EDAW Inc 1420 Kettner Boulevard, Suite 500, San Diego, California 92101 T 619.233.1454 F 619.233.0952 www.edaw.com

October 29, 2008



EDA

ECOM

Ms. Shaelyn Stratton Project Manager Systems Assessment & Facility Siting Division California Energy Commission 1516 Ninth Street, MS-15 Sacramento, CA 95814

Subject: Beacon Solar Energy Project 2008 Spring Survey Report (08-AFC-02)

Dear Ms. Stratton:

EDAW is pleased to submit the Beacon Solar Energy Project Botanical and Wildlife Special Status Species Final 2008 Spring Survey Report on behalf of Beacon Solar, LLC. A summary of the 2008 spring survey results was provided to the agencies in July 2008 in response to California Energy Commission Data Request No. 13, including a summary of impact acreage based on both the 2007 and 2008 surveys (response to Data Request No. 19). This submittal includes the final report documenting the findings of the 2008 spring surveys.

Please call me at (619) 233-1454 if you have any questions or comments.

Sincerely,

Jennifer Guigliano EDAW Project Director

cc: Michael Argentine, Beacon Solar, LLC Kenneth Stein, Beacon Solar, LLC Judy Hohman, USFWS Julie Vance, CDFG Susan Sanders, CEC

BEACON SOLAR ENERGY PROJECT BOTANICAL AND WILDLIFE SPECIAL STATUS SPECIES 2008 SPRING SURVEY REPORT KERN COUNTY, CALIFORNIA

08-AFC-02

Prepared for:

Beacon Solar, LLC 700 Universe Boulevard Juno Beach, Florida 33408

Prepared by:

EDAW, Inc. 1420 Kettner Boulevard, Suite 500 San Diego, California 92101 Phone: (619) 233-1454 Fax: (619) 233-0952

October 2008

TABLE OF CONTENTS

Section			Page
EXECUTIVE	E SUMN	MARY	iii
CHAPTER 1	INTRC	DUCTION	1
CHAPTER 2	BIOLC	GICAL RESOURCE SURVEY METHODOLOGY	5
2.1	CEC S	Survey Guidelines	5
2.2	Flora.		9
	2.2.1	General Botanical Surveys	9
	2.2.2	Rare Plant Surveys	10
2.3	Fauna		
	2.3.1	General Wildlife Surveys	10
	2.3.2	Special Status Wildlife Surveys	10
CHAPTER 3	RESUI	LTS	
3.1	Flora.		
	3.1.1	Vegetation Communities	13
	3.1.2	Sensitive Vegetation Communities	
	3.1.3	General Botanical Survey	
	3.1.4	Special Status Plant Species	
3.2	Fauna		
	3.2.1	Federally Listed Wildlife Species	27
	3.2.2	State-Listed Wildlife Species	
	3.2.3	Nonlisted, Special Status Wildlife Species	28
CHAPTER 4	REFER	RENCES	

APPENDICES

A	2008 Botanical and Wildlife Survey Dates
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- B 2008 Site Photographs
- C Plants Detected during 2008 Surveys
- D Wildlife Detected during 2008 Surveys

LIST OF FIGURES

<u>Figure</u>

1	Regional Location and Project Vicinity	
2	2008 Survey Area	7
3	2008 Plant Site and Transmission Line Options Vegetation Communities	15
4a	2008 Natural Gas Pipeline Vegetation Communities	17
4b	2008 Natural Gas Pipeline Vegetation Communities	19
4c	2008 Natural Gas Pipeline Vegetation Communities	
4d	2008 Natural Gas Pipeline Vegetation Communities	
5a	2008 Wildlife Survey Results - North	
5b	2008 Wildlife Survey Results - South	
	-	

LIST OF TABLES

EXECUTIVE SUMMARY

The proposed Beacon Solar Energy Project (hereinafter referred to as the Project) would result in the construction of a concentrated solar electric generating facility on an approximately 2,012-acre site (Plant Site) in eastern Kern County, California. The Project would use well-established parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. Two auxiliary boilers fueled by natural gas would be used to reduce start-up time and to keep the temperature of the heat transfer fluid from freezing. The Project would have a nominal electrical output of 250 megawatts. Major components of the Project would include the Plant Site (power block, solar arrays, evaporation ponds, administration buildings, and support facilities), a transmission line that connects to Los Angeles Department of Water and Power existing power lines (two options are currently being considered), and a 17.6-mile natural gas pipeline that ties into the existing Southern California Gas Company pipeline west of California City.

Comprehensive biological resource surveys were conducted in 2007 for the proposed Project. The results of these surveys were documented in the focused survey reports (EDAW 2007a, b, and c), the Biological Technical Report (EDAW 2008), the Application for Certification (Beacon Solar, LLC [Beacon] 2008a), and the California Energy Commission Supplement Data Response dated July 16, 2008 (Beacon 2008b). Additional biological resource surveys were conducted in 2008 due to expansion of Project limits, inclusion of a 17.6-mile natural gas pipeline component (gas pipeline route) in the Project design, and a request by the agencies to repeat the special status plant surveys of the Plant Site due to low rainfall in the winter of 2007. This report documents the results of the biological resource surveys for the 2008 survey season.

The Survey Area for 2008 is depicted in Figure 2 and is described below.

• An 80-acre parcel and 14-acre parcel. The surveys included both parcels; however, as depicted in Figure 2, only the 80-acre parcel and a narrow strip of the 14-acre parcel comprised of an existing disturbed access road is within the Plant Site. These areas were added to the Project after the 2007 spring surveys had been completed. While they were covered with multiple Zone of Influence (ZOI) transects in 2007, they received 100 percent survey coverage in 2008 for general biological resources, desert tortoise (*Gopherus agassizii*; DT), western burrowing owl (*Athene cunicularia*; WBO), and special status plants, all per accepted agency protocols.

- The center line of the two transmission line options and associated buffers. While both transmission line corridors were covered in 2007 with multiple ZOI transects, transects on the centerlines received 100 percent coverage in 2008 for DT, WBO, and special status plants all per accepted agency protocols.
- Gas pipeline corridor and associated buffers. This was added to the Project after the 2007 spring surveys had been completed and received 100 percent survey coverage in 2008 for general biological resources, DT, WBO, and special status plants all per accepted agency protocols.
- Beacon repeated the rare plant surveys of the Plant Site at the request of the agencies.

Following botanical surveys in 2008, it was concluded that none of the target rare plant species were present within the Survey Area, nor are they expected to occur since the surveys had been conducted following a satisfactory rainfall year that resulted in abundant growth of other native annual species.

Results of wildlife surveys in 2008 included the detection of DT (USFWS threatened; CDFG threatened), WBO (CDFG Species of Special Concern [SSC]), and two special status bird species (Le Conte's thrasher [*Toxostoma lecontei*] and loggerhead shrike [*Lanius ludovicianus*], both CDFG SSC). A total of seven adult DT were observed. Four were observed within the Survey Area west of State Route 14 (SR-14), two were observed north of the Plant Site (along a ZOI transect), and one was observed 1,000 feet north of California City Boulevard during the survey of the gas pipeline route (along a ZOI transect). Two WBO were observed in the gas pipeline route buffer during 2008 surveys, but were not observed in any other locations in the Project Area. Le Conte's thrasher was observed within the Plant Site and loggerhead shrike was observed along a ZOI transect surveys to the southeast of the Plant Site.

The 2008 surveys did not result in changes to potential impacts on special status wildlife species identified in the previous biological reports (EDAW 2007a, b, c and 2008; Beacon 2008a, b). A summary of impacts to habitat was determined based upon both 2007 and 2008 survey results and was included in the revised table summarizing permanent and temporary impacts provided to the agencies in July 2008 in response to CEC Data Request No. 19 (Beacon 2008b).

CHAPTER 1 INTRODUCTION

The proposed Beacon Solar Energy Project (hereinafter referred to as the Project) would result in the construction of a concentrated solar electric generating facility on an approximately 2,012-acre site (Plant Site) in eastern Kern County, California. The Project would use well-established parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. Two auxiliary boilers fueled by natural gas would be used to reduce start-up time and to keep the temperature of the heat transfer fluid from freezing. The Project would have a nominal electrical output of 250 megawatts. Major components of the Project would include the Plant Site (power block, solar arrays, evaporation ponds, administration buildings, and support facilities), a transmission line that connects to Los Angeles Department of Water and Power existing power lines (two options are currently being considered), and a 17.6-mile natural gas pipeline that ties into the existing Southern California Gas Company pipeline west of California City.

Comprehensive biological resource surveys were conducted in 2007 for the proposed Project. The results of these surveys were documented in the focused survey reports (EDAW 2007a, b, and c), the Biological Technical Report (EDAW 2008), the Application for Certification (Beacon Solar, LLC [Beacon] 2008a), and the California Energy Commission (CEC) Data Response dated July 16, 2008 (Beacon 2008b). Additional biological resource surveys were conducted in 2008 due to expansion of the Project limits, inclusion of a 17.6-mile natural gas pipeline component in the Project design, and a request by the agencies to repeat the special status plant surveys of the Plant Site due to low rainfall in the winter of 2007. This report summarizes the results of the biological resource surveys for the 2008 survey season.



Page 3

CHAPTER 2 BIOLOGICAL RESOURCE SURVEY METHODOLOGY

Biological resource surveys conducted in 2008 included both botanical and wildlife surveys. A summary of the Survey Area components is provided below and is shown in Figure 2.

- An 80-acre parcel and 14-acre parcel. The surveys included both parcels; however, as depicted in Figure 2, only the 80-acre parcel and a narrow strip of the 14-acre parcel comprised of an existing disturbed access road is within the Plant Site. These areas were added to the Project after the 2007 spring surveys had been completed. While they were covered with multiple Zone of Influence (ZOI) transects in 2007, they received 100 percent survey coverage in 2008 for general biological resources, desert tortoise (*Gopherus agassizii*; DT), western burrowing owl (*Athene cunicularia*; WBO), and special status plants, all per accepted agency protocols.
- The center line of the two transmission line options and associated buffers. While both transmission line corridors were covered in 2007 with multiple ZOI transects, transects on the centerlines received 100 percent coverage in 2008 for DT, WBO, and special status plants all per accepted agency protocols.
- Gas pipeline corridor and associated buffers. This was added to the Project after the 2007 spring surveys had been completed and received 100 percent survey coverage in 2008 for general biological resources, DT, WBO, and special status plants all per accepted agency protocols.
- Beacon repeated the rare plant surveys of the Plant Site at the request of the agencies.

2.1 CEC SURVEY GUIDELINES

In 2007, CEC staff provided Beacon with the Draft Recommended Biological Resources Field Survey Guidelines for Large Solar Projects (hereafter referred to as CEC Draft Guidelines; CEC 2007). The CEC Draft Guidelines recommend that biological surveys be conducted according to established protocols within and around the proposed Plant Site, and additional surveys be conducted as necessary to ultimately cover a 1-mile buffer around the Plant Site to evaluate suitable habitat and record occurrence and sign of special status species in this area.



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Page 7

2.2 FLORA

Botanical surveys conducted in 2008 included virtually the entire Survey Area, except for the 1mile buffer surrounding the Plant Site and transmission line options, as agreed upon through coordination between Beacon and the CEC (Figure 2). Botanical surveys consisted of general vegetation community mapping and rare plant surveys as summarized below.

2.2.1 <u>General Botanical Surveys</u>

Vegetation communities were previously mapped for the Plant Site, the 80-acre parcel, and the transmission line options; therefore, vegetation mapping was only performed in 2008 for the 14-acre parcel and the gas pipeline route, including the required 1,000-foot buffer. The gas pipeline route was surveyed along both road shoulders of Neuralia Road and California City Boulevard, including the 1,000-foot buffer area extending outward on either side of the gas pipeline route, per the CEC Draft Guidelines, in areas that did not overlap with the 2007 Plant Site 1-mile buffer area surveys.

The 2008 botanical surveys were conducted by EDAW biologists Josh Corona-Bennett, Rich Dwerlkotte, Fred Sproul, Lance Woolley, Jesper Pietsch, and Linnea Spears-Lebrun with subconsultants Richard Montijo and Dale Powell. Field assessments and surveys were performed during four separate events from March 24 through July 3, 2008 (see Appendix A for survey dates and Appendix B for photographic documentation). Surveys were conducted during 2008 using the same methodology as in 2007 (refer to AFC Vol. 1, Section 5.3.2.4 and AFC Vol. 2, Appendix F).

The Survey Area is dominated by just a few vegetation/cover types, so no minimum mapping unit¹ was used in the vegetation community analysis. Botanical surveys followed the vegetation survey guidelines provided by the CEC Draft Guidelines, USFWS, California Department of Fish and Game (CDFG), and California Native Plant Society (CNPS) (CNPS 2001). Vegetation mapping was conducted for the Survey Area from strategic vantage points whenever direct access was not feasible.

¹ Minimum mapping units (MMU) determine the level of accuracy with which an area is mapped. If the MMU is small with respect to the survey area (e.g., 100 square meters for a 10-square-kilometer study area), then data describing the subject matter that is being assessed will be very accurate. In cases where diversity is low and variation within subject matter being studied is not great, the MMU can be increased or, in the case of this Project, not used at all, while still maintaining an accurate account of the constituents of the study area.

2.2.2 <u>Rare Plant Surveys</u>

During 2008, rare plant surveys were conducted for the entire 2008 Survey Area (Figure 2). Rare plant surveys were conducted for alkali mariposa lily (*Calochortus striatus*), Red Rock tarplant (*Deinandra arida*), Mojave tarplant (*Deinandra mojavensis*), Red Rock poppy (*Eschscholzia minutiflora* ssp. *twisselmanii*), creamy blazing star (*Mentzelia tridentata*), and Charlotte's phacelia (*Phacelia nashiana*). Rare plant surveys were conducted during the same timeframe as the vegetation mapping, as described above, using the rare plant survey guidelines provided by the CEC Draft Guidelines, USFWS, CDFG, and CNPS (CNPS 2001).

2.3 FAUNA

In 2008, wildlife surveys included only the 80-acre and 14-acre parcels, the two transmission line options, and the gas pipeline route, along with associated ZOIs and other buffers defined in the CEC Draft Guidelines (2007) (Figure 2). Wildlife surveys consisted of general wildlife and special status species surveys as summarized below.

2.3.1 General Wildlife Surveys

The 2008 general wildlife surveys were conducted concurrently with the focused DT and WBO surveys, and the botanical surveys. Wildlife surveys were conducted by EDAW biologists Katie Hall, Andrea Currylow, and Shelly Dayman with assistance from subconsultant Peggy Wood (see Appendix A for survey dates). Wildlife sign and sightings were recorded and special status species were mapped using Global Positioning System (GPS) units.

2.3.2 Special Status Wildlife Surveys

The 2008 special status wildlife surveys included protocol surveys for WBO and DT as discussed below. Surveys for all other special status species (American peregrine falcon [*Falco peregrinus anatum*], northern harrier [*Circus cyaneus*], loggerhead shrike [*Lanius ludovicianus*], California horned lark [*Eremophila alpestris actia*], Le Conte's thrasher [*Toxostoma lecontei*], and American badger [*Taxidea taxus*]) were incorporated into WBO and DT protocol surveys, and rare plant surveys (as appropriate).

Desert Tortoise Surveys

In the 2008 survey season, DT presence/absence surveys were conducted between March 25 and May 11, 2008 within the 80-acre and 14-acre parcels, the two transmission line options, and the

gas pipeline route, along with associated ZOIs and other buffers (Figure 2). Surveys were conducted according to CEC Draft Guidelines and followed the guidelines published in the USFWS *Field Survey Protocol for any Non-Federal Action That May Occur within the Range of the Desert Tortoise* (USFWS 1992).

EDAW biologists Katie Hall, Shelly Dayman, Andrea Currylow, and subconsultant Peggy Wood conducted DT protocol surveys. These areas were surveyed with 100 percent visual coverage by spacing transects 10 meters apart. Adjacent to the Project Area, the ZOI transects were conducted at 100, 300, 600, 1,200, and 2,400 feet. For the two transmission line options, ZOI transects were conducted at 330, 660, and 1,000 feet, because this area had already been surveyed in 2007.

Western Burrowing Owl Surveys

In 2008, surveys for WBO were conducted on the 80-acre and 14-acre parcels, the two transmission line options, and the gas pipeline route, along with associated ZOIs and other buffers as depicted in Figure 2. Surveys along the gas pipeline route included the buffer area out to 1,000 feet. Focused WBO surveys were conducted according to the California Burrowing Owl Consortium Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC Protocol) (April 1993). A WBO habitat assessment was conducted during 2008 for the 80-acre and 14-acre parcels and gas pipeline, which were not included in the 2007 WBO habitat assessment (Phase I of the CBOC Protocol). Potential WBO burrows and possible WBO sign were mapped during the focused DT survey and were subsequently checked for WBO activity and/or sign (Phase II).

Focused presence/absence surveys (Phase III) were initiated on March 28, 2008 and were completed on June 12, 2008. A total of 20 surveys were conducted by EDAW biologists Katie Hall and Andrea Currylow. Surveys were initiated either prior to dawn or prior to dusk and lasted approximately 4 to 4.5 hours (see Appendix A).

To locate WBOs, surveyors drove established paved and dirt roads, stopping at observation points that provided a wide view, and scanned for WBO and burrows with 8 x 10 power binoculars and a 20- to 40-power spotting scope. Vehicles were used as blinds, when possible, to minimize disturbance to WBO. If burrows with sign were not visible from established roads, surveyors approached the burrows on foot, carefully verifying presence or absence of WBOs at the burrows. All WBO locations were mapped using GPS units.

CHAPTER 3 RESULTS

This section summarizes results of the 2008 spring surveys for the Project. The 2008 surveys did not result in changes to potential impacts on special status wildlife species identified in the previous biological reports (EDAW 2007a, b, c and 2008; Beacon 2008a, b). A summary of impacts to habitat was determined based upon both 2007 and 2008 survey results and was included in the revised table summarizing permanent and temporary impacts provided to the agencies in July 2008 in response to CEC Data Request No. 19 (Beacon 2008b).

3.1 FLORA

The results of 2008 general botanical surveys and rare plant surveys conducted within the Survey Area are provided below.

3.1.1 <u>Vegetation Communities</u>

A total of three types of native-dominated vegetation communities, and four other cover types (alkali playa, fallow agricultural, tamarisk scrub, and developed) were mapped within the Survey Area (Figures 3 and 4a - 4d; see Appendix B for representative photos) during 2008 surveys. Two of the three main vegetation communities (Mojave creosote bush scrub and Atriplex scrub) had variations in their composition either due to historical and/or recent anthropogenic disturbances. For example, patches of Mojave creosote bush scrub that had a dominant shrub other than creosote bush (*Larrea tridentata*) were so named by their dominant shrub.

Within the Survey Area, the 14-acre parcel and gas pipeline route (including the 1,000-foot buffer) were mapped for vegetation communities and other cover types.

Atriplex Scrub

Atriplex Scrub is dominated with shadscale (*Atriplex confertifolia*), spinescale (*Atriplex spinifera*), and allscale shrubs up to approximately 6 feet in height. Other shrubs occurring in this community include winter fat (*Krascheninnikovia lanata*), horsebrush (*Tetradymia canescens*), and creosote bush. The herbaceous ground layer is generally fairly sparse in Atriplex Scrub habitat. Total cover is often low, as the shrub species are often widely spaced, with large bare areas between the shrubs. This vegetation community occurs on fine-textured, poorly drained soils with high alkalinity and/or salinity, usually surrounding playas on slightly

higher ground (Holland 1986). It was mapped in many locations adjacent to the gas pipeline route.

Vegetation Communities and Other Cover Types	2008 Additional Acreage – 14-Acre Parcel	2008 Additional Acreage – Gas Pipeline Route	2008 Additional Impact Acreage
Atriplex scrub	Not Present	0	0
Mojave creosote bush scrub	Not Present	0	0
Mojave creosote bush scrub – Ambrosia dumosa dominant	Not Present	0	0
Mojave creosote bush scrub – Chrysothamnus nauseosus dominant	Not Present	0	0
Disturbed Mojave creosote bush scrub	10.62	0	0
Mojave desert wash scrub	Not Present	0	0
Alkali playa	Not Present	0	0
Fallow agricultural – disturbed Atriplex scrub	Not Present	0	0
Fallow agricultural - ruderal	Not Present	0	0
Tamarisk scrub	Not Present	0	0
Developed ²	3.38 (Existing Access Road)	60.00	62.7 ³
Total Acreage	14	60.00	62.7

Table 1Vegetation Communities and Other Cover Type Acreage
Mapped during 2008 Spring Surveys1

The 14-acre parcel was mapped for vegetation and surveyed for rare plants in 2008. The only portion of the 14acre parcel within the Plant Site (Impact Area) consists of developed area associated with the already existing access road. The 80-acre parcel was not mapped for vegetation in 2008 because that work had been done in 2007, but rare plant surveys were conducted on the 80-acre parcel in 2008.

² The cover type "Developed" includes dirt/paved roads, dirt/paved road shoulders, and residential properties with structures, or impenetrable surfaces.

³ Only 2.7 acres of the existing access road is within the Plant Site and will be impacted.

Mojave Creosote Bush Scrub

Mojave creosote bush scrub is an open shrub community dominated mainly by creosote bush. Other shrubs commonly found in this vegetation community include white bursage (*Ambrosia dumosa*), box thorn (*Lycium andersonii*), silver cholla (*Cylindropuntia echinocarpa*), and occasional Joshua trees (*Yucca brevifolia*). While dominated by shrubs (approximately 18 percent shrub cover), this vegetation community also has an herbaceous layer, which during 2008 surveys included species such as Mojave sun cups (*Camissonia campestris*), Mojave pincushion (*Chaenactis xantiana*), brittle spineflower (*Chorizanthe brevicornu*), pygmy poppy (*Eschscholzia minutiflora* ssp. *minutiflora*). This community typically occurs on well-drained soils



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Natural Gas Pipeline Vegetation Communities

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2008 Natural Gas Pipeline Vegetation Communities

in alluvial fans, bajadas, and upland slopes. It is one of the most widely distributed desert plant communities in the Mojave Desert from the desert floor up to about 3,500 feet, extending into northwestern Arizona and southern Utah. It is the primary habitat type in the undisturbed areas west of SR-14 and adjacent to the gas pipeline route. Vegetation mapping of the 14-acre parcel resulted in an additional 10.62 acres of disturbed Mojave creosote bush scrub; however, all of this habitat acreage is outside the Plant Site and will not be disturbed.

Mojave Desert Wash Scrub

No additional areas of Mojave desert wash scrub were mapped during 2008 surveys.

Alkali Playa

This community type refers to nearly barren areas of alkaline soil and cracked mud, sometimes including a cover of low, grayish, microphyllous and succulent shrubs, such as saltbush and greasewood (*Sarcobatus vermiculatus*). For the gas pipeline route, a small area characterized as alkali playa was detected, although there was scant vegetation growing in this area.

Fallow Agricultural – Disturbed Atriplex Scrub

The fallow agricultural-disturbed Atriplex scrub vegetation community occurs on areas previously used for agricultural purposes but that have now become occupied with several *Atriplex* sp. shrubs. The dominant species is allscale, which is particularly effective at reoccupying abandoned agricultural lands. Other plants occurring together are shadscale, Russian thistle (*Salsola tragus*), and salt heliotrope (*Heliotropium curassavicum*). Shrub cover in this vegetation community is approximately 22 to 25 percent.

Fallow Agricultural – Ruderal

The fallow agricultural-ruderal vegetation community covers the majority of the Survey Area. The land was formerly used for agricultural purposes and is dominated by ruderal nonnative plants. This plant community occurs in areas that are now unable to effectively retard soil loss through wind and water erosion. Vegetation cover within this community ranges from 0 to 2 percent. The dominant plant species are Russian thistle, Saharan mustard (*Brassica tournefortii*), and Mediterranean schismus (*Schismus arabicus*).

Tamarisk Scrub

This community is dominated by tamarisk (*Tamarix* sp.), a nonnative shrub to small tree from central Asia. The plant was originally introduced for erosion control and for use as windbreaks. It has become highly invasive of native habitats and can cause many detrimental effects especially in riparian communities.

Developed

The areas mapped as developed include dirt/paved roads, dirt/paved road shoulders, and residential properties with structures, or impenetrable surfaces. A total of 60.00 acres of developed land was mapped for the gas pipeline route and 3.38 acres of developed land was mapped within the 14-acre parcel.

3.1.2 <u>Sensitive Vegetation Communities</u>

There were no sensitive vegetation communities detected within the Survey Area during 2008 botanical surveys.

3.1.3 <u>General Botanical Survey</u>

In 2008, a total of 110 plant species were documented for the Survey Area, 16 of which are nonnative introduced species (see full list in Appendix C), and 56 of which were annual natives. Based on these results, rainfall for the 2008 season was acceptable for rare plant surveys considering substantial increase in the number of native annual species found growing in the survey area in 2008 versus 2007 (110 versus 33 plant species and 56 versus 3 annual native species, respectively).

3.1.4 Special Status Plant Species

No special status plant species were detected during the 2008 botanical surveys, even with satisfactory rainfall within the Project vicinity, and none are expected to occur within the Survey Area.

State Rare Plant Species

Based on site assessments performed over a 2-year period, EDAW does not expect any state rare plant species (e.g., state rare - Red Rock tarplant and state-listed Mojave tarplant) to occur within or surrounding the Survey Area.

Other Special Status Plant Species

In performing botanical surveys and site assessments over a 2-year period, EDAW does not expect any other special status plant species (e.g., alkali mariposa lily, Red Rock poppy, creamy blazing star, and Charlotte's phacelia) to occur within or surrounding the Survey Area.

3.2 FAUNA

During the 2008 wildlife surveys, 44 wildlife species were observed during protocol and general surveys, including 8 reptiles, 29 birds, 5 mammals, and 2 invertebrates (Order Lepidoptera) (Appendix D). One federally listed and/or state-listed wildlife species was detected (DT).

3.2.1 <u>Federally Listed Wildlife Species</u>

The DT is listed as endangered under the Federal Endangered Species Act (ESA) and as threatened under the California Endangered Species Act (CESA).

Desert Tortoise

Seven DT were observed during the biological surveys in 2008 all outside the Plant Site boundary. Four of the seven tortoises were observed west of SR-14 (individuals 9, 10, 11, and 42; Figure 5a); two were north of the Plant Site and east of the railroad tracks (individuals 8 and 12; Figure 5a), and one was observed in the 1,000-foot ZOI transect north of California City Boulevard (individual 13; Figure 5b). Three active DT burrows were observed (burrows 1, 2, and 3; Figures 5a and 5b); all were associated with DT observations.

DT sign was observed during the DT focused survey. In addition, two carcasses were observed, one in the ZOI near the gas pipeline route along Neuralia Road (carcass 6; Figure 5b), approximately 4 miles north of California City, and the other carcass was observed on the west side of SR-14 (carcass 5; Figure 5a). Both carcasses were Class 5. DT scat was observed near the DT observation in the ZOI transects for the gas pipeline route, on the north side of California City Boulevard (scat 15 and 16; Figure 5b). Scat was also observed about one mile north of California City on the west side of Neuralia Road in the ZOI transects for the proposed natural gas pipeline (scat 17; Figure 5b). DT scat was also observed in association with the DT individual observed west of SR-14 (scat 14; Figure 5a).

3.2.2 <u>State-Listed Wildlife Species</u>

With the exception of the DT discussed above, no state-listed wildlife species were detected during the 2008 surveys.

An assessment of habitat suitable for Mohave ground squirrel (MGS) was conducted in 2007 in the 2008 Survey Area, with the exception of the 14-acre parcel and the gas pipeline route, and no suitable habitat for MGS was found east of SR-14. All Project activities associated with the 14-acre parcel and gas pipeline route will occur only in developed areas, and thus will have no impact on vegetation or habitat.

3.2.3 <u>Nonlisted, Special Status Wildlife Species</u>

Three unlisted special status wildlife species were observed during the 2008 surveys; WBO, Le Conte's thrasher, and loggerhead shrike. The presence of migratory birds also was noted during the surveys.

Two WBO were observed in flight, one during the DT surveys and one during the focused WBO survey. Both WBO were observed outside of the Plant Site. One was observed southeast of the Plant Site (observation 44, Figure 5a) and one was observed just north of California City Boulevard (observation 18, Figure 5b), within the 1,000-foot buffer associated with the pipeline.

Of the potential WBO burrows observed, nine were active (recent WBO sign) and two were inactive (WBO burrows but without recent sign). Eleven animal burrows with potential WBO sign were observed and six of these burrows showed recent WBO sign (active) and five had degraded WBO sign (inactive).

Two observations of the Le Conte's thrasher were made in 2008 and both were in the dry desert wash in the central portion of the site. Loggerhead shrikes were observed twice in 2008. One observation in 2008 was associated with a WBO observation and both were observed in the 1,000-foot buffer for the gas pipeline route, approximately 3,500 feet from the southeast corner of the Plant Site (points 44 and 45; Figure 5a). The second loggerhead shrike observation was near the pipeline and Neuralia Road (Figure 5b).

A summary of special status wildlife species detected during the 2008 surveys is provided in Table 2 below. Other special status wildlife species with the potential to occur, but not detected in 2008, are defined in the previous Biological Technical Report (EDAW 2008).

Table 2Special Status Wildlife Species Detected during the 2008 Surveys

Common Name	Sensitivity		
Scientific Name	Status ¹	Habitat Requirements	2008 Survey Detections
Reptiles			
Desert tortoise	ESA: Threatened	Various desert scrubs and	In 2008, seven DTs were observed: Four
Gopherus agassizii	CESA: Threatened	desert washes up to 5,000 feet,	were observed west of SR-14; two were
		but not including playas.	north of the Plant Site and east of the
			railroad tracks; and one was on the 1,000-
			foot ZOI transect north of California City
			Blvd. Three active DT burrows were
			observed (associated with DT
			observations listed above). Two
			of the pipeline and one west of SR 14
			DT scat was observed in association with
			DT observations
Birds			
Western burrowing	CDFG: Species of	Found mainly in grassland and	Two individuals were observed during
owl	Special Concern	open scrub from the seashore	2008 surveys. One south of the Plant Site
Athene cunicularia	1	to foothills. Strongly	(3,500 feet from the southeast corner) and
		associated with ground squirrel	one north of California City Boulevard,
		burrows.	both of which were in the gas pipeline
			route 1,000-foot buffer.
Le Conte's thrasher	CDFG: Species of	Inhabits areas with sparse	Two observations in 2008 in the dry
Toxostoma lecontei	Special Concern	desert scrub and uses cholla	desert wash in the northern portion of the
		cactus for nesting.	Plant Site.
Loggerhead shrike	CDFG: Species of	Occurs in semi-open country	One observation near Neuralia Road
Lanius ludovicianus	Special Concern	with utility posts, wires, and	within the gas pipeline route 1,000-foot
		trees to perch on.	buffer, and one observation near the
			western burrowing owl observation that
			occurred 3,500 feet from the southeast
			corner of the Plant Site.

¹ Sensitivity Status Key

Federal ESA - Federal Endangered Species Act

State CDFG - California Department of Fish and Game

CESA - California Endangered Species Act

Beacon Solar Energy Project - 2008 Spring Survey Report Path: P:\2008\08080001 Beacon Solar\SGIS\MXD\2008 Spring Survey Report\2008 Updated Wildlife Survey Results.mxd, 10/29/08, AugelloP

Figure 5a 2008 Wildlife Survey Results - North

N

Beacon Solar Energy Project - 2008 Spring Survey Report Path: P:\2008\08080001 Beacon Solar\5GIS\MXD\2008 Spring Survey Report\2008 Updated Wildlife Survey Results.mxd, 10/28/08, AugelloP

Scale: 1:42,000; 1 inch = 3,500 feet

Figure 5b 2008 Wildlife Survey Results - South

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APPENDIX A

2008 BOTANICAL AND WILDLIFE SURVEY DATES

Date	Surveyors Present	Observations	Notes
3-24-08 to 3-28-08	J. Corona-Bennett, R. Dwerlkotte, F. Sproul, L. Woolley, D. Powell	No rare plants observed	Plant Site
4-22-08 to 4-25-08	J. Corona-Bennett, D. Powell	No rare plants observed	Plant Site/ transmission line options/ 17.6-mile gas pipeline
5-27-08 to 5-30-08	J. Corona-Bennett, J. Pietsch, L. Spears-Lebrun, R. Montijo, D. Powell	No rare plants observed	Plant Site/ transmission line options/ 17.6-mile gas pipeline
7-01-08 to 7-03-08	J. Corona-Bennett, L. Woolley, R. Montijo, D. Powell	No rare plants observed	Plant Site/ transmission line options/ 17.6-mile gas pipeline

BOTANICAL / RARE PLANT FOCUSED SURVEY DATES, 2008

			Танан	W/tee al	Wind	0/		S	
Date		Start	(\mathbf{F}°)	(mph)	(mph)	[%] Clouds	Pcp.	Present	Notes
3/25/2008	Start	7:37 am	60	8.8	10.9			P. Wood, A. Currylow	Plant Site
	End	N/A						K. Hall	
3/26/2008	Start	N/A	57.8	8	11.9			A. Currylow	Plant Site
	End	N/A						K. Hall	
3/27/2008	Start	10:00 am	60.8	1.5				A. Currylow	Plant Site
	End	N/A						K. Hall	
3/28/2008	Start	N/A	44.5	1.9				A. Currylow	Plant Site
	End	N/A						K. Hall	
5/6/2008	Start	6:54 am	60	5.4		0	0	S. Dayman	Transmission line
	End	4:30 pm	92	8		10	0	A. Currylow	ZOI transects
5/7/2008	Start	6:22 am	65.9	2.2		0	0	S. Dayman	Transmission line
	End	5:05 pm	83	8		0	0	A. Currylow	ZOI transects
5/8/2008	Start	6:20 am	54	0		0	0	S. Dayman	Transmission line
	End	5:30 pm	77.9	17.5		0	0	A. Currylow	ZOI transects
5/9/2008	Start	6:47 am	67.8	1.5		0	0	S. Dayman	Transmission line
	End	6:30 pm	76	15		0	0	A. Currylow	ZOI transects
5/10/2008	Start	6:30 am	54.6	2.2		hazy		K. Hall	Transmission line
	End	5:22 pm	89.4	7.8		clear		A. Currylow	ZOI transects
5/11/2008	Start	6:25 am	66.4	0		clear		K. Hall	Transmission line
	End	1:47 pm	88	12		clear		A. Currylow	ZOI transects

DESERT TORTOISE FOCUSED SURVEYS, 2008

BURROWING OWL FOCUSED SURVEY DATES, 2008

Date		Start	Temp (F°)	Wind (mph)	Wind Max (mph)	% Clouds	Pcp.	Survevors Present
3/28/2008	Start	17.30	62.3	13.4	20	clear		A Currylow
pm	End	20.15	56	16	20	clear		n. curryiow
3/29/2008	Start	6:00	54	21.1	20	clear		A Currylow
am	Fnd	12.00	72	3	8	clear		n. currytow
3/29/2008	Stort	16:00	65	70	10.2	25		A Currylow
3/29/2008	End	20.00	50	0.6	10.2	15		A. Currylow
2/20/2008	Ellu	20.00	19	9.0	11.1	5		A Cumulau
3/30/2008	Start	10.00	40	0	11.2 N/A	<u> </u>		A. Currylow
am	Ena	10:00	58.5	2.8	N/A	80		77 11 11
5/2//2008	Start	5:30	53.1	1.0	3.2	clear		K. Hall
am	Ena	10:00	69./	1.8	3	clear		IZ 11.11
5/28/2008	Start	5:30	54 72	1.2	1.8	clear		K. Hall
am	End	10:00	12	2.3	1.9	clear		IZ 11.11
5/28/2008	Start	16:45	15.1	8.0	11.2	5		K. Hall
pm 5/20/2008	Ena	20:45	03.3 54.1	1.2	10	10		V Hall
3/29/2008	Start	10.00	34.1 70.6	1.5	2	clear		
am 5/20/2008	Ena	10:00	70.0	2.1	3.3	clear		V Hall
5/30/2008	Start	5:50	50	0.8	8	clear	clear K. Hall	
alli 5/20/2008	Ena	10:00	02	1.2	<u>8.0</u>	clear		V Hall
5/30/2008	Start	21.00	81.5	18.0	20	5 K. Hall		K. Hall
pm 5/21/2008	Ena	21:00	78.4	18	21.0	15		V Hall
3/31/2008	Start	20.20	71.2	17.6	24	13		
6/1/2008	Ellu	20:30	70	7.2	22	30		K Hall
0/1/2008	Start	20.20	79	0.6	9	clear		
6/0/2008	Ellu	5.20	61.2	9.0	11.2	clear		K Hall
0/9/2008	Start	5:50	01.5	15.4	10 1	clear		K. Hall
am 6/0/2008	Ellu	16:20	757	10	19.1			
0/9/2008	Start	20.20	62.5	0.0 7	12.3	25		
6/10/2008	Stort	5.20	54	21.1	22			V Hall
0/10/2008	Start	10.00	72	21.1	22	clear		
6/10/2008	Stort	16.30	65	7.0	12.3	50		K Hall
0/10/2008	Fnd	20.20	50	0.6	12.3	15		K. Hall
6/11/2008	Ellu	5.20	54.1	9.0	12	alaar		V Hall
0/11/2008	Start	10.00	70.6	1.5	2	clear K. Hall		
alli 6/11/2009	Ella Stort	16:00	70.0	2.1 6 °	2.4	50		K Hall
0/11/2008	Start End	20.20	50 62	0.8	9.0	30		
6/12/2008	Ena	20:30	57	21.1	9 22	0U		V Hall
0/12/2008	Start	5:30	5/ 724	21.1	22	ciear		K. Hall
am 6/12/2009	Ena Stort	10:00	/ 3.4	3 196	2.3	15		
0/12/2008	Start	10:30	82.5	18.0	20	ciear		K. Hall
pm	End	20:30	78.6	18	20.1	clear		

APPENDIX B

2008 SITE PHOTOGRAPHS

Atriplex Scrub (Plant Site)

Mojave Creosote Bush Scrub (within 1,000-foot Buffer of Gas Pipeline Route)

Disturbed Mojave Creosote Bush Scrub (Plant Site)

Mojave Desert Wash Scrub (Plant Site)

Fallow Agricultural/Disturbed Atriplex Scrub (Plant Site)

Fallow Agricultural/Ruderal (Plant Site)

Native Annuals Spring 2008 (adjacent to Plant Site)

Native Annuals Spring 2008 (adjacent to Plant Site)

Surveyors Conducting Rare Plant Surveys in 80-acre Parcel

Roads Shoulder of Neuralia Road - Construction Corridor for Natural Gas Pipeline

APPENDIX C

PLANTS DETECTED DURING 2008 SURVEYS

Family	Scientific Name	Common Name
Asteraceae		
	Ambrosia acanthicarpa	annual bursage
	Ambrosia dumosa	white bursage
	Baccharis salicifolia	mule fat
	Chaenactis xantiana	Mojave pincushion
	Chrysothamnus nauseosus ssp. mohavensis	rubber rabbitbush
	Chrysothamnus viscidiflorus	sticky rabbitbush
	Cnicus benedictus *	blessed thistle
	Coreopsis bigelovii	Bigelow's tickseed
	Encelia farinosa	Brittlebush
	Encelia frutescens	button brittlebush
	Ericameria cooperi	Cooper's goldenbush
	Eriophyllum wallacei	woolly easterbonnets
	Garaea canescens	desert sunflower
	Gutierrezia microcephala	sticky snakeweed
	Helianthus annuus	western sunflower
	Hymenoclea salsola	Cheesebush
	Lasthenia californica	California goldfields
	Lepidospartum squamatum	scale broom
	Lessingia lemmonii var. ramulosissima	Lemmon's vinegarweed
	Malacothrix glabrata	desert dandelion
	Malacothrix coulteri	snake's head
	Stephanomeria pauciflora	small wire lettuce
Boraginaceae		
	Amsinkia tessellata var. tortifolia	bristly fiddleneck
	Cryptantha circumcissa	cushion cryptantha
	Cryptantha micrantha	redroot cryptantha
	Cryptantha nevadensis	Nevada cryptantha
	Cryptantha pterocarya	wingnut cryptantha
	Cryptantha utahensis	scented cryptantha
	Heliotropium curassavicum	salt heliotrope
	Pectocarya linearis ssp. ferocula	sagebrush combseed
	Plagiobothrys arizonicus	Arizona popcorn flower
	Tiquilia plicata	tiquilia
Brassicaceae		
	Brassica tournefortii*	Sahara mustard
	Caulanthus coulteri	Coulter's wildcabbage
	Descurainia pinnata	western tansymustard
	Descurainia sophia *	herb sophia
	Guillenia lasiophylla	California mustard
	Lepidium flavum	yellow pepperweed
	Lepidium fremontii	Fremont's pepperweed
	Lobularia maritima *	sweet alyssum
	Sisymbrium altissimum *	tall tumble mustard
G	Sisymbrium irio *	london rocket
Cactaceae		cileren ek ell
Comment	Cylinaropuntia echinocarpa ssp. echinocarpa	silver cholla
Capperaceae	In our out of and out of	bladdamad
Chananadianaa	Isomerts arborea	biadderpod
Chenopoulaceae	A triplay agnoscopy	four wing salthush
	Amplex conescens	allsealo
	Априел ропусатра	anscale

Family	Scientific Name	Common Name
	Grayia spinosa	spiny hopsage
	Salsola tragus *	Russian thistle
Ephedraceae		
	Ephedra nevadensis	Mormon tea
Euphorbaceae		
	Chamaesyce albomarginata	whitemargin sandmat
	Croton setigerus	dove weed
	Stillingia paucidentata	stillingia
Fabaceae		
	Astragalus layneae	Layne's milkvetch
	Astragalus lentiginosus var. fremontii	freckled milkvetch
	Lotus humistratus	foothill deervetch
	Lupinus microcarpus var. horizantalis	chick lupine
	Psorotnamnus arborescens var. minutifolius	Johnson's indigo bush
Constitution	Senna armata	spiny senna
Geraniaceae	Free dimensional *	na datana atank'a kili
Hadaaahadhaa		reastern stork's bill
Hydrophynaceae	Emmon on the new duliflore	whisperinghalls
	Nama domissum	purplement
	Phacelia distans	distant phacelia
	Phacelia fremontii	Fremont's phacelia
	Pholistoma membranaceum	white fiesta flower
Lamiaceae		white nesta nower
Lumacodo	Salazaria mexicana	bladder sage
	Salvia carduacea	thistle sage
	Salvia columbariae	chia
Lennoaceae		
	Pholisma arenarium	desert christmas tree
Liliaceae		
	Calochortus kennedyi var. kennedyi	desert mariposa lily
	Dichelostemma capitatum	blue dicks
	Yucca brevifolia	Joshua tree
Loasaceae		
	Mentzelia albicaulis	whitestem blazingstar
	Mentzelia eremophila	pinyon blazingstar
	Mentzelia involucrata	whitebract blazingstar
Malvaceae		
	Eremalche exilis	white mallow
	Sphaeralcea ambigua	desert apricot mallow
Nyctaginaceae		
	Mirabilis bigelovii	wishbone bush
Onagraceae		
	Camissonia campestris	Mojave sun cups
	<i>Camissonia claviformis</i> ssp. <i>claviformis</i>	brown eyes
	Camissonia paimeri	Paimer's evening primrose
Dopovorococc	Genomera primiveris ssp. bujonis	desent evening-primirose
rapaveraceae	Eschecholzia californica	annual poppy
	Eschscholzia munutiflora ssp. minutiflora	annual poppy
Doaceaa	Esensenoizia mananjiora ssp. minunjiora	pyginy poppy
1 Uaccae	Acnatherum hymenoides	indian ricegrass
	Bromus madritensis ssp. rubens *	foxtail chess
	Dionius nuur nensis sop. ruoens	10/10/10/00

Family	Scientific Name	Common Name
	Bromus tectorum *	cheat grass
	Cynodon dactylon *	Bermuda grass
	Hordeum murinum ssp. leporinum *	hare barley
	Schismus arabicus*	split grass
	Vulpia myuros*	foxtail fescue
Polemoniaceae		
	Eriastrum eremicum ssp. erimicum	desert woolstar
	Gilia brecciarum ssp. brecciarum	Nevada gilia
	Gilia cana ssp. speciosa	showy gilia
	Gilia sinuata	rosy gilia
	Gilia malior	scrub gilia
	Linanthus bigelovii	Bigelow's linanthus
	Loeseliastrum matthewsii	desert calico
Polygonaceae		
	Centrostegia thurberi	Thurber's spineflower
	Chorizanthe brevicornu	brittle spineflower
	Chorizanthe watsonii	Five-tooth spineflower
	Eriogonum angulosum	anglestem buckwheat
	Eriogonum inflatum	desert trumpet
	Eriogonum pusillum	wild buckwheat
	Eriogonum palmerianum	Palmer's buckwheat
Solanaceae		
	Datura wrightii	thorn apple
	Lycium andersonii	water jacket
	Lycium cooperi	box thorn
	Solanum eleaginifolium *	spiny nightshade
Tamaricaceae		
	Tamarix aphylla *	athel
Zygophyllaceae		
	Larrea tridentata	creosote bush

* Nonnative plant species.

APPENDIX D

WILDLIFE DETECTED DURING 2008 SURVEYS

Scientific Name	Common Name		
Reptiles			
Order Squamata	Lizards and Snakes		
Family Colubridae			
Pituophis catenifer	pacific gopher snake		
Family Crotaphytidae			
Gambelia wislizenii	long-nosed leopard lizard		
Family Phrysonomatidae			
Callisaurus draconoides	zebra-tailed lizard		
Sceloporus graciosus	sagebrush lizard		
Uta stansburiana	side-blotched lizard		
Family Teiidae			
Aspidoscelis tigris	western whiptail		
Family Viperidae			
Crotalus scutulatus scutulatus	Mojave (green) rattlesnake		
Order Testudines	Turtles and Desert Tortoises		
Family Testudinidae			
Gopherus agassizii	Mojave desert tortoise FT/ST		
Birds			
Order Caprimulgiformes	Nightjars, Pootoos, Frogmouths, etc.		
Family Caprimulgidae			
Chordeiles acutipennis	lesser nighthawk		
Order Charadriiformes	Shorebirds, Gulls, and Relatives		
Family Scolopacidae			
Numenius americanus	long-billed curlew		
Order Ciconiiformes	Herons, Egrets, Storks, etc.		
Family Ardeidae			
Nycticorax nycticorax	black-crowned night heron		
Family Cathartidae			
Cathartes aura	turkey vulture		
Order Columbiformes	Pigeons, Doves, Solitaires and Dodos		
Family Columbidae			
Columba livia	rock dove (feral pigeon)		
Zenaida macroura	mourning dove		
Order Falconiformes	Diurnal Birds of Prey		
Family Falconidae			
Buteo jamaicensis	red-tailed hawk		
Circus cyaneus	northern harrier SSC		
Order Passeriformes	Perching Birds		
Family Aegithalidae			
Psaltriparus minimus	bushtit		
Family Alaudidae			
Eremophila alpestris	horned lark		
Family Corvidae			
Corvus corax	common raven		
Family Emberizidae			
Amphispiza belli	sage sparrow		
Melospiza melodia	song sparrow		
Passerella iliaca	fox sparrow		

Scientific Name	Common Name
Spizella atrogularis	black-chinned sparrow
Zonotrichia albicollis	white-crowned sparrow
Family Fringillidae	
Carduelis psaltria	lesser goldfinch
Family Hirundinidae	
Hirundo rustica	barn swallow
Tachycineta bicolor	tree swallow
Tachycineta thalassina	violet-green swallow
Family Icteridae	
Sturnella neglecta	western meadowlark
Family Laniidae	
Lanius excubitor	northern shrike
Lanius ludovicianus	loggerhead shrike ^{SSC}
Family Mimidae	
Toxostoma leconte	Le Conte's thrasher ^{SSC}
Family Sturnidae	
Sturnus vulgaris	European starling
Family Thraupidae	
Piranga ludoviciana	western tanager
Family Tyrannidae	
Savornis nigricans	black phoebe
Tyrannus sp.	kingbird
Order Strigiformes	Owls
Family Strigidae	
Athene cunicularia	western burrowing owl SSC
Invertebrates	
Order Lepidoptera	Butterflies
Superfamily Papilionoidea	
Pieris rapae	cabbage white
Vanessa cardui	painted lady
Mammals	
Order Carnivora	Carnivores
Family Canidae	
Canis latrans	coyote
Order Lagomorpha	Rabbits, Hares, and Pikas
Family Leporidae	
Sylvilagus audubonii	desert cottontail
Lepus californicus	black-tailed jackrabbit
Order Rodentia	Squirrels, Rats, Mice, and Relatives
Family Sciuridae	
Ammospermophilus leucurus	white-tailed antelope squirrel

U.S. Fish and Wildlife Service listed as Threatened California Department of Game listed as Threatened California Department of Game listed as Threatened FT

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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE BEACON SOLAR ENERGY PROJECT

DOCKET NO. 08-AFC-2

PROOF OF SERVICE

(Revised 10/27/08)

<u>INSTRUCTIONS</u>: All parties shall either (1) send an original signed document plus 12 copies <u>or</u> (2) mail one original signed copy AND e-mail the document to the address for the docket as shown below, AND (3) all parties shall also send a printed <u>or</u> electronic copy of the document, <u>which includes a proof of service declaration</u> to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION Attn: Docket No. 08-AFC-2 1516 Ninth Street, MS-14 Sacramento, CA 95814-5512 docket@energy.state.ca.us

Stove Schouer Everytive Director	Konnoth Stoin ID
Steve Schauer, Executive Director	Kenneth Stein, J.D.
Solar Business Development	Duane McCloud
700 Universe Blvd.	Bill Narvaez
Juno Beach, FL 33408	Meg Russell
Steve.schauer@fpl.com	FPL Energy, LLC
	700 Universe Blvd., MS JES/JB
Mike Argentine	Juno Beach, FL 33408
FPL Energy, LLC	Kenneth.stein@fpl.com
1465 Oak Hill Way	Guillermo.narvaez@fpl.com
Roseville, CA 95661	Duane.mccloud@fpl.com
Michael.argentine@fpl.com	Meg.russell@fpl.com
Jane Luckhardt, Esq.	Sara Head, Vice President
Downey Brand, LLP	ENSR Corporation
621 Capitol Mall, 18th Floor	1220 Avenida Acaso
Sacramento, CA 95814	Camarillo, CA 93012
jluckhardt@downeybrand.com	shead@ensr.aecom.com
Geoffrey R. Baxter, P.E. – Project Manager	CA Independent System Operator
Worley Parsons	P.O. Box 639014
2330 E. Bidwell Street, Suite 150	Folsom, CA 95763-9014
Folsom, CA 95630	e-recipient@caiso.com
Geoffrey.baxter@worleyparsons.com	-

Tanya A. Gulesserian	
Marc D. Joseph	
Adams, Broadwell, Joseph & Cardozo	
601 Gateway Blvd., Suite 1000	
So. San Francisco, CA 94080	
tgulesserian@adamsbroadwell.com	
Karen Douglas	Jeffrey D. Byron, Associate Member
Commissioner & Presiding Member	jbyron@energy.state.ca.us
kldougla@energy.state.ca.us	
Kenneth Celli, Hearing Officer	Jared Babula, Staff Counsel
kcelli@energy.state.ca.us	jbabula@energy.state.ca.us
Shaelyn Strattan, Project Manager	Public Adviser
mstratta@energy.state.ca.us	pao@energy.state.ca.us

DECLARATION OF SERVICE

I, Lorraine Ballew, declare that on October 30, 2008, I deposited copies of the attached **2008 Spring Survey Report and Cover Letter** in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of the California Code of Regulations, title 20, sections 1209, 1209.5 and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Lorraine Ballew