March 11, 2019

Via Overnight and Electronic Mail

Brandon G. Anderson  
Bureau of Land Management  
Palm Springs South Coast Field Office  
1201 Bird Center Drive  
Palm Springs, CA 92234  
Email: bganderson@blm.gov

Erika Grace  
Project Manager, AECOM  
10 Patewood Dr., Bldg VI, Suite 500  
Greenville, SC 29615  
Email: blm_ca_desert_quartzite_solar_project@blm.gov

Russell Brady  
Project Planner  
Riverside County Planning Department  
4080 Lemon St., 12th Floor  
Riverside, CA 92501  
Email: RBrady@rivco.org


Dear Mr. Anderson, Ms. Grace, and Mr. Brady:

On behalf of Citizens for Responsible Solar, we submit these comments on the Plan Amendment/Environmental Impact Statement/Environmental Impact Report ("DEIR/S") for First Solar's ("Applicant") 450-megawatt ("MW") Desert Quartzite Solar Project ("Project"), prepared pursuant to the National Environmental Policy Act ("NEPA") and the California Environmental Quality Act ("CEQA").
March 11, 2019
Page 2

(“CEQA”). The total Project area under application for approval from Bureau of Land Management (“BLM”) and Riverside County is approximately 5,275 acres, with 5,115 acres of BLM lands and 160 acres of County land. This acreage includes potential alternatives.

The proposed Project is located in the southern California inland desert, approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of Blythe Airport in Riverside County, California (Figure 2-1).

Construction and operation of the Project would disturb approximately 3,560 acres of BLM land for the solar plant site and other Project-related facilities, 54 acres of BLM land for a 2.79-mile corridor for a 230 kilovolt (“kV”) gen-tie with a width of 160 feet, and 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land. The Project would also disturb approximately 154 acres of private lands that are under County jurisdiction and are adjacent to the BLM ROW grant boundary. The Project does not include any County real property or County right-of-way.

The Project is located within the Riverside East Solar Energy Zone (“SEZ”), which encompasses areas covered by the Northern and Eastern Colorado Desert Coordinated Management Plan (“NECO Plan”), and the California Desert Conservation Area (“CDCA”). Several solar power plants have already been approved for development in the SEZ, and other applications are still pending.\(^2\) As each project is developed, the needs of each individual project will unavoidably tax limited water, land, and biological resources to a potentially significant cumulative extent. The final toll taken by this historic energy boom on California’s desert environment, public health, and natural resource base may not be known for several years or longer, but the mounting evidence of detrimental impacts shows that the effects may be severe.

Information has long been available regarding the impacts that solar PV projects have on sensitive species, the strains that project development is having on the state’s limited water and agriculture resources, and the impacts of long-term

---
1 Pub. Resources Code § 21000 et seq.
construction activities associated with large-scale solar. The Mojave Desert around the Project area has been approved for thousands of acres of solar development with little regard for the cumulative impacts these projects will have on the fragile desert ecosystem. Now, more than ever, it is essential that the County and BLM adequately identify and analyze the Project’s foreseeable direct, indirect and cumulative impacts. It is also imperative that any and all feasible mitigation measures be presented and discussed. Indeed, CEQA and NEPA require nothing less.

As explained below, the Project will generate a multitude of significant, unmitigated impacts to biological resources. The DEIR/S either mischaracterizes, misanalyses, underestimates, or fails to identify many of these impacts. The DEIR/S must be revised to resolve its inadequacies and must be recirculated for public review and comment.

CEQA requires recirculation of an EIR for public review and comment when significant new information is added to the EIR following public review, but before certification. The CEQA Guidelines clarify that new information is significant if “the DEIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect.”

The purpose of recirculation is to give the public and other agencies an opportunity to evaluate the new data and the validity of conclusions drawn from it. As explained more fully below, the DEIR/S does not comply with the requirements of NEPA and CEQA because the DEIR/S (1) fails to set forth the environmental baseline for biological resources, and (2) fails to identify, analyze and mitigate to the extent feasible, all the impacts that the Project will have on biological resources. The County and BLM may not approve the Project until an adequate DEIR/S is prepared and circulated for public review and comment.

\[4\] CEQA Guidelines § 15088.5.
\[5\] Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors (1981) 122 Cal.App.3d 813, 822, 2189-040acp
We have reviewed the DEIR/S and its technical appendices with assistance from technical consultant Renee Owens of Sage Wildlife Biology.\(^6\) Ms. Owens's comments, along with her curriculum vitae, are attached to this letter. We request that the BLM and the County include the entirety of these comments, including the attachments, in the record of proceedings for this Project.

I. STATEMENT OF INTEREST

Citizens for Responsible Solar is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The association includes Blythe residents and California Unions for Reliable Energy ("CURE") and its members and families and other individuals that live and/or work in Riverside County (collectively, "Citizens").

The individual members of Citizens and the members of the affiliated labor organizations live, work, recreate and raise their families in Riverside County. They would be directly affected by the Project's environmental and health and safety impacts. Individual members may also work constructing the Project itself. They will be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal interest in protecting the Project area from unnecessary, adverse environmental and public health impacts.

The organizational members of Citizens also have an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for the members that they represent. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for businesses to locate and people to live there. This, in turn, jeopardizes future development by causing construction moratoriums and otherwise reduces future employment opportunities for construction workers. The labor organization members of Citizens therefore have a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment. Finally, the organizational members of Citizens are concerned about projects that risk serious environmental harm without providing countervailing economic benefits. The CEQA and NEPA processes allow for a balanced

\(^6\) Renee Owens, Sage Wildlife Biology March 5, 2019 Comment Letter ("Owens Letter") (Attachment A).

2389-040nrcp
consideration of a project's socioeconomic and environmental impacts, and it is in
this spirit that we offer these comments.

II. THE DEIR/S IS INCONSISTENT IN ITS ANALYSIS OF NEED AND
COMPLIANCE WITH THE DRECP AND CDCA

The DEIR/S provides that the Project is located within the Development
Focus Area and the Riverside East SEZ designated under the Desert Renewable
Energy Conservation Plan ("DRECP"). The DRECP, issued in October 2016,
amended the 1980 California Desert Conservation Area Plan as amended in 1999
("CDCA"). However, according to the DEIR/S, the "new management prescriptions"
of the DERCP don't apply to the Project's DEIR/S, because the Project was "[a]
"pending" right-of-way (ROW) application under the Western Solar Plan and its
location within a SEZ (DRECP Section II.3.2.4, p. 68-69)" and because "[t]he data
collection, field surveys, and impact analyses for this EIS/EIR [were] based on
BLM's requirements as of the date of the Notice of Intent" which was prior to the
DRECP's framework being in place."7

While the DEIR/S purports to follow DRECP recommendations, the DEIR/S
also states that it is not bound by the DRECP, and thus the BLM is not obligated to
follow the Development Focus recommendations for this region, as dictated by the
DRECP.8 At the same time, the Project is bound to the CDCA Plan, as stated
repeatedly in the DEIR/S, e.g. "[t]herefore, the Desert Quartzsite Solar PV proposal
is being processed under the CDCA land use plan."9 Ms. Owens also notes that the
"DRECP itself relies on equally conflicting statements regarding development of
this region for renewable energy."10

In light of her analysis, Ms. Owens points out that "there are several
directives of the CDCA that should be part of the Purpose and Need statement –
and resultant analysis – that are missing or in conflict with the DEIR/S." Ms.
Owens points out, as an example, that the Project "fails to meet" some of the

---

7 DEIR/S Appendix E-1.
8 Owens Letter p. 2.
9 Id.
10 id.
2589-040np
Decision Criteria for the Energy Productions and Utility Corridors Elements of CDCA,\(^{11}\) such as:

1. "Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors." The abundant and significant biological impacts to several thousand acres of public lands imposed by the Project could be avoided by using an Alternative that builds on energy storage or production from an existing project or other infrastructure.

2. "Avoid sensitive resources wherever possible." This goal is not being met based on the abundance of sensitive biological resources and high number of protected species that will be impacted as identified herein and by the DER/S, nor is it met by any environmentally superior Alternative.

3. "Consider wilderness values and be consistent with final wilderness recommendations." The DEIR/S states the Project will occupy approximately 3,770 acres, which amounts to almost 5.9 square miles. The solar arrays, buildings, transmission lines, roads, night lighting, and other anthropogenic constructs will be visible from adjacent wilderness and conservation areas and contribute to alterations in habitat and wildlife behavior and ecology of the area, undeniably resulting in degradation wilderness values, including the additional dust, light, and noise impacts during construction and decommissioning phases.\(^{12}\)

Ms. Owens concludes that "the DEIR/S should reevaluate and rewrite the Purpose and Need statement to one that more closely represents environmental protections that are the primary responsibility of the BLM as land caretakers for the public..."\(^{13}\)

---


\(^{12}\) Owens Letter pp. 2-3.

\(^{13}\) Id., at p. 3.
III. THE DEIR/S FAILS TO ADEQUATELY ESTABLISH THE EXISTING BIOLOGICAL RESOURCES SETTING AGAINST WHICH IMPACTS SHOULD BE MEASURED

The DEIR/S describes the existing environmental setting inaccurately and incompletely, thereby skewing the entire impact analysis. The existing environmental setting is the starting point from which the lead agency must measure whether a proposed project may cause a significant environmental impact.\(^{14}\) CEQA states the lead agencies should include a description of the physical environmental conditions in the vicinity of a project, as they exist at the time environmental review commences.\(^{16}\) CEQA defines the environmental setting as the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and regional perspective.\(^{16}\)

Describing the environmental setting accurately and completely for each environmental condition in the vicinity of the Project is critical to an accurate, meaningful evaluation of environmental impacts. Courts are clear that, "[b]efore the impacts of a Project can be assessed and mitigation measures considered, an [environmental review document] must describe the existing environment. It is only against this baseline that any significant environmental effects can be determined."\(^{17}\) In fact, it is:

a central concept of CEQA, widely accepted by the courts, that the significance of a Project’s impacts cannot be measured unless the DEIR first establishes the actual physical conditions on the property. In other words, baseline determination is the first rather than the last step in the environmental review process.\(^{18}\)


\(^{15}\) CEQA Guidelines, § 15125(a); see also Communities for A Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310, 321; see also, 40 C.F.R. § 1502.15.

\(^{16}\) CEQA Guidelines §15125(a) (emphasis added); Riverwatch v. County of San Diego (1999) 76 Cal.App.4th 1428, 1453 ("Riverwatch").


\(^{18}\) Save our Peninsula Comm. v. Monterey County Bd. of Supervisors (2001) 87 Cal.App.4th 99, 125. 2589-040acp
The DEIR must also describe the existing environmental setting in sufficient
detail to enable a proper analysis of Project impacts.\textsuperscript{19} Section 15125 of the CEQA
Guidelines provides that “[k]nowledge of the regional setting is critical to the
assessment of environmental impacts.”\textsuperscript{20} This level of detail is necessary to “permit
the significant effects of the Project to be considered in the full environmental
context.”\textsuperscript{21}

The description of the environmental setting in the DEIR/S is inadequate
because it omits, or underestimates, highly relevant information regarding
biological resources. The County must gather the relevant data and provide an
adequate description of the existing environmental setting in a revised and
recirculated DEIR/S.

\section*{A. The Project Fails to Describe the Existing Biological Resources
Setting Against Which Impacts Should be Measured}

\subsection*{a. The DEIR/S Fails to Adequately Evaluate the Existing Setting
for Birds and Bats}

The DEIR/S’s description of the existing environmental setting as it concerns
birds and bats is inadequate because the description of baseline conditions has not
been established. The DEIR/S recognizes that there is a high likelihood that
multiple bird and bat species use at the site, both as nesting and roosting habitat
and as temporary habitat for migratory bird species,\textsuperscript{22} and yet it fails to provide
adequate data on the use levels of the site by birds and bats. Mitigation Measure
WIL-6 requires the creation of a Bird and Bat Conservation Strategy (“BBCS”).\textsuperscript{23} In
fact, in WIL-6, the DEIR/S implicitly states that there is no baseline data on birds
and bats, stating in part: “Prior to the Notice to Proceed, the Applicant shall finalize
and implement their draft BBCS to include the following: \textit{Describe baseline

\textsuperscript{20} CEQA Guidelines § 15125(c).
\textsuperscript{21} Id.
\textsuperscript{22} Owens Letter p. 7.
\textsuperscript{23} Appendix G-33.
2589-040acp
conditions for bird and bat species present within the Project site, including results of site-specific surveys.\textsuperscript{24}

The mitigation measure includes only a bare outline of the types of actions that may result in mitigation of impacts, and what is more, it requires the plan to describe future baselines conditions, suggesting that baseline conditions in compliance with CEQA are absent. This is an impermissible deferral of establishing the existing baseline for biological resources and, thus, the DEIR/S violates CEQA.

\textit{b. The DEIR/S Fails to Adequately Set Forth the Existing Setting for the Mojave Fringe-Toed Lizard (\textit{Uma scoparia})}

The DEIR/S's description of the existing environmental setting as it concerns Mojave Fringe-toed lizard ("MFTL") is deficient on three counts: 1) only a portion of Project site was surveyed, 2) not all the survey data are reported, and 3) the DEIR/S improperly assumes that failure to detect the species during the surveys is evidence of MFTL absence.

The DEIR/S describes the surveys for MFTL:

Two preliminary baseline herpetofaunal investigations from October 22 to 23, 2012 and March 25 to April 12, 2013 and one visual encounter survey in Spring 2013 were completed on the portion of the Project site administered by BLM (i.e., 4,885 acres and additional buffer area). Herpetological surveys also included the 160-acre private inholding. Preliminary baseline herpetofaunal investigations consisted of walking belt transects approximately 10 meters wide to provide 100 percent coverage of the portion of the Project site administered by BLM. The visual encounter survey, which is a more intensive survey compared to baseline investigations, was performed along 12 transects (ten on-site and two in a one-mile buffer zone). Preliminary baseline herpetofaunal investigations and visual encounter surveys were not performed on the 160-acre private inholding. However, a habitat assessment of the

\textsuperscript{24} Id. (italics added.)

2539-040cp

\textcopyright{} printed on recycled paper
inholding was conducted in Spring 2015 by walking 100 percent of the parcel. 25

First, the surveys did not cover the entirety of project site, in that only “[a] habitat assessment of the inholding was conducted in Spring 2015 by walking 100 percent of the parcel.” 26 A habitat assessment does not provide information on presence/absence of a species, but only whether the habitat is appropriate for that species. Therefore, the DEIR/S does not provide baseline data on the presence of MFTL within the inholding.

Second, the DEIR/S only reports the number of individuals noted during the herpetofaunal surveys, 27 but not how many individuals were noted during the preliminary baseline herpetofaunal investigations.

Third, Ms. Owens notes that MFTL is cryptic, blends in with the sand, and that individuals often bury themselves in the sand. 28 Ms. Owns states:

[despite the Applicant conducting herpetofaunal surveys for the Project site six and seven years ago, it must be noted that “Visual Encounter Surveys” of transects can never completely provide an accurate census of an extremely difficult to detect species like the MFTL. Even when not hibernating, the animals are incredibly cryptic and spend a good deal of time buried under the sand for physiologic and behavioral reasons, including predator avoidance. 29

Ms. Owens suggests that “[s]urveys of individuals not combined with a qualitative statistical estimate for occurrence,” always underestimate numbers 30 and therefore lead to an inaccurate approximation of population size.

Thus, the DEIR/S fails to establish a complete and accurate existing environmental setting as it relates to MFTL.

25 DEIR p. 3.4-10.
26 Id. (emphasis added).
27 Id., at p. 3.4-11.
28 Owens Letter p. 36.
29 Id.
30 Id.
2389-040a cp
c. The DEIR/S Fails to Adequately Evaluate the Existing Setting for Foraging Eagles and Other Raptors on the Project Site

The DEIR/S's description of the existing environmental setting as it concerns foraging eagles and other raptors is inadequate on two counts: 1) prey base is not accurately quantified, and 2) use of the site as foraging grounds is underestimated.

The DEIR/S states "Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on lagomorphs and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002)."31 In evaluating the prey base for foraging golden eagles, the DEIR/S estimates that a total of 17 black-tailed jackrabbits were detected on the site, a density of approximately 0.0035 rabbits per acre, while a total count of cottontail rabbit was not conducted, and therefore cottontail a density estimate could not be established.32 Ms. Owens explains that:

[t]his survey is extremely poorly described in scope and methodology, and as such clearly cannot represent a census or any other sort of scientific estimate that is appropriate for determining abundance, site use, and/or density of jackrabbits (or cottontails) inhabiting the Project site as a primary prey item for not only golden eagles but other species as well, including red-tailed hawks and kit foxes.

Ms. Owens recommends that new prey distributions be assessed with new surveys, because the low level of use by golden eagles and other raptors cannot be predicted from these data,33 leading to an inaccurate evaluation of the existing setting.

Also, the proximity of foraging habitat near the project site, in addition to historic data on the presence of raptors in the area, shows a moderate to high likelihood that the Project site would be used for foraging by raptors, and that [t]he Project site may cause significant indirect impacts to foraging eagles and other

31 DEIR/S p. 3.4-14.
32 DEIR/S p. 3.4-14.
33 Owens Letter p. 40.
2589-040ncp
raptor species, contrary to the assumptions made by the DEIR/S that are not supported by substantial evidence.\(^{34}\)

For these reasons, the DEIR/S fails to establish a complete and accurate existing environmental setting as it relates to raptors.

\( \text{d. The DEIR/S Fails to Adequately Evaluate the Existing Setting for Special Status Species} \)

The DEIR/S's description of the existing environmental setting as it concerns special status species is inadequate because many special-status species are omitted from the analysis.

The DEIR/S provides Table 3.4-1, listing special-status species that have the potential to occur within the study site.\(^{35}\) However, DEIR/S survey results show the presence of several special-status species that were not included in table 3.4-1, and were therefore not analyzed.\(^{36}\) Such an omission is "a serious oversight on the part of the DEIR/S." Since it is very likely that these often migratory species, while not breeding or making use of the foraging habitat on a regular basis, need to be considered by the EIR/S.\(^{37}\) The absence of these species from any discussion in the DEIR/S fails to establish a complete and accurate existing environmental setting as it relates to these special-status species.

IV. THE DEIR/S LACKS SUBSTANTIAL EVIDENCE TO SUPPORT THE DEIR/S'S SIGNIFICANT IMPACT FINDINGS AND THE DEIR/S FAILS TO INCORPORATE ALL FEASIBLE MITIGATION MEASURES NECESSARY TO REDUCE SUCH IMPACTS TO A LESS THAN SIGNIFICANT LEVEL

CEQA has two basic purposes, neither of which the DEIR/S satisfies. First, CEQA is designed to inform decision makers and the public about the potentially significant environmental impacts of a Project before harm is done to the

\(^{34}\) id.
\(^{35}\) DEIR/S p. 3.4-4.
\(^{36}\) Owens Letter p. 29.
\(^{37}\) id.
2069-040acp
environment.\textsuperscript{38} The DEIR is the "heart" of this requirement.\textsuperscript{39} The DEIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."\textsuperscript{40}

To fulfill this function, the discussion of impacts in a DEIR must be detailed, complete, and "reflect a good faith effort at full disclosure."\textsuperscript{41} An adequate DEIR must contain facts and analysis, not just an agency's conclusions.\textsuperscript{42} CEQA requires a DEIR to disclose all potential direct and indirect significant environmental impacts of a project.\textsuperscript{43}

Second, if a DEIR identifies potentially significant impacts, it must then propose and evaluate mitigation measures to minimize these impacts.\textsuperscript{44} CEQA imposes an affirmative obligation on agencies to avoid or reduce environmental harm by adopting feasible project alternatives or mitigation measures.\textsuperscript{45} Without an adequate analysis and description of feasible mitigation measures, it would be impossible for agencies relying upon the DEIR to meet this obligation.

Under CEQA, a DEIR must not only discuss measures to avoid or minimize adverse impacts, but must ensure that mitigation measures are fully enforceable through permit conditions, agreements, or other legally binding instruments.\textsuperscript{46} A CEQA lead agency is precluded from making the required CEQA findings unless the record shows that all uncertainties regarding the mitigation of impacts have been resolved; an agency may not rely on mitigation measures of uncertain efficacy or

\textsuperscript{39} No Oil, Inc. v. City of Los Angeles (1974) 13 Cal.3d 68, 84.
\textsuperscript{40} County of Inyo v. Yorty (1973) 32 Cal.App.3d 795, 810.
\textsuperscript{41} CEQA Guidelines § 15151; San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 721-722.
\textsuperscript{42} See Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553, 568.
\textsuperscript{43} PRC § 21100(b)(1); CEQA Guidelines § 15126.2(a).
\textsuperscript{44} PRC §§ 21002.1(a), 21100(b)(3); CEQA Guidelines § 15002(a)(2) and (3); Berkeley Jets, 91 Cal.App.4th at 1354; Laurel Heights Improvement Ass'n v. Regents of the University of Cal. (1998) 47 Cal.3d 376, 400.
\textsuperscript{45} PRC §§ 21002-21002.1.
\textsuperscript{46} CEQA Guidelines, § 15126.4, subd. (a)(2).
feasibility. This approach helps “insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug.”

In this case, the DEIR/S fails to satisfy the basic purposes of CEQA. The DEIR/S conclusions regarding impacts to biological resources are not supported by substantial evidence. In preparing the DEIR/S, the applicant: 1) failed to provide sufficient information to inform the public and decision-makers about potential environmental impacts; 2) failed to accurately identify and adequately analyze all potentially significant environmental impacts; 3) failed to incorporate adequate measures to mitigate environmental impacts to a less than significant level; and 4) failed to analyze impacts associated with mitigation measures. The applicant must correct these shortcomings and recirculate a revised DEIR/S for public review and comment.

A. The DEIR/S Fails to Adequately Analyze and Mitigate Significant Impacts to Bats

The DEIR/S analysis of impacts and mitigation measures on bats is inadequate for two reasons: 1) it fails to consider impacts to bats caused by lighting, and 2) it fails to describe the mitigation compensation for loss of foraging and roosting habitat for bats.

First, the DEIR/S is inconsistent in regards to the amount of light that the project would create. The DEIR/S recognizes the fact that the pallid bat, Townsend’s big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis, all use the site. On one hand, the DEIR/S recognizes that additional light for site security will be provided “24 hours per day, 7 days per week, through a combination of the fencing, lighting...Night lighting would be provided at the O&M building, the On-Site Substation, the temporary construction staging areas, and on or near each PCS station,” as well as nighttime lighting “during

---

47 Kings County Farm Bur. v. County of Hanford (1990) 221 Cal.App.3d 692, 727-28 (a groundwater purchase agreement was inadequate mitigation because there was no record evidence that replacement water was available).
49 Owens Letter p. 7.
50 DEIR/S p. 2-10.
2089-040acp
construction and decommissioning."\(^{51}\) On the other hand, the DEIR/S concludes that “[b]ased on the relatively undeveloped nature of the surrounding landscape, there are very few sources of light associated with the Project area. The primary source of light and glare in the area is motor vehicles traveling on surrounding roadways and from residences in Nicholls Warm Springs/Mesa Verde."\(^{52}\) Thus, the DEIR/S is inconsistent in regards to the amount and location of light impacts to bats from the Project.

Second, the DEIR/S recognizes that the increased night lighting could impact bats “including alteration of foraging and breeding behavior.”\(^{53}\) The DEIR/S uses mortality observations at other, nearby, solar facilities as the only measure of impacts on bats. However, many additional sources can impact bats in more ways than by causing only mortality:

Project impacts from night lighting, habitat loss and fragmentation, fugitive dust, predator attraction, etc., throughout almost 6 square miles of the proposed project development footprint could cause changes in foraging and breeding that may result in increased competition, predation, and overall reduced fecundity and viability that could impact bats at the subpopulation level, and at yet not be observable as mortalities onsite.\(^{54}\)

Regarding describing impacts to roosting and foraging habitat for bats, the DEIR/S does not provide sufficient information to assess compensatory mitigation.\(^{55}\) The DRECP, which the DEIR/S follows (see discussion above) provides guidelines on the evaluation and description of compensatory mitigation for bats.\(^{56}\) However, the “DEIR/S does not provide the necessary information, analysis, or relevant discussion to begin to assess compensatory mitigation as described [by the

\(\text{\footnotesize{51}}\) Owens Letter p. 17.
\(\text{\footnotesize{52}}\) DEIR/S p. 3.19-2.
\(\text{\footnotesize{53}}\) Owens Letter p. 17.
\(\text{\footnotesize{54}}\) id.
\(\text{\footnotesize{55}}\) id.
\(\text{\footnotesize{56}}\) DRECP EIR/EIS Appendix H.3.3
2589-040ecp
DRECP]." As such, any mitigation measures for bats will be insufficient to reduce impacts to levels below significance.53

B. Impacts to Birds from Collisions to Facilities are Underestimated and Ignored, Resulting in Unmitigated Significant Impacts to Sensitive and Protected Bird Species

The DEIR/S analysis of collision impacts and mitigation measures on birds is inadequate for three reasons: 1) the mitigation proposed fails as actual mitigation, 2) it underestimates collision impacts leading to under-mitigation and, 3) it lacks substantial evidence to support its conclusion that bird mortality from collisions is unsupported by available data.

First, as noted in these comments, the DEIR/S fails to provide adequate mitigation for significant impacts to birds. Mitigation measure WIL-6 protype to address impacts to birds and bats but defers preparation of the BBCS to the future. As part of the future mitigation, the BBCS states mitigation will “[m]onitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field.”58 and that the monitoring data will inform future management programs.60 However, monitoring in and of itself “does not mitigate actual harm, injury, or death to individuals in any way, so should not be categorized as actual mitigation.”61 Actual mitigation is intended to reduce impacts resulting from the project, and mitigation measures should be specific enough to allow evaluation of the efficacy of proposed mitigation measures. In this case, it is clear that while monitoring is an important part to any management program, it is not mitigation in itself.

Second, Ms. Owens cites the comment letter submitted in response to the DEIR by the US Fish and Wildlife Service (“USFWS”),62 highlighting the impacts of solar fields on migratory birds. The USFWS letter points out that:

---

57 Owens Letter p. 19.
58 id., at p. 20.
59 DEIR/S Appendix G-34. (emphasis added).
60 id.
61 Owens Letter p. 20.
62 id.
2389-040ncc
in the draft EIS/EIR, post-construction avian mortality monitoring from nearby utility-scale solar facilities has documented bird fatalities. However, the avian mortality monitoring data described in the draft EIS/EIR only considers raw data that are not corrected for searcher efficiency and carcass persistence. These data are useful for considering which project features are associated with mortalities, but do not provide a good metric for evaluating the total impact to migratory bird species.\textsuperscript{63}

The letter goes on to recommend that the Final EIR/S provide data that accounts for searcher bias and rates of carcass removal and a “more accurate cumulative evaluation of effects to migratory birds.”\textsuperscript{64} Ms. Owens agrees with the assessment of USFWS, concluding that impacts to birds are underestimated, and thus remain unmitigated to a less than significant level.\textsuperscript{65}

Lastly, the DEIR/S fails to support its assertion that solar fields do not impact migratory birds. The DEIR/S states:

A potential risk to migrating birds is associated with Polarized Light Pollution (PLP), which creates the “lake effect” in which PV panels may mimic the reflective and light polarizing characteristics of water. Migrating water birds may mistake fields of PV panels as water bodies, and consequently be attracted to them. The lake effect has recently been postulated as a causal factor in injuries and mortalities of water birds at some solar facilities in the California Desert. Migrating birds may attempt to land on what they perceive as water, and instead collide with solar panels or other structures, resulting in injury or death. Additionally, some water birds require a running start


\textsuperscript{64} id.

\textsuperscript{65} Owens Letter p. 28.
across a water surface to take off. If these birds successfully land at the solar facility, they will be unable to take off again.66

However, the DEIR/S argues that impacts of solar fields on birds are not supported by sufficient evidence, stating: “[a]vailable information is not sufficient to allow quantification of the potential hazard of glare. Forecasting the importance of PLP to the survival of avian populations and the integrity and function of ecosystems remains largely speculative (Horvath et al. 2009).”67

To the contrary, there is ample scientific evidence to support the conclusion that birds do collide with reflective solar panel arrays, associated transmission lines, and other structures associated with industrial solar facilities, and Ms. Owens cites nine sources for that substantial evidence.68 Ms. Owens concludes that the studies cited “[p]rovide conclusive evidence that the risks of PV panel avian collisions are real, significant, have been observed by scientific methodologies incorporated into bird and bat monitoring protocols, and quantifiable to the extent required for estimating compensatory mitigation needs.”69

The foregoing clearly illustrates that the DEIR/S fails to mitigate impacts to sensitive and protected bird species to less-than significant levels.

C. Mitigation Protocols for Nesting Birds are Inappropriately Deferred and Inadequate

The DEIR/S fails to provide appropriate mitigation protocols for several reasons, including: 1) contradicting measures, 2) inappropriate triggers for management, 3) inappropriate reporting, 4) inappropriate buffer zones, and 5) underestimation and inadequate environmental impact analysis.

First, Mitigation Measures VEG-8 and WIL-7 can create confusion. Mitigation Measure VEG-8 is unclear in that it lists triggers that “shall be evidence of Project-related disturbance” and includes agitated behavior, increased vigilance behavior, and changes in foraging or feeding behavior, or nest abandonment.

66 DEIR/S p. 4.4-12.
67 id.
69 id., at p. 27.
2559-010acp
However, the measure leaves unclear what would happen to a nest if none of the triggers listed are encountered.

Mitigation measure WIL-7 provides in part:

Pre-construction surveys for nesting birds shall be conducted within a 14-day period preceding initiation of grading or mowing activity. Workers shall be trained in the WEAP training to identify and report nests in active construction areas...If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed...the qualified biologist shall monitor the nest until he or she determines that nestlings have fledged; activities that might, in the opinion of the monitors, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.\textsuperscript{70}

The measure is unclear as to whether biologists, workers, or both, will be the "monitors" detecting nests, and at what time intervals after commencement of construction the nesting birds will be monitored throughout construction.\textsuperscript{71}

Second, the "triggers for management" provided in VEG-8 are "inappropriate since they are based upon behavioral responses indicating negative impacts that are already occurring/ have occurred." Also, it would be too late to mitigate for such impacts since, for example, disruption to mating, foraging, or nesting behavior may have already occurred.\textsuperscript{72} As Ms. Owens notes, "[o]ne cannot rely on birds overtly expressing behavioral indications leading to reduced reproductive success in a manner readily detected by a biologist observing them."\textsuperscript{73}

Third, the reliance on trained employees to accurately evaluate wildlife conditions is misplaced.\textsuperscript{74} For one thing, the Worker Environmental Awareness Program ("WEAP") program provided in Mitigation Measure VEG-6 has not yet

\textsuperscript{70} Appendix G-34-35.
\textsuperscript{71} Owens Letter p. 9.
\textsuperscript{72} id., at p. 10.
\textsuperscript{73} id.
\textsuperscript{74} id.
been designed — which means that the details are missing. The DEIR/S provides that “[t]he WEAP shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.” This is yet another example of deferred mitigation, denying appropriate evaluation by decision-makers and the public. Further, the WEAP’s requirements and rigor are undefined since the WEAP, as described in the DEIR/S, is a very limited outline of the types of actions needed to be implemented without any detail. For example, it is not clear whether the awareness program training will be a one-day, or multi-day program, who will conduct it, and which employees will qualify to undertake it.

Further, the Mitigation Measure provides “[t]he specific program can be administered by a competent individual(s),” (italics added) but does not define who a “competent individual” is. Use of the term “can” in describing who will administer the program leaves that decision to the applicant’s discretion, where the applicant may decide that a person other than a “competent individual,” however defined, may administer the program. Lastly, as Ms. Owens points out “mitigation of impacts should never rely on non-biologists to detect or report nests or any other aspect of onsite birds, regardless of any training or not.”

Fourth, Mitigation Measure WIL-7 provides “[i]f active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed.” Ms. Owens points out the risks and issues with having a project-hired staff biologist set the buffer zones for nesting birds, noting that “buffer zones of avoidance should be determined with confirmation of a USFWS or CDFW biologist and not left the subjective determination of a biologist hired by the developer as would be the case described in WIL-7.” Ms. Owens also explains that “[t]he buffers should always be determined by USFWS or CDFW, at a minimum for every species protected by the ESA, CESA, MBTA, and Eagle Act.”

Fifth, in the context of nesting bird mitigation, Ms. Owens reiterates the deficiencies in the DEIR/S regarding underestimation and minimization of impacts

---

76 Appendix G-7.
76 Owens Letter p. 10.
77 Appendix G-35.
78 Owens Letter p. 10-11.
205:9-040acp
of solar projects on birds and emphasizes that this issue also applies to nesting birds.\(^{79}\) Ms. Owens goes on to share her personal observations in desert solar facilities of ground nesting birds, that normally nest in bare or rocky ground, sand or soils, making use of the “shaded microhabitats underneath and bordering the solar panel arrays.”\(^{80}\) Ms. Owens notes that this widespread phenomenon has been under-reported, and has not been described in peer reviewed literature, which is why “[m]itigation must include professional, statistically significant mitigation monitoring throughout the life of the Project, conducted by biologists, not site personnel.”\(^{81}\)

The foregoing discussion makes it clear that the DEIR/S does not provide sufficiently detailed mitigation measures to reduce significant impacts to nesting birds, and impermissibly defers mitigation to the future. The DEIR/S is thereby inconsistent with CEQA requirements, and must be revised and recirculated.

D. The DEIR/S Fails to Provide Definite and Timely Mitigation Measures

i. Various Mitigation Plans for Protected Species and Entire Taxa Deferred to Future

The DEIR/S fails to develop sufficiently detailed wildlife mitigation measures to allow appropriate review by decision makers and the public. Section 2.3.7.5 of the DEIR/S states that the Applicant will “develop and implement a variety of management plans and procedures for protection and mitigation of impacts to wildlife.”\(^{82}\) These mitigation plans and procedures include the BBCS, California burrowing owl mitigation measures based upon California Burrowing Owl Consortium guidelines, and mitigation measures to reduce potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines, based on APLIC guidelines.\(^{83}\) The DEIR/S summarizes other mitigation measures by stating that additional plans will be developed including a Mojave

\(^{79}\) id., at p. 11.
\(^{81}\) Owens Letter p. 12.
\(^{82}\) DEIR/S p. 2-25.
\(^{83}\) Owens Letter p. 5.
2580-040acp
Desert Tortoise Mitigation Plan, a Raven Management Plan, a Desert Kit Fox and Badger Management Plan, a Vegetation Resources Management Plan ("VRMP"), a Biological Resources Mitigation, Implementation and Monitoring Plan, a Worker Environmental Awareness Plan, and that, prior to construction, the requirements of all of the management plans and mitigation measures associated with wildlife protection would be incorporated into a Worker Environmental Awareness Program ("WEAP").

The DEIR/S claims to provide further detail to these measures in Appendix G, however the details are "[n]ot the type necessary for satisfactory baseline analysis of the efficacy of these theoretical, unscripted plans to truly mitigate significant impacts to species and habitats." Furthermore, the details to be developed for the measures proposed in the DEIR/S "are being based largely upon anticipation of a future direction by various unnamed experts — or simply administrators — to be determined." This type of deferral prevents reviewers from assessing the efficacy and impacts of the proposed mitigation measures and "[i]t leaves the process vulnerable to the whims, bias, and conflicts of the permittees as well as to litigation and other interruptions that can lead to mitigation failure and disruptions of the permitting processes."

Thus, by deferring specifics on mitigation measures, and placing the authority of developing these details in the hands of unknown experts and administrators, the DEIR/S fails to comply with CEQA.

ii. Mitigation Measures are Absent or Deferred, Resulting in Unmitigated Significant Impacts to Birds and Bats

The DEIR/S, in concert with the DRECP model cited in the DEIR/S, indicates the presence and high likelihood of occurrence of a high number of protected and sensitive bird and bat species, including the golden eagle, western burrowing owl,
Cooper's hawk, ferruginous hawk, Swainson's hawk, Vaux's swift, Northern harrier, peregrine falcon, loggerhead shrike, Le Conte's thrasher, pallid bat, Townsend's big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis.\textsuperscript{89}

As noted prior, Appendix G of the DEIR/S contains mitigation measures. Measure WIL-6: BBCS states:

Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following:

- Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.
- Assess potential risk to bird and bats based on the proposed activities.
- Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.
- Describe the incidental monitoring and reporting that will take place during construction.
- Provide details for avian and bat post-construction monitoring and reporting.
- Specify the adaptive management process that will be used to address potential adverse effects on these species.
- Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field.
- The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts. The study design shall be approved by the BLM AO in consultation with USFWS, and shall be incorporated into the Project's Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP; see Mitigation Measure VEG-7) and implemented.
- Post-construction mortality monitoring will be required for a minimum of two years, including the following project components: PV solar panel arrays (40% survey coverage per year), perimeter fencing (100%}

\textsuperscript{89} Owens Letter p. 7.

2589-040a-c

\footnote{printed on recycled paper}
survey coverage per year), and the gen-tie line (50% survey coverage per year).\textsuperscript{60}

It is crucial to note that the DEIR/S requires the BBCS to be completed "[p]rior to the Notice to Proceed," which means that these mitigation measures are not fully detailed in the DEIR/S. Ms. Owens states that while the details to be finalized are important for a monitoring and mitigation plan:

[i]he lack of detail about these types of data in the DEIR/S precludes comprehensive and thus accurate analysis of mitigation measures and their resultant efficacy. Descriptions including baseline conditions, potential risks, specific conservation measures relevant to different rare and unique species are all details that should be included in the DEIR/S's explanation of how impacts will be mitigated; they must be provided prior to issuance of the development approval, not after." and "[t]his deferral to the future is inadequate for thorough impact mitigation analysis and results in impacts remaining unmitigated.\textsuperscript{91}

Because CEQA requires that mitigation measures be sufficiently detailed to allow appropriate review of the project's impacts, and this mitigation measure fails to provide sufficient details, the DEIR/S fails to comply with CEQA.

E. The Information Provided For Compensatory Mitigation Is Vague and Inadequate

CEQA requires that mitigation be provided to reduce significant project impacts to levels below significance. CEQA recognizes that compensatory measures can act as mitigation including "[b]y replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements."\textsuperscript{92}

The DEIR/S fails to provide adequate compensatory mitigation measures in two ways: 1) by impermissibly deferring details, and 2) providing vague selection criteria, and denying decisionmakers and the public review of these criteria.

\textsuperscript{60} Appendix G-33 (emphasis in original).
\textsuperscript{91} Owens Letter p. 8.
\textsuperscript{92} Pub Res Code § 15370, subd. (e).
2089-040cpp
For example, in the DEIR/S's analysis of cumulative impacts to special status plant species, a source of mitigation includes compensatory mitigation. However, mitigation measure VEG-9 states:

Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall prepare and implement a [Vegetation Resources Management Plan] that meets the approval of BLM AO and Riverside County. The Plan shall ensure adequate special-status plant surveys and reporting, avoidance of and mitigation for impacts to special-status plants, and funding or support of a compensatory mitigation program for state or Federally listed species through land acquisition, restoration/enhancement, or a combination of acquisition and restoration/ enhancement.  

The requirement that the Vegetation Resources Management Plan be provided in the future, is once again, impermissible deferral of mitigation measures.

In addition, mitigation measure VEG-9C states “[t]he Applicant shall fund activities that the BLM Authorize Officer ("AO") requires for the initial protection and habitat improvement of the compensation lands.” However, the DEIR/S does not describe what these activities are, as they have not yet been determined. Furthermore, the estimated cost per acre of any such lands is based on the "[e]stimated cost per acre for Mojave desert tortoise mitigation as the best available proxy." Using the desert tortoise habitat as a proxy is problematic, because it only estimates compensatory mitigation costs for one species, whereas compensatory costs for a suite of species and their habitat requirements could be higher. In addition, the cost per acre cannot not take into account the total cost of habitat disturbance or destruction resulting from the Project because the footprint of the project has not been absolutely determined.
Furthermore, Mitigation Measure VEG-9 provides that the type and location of compensatory mitigation is to be evaluated by the Applicant or one of few other personnel.\textsuperscript{99} For example, the proposal to acquire lands for compensatory mitigation is to be submitted to the BLM AO,\textsuperscript{100} who would decide what kind, and location, of compensatory mitigation is appropriate; a decision inappropriate for “[j]ust the BLM AO or a few other personnel.”\textsuperscript{101} Further, the DEIR/S’s selection criteria for land acquisition for compensatory mitigation are “misleading and vague,” lacking quantitative benchmarks, and described as

[Land that may be (a) occupied by “the species” and is “of equal or better habitat quality than that of the affected occurrence,” (b) is degraded by impacts such as ORVs, ranching, or invasive plants and thus will be enhanced or restored by an as of yet unscripted Plan; or is (c) habitat that does not even host the target species to be mitigated, but may be bordered by “occupied” habitat and may accompanied by restoration efforts.\textsuperscript{102}

These criteria do not provide a decision-making process where one option is better than another. As explained by Ms. Owens:

[These are not quantitative criteria but descriptors of indeterminate compensatory lands, with no actual criteria given for why options b or c would be chosen since they would certainly require greater cost, time, and effort to achieve status as being truly compensatory to degraded and developed habitat and the protected species the habitat supports, not to mention they may be wholly or partly non-representative of migratory species that may be impacted but are not represented by onsite habitat. For instance, compensatory mitigation for impacts to migratory species that breed in non-desert habitat may involve an alternative type of compensation such as contributing conservation funds to MBTA species protections unrelated to desert land acquisition or restoration.\textsuperscript{103}

\textsuperscript{99} Appendix G-12.
\textsuperscript{100} Appendix G-17.
\textsuperscript{101} Owens Letter p. 13-14.
\textsuperscript{102} \textit{id.}, at p. 14.
\textsuperscript{103} Owens Letter p. 14.
In addition, the measure provides that the Applicant shall comply with other requirements related to the purchase of compensatory mitigation, including the criteria used for selection of acquisition lands.\textsuperscript{104} However, the subsection providing these selection criteria states, “[t]he compensation lands selected for acquisition \textit{may} include any of the following three categories...”\textsuperscript{105} Thus, the measures leaves it to the discretion of the Applicant whether to follow these criteria, or ignore them completely, rendering the criteria as mere guidelines, as opposed to requirements for selection of compensatory land.\textsuperscript{106} Ms. Owens emphasizes that compensatory mitigation strategies can be more successful at reaching performance when performance standards are provided with detail for public review.\textsuperscript{107} Indeed, this is what CEQA requires.

Thus, by deferring details of, and providing vague guidelines to, mitigation measures, the DEIR/S fails to provide feasible, enforceable mitigation to reduce impacts to less than significant levels.

F. The Alternatives Presented Do Not Put Forth the Most Environmentally Superior Project

The DEIR/S fails to comply with CEQA’s requirement to adopt feasible project alternatives or mitigation measures.\textsuperscript{108}

The Project could avoid or reduce impacts to biological resources, while still meeting the “community renewable energy needs that this project purports to address.”\textsuperscript{109} Ms. Owens identifies the use of a distributed renewable energy source in the form of rooftop solar on existing buildings as one such alternative. Ms. Owens points out that this “[a]lternative would clearly reduce or eliminate the development and degradation of native habitats on public lands, and could reduce transmission costs by reducing the need, and extent, of additional transmission lines required for Projects like this one.” Further, this alternative would greatly reduce the cost of the

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{104} Appendix G-15-16.
\item \textsuperscript{105} Appendix G-16 (emphasis added).
\item \textsuperscript{106} Owens Letter p. 14.
\item \textsuperscript{107} id.
\item \textsuperscript{108} PRC §§ 21002-21002.1.
\item \textsuperscript{109} Owens Letter p. 3.
\item 2599-040ncp
\end{itemize}
\end{footnotesize}
project by reducing the need for both on-site, and compensatory, mitigation. Finally, a combination of rooftop solar and development of already degraded parcels would also reduce the Project’s impacts, while still meeting the goals of the Project.

V. CONCLUSION

The Project presents significant environmental impacts that the County failed to address in the DEIR/S, which must be disclosed, analyzed and mitigated in a revised DEIR/S prior to Project approval. The DEIR/S fails to adequately establish the existing setting upon which to measure impacts to biological resources. For some species that may be impacted by the Project, the DEIR/S fails to conduct an analysis of potentially significant impacts. The DEIR/S also fails to include an adequate analysis of and mitigation measures for the Project’s potentially significant impacts that it does purport to analyze. The DEIR/S improperly defers the identification of mitigation for significant impacts. Finally, the DEIR/S’s conclusions lack substantial evidence, as required by CEQA. Due to these significant deficiencies, a revised DEIR/S that addresses these inadequacies must be recirculated.

Sincerely,

Yair Chaver

YC:acp

Attachment

110 id., at p. 3-4.
111 id.
March 5, 2019

Yair Chaver
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
(650) 589-1660
ychaver@adamsbroadwell.com


Dear Mr. Chaver,

This letter contains my comments on the biological resource impact analysis for the Draft Plan Amendment / Draft Environmental Impact Report / Draft Environmental Impact Statement for the Desert Quartzite Solar Project. For the reasons outlined herein, the Desert Quartzite Solar Project (Project) Draft Plan Amendment / Draft EIR /Draft EIS (DEIR/S) fails to meet the requirements of impact analysis and mitigation under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

***************************************************************************

The proposed Project would be located approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of the Blythe Airport in Riverside County, California. First Solar Development LLC (Applicant) as prepared an EIR/S as partial fulfillment of their application requirements for CEQA and NEPA, submitted to the Bureau of Land Management (BLM) and Riverside County planning department (the Agencies), for the construction, operation, and decommissioning of a photovoltaic (PV) solar facility, Desert Quartzite, on public (approximately 5,115 acres) and private (160 acres) lands totaling approximately 5,275 acres. The proposed Project includes 61 acres of construction impacts on BLM land.

I. THE DEIR/S IS INCONSISTENT IN ITS ANALYSIS OF NEED AND COMPLIANCE WITH THE CDCA

The Project is located within the Development Focus Area and the Riverside East Solar Energy Zone designated under the Desert Renewable Energy Conservation Plan (DRECP). However, according to the DEIR/S, the Project (a.k.a. “DQSP”) does not fall within management prescriptions of the DRECP because according to the DRECP, “renewable energy applications in the Riverside East Solar Energy Zone filed
before June 30, 2009, including the application for DQSP, are not, and will not be, subject to the terms of the DRECP. The DRECP recognizes that the DQSP would not be subject to the DRECP due to its status as a “pending” right-of-way (ROW) application under the Western Solar Plan and its location within a SEZ (DRECP Section II.3.2.4, p. 68-69); and the data collection, field surveys, and impact analyses for this EIS/EIR are based on BLM’s requirements as of the date of the Notice of Intent, which was on March 6, 2015. The DRECP’s designations and classifications were not issued until 18 months later.”

Since the Project is not beholden to the DRECP, it follows that due to the many environmental impacts this Project will impose on biological resources, the Bureau of Land Management (BLM) is not obligated to follow the Development Focus recommendations for this region as dictated by the DRECP. However, the DEIR/S proposes to follow DRECP recommendations while concurrently stating they are not beholden to its prescriptions, and it should be noted that the DRECP itself relies on equally conflicting statements regarding development of this region for renewable energy: The DRECP includes the Project site in its Development Focus Area, and yet concurrently states its Objectives goals to “maintain habitat and landscape connectivity” while avoiding disturbance of sand transport corridors, including to “conserve the geomorphic (fluvial, alluvial, and Aeolian) processes associated with sand dune formation and the sand transport corridors between the sand dunes and their sand sources, and to conserve or increase protective management to prevent structures capable of obstructing sand movement, within sand transport areas.” Additionally, based upon a vague mention of the BLM’s “multiple use mandate”, as part of its statement of Purpose and Need, the DEIR/S reiterates Executive Orders 13783 and 13807, and Secretary Orders 3349 and 3355 that seek to prioritize energy development and to “streamline” environmental review. However, the DEIR/S does not represent Order 3355 prescriptions regarding length and timelines, and is neither beholden to these Executive or Secretary Orders by default. Therefore, the DEIR/S inappropriately emphasizes economic concerns where instead environmental analyses and protections should be prioritized for this document and Project.

The Project is, however, beholden to the California Desert Conservation Area (CDCA) Plan, as stated repeatedly in the DEIR/S, i.e. “Therefore, the Desert Quartzite Solar PV proposal is being processed under the CDCA land use plan.” In light if this it is important to note that there are several directives of the CDCA that should be part of the Purpose and Need statement – and resultant analysis – that are missing or in conflict with the DEIR/S. For example, the Project fails to meet the following Decision Criteria for the Energy Productions and Utility Corridors Elements:

1. “Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors.”

---

1 DEIR/S Appendix E-1
3 DEIR/S p. ES-3-4
4 ibid. p. 1-11
The abundant and significant biological impacts to several thousand acres of public lands imposed by the Project could be avoided by using an Alternative that builds on energy storage or production from an existing project or other infrastructure.

2. “Avoid sensitive resources wherever possible.” This goal is not being met based on the abundance of sensitive biological resources and high number of protected species that will be impacted as identified herein and by the DER/S, nor is it met by any environmentally superior Alternative.

3. “Consider wilderness values and be consistent with final wilderness recommendations.” The DEIR/S states the Project will occupy approximately 3,770 acres, which amounts to almost 5.9 square miles. The solar arrays, buildings, transmission lines, roads, night lighting, and other anthropogenic constructs will be visible from adjacent wilderness and conservation areas and contribute to alterations in habitat and wildlife behavior and ecology of the area, undeniably resulting in degradation wilderness values, including the additional dust, light, and noise impacts during construction and decommissioning phases.

As such, the DEIR/S should reevaluate and rewrite the Purpose and Need statement to one that more closely represents environmental protections that are the primary responsibility of the BLM as land caretakers for the public; a responsibility that needs to be emphasized more with less focus on BLM acting as private energy development brokers.

II. THE DEIR/S DESCRIPTION OF PROJECT ALTERNATIVES IS INSUFFICIENT

The alternatives presented do not put forth the most environmentally superior project that would concurrently meet community renewable energy needs that this Project purports to address, and yet one is available: The Alternative of reliance on a distributed renewable energy source, i.e. rooftop solar on existing buildings. Such an Alternative would clearly reduce or eliminate the development and degradation of native habitats on public lands, and could reduce transmission costs by reducing the need, and extent, of additional transmission lines required for Projects like this one. Greater reliance and incentivization of rooftop solar would place the energy source much closer to the demand and reduce other costs as well, including mitigation costs that would be minimized by default of reduced impacts to natural resources, and vastly reduced need for compensatory mitigation. Additionally such actions would divert much-needed discretionary funds for BLM to maintain and preserve park and other protected lands in lieu of acting as oversight administrators of development projects and mitigation parcels.

The agencies could also provide an alternative that relies on a combination of strategies, i.e. rooftop solar plus development of already highly degraded parcels, such as abandoned agricultural fields or
abandoned “developed” habitat. This would similarly avoid destruction and degradation of sensitive desert habitats that are still essential for survival of various at-risk species discussed in the DEIR/S.6

USFWS Recommendations for environmentally superior design alternatives to reduce impacts are ignored.

The DEIR/S notes that during the Project scoping period the USFWS requested that an alternative designed to minimize impacts to migratory birds, as well as other special status species, be considered. The Applicant denied this request, saying that some features are not “not technically or economically feasible”.7 They state that irregular spacing within arrays, placing gen-tie lines underground, and eliminating open construction ponds (which could be covered via various structurally flexible strategies) might reduce power output and would not be economically feasible. As a result, a specific Migratory Bird and Special Status Species Protection Alternative was not developed, as the DEIR/S points out. This argument is specious and akin to saying that if the Project was reduced whatsoever in scope to any degree it would make construction infeasible, ignoring the reality that proposed Alternatives include a reduction in Project scope.

USFWS’s recommendations are worth further consideration, especially for a Project whose development footprint as proposed would comprise almost 6 square miles. The DEIR/S provides no substantial evidence to support the claim that an environmentally superior design of the Project as suggested by USFWS would be infeasible. Indeed, it is not the BLM’s responsibility to compromise publicly owned, existing resources for profit maximization of a private developer. To do so demonstrates a bias towards the developer while ignoring potential avoidance of impacts for the life of the project and ignoring stakeholder concerns. There are various alternatives that could be environmentally superior, and aid in examining the role of different array and panel designs to reduce bird impacts and lead to advances in project design for future projects. For instance, researchers have identified ways to make glass visible to birds as an obstacle without altering the function of the reflective surface8. This knowledge could be applied to a section of the site’s solar panels, likely without disrupting significant energy output, and be carefully monitored to compare rate of impacts for the life of the Project. Other permutations of environmentally superior array configurations could be utilized, but the DEIR/S makes no attempt to consider any such options despite proposing such a massive development that lends itself to creative modifications for research as much as energy output. Future industrial solar developments could take great advantage of the findings of such alterations.

III. THE DEIR/S RELIANCE ON DEFERRED MITIGATION RESULTS IN UNMITIGATED IMPACTS

7 DEIR/S 2-11.
-See also: https://abcbirds.org/program/glass-collisions/
a. Various Mitigation Plans for Protected Species and Entire Taxa Deferred to Future

Section 2.3.7.5 of the DEIR/S states that the Applicant will "develop and implement a variety of management plans and procedures for protection and mitigation of impacts to wildlife." These include a Bird and Bat Conservation Strategy (BBCS) that would be developed to describe measures to protect "sensitive bird species". It also states that unavoidable impacts to burrowing owls would be mitigated based upon California Burrowing Owl Consortium guidelines, and that due to potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines, the Applicant proposes to follow APLIC guidelines specified in Suggested Practices for Avian Protection on Power Lines (APLIC 2006)." The DEIR/S summarizes other mitigation measures by stating that additional plans will be developed including a Mojave Desert Tortoise Mitigation Plan, a Raven Management Plan, a Desert Kit Fox and Badger Management Plan, a Vegetation Resources Management Plan (VRMP), a Biological Resources Mitigation, Implementation and Monitoring Plan, a Worker Environmental Awareness Plan, and that prior to construction, the requirements of all of the management plans and mitigation measures associated with wildlife protection would be incorporated into a Worker Environmental Awareness Program (WEAP). The DEIR/S does provide an entire Appendix J Weed Management Plan, demonstrating that the capability to provide detail on any given Plan within this DEIR/S is not beyond the capacity of the Applicant.

Although Appendix G does claim to explain these plans “in more detail”, for the most part the detail provided is not the type necessary for satisfactory baseline analysis of the efficacy of these theoretical, unscripted plans to truly mitigate significant impacts to species and habitats. For instance, these so-called "details" provided throughout sections of Appendix G state that certain practices, monitoring, adaptive management, analyses (such as to determine risks and impacts to a host of species), and minimization measures will be created and implemented. As a result these “details” are not informative or expository. For mitigation actions to be successful the devil is in the details, without such there can be no thorough or informative review by the public of their adequacy. As an environmental consultant and monitor for two decades I have observed many times that many mitigation measures when applied fail due to problems with lack of appropriate performance and success criteria not being implemented, defined, or otherwise analyzed prior to issuance of necessary development permits, followed by failures of mitigation success and enforcement as a result.

In summary the DEIR/S defers to the future a tremendous amount of mitigation protocols; meanwhile mitigation actions to be taken are highly indeterminate and unspecified. This is inadequate for the reviewing public to determine efficacy of the mitigation, thus denying one of the primary purposes of NEPA and CEQA review. Simply saying that a plan intends to follow guidelines or agency recommendations does not address the specific requirements for mitigation for a specific location, including the unique characteristics of a specific project and its impact on a specific sensitive, rare, or otherwise at-risk population in a specific location, including the long term, indirect, and cumulative...

---

9 DEIR/S p. 2-25
impacts unique to every development. It does not address the characteristics of a site and its unique species cohort, and makes no mention of necessary distinctions in compensatory mitigation, revegetation, or restoration that must rely on factors including types of habitat not just onsite but nearby, as well as other variables like population densities located on and near the site, and cumulative impacts to the Project.

It is important to note that the final EIR/S’s ultimate goal is to garner permitting approval to move forward with development. It follows that approving a theoretical, unwritten set of plans provides little promise of actual, on-the-ground mitigation, and no way for the reviewing public to determine efficacy, including a lack of what specific and adequate success and performance criteria are for a site comprised of almost 6 square miles of habitat destruction and degradation on public lands, and ultimately covering a site footprint of almost 9 square miles. With yet-to-be-determined plans proposed as the primary means of mitigation extent here, the necessary details regarding everything from restoration to mitigating impacts to birds, mammals, reptiles, and a host of sensitive species, have been omitted, including the necessary and highly variable components of mitigation strategies regarding not only species-specific but site-specific protocols, methodologies, timeline, responsibilities of the Applicant, consultant, and third parties; expectations for public oversight and reporting, and enforcement.

Deferring mitigation plans to be written at a future date is also inadequate because the unscripted details are being based largely upon anticipation of a future direction by various unnamed experts - or simply administrators - to be determined. This has two inherent problems: (a) as mentioned above, it disallows reviewers to adequately analyze efficacy of mitigation measures as required, and (b) it leaves the process vulnerable to the whims, bias, and conflicts of the permittees as well as to litigation and other interruptions that can lead to mitigation failure and disruptions of the permitting processes. Resource experts on measuring effectiveness of mitigation measures, especially ones regarding compensatory tradeoffs as part and parcel to mitigation plans (as is the case with this Project), astutely state that, “Public choice theory suggests officials and traders have more incentive to facilitate barter than to ensure biodiversity protection. Thus, given the option of saying to developers “yes, with conditions” rather than “no,” officials will prefer “yes, with conditions” — particularly when compliance with conditions cannot be credibly measured and officials can avoid accountability for outcomes. Legitimized bartering can thus create a policy situation “obscure enough to please all parties . . . and so ill-defined that failures will be difficult to detect.”

This statement speaks profoundly to why so many compensatory conservation deals have failed to meet the goals of mitigation for projects over the years, something I have personally observed repeatedly as an environmental consultant working in the public and private energy, residential, and transportation development sectors. If the lead agencies are truly concerned with their role in insuring adequate mitigation of all of the significant impacts imposed by this development — to both resident and migratory species - they will require detailed descriptions allowing for review and discussion of the adequacy of mitigation plans, by independent experts for each and every species in question, prior to

---

issuance of a development permit, and not leave most such prescriptions indeterminate upon Project approval.

b. Mitigation Measures are Absent or Deferred, Resulting in Significant Impacts to Birds and Bats Unmitigated

The DEIR/S, in concert with the DRECP model cited in the DEIR/S, indicates the presence and high likelihood of occurrence of a high number of protected and sensitive bird and bat species, including the golden eagle, western burrowing owl, Cooper’s hawk, ferruginous hawk, Swainson’s hawk, Vaux’s swift, Northern harrier, peregrine falcon, loggerhead shrike, Le Conte’s thrasher, pallid bat, Townsend’s big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis.

The DEIR/S also states:

"In addition to special-status avian species for which species-specific surveys were conducted (i.e., burrowing owl and golden eagle), many other common and special-status migratory birds and raptors are expected to occur within the Study Area. Not only does the Study Area provide nesting habitat for species of migratory birds and raptors, it is located along a major migration corridor (i.e., the Pacific Flyway, which runs from Alaska to Patagonia and stretches inland from the Pacific Ocean to encompass parts of Montana, Wyoming, Colorado and New Mexico). The Study Area’s proximity to the Colorado River increases the likelihood of migratory birds stopping over. Migratory birds and all raptors native to North America are afforded protection under the MBTA and FGC Sections 3503, 3503.5, and 3513. (Emphasis added.)" ¹¹

Appendix G of the DEIR/S states the Applicant will mitigate impacts to bats and nesting, residential, and migratory birds, specifically, “WIL-6: Bird and Bat Conservation Strategy. Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following:

- Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.

- Assess potential risk to bird and bats based on the proposed activities.

- Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.

- Describe the incidental monitoring and reporting that will take place during construction.

- Provide details for avian and bat post-construction monitoring and reporting.

- Specify the adaptive management process that will be used to address potential adverse effects on these species.

¹¹ DEIR/S 3.4-15
- Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field.

- The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts. The study design shall be approved by the BLM AO in consultation with USFWS, and shall be incorporated into the Project’s Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP; see Mitigation Measure VEG-7) and implemented.”

The DEIR/S states that these “details” will be finalized in a Bird and Bat Conservation Strategy. The types of data indicated above are important for a bird monitoring and mitigation plan, however the lack of detail about these types of data in the DEIR/S precludes comprehensive and thus accurate analysis of mitigation measures and their resultant efficacy. Descriptions including baseline conditions, potential risks, specific conservation measures relevant to different rare and unique species are all details that should be included in the DEIR/S’s explanation of how impacts will be mitigated; they must be provided prior to issuance of the development approval, not after. As discussed above, this deferral to the future is inadequate for thorough impact mitigation analysis and results in impacts remaining unmitigated.

Appendix G also states, “Post-construction mortality monitoring will be required for a minimum of two years, including the following project components: PV solar panel arrays (40% survey coverage per year), perimeter fencing (100% survey coverage per year), and the gen-tie line (50% survey coverage per year)” and “The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts.”

There is utility in adapting plans to ongoing monitoring and resultant data, but how will impacts be successfully, reliably mitigated prior to sufficient data being collected over the long term, to inform decision-makers on how to adjust the as-of-yet theoretical plan? Why will the solar panel and gen-tie survey coverage be half or less than half, what is the justification for such incomplete coverage? I have participated in mortality monitoring of industrial solar arrays in the Sonoran and Mojave deserts of similar type, and size, of the proposed Project, and our surveys covered 100% of the site. 100% coverage is feasible even for relatively large sites, and obviously not too time consuming to carry out, therefore there is no necessity of partial coverage of monitoring for any reasons of practicality or capability. The U.S. Geological Services (USGS) industrial solar site monitoring protocol guidelines reinforce this where they state,

“Because industrial solar facilities are established in generally flat, arid areas, the search area extent can be the entire facility, with each source of mortality sampled in its entirety....To optimize overall detection probability for all species, we recommend that searches be conducted along relatively wide transects that cover the full extent of each feature rather than covering only a randomly selected set of sample plots with relatively narrow transects within the feature. The advantage to full-extent transects is that the overall detection probability is maximized, that is, not limited by a sampling fraction less than one.”

Such a lack of expository analysis in regards to monitoring design exemplifies why the details for mitigation plans are necessary for adequate review and analysis prior to development, not deferred until after Project approval and construction.

c. **Mitigation Protocols for Nesting Birds are Inappropriately Deferred and Inadequate**

The DEIR/S Mitigation Measure VEG-8 “Avoidance of Biological Resources During Construction” states that monitoring to reduce impacts to potentially breeding birds will be conducted in accordance with an as of yet nonexistent Nesting Bird Monitoring and Management Plan that shall include “management measures” to prevent disturbance to all nesting birds from construction related activities. Mitigation Measure VEG-8 states:

“Triggers for management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Bird Monitoring and Management Plan shall include a description of management actions ... limiting construction activities in an appropriate sized no-disturbance buffer that are deemed by the biologist to be the source of disturbance to the nesting bird.”

Additionally, Mitigation Measure WIL-7 states that:

“Pre-construction surveys for nesting birds shall be conducted within a 14-day period preceding initiation of grading or mowing activity. Workers shall be trained in the WEAP training to identify and report nests in active construction areas...If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed...the qualified biologist shall monitor the nest until he or she determines that nestlings have fledged; activities that might, in the opinion of the monitors, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.”

First, these two mitigation measures partly contradict each other, resulting in confusion as to which variables will dictate which actions: triggers as defined above? If no “triggers” are observed, is the nest ignored? Who will be “monitors” detecting nests, biologist or workers? Both? And at what time intervals after commencement of construction will nesting birds be monitored throughout construction?

There are several other problems with the mitigation measures proposed to reduce impacts to nesting birds:

---

13 Appendix G-9
14 Appendix G-34-35
First, “triggers for management” of construction related activities are inappropriate since they are based upon behavioral responses indicating negative impacts that are already occurring/ have occurred. The appropriate mitigation would include (but not be limited to) surveying for active nests and then avoiding these nests, per the MBTA requirements, by stopping construction nearby, or at a minimum by way of a designated avoidance buffer - typically of several hundred feet depending upon the species involved - until the nest has fledged. This is standard mitigation procedure, whereas taking measures to avoid further impacts only after birds are already demonstrating negative behavior to indicate disturbance may be too late to have avoided a significant reduction in reproductive success of the nesting birds. For instance, nesting birds are highly sensitive to abandonment when laying eggs. A construction disturbance (noise, dust, human presence) could agitate birds to the point of abandonment of a nest with eggs prior to the biologist actually observing some overt indicative “trigger” behavior. Abandonment or other alterations in behavior could result in a significant reproductive energy expenditure on the birds and could result in a completely failed reproductive output for the entire year. This could reduce breeding success, bird fecundity, increase vulnerability to predation or competitions, all variables that are readily predictable results of disturbance. Nesting birds do not announce when they are suffering reduced breeding success or fecundity from anthropogenic impacts; determining such an impact - short of complete abandonment by the breeding pair - is far from simple or straightforward, and typically requires extensive data collection about nestling and fledgling mortality and/or success, changes in regimes of predation, prey selection, competition, other behavioral changes, etc. throughout one or more breeding seasons. Birds that are impacted by noise, dust, pollutants, human presence, attraction of diurnal or nocturnal predators to human structures (ravens, coyotes, feral dogs) do not as a rule demonstrate overt or readily available cues to notify human observers that such negative impacts are at play at any given moment. In short, one cannot rely on birds overtly expressing behavioral indications leading to reduced reproductive success in a manner readily detected by a biologist observing them.

This error is another example of where the determinants of success of mitigation, including criteria for management, is in the details, and the few details provided here demonstrate erroneous methods regarding necessary protocol to avoid and mitigate potential significant impacts. Based upon this faulty biological assumption, one can only wonder what other errors will be scripted in the many plans yet to be written and deferred to the future, and unavailable for public review.

Second: In respect to the WEAP training or related expectations of workers reporting, for reasons also described above mitigation of impacts should never rely on non-biologists to detect or report nests or any other aspect of onsite birds, regardless of any training or not. One may as well ask the electrical technicians to have an afternoon training to assist the project lawyer or accountant.

Third, buffer zones of avoidance should be determined with confirmation of a USFWS or CDFW biologist and not left the subjective determination of a biologist hired by the developer as would be the case described in WIL-7. Determining appropriate buffers is not an exact science, and its discretionary nature
is therefore consistently subjected to abuse.\textsuperscript{15,16} As an environmental consultant who has worked as a biologist on over 200 energy and development projects including eight industrial solar facilities, only twice have I observed a development project put construction on hold for the duration of a nesting event to avoid impacts to a nesting bird, and even then it was for a federally endangered species, and never at a solar facility. It is simply rarely done; if and when a nesting bird is detected the project applicant’s biologist almost always chooses a buffer (subsequently often reduced by a variance) or a buffer exemption - based upon what is most convenient for the developer, not based upon science in combination with the precautionary principle as should be the case.\textsuperscript{17} Time and again requests for a permit “variance”, reduced buffer, or exemption for the requirement off a buffer is granted, due to the developer invariably claiming economic hardship to do otherwise, and these variances or adjustments to buffers are thus often reduced to the point of ineffectivity and potential harm.\textsuperscript{18} In summary, to ask the biologist to determine the appropriate buffer, and duration of said buffer, creates a conflict of interest based upon the contractual responsibilities given the biologist, and including the NDA they are all required to sign (see discussion above). The buffers should always be determined by USFWS or CDFW, at a minimum for every species protected by the ESA, CESA, MBTA, and Eagle Act.

Fourth, it is important to iterate for the sake of mitigation adequacy that avian impacts have repeatedly been underestimated and minimized in environmental impact analyses for solar projects, resulting in a lack of impact mitigation due to too many project Applicants and lead agencies ignoring the Precautionary Principle, and current available evidence. As a lead biologist conducting bird and bat mortality surveys on several industrial solar facilities (facilities with between 100 and 2700 acre footprints), I have witnessed a significant impact that occurs during and post-construction, observed at Mojave and Sonoran desert solar facilities bordered by both agricultural and native scrub habitats. I and my colleagues repeatedly observed that ground nesting birds that are attracted to areas dominated by bare or rocky ground, sand, or soils are attracted to the shaded microhabitats underneath and bordering

\begin{itemize}
  \item \textsuperscript{16} See also: SDGE-Sunrise Powerlink “Buffer Incident Report” https://www.eastcountymagazine.org/sites/eastcountymagazine.org/files/SDGE%20eagle%20Buffer%20Zone%20Incident_0.pdf

\end{itemize}
the solar panel arrays\textsuperscript{19}. These species have not evolved to anticipate the hazards of these areas as nesting sites, which include collision with utility vehicles and enhanced susceptibility to hyperthermia due to the heat generated by the panels and related infrastructure. The birds choose these nest sites in the cooler weeks of spring, but as summer heats up they not only have to deal with the natural heat stress that increases as the season temperatures rise, but they also must deal with the unanticipated additional heat compounded by the presence of the solar panels. The high heats appear to exceed their limits of tolerance, indicated by an unusually high rate abandonment of nests and scrapes containing eggs (see photos 22-23). There is little doubt this behavior (abandonment) negatively impacts the species’ breeding success and contributes to potential negative impacts.

In the southwest desert bioregion birds observed to be prone to this include species such as nighthawks, killdeer, black-necked stilt, and doves, among others; all are species protected during nesting season under the Migratory Bird Treaty Act (MBTA). Thus far this phenomenon has not been described in the peer reviewed literature (in prep, Owens and Hord), not surprisingly because so few studies have been conducted that include long term observations of industrial solar facilities’ impacts to wildlife aside from mortality monitoring. Indeed much of this mortality monitoring is not readily available for public review. This is one major reason why mitigation must include professional, statistically significant mitigation monitoring throughout the life of the Project, conducted by biologists, not site personnel.

Photos 1-24 illustrate some examples of birds and other wildlife (a) striking and (b) using solar facility equipment and roads to nest, roost, stopover, and perch resulting in higher than normal likelihood of hazards affecting breeding, including strikes, overheating, increased vulnerability to predation, and electrocution.

IV. MUCH OF THE DEIR’S MITIGATION ANALYSIS IS INCOMPLETE RESULTING IN SIGNIFICANT IMPACTS UNMITIGATED

a. The Information Provided for Compensatory Mitigation is Inadequate for Complete Analysis

The need for detail also plays a key practical role in determining success of mitigation based on the scope and related costs assigned to, and adopted for, third parties (i.e. environmental consultants, other contractors, land trustees, scientists, etc.) involved in the process. Many of the details regarding scope of work for a development project are determined by the prescriptions within a final EIR/S and yet are not actually agreed upon until after a development permit has been approved and contracts are being solicited. And, this often happens prior to any mitigation Plan being scripted when deferred to the future as is in this DEIR’S. See also Appendix G-76 in the DEIR/S where it states, for Desert Tortoise

compensatory mitigation, "Compensation to be verified through BLM approval of compensation type and amount...Compensation to be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer." In other words, permitting would be approved, and development commenced well before the details of a Plan are even scripted and approved. Page 10 of the Consultant Procurement Manual for California states "The scope of work is an integral part of contract development and procurement process. The scope of work may be developed from standardized tasks such as work breakdown structure, in accordance with project conditions and requirements. A multi-disciplined team should provide appropriate details for the tasks and activities in their field of expertise to complete the scope of work. Costly modifications, in terms of time and expenditures, can often be avoided with a well written scope of work, an accurate estimate and effective contract management." This makes sense, and yet without a written Plan detailing or even outlining what the nature of the scope of work will be, the budget for any given part of a mitigation project is vulnerable to being reduced to the lowest bid or "efficient" estimate that by default may lack the necessary capacity to fulfill what would be the baseline success and performance standards, including consideration of things like monitoring timelines and time investment by personnel, including supervisors, biologists, and other monitors. This problem is underscored in the DEIR/S's claim about Protection and Habitat Improvement (Appendix G p. 17) where it states,

"The Applicant shall fund activities that the BLM AO requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands...with an estimate of $330 per acre for using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy" and "If the Applicant elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the BLM AO for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy for every acre of habitat supporting the plant species which is directly or indirectly impacted by the Project."

First, using desert tortoise habitat mitigation cost per acre as a proxy is only part of a much bigger picture, based upon all the yet-to-be scripted mitigation Plans for various sensitive species and habitats identified as being significantly impacted by the Project. Costs per acre could be slightly to significantly higher depending on overall requirements for all of the habitats and species in question, and cost per acre does not consider total cost for impacting and destroying habitat in an area yet to be determined absolutely, but certainly extensive, given the impact footprint of the Project will purportedly be a minimum of 5.9 square miles.

Second, it should not be entirely up to the Applicant or the Applicant and one or a few other personnel to determine which kind of compensatory mitigation is appropriate, and where. The details to determine which mitigation lands and management of said lands will satisfy reduction to below significant of the many biological impacts discussed in this chapter should be presented for review by the public, not just the BLM AO or a few other personnel.

The following is an example of the problem posed by this omission: the DEIR/S’ explanation of its “selection criteria” for land acquisition for compensatory mitigation is misleading and vague. It states that the compensation land selected for mitigation for protected plants (and thus, habitat) may follow any of three categories, and then proceeds to describe in nonspecific terms these categories of land that may be (a) occupied by “the species” and is “of equal or better habitat quality than that of the affected occurrence,” (b) is degraded by impacts such as ORVs, ranching, or invasive plants and thus will be enhanced or restored by an as of yet unscripted Plan; or is (c) habitat that does not even host the target species to be mitigated, but may be bordered by “occupied” habitat and may accompanied by restoration “efforts.” In short, these are not quantitative criteria but descriptors of indeterminate compensatory lands, with no actual criteria given for why options b or c would be chosen since they would certainly require greater cost, time, and effort to achieve status as being truly compensatory to degraded and developed habitat and the protected species the habitat supports, not to mention they may be wholly or partly non-representative of migratory species that may be impacted but are not represented by onsite habitat. For instance, compensatory mitigation for impacts to migratory species that breed in non-desert habitat may involve an alternative type of compensation such as contributing conservation funds to MBTA species protections unrelated to desert land acquisition or restoration.

Desert habitat restoration specialists and other scientists who have been involved in compensatory mitigation actions for decades are describing in greater detail how mitigation success is largely dependent upon the specific processes involved in implementation. For instance, in discussing how compensatory mitigation strategies can be more successful at reaching performance standards, regional conservationists point out that these performance standards must be provided for public review, and with detail; “Key steps of such an approach include adopting an appropriate study design, organizing compensatory mitigation project files in a geospatial database, and conducting a baseline evaluation and subsequent evaluations using the study design at regular intervals.” Other scientists involved in energy development mitigation have provided evidence of how successful mitigation includes building mitigation measures into a project’s design and thereby “facilitates a faster project review process because it can lead to fewer conflicts with regulators and the public, opens up greater opportunities for synchronized permitting and environmental review...” Indeed, the courts have established that mitigation must be discussed “in sufficient detail to ensure that environmental consequences have been fairly evaluated.” Further, analysts of mitigation success point out the practicalities of cost as relates to

21 Appendix G-15-16
performance and protocol detail, stating that “An unclear mitigation policy landscape also inhibits private investment in compensatory mitigation solutions. Having in place a clear and consistent mitigation rule set gives private mitigation providers the confidence they need to make investments in these markets. Without these conditions, fewer third-party options will be available, leaving project proponents with only the more time-consuming, do-it-yourself option.”

One cannot analyze the efficacy or thoroughness of any such key steps if they are unscripted and theoretical, as is the case with this DEIR/S, and left solely to one or a few personnel to write, review, and approve. Deferring the scripting of details to a future date is unacceptable, as it denies the reviewing public, including experts, the ability to offer analysis and recommendations to design, performance, and success criteria, and to review the pathways to enforcement presented. In short, these Plans should be provided in detail in the EIR/S and include performance standards, success criteria, and timelines and the very least. They should also predetermine potential compensatory mitigation parcels whose biodiversity, habitat, and species composition have already been catalogued in the recent past to determine efficacy of mitigation compensation.

The DEIR/S Appendix G states that the “The Bird Monitoring and Management Plan shall include a description of management actions, which shall include, but not be limited to, limiting construction activities in an appropriate sized no-disturbance buffer that are deemed by the biologist to be the source of disturbance to the nesting bird.” In my years as an environmental consultant I have witnessed that it is increasingly common for agencies to give a “variance” or exception of a permit and defer to the complaints of the developer when construction is at risk of being reduced in capacity or delayed due to risk of a biological impact, especially in the case if nesting birds (for further discussion of this, see below). These variances for the prescribed mitigation can and do lead to mitigation measures that are altered and diminished in effectiveness from their written prescriptions, resulting in unmitigated, significant impacts, and unanticipated (and sometimes unreported) take of species.

Alternatively, this practice also occurs when mitigation protocols are vague, inadequate, or lacking in specificity, as is often the case, allowing for more discretion by agencies and the developer to push for a variance i.e. exception to the mitigation procedure. On both large scale industrial solar and wind sites in Southern California I have witnessed certain actions by the developer, including violations such as ignoring or modifying regulations and mitigation measures, that go unreported in part due to environmental consultants’ ubiquitous use of extreme and rigid non-disclosure agreements (NDA), where biologists and other experts are required to sign strict NDAs to be employed/contracted and subsequently are at risk of losing their jobs, or worse, if they report any unpermitted harassment or take of protected species, or even the potential for take based upon actions by the developer. This is a well-known but publicly unacknowledged phenomenon of the use of NDAs to reduce obligations, including aspects of costs and scope of work, in applied mitigation strategies for cost-saving for high profile sites, especially those in the energy, military, and extractive sectors of development.

26 DEIR/S Appendix G-9
such systemic pitfalls in mitigation implementation is to provide very detailed plans prior to project permitting, i.e. within the impact assessment.

Further evidence of the nature of this type of problem regarding lack of appropriate oversight or enforcement post-permitting of developments is iterated by Kathryn Simon, President and wildlife biologist of Ironwood Consulting, in her report to the Desert Tortoise Council Symposium in 2017 where she summarized large scale energy developments thus: “Renewable energy at an industrial scale is an important part of achieving energy independence for the United States. However, the political backing that supports energy development in the western part of the country has also resulted in the neglect or abuse of natural resources. While a great deal of effort is placed on properly siting and permitting a project, little or no oversight happens once the project enters construction and continues into operations and maintenance. This has led to a “power vacuum,” often filled by the project proponent’s "environmental" staff who often ensure the least amount of information leaves the project and is reported to wildlife agencies and the public. Specific examples of such behavior are provided and suggestions made for biologists on the ground in achieving their goals of proper monitoring oversight.”

I have witnessed the problem she summarizes here, regarding reports that I and my colleagues provided to a lead environmental consultant on projects for the purpose of review by the lead agency (i.e. USFWS), as part of mitigation protocol. It is now common practice that the environmental consultant supervisor gives these reports to the developer first, where they are allowed to be edited - without the biologist’s permission - prior to being given to the lead agency. Additionally, I have witnessed several approved senior biologists working on alternative energy sites in Southern California, during and post-construction, be immediately terminated by large, international environmental consultancies for pointing out that mitigation protocols are not being followed or enforced. This is a real and significant problem on industrial solar and wind development projects as the push for alternative energy is considered to be at an almost emergency status, and unreasonable time deadlines and cost minimization efforts override effective mitigation protocols, best available science, and biodiversity-enhancing adaptive management. One cannot presume such problematic actions described above will be avoided simply by the existence of certain regulations or an approved permit(s), especially since they fall between the gaps of environmental agency oversight requirements and discretionary actions, partly due to issues of lack of transparency throughout contractual processes and applied on-the-ground actions.

In short, these mitigation measures that have been partly or almost entirely deferred to the future are inadequate. To ensure adequate mitigation of indirect, direct, and cumulative impacts, the Applicant should commit to providing at a minimum an outline of the proposed Plans, including the relevant performance and success criteria associated with each species and habitat in question.

b. The DIER/S Fails to Adequately Analyze and Mitigate Impacts to Bats

Mitigation strategies including avoidance and minimization of disturbances, and acquisition of specific off-site compensatory parcels should be described in detail (as opposed to being posed in theoretical categories as the DEIR/S does (see above)), for impact mitigation at the individual and relevant population level. This should be done not only for resident and migratory birds, it should describe the provision of adequate foraging and roosting habitat for bats, especially those identified as using the site, specifically: the pallid bat, Townsend’s big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis. The DEIR/S states that “Based on the relatively undeveloped nature of the surrounding landscape, there are very few sources of light associated with the Project area. The primary source of light and glare in the area is motor vehicles traveling on surrounding roadways and from residences in Nicholls Warm Springs/Mesa Verde.”

"It goes on to declare that throughout the life of the project “Site security would be provided 24 hours per day, 7 days per week, through a combination of the fencing, lighting...Night lighting would be provided at the O&M building, the On-Site Substation, the temporary construction staging areas, and on or near each PCS station” and would include additional street lighting." Table ES-1 and section 2.3.4.7. and 2.3.6 note that there will be additional nighttime lighting during construction and decommissioning, according to a Lighting Management Plan, as well as identifying lighting as being a source of impacts to wildlife via collisions, and that the Project will increase night lighting that could disturb special-status species, including alteration of foraging and breeding behavior. This is particularly true for bats. However, the DEIR/S erroneously equates observations of mortality as the only measure of impacts by citing a “low” number of dead bats observed at the Desert Sunlight and Genesis projects. However, the reality is that Project impacts from night lighting, habitat loss and fragmentation, fugitive dust, predator attraction, etc., throughout almost 6 square miles of the proposed project development footprint could cause changes in foraging and breeding that may result in increased competition, predation, and overall reduced fecundity and viability that could impact bats at the subpopulation level, and at yet not be observable as mortalities onsite.

It is a widely accepted scientific consensus that nationwide bats of multiple species are suffering dramatic losses due to habitat loss, light and noise pollution, habitat disruption, and the spread of white-nose syndrome; evidence demonstrates that over one third of bats studied in North America are vulnerable, imperiled, or critically imperiled. Abundant research has also demonstrated that artificial light and noise does increase the risk of mortality and reduce foraging success by bats in both urban and rural settings. Because impacts to bats are notoriously undervalued and underestimated in impact

---

29 DEIR/S p. 3.19-2  
30 Ibid. 4.4-12  
31 Ibid. p.2-10  
32 Ibid. table 4.1-1  
assessments on both public and private lands – as is the case with this Project and DEIR/S - it is necessary to emphasize their importance to ecosystem integrity, as Stone et. al. do here:

“As the second most species-rich mammalian order in the world (Wilson and Reeder 2005) bats represent a significant contribution to global biodiversity (Altringham, 1996; Racey and Entwistle,2003). Bats make effective bio-indicators, capturing the responses of a range of taxa and reflecting components of biological diversity such as species richness and biodiversity (Jones et al., 2009). Due to their high niche diversity bats are also effective ecological indicators reflecting responses over a range of trophic levels and highlighting effects of environmental degradation on specific ecological processes that are key to ecosystem functioning. Bats are potentially effective bio-indicators for conservation biologists measuring the human impact on the environment, including the impacts of light pollution as their relative abundance, species richness, and vulnerability to disturbance can be relatively easy to monitor over successive years (Fenton et al., 1992). Bats are therefore critical to ecosystem functioning and should be included in conservation plans aimed at preserving the integrity of ecosystems (Kalka et al., 2008). Declining bat populations may compromise important ecosystem services, so understanding their conservation needs is vital (Williams-Guillén et al., 2008). Urbanization and development affect bat habitats, either through direct loss or disturbance from light and noise pollution or human activities. Connectivity of habitat and foraging areas to roosts is fundamental to the survival of many bat populations (Verboom and Huitema, 1997). Changes in habitat affect the quantity, quality and connectivity of foraging, drinking and roosting resources available to bats. Light pollution is now recognized as a key biodiversity threat and is an emerging issue in biodiversity conservation, with important implications for policy development and strategic planning (Emphasis added.)”

In respect to lighting, Stone and colleagues confirm that, “Artificial lighting can have an impact upon a range of bat behaviors including foraging and commuting, emergence, roosting, breeding and hibernation. Artificial lighting can damage bat foraging habitat directly making an area unsuitable for foraging, or indirectly by severing commuting routes from roosts...Illumination of foraging areas can potentially prevent or reduce foraging activity, causing bats to pass quickly through the lit area or avoid it completely (Polak et al., 2011). Lighting can disrupt the composition and abundance of insect prey (Davies et al., 2012). Artificial illumination in foraging habitats can effectively cause a loss of foraging areas for some bat species.”35

---


Recent research describes how light intensity, type (i.e., short wavelength "blue" lights vs. standard, non-LED lighting), distribution, and other factors do influence direct and indirect impacts on bats.\textsuperscript{36} These considerations should be part of a Lighting Management Plan provided in the DEIR/S that must address the significant impacts to bats created by this extremely large proposed development, and should consider reduced lighting and alternative lighting strategies to minimize impacts beyond that proposed in the DEIR/S. Additionally, The DRECP offers detailed guidelines on how compensatory mitigation can be evaluated and described for impacts to bird and bats\textsuperscript{37} including where it states,

"To determine the required compensation the following section describes a generalized compensatory framework for operational impacts on bird and bat Covered Species. The compensatory framework for operational impacts to bird and bat Covered Species is based on Resource Equivalency Analysis (REA), which measures the total replacement cost for a given resource. REA relies on an understanding of a) the relative loss to a population (debt) resulting from an operational activity i.e., the life-time and generational loss of productivity of an individual and b) the productivity gain (credit) to a population from the implementation of compensation actions. It is important to recognize that both sides of the balance sheet estimate the debt and credit in the same currency, to clearly and transparently estimate the degree of compensation necessary. In this case, the currency is the number of bird/bat-years gained or lost because of operational impacts and the resulting compensation. The accuracy with which the debt/credit of bird/bat-years can be estimated is dependent upon the extent to which the life history, demographics, reproductive rate, and susceptibility to operational impacts are known."\textsuperscript{38}

Clearly the DEIR/S does not provide the necessary information, analysis, or relevant discussion to begin to assess compensatory mitigation as described above. Without these kind of data provided, including in relation to analysis of the adequacy of proposed land acquisition parcels, how exactly can the mitigation Plan be scripted prior to commencement of development, as the DEIR/S indicated it will be?

The necessity of detailed data provided for public review is underscored by the fact that significance criteria for substantial impact analyses may have three principal factors: magnitude or intensity and duration of the impact; rarity and context of the affected resource; and susceptibility of the affected resource to disturbance. For instance, the relevant criteria to determine the degree of impact of noise, under CEQA includes three variables of magnitude, frequency, and duration of the impact, as opposed to basing analyses and resultant mitigation prescriptions on basic data such as the potential for a species to occur. The evaluation of significance must also consider the interrelationship of these factors.\textsuperscript{39} Given

\textsuperscript{37} DRECP EIR/EIS Appendix H.3.3 https://www.fws.gov/carlsbad/PalmSprings/DRECP/Appendix%20H_Conservation%20and%20Management%20Actions%20Documentation/Appendix%20H_CMAs%20Documentation.pdf
\textsuperscript{38} Ibid. p. H-66.
\textsuperscript{39} City of San Diego Development Services Department. (Jan 2011). California Environmental Quality Act
how much birds and bats use noise as part of their survival, for everything from foraging and breeding to territory and conspecific recognition, these variables are certainly relevant especially over the long term. Additionally, a relatively small-magnitude impact on a state or federally listed species could be considered significant if the species is rare and highly susceptible to disturbance. This is true not only for determining significance of impact, but degree of significance in respect to what mitigation measures would be adequate. Given all of these factors, the DEIR/S has failed to describe how and to what extent bats may likely be impacted by the Project, and as such impacts to bats remain significant and unmitigated.

c. Impacts to Birds from Collisions to Facilities are Underestimated and Ignored Resulting in Unmitigated Impacts to Sensitive and Protected Bird Species

The DEIR/S states mitigation will “Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field (Emphasis added).”

As important as monitoring is to contribute to future databases and management strategies, it does not mitigate actual harm, injury, or death to individuals in any way, so should not be categorized as actual mitigation. The DEIR/S includes monitoring of the solar arrays as part of its mitigation measures, and yet the DEIR/S is misleading in its denial of the fact that bird strikes to solar panels will cause a significant impact, or that estimating impacts would be mere speculation or not supported by “available” data. To downplay the significance of the impacts to birds, the DEIR/S resorts to an outdated argument where it claims “Available information is not sufficient to allow quantification of the potential hazard of glare [lake effect]. Forecasting the importance of PLP [polarized light pollution] to the survival of avian populations and the integrity and function of ecosystems remains largely speculative.”

This attempt at obfuscating impacts with vague and erroneous language (i.e. “forecasting” and “speculative”) creates an unsupported unscientific assumption that is counter to substantial evidence of the impacts of bird strikes to PV arrays. The Project will result in removal of habitat and installation of reflective solar panels covering a minimum of almost 6 square miles, and will undeniably pose a significant impact to birds both residential and migratory over the life of the Project, i.e. 30 or more years.

Contrary to the DIER/S’s claim, there is abundant evidence, including supporting statements by U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), as well as evidence provided by other research biologists, showing that such impacts are not speculative, and indeed there is a combination of cumulative, replicated, peer reviewed, and photographically verified evidence that


40 DEIR/S Appendix G-34
41 DEIR/S p. 4.4-12
birds of many taxonomic Families local residents and migrants, consistently collide with (a) reflective solar panel arrays of varying designs, (b) associated transmission lines, and (c) other structures associated with varying types and designs of industrial solar facilities constructed in the southwest, clearly demonstrating that solar facilities, regardless of design, size or location, pose significant impacts to birds.

Due to the Applicant’s denial of the ability to quantify or characterize bird strikes to PV arrays on this Project, below I have presented detailed evidence to the contrary. This evidence should be included in the analysis and presentation of impacts to all resident and migratory birds, including state protected burrowing owls and Swainson’s hawks, and federally protected golden eagles. The detailed analysis should be part of a compensatory mitigation strategy provided in the final EIR/S and not deferred to an unscripted Bird and Bat Monitoring Plan, or other such plan. For sensitive migratory species that may be impacted, compensatory mitigation should be considered that can enhance conservation of species not represented by the habitat onsite.

A. The DEIR/S relies heavily, in part, on Worker Environmental Awareness Program (WEAP) training for mitigation of impacts to vegetation and wildlife, stating the worker program will include,

“requirements for reporting injured or dead animals...shall be implemented during site preconstruction, construction, operation, and decommissioning...shall include training components specific to protection of special-status plants that may occur in the Project Area...Workers shall be trained in the WEAP training to identify and report nests in active construction areas,” and “the training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern....”

The assumption that onsite workers, via a WEAP or other sort of training, might adequately observe, detect, identify, and otherwise report nesting, injured, or dead birds or other animals in a manner similar to that done by biologists with years of training for their profession is not only illogical, it is unsupported by the on-the-ground reality even if it were not a flawed measure to begin with. Having personally conducted numerous bird and bat mortality monitoring surveys on large industrial solar sites with various configuration of solar arrays, I can confirm that once a solar industrial facility construction is complete, the available staff onsite typically comprise a total of one to a few individuals at any given time working indoors at their assigned management, engineering, safety, and/or administrative jobs which do not include walking among the panels and other project structures in search of, and correctly identifying, nesting, injured or dead animals. This is not part of their job definition or expertise regardless of whether or not they attend and receive a sticker on their helmet some kind of training workshop. This point is underscored by where the DEIR/S states that “Operations and maintenance of the solar facility and gen-tie line require minimal activities on the part of the operator. The facility operates passively, with no...

---

42 Appendix G
fuels, no thermal cycle, and no need for water use for electricity generation except for washing of
solar panels... Dust would be washed from solar panels up to twice per year.”

B. The DEIR/S’s oversight of Project impacts – direct, indirect, and cumulative - by way of bird
strikes throughout the life of the project is fatally flawed in its omission due to the plethora of
evidence that such strikes knowingly contribute to bird deaths and injuries on every industrial
scale solar facility. The following is a compilation of evidence supporting the facts that the project
will result in potentially significant direct, indirect, and cumulative impacts to migratory and
resident birds, breeding and non-breeding, and the project does not adequately mitigate such
impacts:

(1) Table 1 summarizes a partial review of avian mortality reports for solar desert facilities
submitted to the state and federal Fish and Wildlife agencies between 2011 and 2016,
depending on the report. Table 1 shows just a partial summary that lists species that are
protected under the Federal ESA, California ESA, California Species of Special Concern, and
Migratory Bird Treaty Act, and have been killed by collision deaths at Southern California desert
solar facilities, including burrowing owls, loggerhead shrikes, and Le Conte’s thrasher, species all
identified as residents on the Project site. The data therein demonstrate not only the
importance of appropriately scripted scientific, methodical data collection to determine direct
and cumulative impacts via strike mortality (a plan completely lacking in the DEIR/S), it provides
undeniable evidence that solar facilities specifically attract and kill birds across many groups
including migrants; resident birds are not the only ones affected. It is also important to note that
these structures are not discriminatory in attracting only common desert residents. Table 1
shows that protected, endemic, and unusual desert migrants of all sizes succumb; including
marine and freshwater species including the blue-footed booby, surf scoter, Virginia rail,
common gallinule, common loon, pelicans, a jaeger, various ducks, grebes, a surf scoter, and
other birds native to marine and freshwater habitats.

The California Valley Solar Ranch Project (CVSRP) is located in the California desert region
primarily on land designated largely as formerly disturbed habitat. The CVSRP development
footprint that contains the PV solar arrays and operating facilities is approximately 1475 acres, \(^{44}\) less than half of that of this Project, and generates a purported 250 MW as compared to this
Project’s predicted 450 MW. Despite what was deemed lower quality habitat and thus less used
by various bird species, over the course of just two years \textbf{703 bird mortalities were reported at}
CVSRP, including three burrowing owls; this despite burrowing owl mitigation measures in
place. This predicts a mortality of 10,545 birds for the life of a 30-year facility, including 45
burrowing owls. One need only extrapolate the impact of a project more than twice CVSRP’s size
in acreage, such as this Project predicted development footprint of 3,770 acres, to estimate that
bird mortality due to strikes to solar arrays and associated infrastructure, throughout the life of
this Project, could total in the tens of thousands, and would thus pose a high risk of significantly

\(^{43}\) DEIR/S 2-19

\(^{44}\) H.T. Harvey and Associates. (2010). Biological Assessment for the California Valley Solar Ranch Project
impacting an entire population or a resident or migratory species that uses this site for nesting, foraging, or a migratory flyway.

(2) In a peer reviewed study published three decades ago, McCravy et. al. reported, “We studied avian mortality at an operating solar central receiver power plant in the Mojave Desert of southern California. During 40 weeks of study we documented the deaths of 70 birds (26 species). The estimated mortality rate was 1.9-2.2 birds per week. 81% of birds of 20 species died from collisions with Solar One structures, mainly the mirrored surfaces of heliostats.” \(^{45}\) The study goes on to further distinguish collision deaths with reflective panels as separate from other collision deaths, “Avian Collisions are an inevitable by-product off almost all man-made structures (see Avery et al., FWS/OBS-80/54, 1980). Reflective surfaces are especially prone to collisions (Klem, Ph.D. thesis, Southern Illinois Univ., Carbondale, 1979), and it is not surprising that collisions with mirrored heliostats occur on a somewhat regular basis considering the reflective surface area of Solar One”. \(^{46}\)

(3) Research on solar array and power line collisions demonstrates that impacts can be influenced by many variables, including proximity to developed areas and wetlands, degree of fencing, proximity to roads or roosts, wind conditions, and migration micro-pathways. \(^{47}\) USGS biologists point out that numerous animal species use polarized light for orientation and navigation purposes (Horváth and Varjú 2004). As such, the potential exists for polarized light pollution (PLP) to disrupt the orientation and migration abilities of desert wildlife, including those of sensitive species. In the review by Horváth and colleagues (2009), they highlighted the fact that anthropogenic structures that produce PLP “can appear to be water bodies to wildlife and can become ecological traps for avian species. Therefore, utility-scale solar energy facilities at which photovoltaic technology is used in the desert Southwest could have profound but unquantified effects on the ecological community surrounding the solar facility. (Emphasis added.)” \(^{48}\)

(4) In their preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States, Walston et. al. \(^{49}\) summarize their findings on impacts to birds as follows, “Utility-scale solar energy facilities in the United States require large spatial footprints (between 1.4 and 6.2 ha of land per MW of electric production) and are projected to require a total of 370,000 - 1,100,000 ha of land by 2030, mostly in the arid regions of the southwestern states [11]...Recent studies have suggested that utility-scale solar developments may represent a source of mortality for wildlife such as birds [12]. There are currently 2 known types of direct solar energy-related bird mortality [9,12,13]: 1. Collision-related mortality - mortality resulting


\(^{46}\) Ibid.


from the direct contact of the bird with a solar project structure(s). This type of mortality has been documented at solar projects of all technology types...different solar technologies and project designs may influence avian mortality risk. For example, project designs that utilize solar collectors that reflect polarized sunlight in such a way so as to be perceived as waterbodies, may attract birds and their prey (e.g., insects), thereby increasing the risk of bird collisions with project structures [10,12,14,20](Emphasis added).”

This summary underscores the cumulative impacts that current and proposed desert solar projects will have on birds in the California desert southwest. Using Fesnock et. al.’s conservative findings50 on bird deaths per acre at California desert solar facilities, and the projected acreage slated for development by 2030, bird deaths would number between 548,000 and over 4,347,000. A fraction of these deaths within one species could incur significant impact to an entire population, especially of species already rare or declining.

The report also makes recommendations to better assess avian impacts caused by industrial solar sites: “There is a need for more standardized, consistent, and science based avian monitoring protocols ... Standardized monitoring methodologies will improve the scientific certainty of conclusions about avian mortality. As efforts get under way to improve the quality of avian mortality data collected from USSE facilities, researchers should focus on development of more effective inventory and monitoring techniques”.51

As such all industrial solar facilities, this Project included, should be required not only to adopt a bird and bat conservation program scripted within the DEIR/S, for reasons iterated above the details of such a plan, including performance and success criteria, should be part of the final impact assessment available for public review. Such a plan should include scientific data collection of avian injury and mortality for the life of the project, not only to assess long term and cumulative impacts, but to contribute to a much-needed database to enhance future mitigation strategies.

(5) The U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy and the U.S. Department of the Interior’s Bureau of Land Management published their Solar Energy Development Programmatic EIS PEIS, which concluded that “Since birds are prone to collisions with reflective surfaces, it would be expected that a utility-scale solar energy project could cause significant bird mortality. Glare could possibly disorientate a bird in flight and cause it to collide with solar energy project facilities or other objects.”52 This conclusion by the federal government agencies responsible for overseeing wildlife impact mitigation on public lands further exemplifies the accepted reality that significant bird collision risks are created and

---

51 ibid.
enhanced by the presence of reflective solar arrays at solar industrial projects, regardless of differences in design of the panels between projects.

(6) In their comments to the Palo Verde Solar DEIR, the USFWS confirms that there is growing evidence of the impacts from what is known as the “lake effect”, especially for water-associated birds and other species seeking migratory stopover habitat, and that projects in proximity to this project’s site are among those reporting the highest mortality of water-associated birds. They conclude that cumulative impacts to birds could be significant for various species, and would warrant project-specific systematic monitoring and mitigation via a bird and bat conservation plan. They go on to suggest some strategies that should be incorporated into such a plan, while emphasizing that any such Plan should provide enough detail to demonstrate standard scientific rigor, appropriate methodology, and consistency with other similarly approved plans.

(7) In the 2015 National Renewable Energy Laboratory’s review of avian monitoring and mitigation information at existing utility-scale solar facilities, the report summarized their findings of 7 solar sites by stating, “One commonality among utility-scale solar facilities of all technology types is that they occupy relatively large spatial footprints to capture the sun’s energy. The development of utility-scale solar facilities, therefore, represents a large human land use in the environment, which has the potential to affect birds and bird communities in a number of ways and during all project phases (construction, operations, and decommissioning). The range of potential impacts from utility-scale solar projects on birds and other wildlife has been evaluated in the literature (e.g., Lovich and Ennen 2011; Hernandez et al. 2014) and in the Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (BLM and DOE 2012). Like all industrial activities, utility-scale solar energy development has the potential to directly and indirectly impact birds and bird communities in a number of ways. This report summarizes existing information of direct avian fatality at utility-scale solar facilities, which represents one of several impact factors. There are currently two known types of direct solar-related bird fatalities (McCrary et. al.1986; Hernandez et al. 2014; Kagan et al. 2014): 1. Collision-related fatality—fatality resulting from the direct contact of the bird with a project structure(s). This type of fatality has been documented at solar projects of all technology types.”

The review further summarizes, “Collisions may occur at any facility (solar or otherwise) with aboveground structures. In the case of solar plants these may include transmission lines, cooling towers, PV panels and poles, trough systems, heliostats, fencing, and buildings. At PV and CSP facilities, collision hazards to birds are greatest among the solar field arrays...PV facilities may attract some species of birds through what has been called the “lake effect” (Kagan et al. 2014),

---

whereby migrating birds perceive the reflective surfaces of PV panels as bodies of water and collide with project structures as they attempt to land on the panels. (Emphasis added).”

The Laboratory report’s data collected from monitoring seven solar site reveal 1,384 bird mortality detections over the course of 6 months to three years, depending on the individual project report, with 11.2% of those being water dependent birds, and the majority reported as collision related. All project sites were characterized by presence of various types of desert scrub habitats native to California desert systems, similar to those identified on the Project site.

(8) A California Department of Fish and Wildlife (CDFW) grant proposal, written in cooperation by the USFWS and USGS, makes the determination that, “Utility-scale solar projects, totaling many tens of thousands of acres, have been approved and are currently proposed within the range of Yuma Clapper Rail. Photovoltaic, solar thermal trough, and solar thermal power tower technologies reflect ambient light during the day and night, producing a “lake effect” that attracts numerous water-associated birds, including numerous rails... Since no water-associated birds were reported in pre-project avian surveys in desert scrub habitat on these project sites, and suitable habitats were not present, we conclude these solar technologies pose an “attractive nuisance” to which rails and other water-associated birds are particularly vulnerable. In addition to collision with solar panels, rails and other water-associated birds have died by collisions with fences and transmission lines, and entanglement in netting over water evaporation ponds. As such, existing and proposed utility-scale solar projects and their associated infrastructure introduce new sources of mortality to dispersing rails [and other water-associated birds], which cumulatively could be significant enough to function as population sinks for the life of these projects”. This statement reinforces the fact that bird collisions to the facility may not only cause significant impacts to birds of many types (sensitive and endangered species, residents, migrants, passerines, water dependent birds, etc.), but could significantly impact birds at the population level.

(9) Fourteen wildlife and other governmental state and federal agencies are coordinating to address what they consider to be emerging issues related to potential avian-solar impacts under the umbrella of the Multi-agency Avian-Solar Collaborative Working Group. In doing so the agencies involved have produced a draft Plan that includes justification and details regarding reduction of impacts caused by bird strikes to solar panels. One part of this justification is in response to the bird mortality reports outlined in Table 1, among others. The complete list of

---

55 Ibid. p.30
56 CDFW. (2016). Demographic tool for assessing the impact of increased mortality rates on Yuma Clapper Rail (Rallus longirostris yumanensis) and California Clapper Rail (R. I. obsoletus) populations. Unpub. ESA Section 6 Grant.
https://www.researchgate.net/publication/307965556_Yuma_Clapper_Rail_Rallus_longirostris_yumanensis_Dickey_CLRA_Basic_Conceptual_Ecological_Model_for_the_Lower_Colorado_River

The reports referenced above provide conclusive evidence that the risks of PV panel avian collisions are real, significant, have been observed by scientific methodologies incorporated into bird and bat monitoring protocols, and quantifiable to the extent required for estimating compensatory mitigation needs.

Finally, in their comments to this DEIR/S, USFWS states that,

“The Project site occurs in the Lower Colorado River Valley, which forms a major branch of the Pacific Flyway (Rosenberg et al. 1991). The diverse aquatic, wetland, riparian, agricultural, and desert habitat types in this area provide permanent and seasonal refuge to hundreds of resident and migratory birds (Shuford et al. 2002). Utility-scale PV, parabolic trough, and power tower projects that are currently under construction or in operation are reporting avian mortalities and injuries resulting from collisions and other accidents with various project features, including solar panels or heliostats, evaporation ponds, fencing, electrical distribution lines onsite, and gen-tie lines to regional substations on the grid. As indicated in the draft EIS/EIR, post-construction avian mortality monitoring from nearby utility-scale solar facilities has documented bird fatalities. However, the avian mortality monitoring data described in the draft EIS/EIR only considers raw data that are not corrected for searcher efficiency and carcass persistence. These data are useful for considering which project features are associated with mortalities, but do not provide a good metric for evaluating the total impact to migratory bird species. For example, the raw data used in the draft EIS/EIR states that mortality monitoring at Desert Sunlight detected 432 total mortality events. However, to represent a more accurate estimate of mortalities, the numbers should reflect the searcher bias and carcass removal rates. For example, in Desert Sunlight’s post-construction avian mortality monitoring annual report, the adjusted total bird fatality estimate was 1,610 (CI: 1,118 – 3,671) fatalities in year one and an estimated 1,594 (CI: 1,271 – 2,116) fatalities in year two (WEST 2018). Therefore we recommend the final EIS/EIR provide the corrected data to provide a more accurate cumulative evaluation of effects to migratory birds. Lastly, contrary to information in the draft EIS/EIR the avian mortality monitoring period for Desert Sunlight was conducted within a two-year period, not a five-year period. Therefore some calculations in Table 4.4-4 in the Draft EIS/EIR are incorrect and should be updated in the final EIS/EIR or an explanation should be provided on how the five-year timeframe was calculated. Based on the avian monitoring data for other nearby solar energy facilities, the Desert Quartzite Project is likely to contribute to an increase in avian fatalities through collisions with PV panels, fencing, and gen-tie lines. The draft EIS/EIR includes a requirement for development of a Bird and Bat Conservation Strategy (BBCS) but lacks details. To help reduce impacts to migratory birds we recommend the BBCS include, at a minimum, a nesting bird management plan that addresses all migratory birds and systematic post-construction mortality monitoring, including searcher
efficiency and carcass persistence trials, and adaptive management measures as necessary to address avian impacts. See the enclosure for more information on developing a BBCS.”

To reduce adverse effects to migratory birds, USFWS recommends the following measures:

- Undergrounding of on-site distribution lines.
- The use of monopoles for any above-ground distribution lines and gen-tie lines.
- Marking fences to reduce avian collisions with newly constructed fences.
- Avoiding the use of lattice-type structures or placing external ladders and platforms on project infrastructure to minimize perching and nesting opportunities for birds on site.
- Avoiding the use of meteorological towers that require use of guy wires, or where this is not feasible, placing markers on the guy wires to increase visibility of these hazards to birds.

I agree with the comments and requests by USFWS. However, to completely mitigate Project impacts to resident and migratory birds due to strikes to infrastructure, the DEIR/S needs to revisit and more thoroughly analyze the impacts described herein, including exactly how and what type of compensatory mitigations will be established and offset these impacts to below significant for all of the many species involved, including migrants that do not utilize the habitat onsite for breeding.

d. The DEIR/S Underestimates Impacts to the Endangered Willow Flycatcher

As noted above, the DEIR/S fails to discuss the impact of the Project on the willow flycatcher (Empidonax trailli) despite it being recorded as present in Appendix M. The willow flycatcher is an endangered species under the CESA, and the southwestern willow flycatcher is protected under the federal ESA. Not only is the willow flycatcher is reported in the proposed project site area in the fall of 2014, it has been recorded regularly in the area.

Willow flycatchers were also observed and recorded close to the Project site at 22nd Avenue Oasis West of Stephenson Blvd (an eBird hotspot) according to an eBird listing (reviewed by ornithologists prior to posting). Willow flycatchers are known to migrate along the Colorado River, and mortalities of other species of flycatchers have been documented on the nearby Desert Sunlight PV project. As discussed

---

60 Appendix M-9
62 See https://ebird.org/pnw/hotspot/L1842425?yr=BIGDAY_2017a&m=&r=mc

in detail above, migrant birds mortalities are a predictable significant impact to every solar industrial site, therefore the County and BLM should consult with the state (California Department of Fish and Wildlife, CDFW) and federal (U.S. Fish and Wildlife Service, USFWS) wildlife agencies to determine what is necessary to reduce impacts associated with the proposed project to both protected species and subspecies

e. **Special Status Species Detected Onsite are Omitted in the DEIR/S Impact and Mitigation Analysis**

The DEIR/S summarizes special-status wildlife species with potential to occur within the study area on Table 3.4-1. However, several such species that were observed during surveys are not included in this table, specifically: American white pelican (CA Species of Special Concern), Merlin (CDFW Watch List), Mountain plover (BLM Sensitive, CA Species of Special Concern), Prairie falcon (CDFW Watch List and Bird of Conservation Concern), Sandhill Crane (Subspecies canadensis is a CA Species of Special Concern, subspecies tabida is state Threatened and BLM Sensitive Species), Short-eared owl (CA Species of Special Concern), White-faced ibis (CDFW Watch List), Willow flycatcher (State Endangered/ Federally Endangered depending upon subspecies, not indicated), Yellow warbler (CA Species of Special Concern), and Yellow-headed blackbird (CA Species of Special Concern).

The omission of these species, including a federal ESA and California ESA protected species, from impact analyses is a serious oversight on the part of the DEIR/S. The discussion above demonstrates in detail the high risk of migratory species being harmed by the Project, therefore the need for further analysis of impacts should not be limited to the presence of breeding or foraging habitat of these species present onsite. As such the Applicant needs to completely revisit its analysis of impacts to sensitive migratory (and non-migratory) birds to include those above. Such analyses should not be deferred to the future by way of a theoretical mitigation Plan, as discussed previously in this letter, and should include specific details regarding how compensatory mitigation will reduce impacts to these rare, threatened, and endangered species to below significant.

f. **Significant Impacts to Desert Bighorn Sheep and Burro Deer are Underestimated and Remain Unmitigated**

The DEIR/S says “Although impacts on wildlife movement are anticipated under Alternatives 1, 2, or 3, these impacts would be less than significant with mitigation.... Mitigation Measures WIL-1 (Mojave desert tortoise fencing), WIL-4 (Mojave desert tortoise habitat acquisition), and WIL-9 (burrowing owl


65 Appendix M p. 186-188
habitat acquisition) would reduce remaining potential impacts to a less than significant level by directing wildlife movement around the Project (via the site perimeter fencing), and building upon a consolidated block of conserved open space suitable for maintaining movement corridors (via the Project’s habitat acquisition contribution). Post-mitigation, impacts would be less than significant.”

It goes on to state that, “Fencing that is proposed around the Project, other local solar projects, and I-10 create barriers to wildlife movement that would alter, but not likely impede, the movement of large wildlife species such as Desert bighorn sheep, burro deer, mountain lion, or other highly mobile species. ... the cumulative projects are not expected to present a barrier to regional movement, because these animals have the ability to move outside of the fenceline of the projects. In addition, the largest impact to wildlife movement associated with the cumulative projects is expected to be that posed by I-10. The contribution of the Project to the larger cumulative impact posed by the highway is expected to be minimal.” However, the DEIR/S also notes that “The McCoy Mountains Bighorn Sheep Wildlife Habitat Management Areas (WHMA) is located approximately 0.5-mile north of the Study Area’s ROW Boundary, immediately north of Interstate 10, and the Mule Mountains WHMA is located approximately 0.9-mile southwest of the Study Area’s ROW Boundary. These two WHMAs (shown in Figure 3.4-10) are currently listed as unoccupied range (BLM 2002).”

Finally, the DEIR/S concludes that, “direct and indirect construction impacts to burro deer include the loss of foraging habitat in the Parkinsonia floridiana-Olneya tesota alliance, vegetated swales, and the Larrea tridentata and Larrea tridentata-Ambrosia dumosa alliances, and potential barriers to local and regional deer movement...the Project would not present a barrier to regional movement because deer still could disperse around the site to the west, north, and south.”

To begin with, this statement is misleading. A model for intactness does not override the fact that the species’ microphyll habitat is onsite, and that sheep and deer would use the site as a corridor, especially when burro deer are highly dependent upon microphyll woodlands (desert washes with trees, usually ironwood and Palo Verde). To say they can just go around as if doing so would impose no deleterious cost to individual animals is misleading given the site is almost 9 square miles, and dispersing this far to reach appropriate forage, shade, cover, etc. can incur a negative impact to individuals. The site is bordered to the southwest by mountains, to the southeast by agricultural fields. To say there will be minimal impact with the development of a vast development of this size, with its associated roads that will dissect and disrupts this corridor, especially for bighorn sheep that are known to be incredibly sensitive to human presence, is simply not based in fact. Additionally, to say the area is unoccupied based upon 17 year-old data is outdated and inappropriate, as is claiming that there are no significant cumulative impacts despite the cumulative impacts readily identified. The DEIR/S does not provide a substantial argument or evidence for this claim, therefore impacts to Desert bighorn sheep and burro deep remain unmitigated.

---

66 DEIR/S 4.4-21
67 Ibid. 3.4-2
68 DEIR/S 4.4-11
g. **Project Impacts to Western Burrowing Owls are Underestimated and as a Result Unmitigated.**

The DEIR/S has confirmed there are Western burrowing owls, a protected California Species of Special Concern, on the Project site. This included detection of an incredibly high number of burrows; biologists found 70 burrows deemed readily active, usable and/or had owls in residence. And, as Figure 3.4-4 of the DEIR/S demonstrates, observations of burrowing owls along with those of usable, recent burrows are spread throughout thousands of acres of the Project site within many acres of “suitable” habitat.

By way of their discussion of the various ways in which the species is impacted by development, the DEIR/S acknowledges there will be direct, indirect, and cumulative impacts to owls by the Project. Yet the DEIR/S fails to demonstrate *exactly* how it will mitigate these significant impacts throughout such a wide swath of habitat and known occurrence, and instead defers most planning to the future by simply stating a Protection and Mitigation Plan will be written at some point in the future. For reasons iterated in detail above, this deferral is completely inadequate.

The DEIR/S also claims WIL-9 describes BUOW mitigation, where it states this theoretical Plan shall “identify appropriate off-site areas for creation or enhancement of burrows to support passive relocation of burrowing owls, provide details for implementing the passive burrow exclusion and relocation of burrowing owls from the Project site, and specify reporting protocol for any implemented burrowing owl mitigation measures. Active translocation may be considered…” There can be no review of these plans, or their efficacy, without seeing the details in the DEIR/S. Second, the DEIR does not evaluate known, potentially significant impacts associated with owl eviction. In fact, the CDFW does not recommend passive displacement of owls as a mitigation technique. To the contrary, CDFW’s Staff Report states:

> “Exclusion in and of itself is not a take avoidance, minimization or mitigation method. Eviction of burrowing owls is a potentially significant impact under CEQA...Therefore, exclusion and burrow closure are not recommended where they can be avoided. The current scientific literature indicates consideration of all possible avoidance and minimization measures before temporary or permanent exclusion and closure of burrows is implemented, in order to avoid take.”  

Contrary to guidance in the Staff Report, the DEIR/S indicates the Project will displace owls from their burrows without having to consider “all possible avoidance and minimization measures.” Neither has the Applicant prepared a Burrowing Owl Exclusion Plan (nor do they propose who would script such a plan), and so once again a complete analysis of mitigation measures is precluded.

The CDFW’s guidelines for adequate impact assessment of burrowing owls include the following steps:  

---

70 California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. p. 10  
71 Ibid, pp. 6-8
(a) Define the problem including type and extent of disturbance, duration and timing of disturbance, visibility of disturbance, sensitivity and ability to habituate, and influence of environmental factors. They suggest identifying and addressing all potential direct and indirect impacts to burrowing owls, regardless of whether or not the impacts will occur during the breeding season.

(b) Describe the type and extent of the disturbance in terms of “impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate.”

(c) Describe the duration and timing of impact impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate.

(d) Assess the visibility and sensitivity of the owl(s) at/near the site to ongoing visual or audible disturbance.

(e) Discuss the environmental factors that “that could be influenced or changed by the proposed activities including nest site availability, predators, prey availability, burrowing mammal presence and abundance, and threats from other extrinsic factors such as human disturbance, urban interface, feral animals, invasive species, disease or pesticides.

(f) In respect to the details provided as directed, “evaluate the potential loss of nesting burrows, satellite burrows, foraging habitat, dispersal and migration habitat, wintering habitat, and habitat linkages, including habitat supporting prey and host burrowers and other essential habitat attributes.”

(g) Asses the consequences of cumulative effects of the Project, and nearby projects, on the local and regional populations of owls.

(e) Create mitigation goals that provide a standard by which to measure mitigation success.
The DEIR/S’s deferment of detailed burrowing owl measures to the future clearly does not come close to meeting the recommendations for impact analysis according to the oversight agencies, nor does Mitigation Measure WIL-9; which as written which is potentially conciliatory to development over the actual needs of the owls. For instance, the DEIR/S states that an avoidance buffer will be created if owls are observed during non-breeding season. However, “The appropriateness of buffer distances shall be carefully reassessed and relaxed or modified, on a case-by-case based on a review by the Qualified Biologist, and shall depend on existing conditions (e.g., vegetation/topographic screening and current disturbance regimes) and/or future development plans (e.g., increased or intensified construction activities).” If owls are detected during breeding season, the DEIR/S is even less precise about actions to be taken, claiming “If construction activities would occur within 656 feet of the occupied burrow during the nesting season...the Qualified Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance.” As noted previously in this letter, such subjective determinations of disturbance once birds are nesting are inappropriate and a time contrary to actual mitigation. Additionally, buffer size and appropriateness should be confirmed by oversight agency personnel, not a biologist hired by the developer, where they can (and often are) asked to modify a buffer according to construction activity contingencies that may (and have, in my direct observations) be motivated by construction timelines over a bird’s nesting viability.

The DEIR/S erroneously states that, “Operation and maintenance actions have a low likelihood to affect burrowing owls because activities would largely occur within the developed solar plant site. Burrowing owls have the potential to return to the Project area, following the completion of construction. However, if the burrowing owl does return to the Project area as a resident species, it would likely inhabit the periphery of the development footprint in either natural burrows or manmade structures (e.g., drainage culverts, debris piles, etc.). O&M activities are not expected to remove burrowing owl breeding habitat and would occur only on Project access roads and within work areas.”

This claim is at best is misleading. First, burrowing owls, like most bird species, have high natal site fidelity and are thus highly likely to return to the area in which they were born, especially in light of the fact that burrowing owls take full advantage of burrows in native and highly altered agricultural and ruderal habitats if in close proximity to adequate prey. Project development will clearly remove owl habitat onsite, so to state O&M will not impact owls given their proclivity to return to their natal site is incorrect. The DEIR/S has not provided the necessary details regarding how resident burrowing owls will be addressed if they arrive during O&M, which is also mistakenly considered separate than impacts from access roads and work areas. On this note, the evidence does not support the claim that burrowing owls would only inhabit the periphery of the development, given the fact that they will reuse and excavate burrows made by other species, including, rodents that may infiltrate the site at any time and anywhere there is sufficient ground cover for burrowing.

---

72 Appendix G-37

73 DEIR/S 4.4-16
The discussion above in this letter regarding the impacts of solar arrays, gen-tie lines, and other infrastructure to birds via strikes, in addition to Table 1, provide clear evidence that the entire development footprint of industrial solar developments cause impacts to burrowing owls - during operation - in the form of mortalities and negative behavioral impacts as documented on various solar farms. When monitoring solar facilities in the Sonoran desert I observed several burrowing owls that had entered grounds where they had been relocated previously, arriving next to the solar arrays to nest and forage, including areas otherwise known as O&M grounds where maintenance activities included major ground disturbance for vehicle transport, flood control, and other excavations that disturbed burrowing owl burrows. Over the course of just two years, 703 bird mortalities were reported at the CVSR desert solar facility, including three burrowing owls; this despite burrowing owl “mitigation measures” approved by the agencies being in place. This predicts a mortality of 10,545 birds for the life of a 30-year facility, including 45 burrowing owls. In summary, the DEIR/S fails to describe in adequate detail how it will mitigate this high potential rate of owl disturbance in the form of direct, indirect, and cumulative impacts.

h. The DEIR/S Provides Inadequate Analysis and Incomplete Mitigation of Impacts to the Mojave Fringe-toed Lizard (*Uma scorpioides*) (MFTL)

i. Subheading needed

The DEIR/S states that, “Direct impacts to Mojave fringe-toed lizards during construction of the solar facility, gen-tie line, distribution line, and associated access roads would occur due to removal of habitat and accidental mortality of lizards from vehicle strikes. The Mojave fringe-toed lizard has wide distribution in portions of the gen-tie line alignment located south of I-10, with 135 individuals identified in the Alternative 1 Study Area during surveys (107 within the solar facility footprint, 28 along the gen-tie corridor). Within 150 feet of these documented occurrences, Alternative 1 would directly impact 78 acres of occupied habitat... Alternative 1 would directly impact 3,692 acres of potential habitat [on the project site]. It is uncertain whether sufficient private lands meeting the habitat criteria may be available for purchase. Therefore, compensation required under Mitigation Measure WIL-10 may be accomplished through acquisition and management of off-site habitat or, if suitable compensation habitat is not available, through off-site habitat enhancement and restoration.”

According to USFWS comments to the nearby Palo Verde Mesa Solar Project DEIR, the Mojave fringe-toed lizard “is designated as a Sensitive Species by BLM and a Species of Special Concern by the State. These designations recognize the general rarity of this species, which is vulnerable because a proportionally small amount of suitable habitat is scattered in a relatively few, small, isolated patches of sandy habitats across the Sonoran and Mojave deserts in California. These patches of sand-dominated habitat rely on aeolian sand transport systems, such as the several sand transport corridors in the Chuckwalla Valley, which provide periodic pulses of loose blows and from upwind sand sources.”74 Given

---

the observations of MFTL onsite, and the extensive research describing local habitat requirements for this species, there is no question that the Projects’ sand dune and partially stabilized sand dune habitat is crucial for the Mojave fringe-toed lizard. What is not emphasized is how the project could impact four Sand Migration Zones (SMZs): Wiley’s Well Basin, Mule, Palowalla and Powerline SMZs, including in the northern part of the site and along the gen-tie line to the Colorado River Substation, where sand migrations in some areas is denoted as moderate to high.\(^75\) There is no quantitative analysis within the DEIR/S regarding how direct and indirect impacts to these Zones will impact the MFTL, nor exactly how they would be mitigated as a result.

The DEIR/S proposes 3:1 compensatory mitigation for the MFTL. It is important to note that given the problems other Projects have had meeting mitigation success criteria for sand dune habitat supporting viable subpopulations of MFTL over the long term, other solar energy projects known to impact MFTL habitat have established mitigation ratios higher than 3:1 for direct impacts to occupied habitat in combination with other compensatory mitigation for indirect impacts. For example, the Desert Sunlight project was required to mitigate unavoidable impacts to the MFTL habitat up to 5:1 for direct impacts to all occupied MFTL habitat and lesser ratios for indirect impacts, while also creating a detailed MFTL Protection Plan.\(^76\) Despite the fact that this Project will incur a much higher degree of impacts (over 3,700 acres) than Desert Sunlight, the DEIR/S provides no explanation for failing to provide a detailed MFTL Protection Plan, including key addressing key factors including why only a 3:1 mitigation ratio is justified as adequate for direct impacts, and how construction will impact downwind habitats already denoted as moderate to highly migratory sand. Habitat fragmentation and resultant edge effects are known to decrease fringe-toed lizard subpopulation viability, yet another reason why a detailed evaluation (Plan) should be available for review within the EIR/S, one that evaluates population and habitat related performance and success criteria -including that for potential restoration proposed, for compensatory mitigation.\(^77\)

In addition to these omissions for mitigation, the DEIR/S summarizes its mitigation of MFTL as follows, “It is also uncertain whether off-site enhancement and restoration can feasibly and effectively restore natural sand transport function and aeolian sand habitat values. Therefore, with implementation of Mitigation Measure WIL-10 to the extent it is feasible, the Proposed Action’s direct effects on sand transport may remain only partially mitigated...Therefore, compensation required under Mitigation Measure WIL-10 may be accomplished through acquisition and management of off-site habitat or, if suitable compensation habitat is not available, through off-site habitat enhancement and restoration (e.g., by controlling weeds or off-highway vehicle access). However, it is also uncertain whether off-site enhancement and restoration can feasibly and effectively restore natural sand transport function and aeolian sand habitat values. Therefore, with implementation of Mitigation Measure WIL-10 to the..."

\(^75\) Appendix O Plate ES-3


extent it is feasible, the Proposed Action’s direct effects on sand transport may remain only partially mitigated.”

This lack of proposed adequate mitigation to thousands of acres of potentially occupied habitat within the Project site warrants that the Applicant consider alternatives that will avoid impacts to the existing MFTL populations including related regional sand movement zones, or select the No Project Alternative.

ii. Population Status and Resultant Direct Impacts to MFTL are Underestimated

Despite the Applicant conducting herpetofaunal surveys for the Project site six and seven years ago, it must be noted that “Visual Encounter Surveys” of transects can never completely provide an accurate census of an extremely difficult to detect species like the MFTL. Even when not hibernating, the animals are incredibly cryptic and spend a good deal of time buried under the sand for physiologic and behavioral reasons, including predator avoidance. They have been described in the species account for the BLM as having “interesting behavioral adaptations for their dune habitat. Most notable is their sand burial behavior...fringe-toed lizards tend to frequently bury themselves within 4-6 cm of the sand surface.” The species’ morphology itself demonstrates its unique evolutionary adaptations for spending a lot of time under sand, including a countersunk lower jaw, valved nostrils, keeled supralabials, enlarged and imbricate shoulder scales, and a dorsoventrally compressed body. As fringe-toed specialists describe, “the dorsal network of dark ocelli on a yellowish ground color make these lizards extremely cryptic on the sandy substrate”. (See Figs 1-3). Due to their cryptic nature and difficulty to detect, many species of reptiles are historically underserved in conservation management plans, including those dependent on environmental impact analyses.

78 DEIR/S 4.4-7,8
80 Ibid.
New roads and access driveways are constructed to create access to solar development sites, which increases the risk of direct morality of lizards and snakes by vehicles, causes habitat fragmentation and potential barriers to gene flow, and makes previously inaccessible areas available to vehicles including off-road vehicles. Solar sites are inevitably surrounded by fencing of various kinds during and post-construction, which may serve to exclude some individual animals, but also serves to trap or funnel other small species - including reptiles seeking shade - within a construction site. Additionally, industrial scale solar projects are known to alter the microclimate of a region. "It has been estimated that a concentration of solar facility can increase the albedo of a desert environment by 30%-56%, which could influence local temperature and precipitation patterns through changes in wind speed and evapotranspiration. Depending on their design, large concentrating solar facilities may also have the ability to produce significant amounts of unused heat that could be carried downwind into adjacent wildlife habitat with the potential to create localized drought conditions." The DEIR/S clearly describes how new roads, fencing, and habitat fragmentation will all promote impacts to species including the MFTL, including where it states that, "direct impacts to MFTL during construction of the solar facility, gen-tie line, distribution line, and associated access roads would occur due to removal of habitat and accidental mortality of lizards from vehicle strikes." However, there are two reasons why the DEIR/S analysis of impacts and resultant (inadequately) described mitigation fall short for the MFTL:

1. For reasons described above, surveys of individuals not combined with a qualitative statistical estimate for occurrence are always underestimated, and

2. There is an impact phenomenon that occurs on desert development sites not addressed by the DEIR/S, detailed below.

Biologists, myself included, have witnessed an important phenomenon on solar and wind energy project construction sites in arid regions where lizard species are present, and pre-construction surveys required focused searches for animals along roads and within construction zones. Specifically, we have observed that lizards are directly and immediately attracted to roads on and around construction sites where trucks spraying water and other erosion control liquids are used to reduce airborne dust, as is the case with every desert development project when attempting to dust minimization protocols. This practice serves to attract lizards of a variety of species to the higher moisture levels on the roads, resulting in increased mortality and injury due to being hit by construction site traffic that use the roads subsequent to the water trucks passing. For instance, within the course of one month this phenomenon resulted in the mortality of over 20 flat-tailed horned lizards (Phrynosoma mcallii) (a sensitive species) (FTHL) on one solar construction site in the southern Sonoran desert during the summer of 2014, and where over an additional 100 FTHLs were relocated to avoid mortality from vehicle impacts during several weeks of the construction phase. During the construction of the Sunrise Powerlink gen-tie line in the Sonoran Desert, from just April to November, 103 flat-tailed horned lizards were relocated and 25

mortalities were recorded. It is key to note that these solar industrial projects failed to anticipate these significant impacts to lizards due to this phenomenon, and as a result one facility had to completely stop work for at least a week. One independent contractor reported losing an alleged $146,000 a week due to the unexpected delay, partly due to the developer’s resistance to hiring the requisite number of additional biologists needed to detect and relocate lizards at risk of mortality and injury.

In summary, observations during the construction phase of a solar industrial site facility construction in Southern California desert reveal that lizards of varying species and sizes appear to be opportunistically attracted to the added moisture on the roads from water trucks. Such behavior was not restricted to any lizard species in particular, however clearly the reason it is under-reported is that these development sites rarely have biologists deliberately searching Project sites and roads for lizards because the impact analyses and resultant permits typically do not require such an effort. When this phenomenon was officially noted as impacting sensitive species (i.e. the FTHL), additional on-site biologists and mitigation management practices were necessary to ensure complete coverage of all construction roadways and other areas where lizards were prone to death and injury from vehicle impacts. It must be noted that mortalities from even one Project such as this could have a population level effect, considering several Distinct Population Segments have been identified in this region; the same can be said for the MFTL. According to Murphy et. al., “many local populations of *U. scoparia* are quite small with some having perhaps fewer than 500 adults. Small patches of sand cannot support large populations of lizards. Thus, the species is considered rare according to geographic distribution, population size and habitat specificity.” Further, as noted above, fringe-toed lizard densities are negatively affected by sand depletion and surface de-stabilization.

In order to adequately mitigate for such high potential impacts to the fringe-toed lizards, the Applicant must take into consideration the risks iterated above, and require mitigation measures to reduce resultant impacts include additional biologists present onsite during all hours of construction, enhanced traffic restrictions, and a reptile relocation Plan and Monitoring Strategy during the construction phase.

### iii. The DEIR/S Underestimates the Potential for Foraging Eagles and other Raptors on the Project Site

---


The DEIR/S states that “In March and April 2013, a total of 17 black-tailed jackrabbits were detected across the 4,855 acre Project site, equating to an estimate of approximately 0.0035 black-tailed jackrabbits/acre. A total count of cottontail rabbits was not conducted, therefore, a density estimate cannot be established for the species...Due to lack of active nests near the Project and low observed prey densities on the site (i.e., 0.0035 black-tailed jackrabbits per acre), golden eagles are expected to forage infrequently within the Alternative 1 site.” 92,93 Appendix M says that these animals were detected during a 10-meter belt-transect survey of the entire Project.” If 0.0035 was an actual density of jackrabbits per acre the regional population would likely be extinct by now. This survey is extremely poorly described in scope and methodology, and as such clearly cannot represent a census or any other sort of scientific estimate that is appropriate for determining abundance, site use, and/or density of jackrabbits (or cottontails) inhabiting the Project site as a primary prey item for not only golden eagles but other species as well, including red-tailed hawks and kit foxes. Therefore these data inferring prey distribution or abundance are spurious and need to be re-assessed with new surveys, and cannot be used to predict that eagle or other raptors species foraging onsite would be low. Indeed, the DEIR/S also states that “A total of 26 raptor or raven nests were documented during Golden Eagle Territory Occupancy Surveys (Figure 24). Sixteen of these nests were in cliff or rock outcrop substrates, nine (9) were in power line support structures, and one was located in an ironwood tree (Olneya tesota). In 2013-14, species associated with raptor nests included four (4) red-tailed hawks (Buteo jamaicensis), two (2) prairie falcons (Falco mexicanus), and 12 undetermined species of raptor. The one historic golden eagle territory was occupied by a pair of red-tailed hawks during this breeding season.” 94 Based upon this albeit outdated data, it can be estimated that Project use would be moderate to high for foraging by these nesting birds by default of proximity and thousands of acres of habitat for their prey species. In summary, the Project site may cause significant indirect impacts to foraging eagles and other raptor species, contrary to the assumptions made by the DEIR/S that are not supported by substantial evidence.

V. CONCLUSION

Based on the issues described in this letter, it is my professional opinion that the DEIR/S has not met the obligations of CEQA and NEPA and that the Project would result in significant and unmitigated impacts to several sensitive biological resources. The Impact analyses must be revised and resubmitted to disclose, adequately analyze, and mitigate the significant impacts. If the impacts cannot be reduced to less than significant, they are unavoidable. No further consideration should be given to the proposed Project until a DEIR/S are prepared and circulated that fully comply with CEQA and NEPA.

92 DEIR/S 4.4-9
93 Ibid. 3.4-14
94 Ibid. 4.4-9
Sincerely,

Renée Owens, M.S.
Conservation Ecologist

Professional Background

I am a conservation biologist and environmental consultant with 25 years of professional experience in wildlife ecology and natural resource management. I have managed an independent environmental consultancy since 1993, contracted for work in the U.S. and Latin America. Since 1994 have maintained U.S. Fish and Wildlife (USFWS) Recovery permits for listed species under the federal Endangered Species Act (ESA), including species discussed herein. I also hold several California state and federal certifications for surveys and monitoring of protected and special status species. I have extensive experience monitoring and studying many species across several taxa, including reptiles and amphibians, passerines and raptors, and marine and terrestrial mammals. I have served as a biological resource expert on over a hundred projects involving water, urban and rural residential developments, mines, and industrial scale energy projects; on private, public, and military lands; in California, the southwest, and Latin America. I have extensive experience observing the species and habitats located within and in proximity to the Project presented in the DEIR.

The scope of work I have conducted as an independent environmental contractor, supervisor, and full time employee has included assisting clients to evaluate and achieve environmental compliance, restoration, mitigation, and research as related to biological resources; as well as submitting written reports and comments for such work to oversight agencies. This work includes analyzing and reviewing actions pursuant to the California Environmental Quality Act, the National Environmental Policy Act, the Endangered Species Act, the Clean Water Act, the Migratory Bird Treaty Act, and other regulations, along with surveying for and preparing Biological Technical Reports and Assessments. I have been contracted as an environmental consultant by the USFWS, the US Forest Service, BLM, and at least 18 local, national and international. I am a member of the National Sierra Club’s Wildlife and Endangered Species Committee and Marine Advisory Committee.

My conservation and natural history research on endangered vertebrate species in Latin America have received various awards including the National Geographic Research and Exploration Award and the National Commission for Scientific and Technological Research Award. My research has been featured on National Geographic Television and Discovery Channel documentaries, and I have served as technical consultant for wildlife documentaries filmed by National Geographic Television, Discovery Channel, BBC, and Animal Planet; in 2017 I received a Special Commendation for contributions to environmental conservation from the City of San Diego.

I have a Master’s degree in Ecology; my teaching experience includes college instruction since 1991. I have been an adjunct instructor in Biology, Zoology, Botany, and Environmental Science at Palomar
Community College, San Diego State University, and Imperial Valley College. I taught field courses in Tropical Ecology in Ecuador and the Galapagos for Boston University, and was a Visiting Full Time Professor in Environmental Science and Botany at Imperial Valley College. At present I am completing a second MS degree in Environmental Studies from Green Mountain College, focusing on Environmental Education and Communication.

I have gained particular knowledge of the biological resource issues associated with the Project through my extensive work on numerous research and consulting projects throughout southern California. My comments are based upon first-hand observations, review of the environmental documents prepared for the Project, review of scientific literature pertaining to biological resources known to occur in and near the Project area, consultation with other biological resource experts, and the knowledge and experience I have acquired throughout my 25 years of working in the field of natural resources research and management.
Photo 1. Western Grebe killed by collision impact to PV panels on industrial solar site in the Sonoran Desert.
Photo 2. American coot killed by collision impact to PV panel at industrial facility in the Sonoran Desert. Note imprint in dust in solar panels indicating collision.
Photo 3. American kestrel injured, subsequently died, from collision with PV panels at an industrial facility in the Sonoran Desert. Kestrels often observed perching on site fencing and panels.
Photo 4. Peregrine falcon perched on poles servicing an industrial solar facility in the Mojave Desert.

Photo 5. Western grebe injured, later died, due to collision with PV panels in the Sonoran Desert facility.
Photo 6. Sora killed by collision with PV panel in the Sonoran Desert facility.

Photo 7. MacGillivray's warbler killed by collision with industrial solar facility equipment during migration at Mojave facility. Warblers like this, as well as Wilson's warblers, appear particularly vulnerable to impacts with power lines based upon high mortality incidences personally observed.
Photo 8. Burrowing owl perched on PV panels at industrial solar site where mitigation protocols included burrow exclusion and relocation. This banded owl was one of several relocated that returned to its natal site, now a solar facility.

Photo 9. Strike imprint of Virginia Rail that was killed by a collision with solar panels in the Mojave Desert. Collision occurred despite the purported reduced reflectivity caused by an accumulation of dust, and presence of panels with theoretical "low reflection coating".
Photo 10. Forensic (blood) evidence at site of panel collision by a Sora.

Photo 12. Mourning dove nest constructed on control box in Sonoran Desert.

Photo 13. Strike imprint on PV panel cause by American coot (killed by collision). Strike occurred despite presence of dust build-up and “low reflectivity” of theoretical “low reflection” coating.
Photo 14. Snake killed by vehicle traffic on solar facility site

Photo 15. Lesser nighthawk incubating underneath solar panels in desert solar facility.
Photo 16. Lesser nighthawk incubating underneath solar panels.

Photo 17. Lesser nighthawk egg abandoned under solar panels. This was a common occurrence observed at solar facilities.
Photo 18. Black-necked stilt scrape, with eggs, alongside a road inside an active fenced solar facility.

Photo 19. Killdeer scrape with abandoned eggs next to PV panel array on utility vehicle road.
**Photo 20.** Bobcat in winter resting on converter located in solar facility array in the Mojave Desert. Bobcats and especially coyotes are regularly observed in facilities despite exclusion fencing.

**Photo 21.** Mammal tracks on solar panel in Sonoran Desert solar facility array.
Photo 22. Killdeer on nest (scrape) on roadside four feet from solar panel array at solar facility in Imperial county. Bird is attempting to heat regulate nestling (also incubating an egg). On rare occasions during extreme heat exposure killdeer attempt to cool offspring by dribbling water from their mouths onto nestlings as observed here. One nestling was later found abandoned at the scrape site, parents had been absent for several days. (Photo 23).
Photo 23. Killdeer nestling abandoned alongside access road inside solar industrial facility.

Photo 24. Great horned owl using nest (constructed by ravens the previous year) on solar industrial facility electrical supply tower in the Imperial Valley desert.
### Table 1

**Avian Mortality Summary**

This table provides a partial summary of avian mortalities documented at select solar facilities in desert regions of California between January 2012 and March 2016. This summary is not comprehensive for any category, it is limited to projects that have provided mortality data, and to data that were provided by the CDFW and USFWS in July 2016 in response to a Freedom of Information Act request. Blank cells indicate a lack of data provided in the report.

<table>
<thead>
<tr>
<th>Doc No.</th>
<th>Monitoring Dates</th>
<th>Facility</th>
<th>Developer</th>
<th>MW / Type (PV or Solar thermal)</th>
<th>Location</th>
<th>Lead Agency</th>
<th>Deaths</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Q</td>
<td>Q4 2013 10/2013 - 12/2013</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>Imperial County</td>
<td>36</td>
<td>Specific species not identified</td>
</tr>
<tr>
<td>1A</td>
<td>Q1 2014 01/2014 - 03/2014</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>Imperial County</td>
<td>17</td>
<td>Mourning Dove, Sora, American Kestrel, Snowy egret, Indian peafowl, American Coot, Red-tailed Hawk, Burrowing Owl</td>
</tr>
<tr>
<td>1O</td>
<td>Q2 2014 04/2014 - 06/2014</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>Imperial County</td>
<td>10</td>
<td>Mourning Dove, Sora, Lesser Nighthawk, Dove sp., Unknown</td>
</tr>
<tr>
<td>1P</td>
<td>Q3 2014 07/2014 - 09/2014</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>Imperial County</td>
<td>30</td>
<td>Mourning Dove, Sora, Lesser Nighthawk, Dove sp., American Coot, Burrowing Owl, Eurasian Collared Dove, Common Ground Dove, Unknown</td>
</tr>
<tr>
<td>1RA</td>
<td>Q4 2014 10/2014 - 12/2014</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>Imperial County</td>
<td>34</td>
<td>Sora, American Kestrel, Mourning Dove, Dove sp.</td>
</tr>
<tr>
<td>Site</td>
<td>Year</td>
<td>Quarter</td>
<td>Location</td>
<td>Species</td>
<td>Imperial County</td>
<td>Imperial County</td>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>----------</td>
<td>----------</td>
<td>---------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>1SA</td>
<td>2015</td>
<td>Q1</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>1SB</td>
<td>2015</td>
<td>01/01/15 - 03/03/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1SC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITA</td>
<td>2015</td>
<td>Q2</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>1TB</td>
<td></td>
<td>04/04/15 - 06/06/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>2015</td>
<td>Q3</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>45+</td>
<td></td>
</tr>
<tr>
<td>Mssi</td>
<td></td>
<td>07/07/15 - 09/09/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Augu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1UC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAA</td>
<td>2015</td>
<td>Q4</td>
<td>Campo Verde Solar</td>
<td>First Solar</td>
<td>123-139 / PV</td>
<td>Imperial County</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>1VB</td>
<td></td>
<td>10/10/15 - 12/12/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1VC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>1WA</th>
<th>Q1 2016</th>
<th>Campo Verde Solar</th>
<th>First Solar</th>
<th>123-139 / PV</th>
<th>Imperial County</th>
<th>Imperial County</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>1WB</td>
<td>01/2016 - 03/2016</td>
<td>Topaz Solar Farm</td>
<td>First Solar</td>
<td>550 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>6</td>
</tr>
<tr>
<td>1WC</td>
<td>Topaz Solar Farm</td>
<td>First Solar</td>
<td>550 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>1J</td>
<td>Topaz Solar Farm</td>
<td>First Solar</td>
<td>550 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1L</td>
<td>Topaz Solar Farm</td>
<td>First Solar</td>
<td>550 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>1M</td>
<td>Topaz Solar Farm</td>
<td>First Solar</td>
<td>550 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1N</td>
<td>Topaz Solar Farm</td>
<td>First Solar</td>
<td>550 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1E</td>
<td>1st Quarterly Post-Construction Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>08/2012 - 11/2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Greater Roadrunner
Mallard
Vesper Sparrow
Blue-footed Booby
European Starling
Unknown bird

Mourning Dove
Sora
Dove Sp.
Western Meadowlark
Black Phoebe
Rock Pigeon
American Coot
Red-tailed Hawk
Emberizidae sp.
Eurasian Collared Dove
White-faced Ibis
Savannah Sparrow
Surf Scoter
Barn Owl
Le Conte’s thrasher

Short-eared Owl (2)
Burrowing Owl (3)
Blackbird sp.
Savannah Sparrow
Western Meadowlark
Red-tailed Hawk
Mourning Dove
Fox Sparrow
Common Raven
<table>
<thead>
<tr>
<th></th>
<th>2nd Quarterly Post-Constructio n Report</th>
<th>California Valley Solar Ranch Project</th>
<th>SunPower</th>
<th>250 / PV</th>
<th>San Luis Obispo County</th>
<th>San Luis Obispo County</th>
<th>144</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C</td>
<td>3rd Quarterly Post-Constructio n Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>84</td>
</tr>
<tr>
<td>1D</td>
<td>4th Quarterly Post-Constructio n Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>89</td>
</tr>
<tr>
<td>1E</td>
<td>5th Quarterly Post-Constructio n Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>103</td>
</tr>
<tr>
<td>1F</td>
<td>6th Quarterly Post-Constructio n Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>152</td>
</tr>
<tr>
<td>1G</td>
<td>7th Quarterly Post-Constructio n Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>54</td>
</tr>
<tr>
<td>1H</td>
<td>8th Quarterly Post-Constructio n Report</td>
<td>California Valley Solar Ranch Project</td>
<td>SunPower</td>
<td>250 / PV</td>
<td>San Luis Obispo County</td>
<td>San Luis Obispo County</td>
<td>144</td>
</tr>
</tbody>
</table>

CA Horned Lark  
Northern Flicker  
Lincoln's Sparrow  
Long-eared Owl  
American Crow
<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Location</th>
<th>Developer</th>
<th>Solar PV</th>
<th>County</th>
<th>Agency</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Range</td>
<td>Report Category</td>
<td>Location</td>
<td>Species</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------</td>
<td>------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/2014 – 12/2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/2014 – 01/2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 2CA  
| 2CB | 11/2013 - 12/2013 | Imperial Solar Energy Center South | Tenaska | 130 / PV | Imperial County | Imperial County | 5 | American Coct |
| 2DA  
| 2DB  
| 2DC | 01/2014 - 03/2014 | Imperial Solar Energy Center South | Tenaska | 130 / PV | Imperial County | Imperial County | 5 | Mourning Dove  
| | | | | | | | | Cattle Egrets  
| | | | | | | | | Sora |
| 2EA  
| 2EB  
| 2EC | 07/2015 - 09/2015 | McCoy | NextEa | 750 / FV | Riverside County | ELM | 29 |
| 2FA  
| 2FB  
| 2FC | 10/2015 - 12/2015 | McCoy | NextEa | 750 / FV | Riverside County | ELM | 91 |
| 2G | 01/01/16 | McCoy | NextEa | 750 / FV | Riverside County | ELM | 10 |
RENÉE OWENS
Curriculum Vitae
9712 Snow View Drive, El Cajon, CA 92021
619-201-1965
renee@wildlifezone.net

- College instruction in Biology, Botany, Environmental Science, Tropical Ecology, Zoology
- Recipient, National Geographic Research and Exploration Award
- USFWS Recovery permits for endangered Least Bell’s vireo Quino checkerspot butterfly, threatened California gnatcatcher
- Environmental non-profit campaign development, volunteer coordination, training, workshop presentation, lobbying, fundraising
- Rare plant, raptor, herptile, and nesting bird surveys
- CEQA, NEPA Biological and Environmental Assessments
- Mitigation and Restoration Monitoring, HCP Planning and Implementation
- Integrated Natural Resource Management
- Small business management, website design, grant writing

For over two decades Ms. Owens has worked and volunteered as a conservation biologist, adjunct college professor, non-profit coordinator, writer, activist, and public speaker. She is founder and co-owner of Sage Wildlife Biology, specializing in wildlife research, education, and environmental compliance, established in 1993. She is certified in community college instruction, and her extensive research experience includes study in California and Latin America.

Her college instruction includes courses in Biology, Tropical Ecology, Zoology, Botany, and Environmental Science for San Diego State University, Palomar College, Boston University, and Imperial Valley College. Her research in Venezuela has been featured by National Geographic (Crocodiles of the Orinoco, Land of the Anaconda), Discovery, BBC, Dateline NBC, and Sierra magazine.

Sage Wildlife Biology consultancy provides services for a broad spectrum of projects that include one or more of the following: Ethology, ecological and conservation research, restoration and mitigation management, biological assessments, Habitat Conservation Plan development and implementation; surveys, mapping, and reporting of rare, threatened, sensitive, and endangered species.

Projects incorporate research and regulatory compliance from the local to federal level. Clients have included private, public, and government entities; she is an Approved Biologist for San Diego County, USDA, USFWS, DOI, and BLM.

Her research and work projects encompass many species and habitats in North and South America, including passerines, raptors, shorebirds, herptiles, cetaceans, pinnipeds, and carnivores. She leads annual workshops on CEQA and NEPA review as it relates to biological resources and public comment, and on endangered species identification and conservation. Regardless of the species or habitat involved, Ms. Owens always strives to apply the tenants of successful and humane conservation to all projects.

EDUCATION

Community College Instructor Certification, University of California San Diego, La Jolla, CA

Advanced Coursework in Statistics, Ecology Seminars, University of Tennessee, Knoxville, TN

MS Ecology (ABD), San Diego State University, San Diego, CA

BS Biology, State University of New York at Geneseo, Geneseo, NY
WORK EXPERIENCE

Adjunct Professor, Department of Math, Science, and Engineering, Imperial Valley College, Imperial, CA. Instructor in Environmental Science, Biology. 2012 – present.

Owner, Sage Wildlife Biology LLC. Environmental compliance, research, and education in California and South America. 1993 – present.

Representative Projects:


Biologist, Los Angeles Regional Interoperable Communications System (2013). Conducted habitat assessments, sensitive species surveys, sensitive plant surveys, co-authored Biological Assessment for PEIR/PIES, 718 site project including coastal regions to mountains to deserts. County-wide project was federally funded to create broadband wireless network using Long-Term Evolution (LTE) technology while minimizing impacts to native habitats and ecosystems. Management recommendations and design included maximizing use of existing man-made structures for project implementation while avoiding sites near riparian areas and watersheds.

Habitat Conservation Planning and Development, City and County of San Diego (2006 - 2013). Federally permitted surveys for California gnatcatcher, Quino checkerspot butterfly, Least Bell’s vireo; Migratory Bird Treaty Act nesting bird surveys, herptile surveys, population assessments, and concurrent development of endangered species critical habitat components of Habitat Conservation Plans including the San Diego Multiple Species Conservation Plan and Multiple Habitat Conservation Plans.

MHCP Restoration, City of San Diego Black Mountain Open Space, CA (2011). Principal biologist for biological assessments and mitigation design and monitoring on behalf of the Black Mountain Open Space Park development project; supervised biological components of mitigation management, including coordination with the City of San Diego to implement restoration efforts within the MHCP.

Wildfire Prevention and Brush Management, California Fire Safe Council and USDA Forest Service, San Diego County, CA (2009-2011). Principal investigator responsible for brush management projects for the Alpine and California Fire Safe Council in areas adjacent to U.S. Forest Service land. Included habitat mapping, sensitive plant and bird surveys, GPS mapping, monitoring and management of vegetation reduction and invasive species management teams (consisting of two to thirty individuals), and preparation of the Biological Evaluations for the Bureau of Land Management. Project development included consultation and coordination with private landowners, scientists, Home Owners Associations, other stakeholders, and Forest Service and BLM staff.

Biologist, Pattern Energy Ocotillo Express Wind Project, BLM land, Imperial County, CA (2010-2011). Conducted daily and weekly surveys for an Environmental Assessment (EA) incorporating extensive focused wildlife surveys throughout 15,000 acres of Bureau of Land Management land in Imperial County. Involved preparation of the a EA with recommendations for avoidance of impacts to sensitive habitats and species including golden eagles, Peninsular bighorn sheep, burrowing owls, and flat-tailed horned lizards.

Perpetual Land Management Plan, San Elijo and Greenland Reserves, San Diego County (2005 – present). Principal biologist reporting on the status of two habitat preserve Habitat Conservation Plans on behalf of The Escondido Creek Land Conservancy. The areas combined incorporate 110 acres of riparian wetland, oak woodland, coastal sage scrub, and chaparral habitats; created in compliance with California Environmental Quality Act (CEQA) and Multiple Habitat Conservation Plan (MHCP) planning. Third party beneficiaries of these preserves are the USFWS and California Department of Fish and Wildlife. Project duties include
habitat mapping, surveying and reporting of sensitive, threatened, and endangered plant and animal species as well as habitat suitability analysis, invasive floral species monitoring and removal, and recommendations for riparian corridor restoration.

California Wild Heritage Campaign, Wilderness Society (2002 -2003). Duties as a biologist and campaign organizer included biological surveys and mapping of proposed wilderness areas, coordination of volunteers, lobbying of Congressional politicians, organizing of tabling events, educational materials, and outreach campaigns.

Endangered Species Conservation and Natural History Research (1996-2002). Funded by the National Geographic Research Foundation, Wildlife Conservation Society (WCS), The Venezuelan National Council for Scientific and Technological Research (CONICIT), and Venezuela’s federal wildlife agency (Profauna); co-researcher in a unique eight year study of the natural history of the green anaconda. Research incorporated radio telemetry, mark and recapture, genetic analysis, and mating system study; findings were used to develop a sustainable conservation program for 175,000 acres of flooded savanna and forest in Apure, Venezuela. Provided eco-tourism and wetland restoration management recommendations for other regions with similar habitats. Included habitat suitability analysis, population assessments and nest monitoring, and reintroduction of endangered species (Orinoco crocodile, Arau turtle, and the Red-footed tortoise); as well as natural history study of the endangered giant otter previously considered regionally extinct. Ms. Owens also generated a resident bird list for a 150,000 acre preserve comprised of over 400 species including one previously undocumented species for the region.

Threatened Species Monitoring and Critical Habitat Assessment, (USFWS) Camp Pendleton Marine Base, (1994-1995). Principal biologist, participated in a long term monitoring effort of the California gnatcatcher for Camp Pendleton Marine Base in Oceanside, CA. The study incorporated monitoring of the species during breeding and non-breeding seasons; included data collection for over 40 active breeding pairs spanning an area of several thousand acres. Data was used to generate reports on habitat suitability as related to nesting success, contributed to critical habitat assessments and recovery planning.

Least Bell’s Vireo Endangered Species Recovery Plan (USFWS) (1991-1995). Conducted 5 years of breeding season nest monitoring surveys and invasive species management as part of the USFWS Endangered Species Recovery Plan for the Least Bell’s Vireo; duties included monitoring, banding, and reporting annually on 25 to 70 nesting pairs throughout San Diego County while providing habitat assessments and reports for Critical Habitat evaluation and population recovery analysis.

Campaign Director, Wildlife Conservationist Certification Training Program. 2009-2011. Conservation grant from the San Diego Foundation, collaborating with San Diego Audubon, funded the development and implementation of a program designed to solicit, educate, and train adult volunteers for a long term commitment to volunteer activism and naturalist interpretive programs. Certification included class instruction, field trips, and 30 hour commitment to an environmental campaign.

Visiting Assistant Professor, Department of Math, Science, and Engineering, Imperial Valley College, Imperial, CA. Lecture and laboratory instruction in Environmental Science and Botany. 2008.

Adjunct Professor and Research Fellow, Boston University Tropical Ecology Program, Cumbaya, Ecuador. Included lecture and intensive field study of tropical habitats including cloud and mangrove forest, Pacific intertidal zones, rainforest, Galapagos Islands, and Paramo. 1999 –2000.

Campaign Director and Biologist, World Society for the Protection of Animals, Boston, MA. Responsible for research, project development, and reporting for wildlife related campaigns in Latin America. Included travel to
various Central American to lead training workshops, implement campaigns for species in biodiversity hotspots including key watersheds, coral reef, Pacific coastal rainforest, among other habitats; and oversight of emergency disaster relief that incorporated basic veterinary care instruction, organizational and material support, livestock vaccinations, as well as support for wildlife and companion animals. 1998-1999.


**Adjunct Professor**, Palomar Community College, San Marcos, CA. Instruction in General Biology for majors, non-majors. 1994 - 1996.

**Laboratory Assistant**, Toxicology and Physiology Departments, University of Rochester Medical Center, Rochester, NY. Duties included research in environmental toxicology, Muscular Sclerosis, Parkinson's disease. 1987 – 1989.

**Wildlife Conservation Intern**, Mumford Wildlife Research Station and Preserve, Mumford, NY. Conducted research on breeding success of nesting Eastern Bluebirds and parasitism of breeding passerines; included monitoring and mapping of 250 nest boxes and species use, also conducted surveys with Preserve visitors regarding public interest for wildlife and conservation. 1987.

**VOLUNTEER EXPERIENCE**

SDSC Conservation Committee Chair, 2007 – 2010.

**AWARDS / HONORS**

- San Diego Foundation Vision Fund Environmental Education and Conservation Grant 2010
- Photo, "TIME Great Images of the 20th Century", TIME Magazine Publications 2000
- CONICIT Award for the Novel Researcher 1998
- CITES and Profauna Joint Research Grant 1996
- National Geographic Film and Research Grant 1996
- National Geographic Research and Exploration Award 1996
- Wildlife Conservation Society Research Grant 1996
- Sierra Club Emily Durbin Leadership in Conservation Award 1995
- SDSU Harry Hamber Academic Graduate Scholarship 1991
- U.S. National Triathlon Championships 1989
• New York State Regents Academic Scholarship 1983

CERTIFICATIONS and WORKSHOPS
• U.S. Fish and Wildlife Recovery Permit for the Coastal California gnatcatcher, Least Bell’s Vireo, Quino checkerspot butterfly.
• Acoustic Monitoring of Bats, Field Techniques Workshop, Wildlife Society, 2012
• Desert Tortoise Council, Survey Techniques Workshop, Certificate of Completion November 2010
• Flat-tailed Horned Lizard BLM Survey Techniques Workshop, Certificate of Completion, 2010
• Desert Tortoise Council, Survey Techniques Workshop, Certificate of Completion, 2006
• USFWS Arroyo Toad Workshop, Certificate of Completion, Camp Pendleton Marine Base, 1999
• Willow Flycatcher Workshop, SD Natural History Museum, Certificate of Completion, 1995

PROFESSIONAL AFFILIATIONS
• Association of Field Ornithologists
• Citizen Science League
• Marine Mammal Society
• National Association of Biology Teachers
• Society for Conservation Biology
• Society for the Study of Amphibians and Reptiles
• Wildlife Society

INTERNATIONAL SOCIETY CONFERENCE PRESENTATIONS

Select PUBLICATIONS and ARTICLES
• Owens, Renee Y. In prep. (Conservation Biology.) Economic and social costs of “joint use” policy management of a Harbor seal rookery in a developed coastal zone of California.


REFERENCES

Patrick L. Hord, conservation biologist, non-profit manager  858-220-4732  chatamour7@yahoo.com

Jill Fritz, Michigan Director, Humane Society of the U.S.  517-515-3839  jfritz@humanesociety.org

Jane Higginson, retired college instructor, environmental consultant  619-219-9311  archelonia@cox.net