispersal of juvenile cougars in fragmented habitat. Journal of Wildlife Management 59:228–237.

Bulger, J., N. Scott, and R. Seymour. 2002. Terrestrial activity and conservation of adult California red-legged frogs (*Rana aurora draytonii*) in coastal forests and grasslands. Biol. Conservation 15: 234-245.

CDFW (California Department of Fish and Wildlife). 2019a. RAREFIND database ed.3.1.1. Electronic database managed by the California Natural Diversity Data Base, Wildlife Data and Habitat Analysis Branch, California Department of Fish and Wildlife. Sacramento, CA.

_____. 2018b. State and Federally Listed Endangered and Threatened Animals of California. August.

_____. 2018c. Special Animals List. November.

_____. 2018d. State and Federally Listed Endangered and Threatened Plants of California. August.

_____. 2018e. California Sensitive Natural Communities.
<https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>

_____. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Sacramento, California.

_____. 2000. "Spotted Bat." California Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

References

January 28, 2020

- _____. 1994. A Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607, California Department of Fish and Game Code. Environmental Services Division. Sacramento, California. January.
- County of Imperial. 2016. Imperial County Conservation and Open Space Element. Planning and Development Services Department. March 8, 2016.
- _____. 1993. Draft EIR for the County of Imperial General Plan. Brian F. Mooney Associates. 1993.
- CNPS (California Native Plant Society). 2018. Inventory of rare and endangered plants. California Native Plant Society. Sacramento. Online: <http://www.cnps.org/inventory>. Accessed August 2018.
- CCH (Consortium of California Herbaria). 2019. California Vascular Plant Online Database. [online]: <http://ucjeps.berkeley.edu/consortium/>
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1). Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- Flora of North America (1993+), Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. Vol. 1, 1993; vol. 2, 1993; vol. 3, 1997; vol. 4, 2003; vol. 5, 2005; vol. 7, 2010; vol. 8, 2009; vol. 19, 2006; vol. 20, 2006; vol. 21, 2006; vol. 22, 2000; vol. 23, 2002; vol. 24, 2007; vol. 25, 2003; vol. 26, 2002; vol. 27, 2007.
- Maser, C. and J.M. Trappe, tech eds. 1984. The seen and unseen world of the fallen tree. Gen. Tech. Rep. PNW-164. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 56 p.
- Meffe, G.K. and C.R. Carroll. 1997. Principles of conservation biology. Sinauer Associates, New York, NY.
- Newmark, W. 1995. Extinction of mammal populations in western North American national parks. *Conservation Biology*, 9: 512-526.
- Noss, R., P. Beier, and W. Shaw. No date. Evaluation of the Coal Canyon biological corridor, Los Angeles, Orange, Riverside, and San Bernardino counties, California. Unpub. ms. 19 pp
- Noss, R., H. Quigley, M. Hornocker, T. Merrill, and P. Paquet. 1996. Conservation biology and carnivore conservation in the Rocky Mountains. *Conservation Biology*, 10:949-963.
- Penrod, K., R. Hunter, and M. Merrifield. 2001. Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings. Co-sponsored by California Wilderness Coalition, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

References

January 28, 2020

Ramirez, R. 2003a. Arroyo toad (*Bufo californicus*) radio telemetry study, San Juan Creek, Orange County, California. Prep. for Rancho Mission Viejo LLC, San Juan Capistrano, CA. October. 64 pp.



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Appendix A Figures
January 28, 2020

Appendix A **FIGURES**



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Appendix B Flat Tailed Horned Lizard Survey Results
January 28, 2020

Appendix B **FLAT TAILED HORNED LIZARD SURVEY RESULTS**



WISTER SOLAR PROJECT BIOLOGICAL RESOURCES TECHNICAL REPORT

Appendix C Photographic Log
January 28, 2020

Appendix C PHOTOGRAPHIC LOG

