



CENTER *for* BIOLOGICAL DIVERSITY

VIA EMAIL AND FEDERAL EXPRESS OVERNIGHT DELIVERY

June 16, 2010

Allison Shaffer, Project Manager,
Palm Springs South Coast Field Office
Bureau of Land Management
1201 Bird Center Drive
Palm Springs, California 92262
CAPSSolarBlythe@blm.gov

DOCKET

09-AFC-6

DATE JUN 16 2010

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Re: Comments on the Draft Environmental Impact Statement/Staff Assessment for the Chevron Energy Solutions/Solar Millennium (CESSM) Blythe Solar Power Plant (BSPP) and Possible California Desert Conservation Area Plan Amendment

Dear Project Manager Shaffer:

These comments are submitted on behalf of the Center for Biological Diversity's 255,000 staff, members and on-line activists in California and throughout the western states, regarding the Draft Environmental Impact Statement/Staff Assessment (the "DEIS") for the proposed Chevron Energy Solutions/Solar Millennium (CESSM) Blythe Solar Power Plant (BSPP) and Possible California Desert Conservation Area Plan Amendment ("proposed project"), issued by the Bureau of Land Management ("BLM").¹

The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and to assist California in meeting emission reductions set by AB 32 and Executive Orders S-03-05 and S-21-09. The Center for Biological Diversity (the "Center") strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitats, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

As proposed, the proposed project right of way includes over 9,000 acres and the proposed solar facility would cover approximately 7,030 acres (over 10 square miles) in the

¹ The document released by the agencies is entitled "Staff Assessment and Draft Environmental Impact Statement BLYTHE SOLAR POWER PROJECT Application For Certification (09-AFC-6)".

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Colorado desert. The proposed project also includes new a new gas line, a gen-tie line, and a new substation. The DEIS for the proposed plan amendment and right-of-way application: fails to provide adequate identification and analysis of all of the significant impacts of the proposed project on the desert tortoise, the Mojave fringe-toed lizard, rare plants including Colorado desert microphyll woodlands, and other biological resources; fails to adequately address the significant cumulative impacts of the project; and lacks consideration of a reasonable range of alternatives. Of particular concern is the BLM's failure to include adequate information regarding the impacts to resources from the construction and operation of the proposed Colorado River substation and the gen-tie line in the DEIS. The substation is proposed to be constructed in occupied Mojave fringe-toed lizard habitat and no alternative sites for the substation are evaluated.² In addition, BLM has failed to fully examine the impact of the proposed plan amendment to the California Desert Conservation Act Plan ("CDCA Plan") along with other similar proposed plan amendments and as a result the current piecemeal process may lead to the approval of industrial sites sprawling across the California Desert within habitat that should be protected to achieve the goals of the bioregional plan as a whole. The DEIS also fails to consider potential alternative plan amendments that would protect the most sensitive lands from future development.³

Notably, the area of the proposed project is currently part of the evaluation being undertaken by the BLM for the solar PEIS for solar energy zones. Nonetheless, alternative siting alternatives and alternative technologies including distributed PV should have been fully considered in the DEIS, because they could significantly reduce the impacts to many species,

² The DEIS/SA provides some information on the impacts of the substation scattered throughout the document. *See, e.g.*, DEIS at C.2-63 fn. 7 ("Construction impacts are presented here but Southern California Edison would construct the 33-acre substation and would undertake mitigation for the biological resource impacts.") This information is clearly insufficient as noted in the Revised Staff Assessment ("Revised SA") for the Blythe Project CEC-700-2010-004 REV1, DOCKET NUMBER 09-AFC-6 dated June 4, 2010, which includes the following statement:

Transmission System Engineering – The California Public Utilities Commission staff have asked the Energy Commission to include a permitting-level analysis of the proposed Colorado River substation expansion that is under their permitting authority. *Consultants are currently preparing this report and it will be included as part of the Supplemental Staff Assessment.*

pp. 12-13 (Executive Summary; emphasis added); *see also* pp. A-14 ("Transmission System Engineering – The California Public Utilities Commission staff have asked the energy commission staff to include a permitting-level analysis of the proposed Colorado River substation that is under their permitting authority. Consultants are currently preparing this report, and it will be included as part of the Supplemental Staff Assessment.").

³ Notably, the Revised SA (which is not a federal document) includes additional information regarding potential plan amendments as part of a mitigation strategy. *See* Revised SA, Biological Resources Appendix B: Northern and Eastern Colorado Desert Coordinated Management Plan NECO Land Use Plan Amendments. The Revised SA states: "Biological Resources Appendix B: Appendix B, the NECO Land Use Plan Amendments, was inadvertently omitted from the SA/DEIS and is now included at the end of this section." Revised SA at C.2-6. Because this information was not included in the DEIS, it has not yet been properly noticed or circulated for public comment by the BLM.

soils, and water resources in the Colorado desert. In addition, alternative plan amendments should have been discussed in the DEIS. The Center urges the BLM to revise the DEIS to adequately address these and other issues detailed below and re-circulate the DEIS or a supplemental DEIS for public comment.

In the sections that follow, the Center provides detailed comments on the ways in which the DEIS fails to adequately identify and analyze many of the impacts that could result from the proposed project, including but not limited to: impacts to biological resources, impacts to water resources, impacts to soils, direct and indirect impacts from the gen-tie line and substation, and cumulative impacts.

Because the project approval process includes a quasi-judicial process in the California Energy Commission, the Center hereby incorporates by reference all of the materials before the California Energy Commission regarding the approval of this project. BLM is a party to the CEC process, which is being conducted in concert with the BLM approval process, and BLM has access to all of the documents (which are also readily accessible on the internet), therefore, BLM should incorporate all of the documents and materials from that process into the administrative record for the BLM decision as well.

I. The BLM's Analysis of the Proposed Plan Amendment and Proposed Project Fail to Comply with FLPMA.

As part of FLPMA, Congress designated 25 million acres of southern California as the California Desert Conservation Area ("CDCA"). 43 U.S.C. § 1781(c). Congress declared in FLPMA that the CDCA is a rich and unique environment teeming with "historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources." 43 U.S.C. § 1781(a)(2). Congress found that this desert and its resources are "extremely fragile, easily scarred, and slowly healed." *Id.* For the CDCA and other public lands, Congress mandated that the BLM "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C § 1732(b).

The sum total of the plan amendment to the CDCA plan is one sentence: "Permission granted to construct solar energy facility (proposed BSPP Project)." DEIS at A-6. The DEIS then lists the criteria for consideration of the plan amendment and right of way application and BLM's responses to each issue. DEIS at A-6 to A-9. While the Center appreciates BLM's effort in this regard (which were absent in other recent environmental documents prepared for large-scale solar projects), given the impact of the proposed project on other multiple uses of these public lands at the proposed site as well as other aspects of the bioregional planning, it appears that BLM may also need to amend other parts of the plan as well and should have looked at additional and/or different amendments as part of the alternatives analysis. Indeed it appears that BLM recognized the need for this additional information, the Revised SA (which is not a federal document) includes additional information regarding potential plan amendments as part of a mitigation strategy. *See* Revised SA, Biological Resources Appendix B: Northern and Eastern Colorado Desert Coordinated Management Plan NECO Land Use Plan Amendments. The Revised SA states: "Biological Resources Appendix B: Appendix B, the NECO Land Use Plan Amendments, *was inadvertently omitted from the SA/DEIS* and is now included at the end

of this section.” Revised SA at C.2-6 (emphasis added). Unfortunately, it appears that this information was available but was not properly provided to the public for review and comment. The Revised SA discusses plan amendments that would increase protection for the desert tortoise by designation of a Tortoise Linkage Habitat Acquisition Area (TLHAA) and a Chuckwalla Bench Acquisition Area (CBA) where uses would be limited to protect key habitat values. The Revised SA also proposes to increase protections within the Chuckwalla DWMA by reducing the disturbance cap and developing an “activity plan” for OHV use in desert washes. While it appears that such an “activity plan” would be focused on increasing protections for desert tortoise and habitat, there is no explanation or analysis of why or how the current land use designations and route designations are not providing the needed protection.

The Center has repeatedly sought stronger protections for desert tortoise and tortoise critical habitat in the DWMA within the CDCA as a whole and particularly within the NECO planning area. Despite the fact that desert tortoise populations in the NECO DWMA continue to decline, the BLM’s NECO plan amendment adopted ORV “open wash zones” on 218,711 acres (25%) in the Chemehuevi DWMA and 352,633 acres (43%) in the Chuckwalla DWMA, and in an additional 1,042 square miles (666,880 acres) of desert tortoise habitat outside of both the DWMA and critical habitat. As a result the NECO plan currently allows virtually unlimited ORV use in large parts of the DWMA and allows significant damage to desert tortoises and their critical habitat to occur. The Center strongly supports greater protections for the desert tortoise and its habitat and the first step should be removing all “open wash zones” from both all critical habitat and DWMA in the planning area. The BLM should also provide ongoing monitoring of the DWMA and reporting to ensure that all route closures in the DWMA are implemented so that any new protective measures have the intended effect. In contrast, a plan amendment such as that suggested in Revised SA that would simply require the BLM to prepare a new “activity plan” appears to be more form than substance.

Unfortunately, none of the plan amendment proposals to provide additional protections for species on public lands were included in the DEIS and, moreover, the DEIS confusingly appears to actually defer consideration of any specific proposed plan amendments until the FEIS. See DEIS at 2 (“The Supplemental Staff Assessment (SSA)/FEIS will include for BLM a Proposed Land Use Plan Amendment (Proposed PA). The NOA will initiate a 30-day period in which to protest the Proposed PA to the Director of the BLM.”). It is possible that BLM intended this statement to encompass the potential for additional plan amendments to protect resources as part of the mitigation measures for this project. However, BLM cannot properly defer the identification of the proposed plan amendments and analysis of the impacts of the proposed plan amendment until the Final EIS stage.

Overall BLM has still failed to take a comprehensive look at the proposed plan amendment for the ROW to determine: 1) whether industrial scale projects are appropriate for any of the public lands in this area; 2) if so, how much of the public lands are suitable for such industrial uses given the need to balance other management goals including preservation of habitat and water resources; and 3) the location of the public lands suitable for such uses. The BLM has also failed to explain how this proposed project would interface with the Solar PEIS process that is already under way and was intended to consider these questions. The Center remains concerned that the result of the current process is a piecemeal approach to project review

with site-specific approvals made before planning is completed which threatens to undermine the “bioregional” approach in the CDCA Plan as a whole as well as violate the fundamental planning principles of FLPMA.

A. The DEIS Fails to Adequately Address the Plan Amendment in the Context of the CDCA Plan.

Unfortunately, the DEIS fails to adequately consider the impacts of the proposed project and plan amendment and reasonable alternatives in the context of FLPMA and the CDCA Plan. FLPMA requires that in developing and revising land use plans, the BLM consider many factors and “use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences . . . consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values.” 43 U.S.C. § 1712(c). As stated clearly in the CDCA Plan:

The goal of the Plan is to provide for the use of the public lands, and resources of the California Desert Conservation Area, including economic, educational, scientific, and recreational uses, in a manner which enhances wherever possible—and which does not diminish, on balance—the environmental, cultural, and aesthetic values of the Desert and its productivity.

CDCA Plan at 5-6. The CDCA Plan also provides several overarching management principles:

MANAGEMENT PRINCIPLES

The management principles contained in the law (FLPMA)—*multiple use, sustained yield, and the maintenance of environmental quality*—are not simple guides. Resolution of conflicts in the California Desert Plan requires innovative management approaches for everything from wilderness and wildlife to grazing and mineral development. These approaches include:

—Seeking simplicity for management direction and public understanding, avoiding complication and confusing in detail which would make the Plan in comprehensive and unworkable.

—Development of decision-making processes using appropriate guidelines and criteria which provide for public review and understanding. These processes are designed to help in allowing for the use of desert lands and resources while preventing their undue degradation or impairment.

—*Responding to national priority needs for resource use and development, both today and in the future, including such paramount priorities as energy development and transmission, without compromising the basic desert resources of soil, air, water, and vegetation, or public values such as wildlife, cultural resources, or magnificent desert scenery. This means, in the face of unknowns, erring on the side of conservation in order not to risk today what we cannot replace tomorrow.*

—Recognizing that the natural patterns of the California Desert, its geological and biological systems, are the basis for planning, and that human use patterns, from freeways to fence lines, define its boundaries. Only in this way can the public resources can be understood and protected by the Plan that can be publicly comprehended, accepted, and followed.

CDCA Plan 1980 at 6 (first emphasis in original, second emphasis added).

The CDCA Plan anticipated that there would be multiple plan amendments over the life of the plan and provides specific requirements for analysis of Plan amendments. Those requirements include determining “if alternative locations within the CDCA are available which would meet the applicant’s needs without requiring a change in the Plan’s classification, or an amendment to any Plan element” and evaluating “the effect of the proposed amendment on BLM management’s desert-wide obligation to achieve and maintain a balance between resource use and resource protection.” CDCA Plan at 121. Thus, BLM was required to analyze in the DEIS whether alternative locations were available that would not require a plan amendment, and how the proposed amendment would affect desert-wide resource protection—BLM mentions the former issue but fails to address the latter issue.

The CDCA Plan includes the Energy Production and Utility Corridors Element which is focused primarily on utility corridors with brief discussion of powerplant siting. Even in 1980 the CDCA Plan contemplated that alternative energy projects would likely be developed in the future but did not expressly provide planning direction for solar energy production. Nonetheless, the overarching principles expressed in the Decision Criteria are also applicable to the proposed project here including minimizing the number of separate rights-of-way, providing alternatives for consideration during the processing of applications, and “avoid[ing] sensitive resources wherever possible.” CDCA Plan at 93. Nothing in the DEIS shows that BLM considered the landscape level issues and management objectives or alternatives to the proposed plan amendment *in the DEIS*.

In addition, BLM should have considered the impacts to existing land use plans for these public lands across several scales including, for example: in the western Imperial Valley; in the Imperial Valley as a whole; in the Salton Trough; and in the CDCA as a whole.

B. The DEIS Fails to Adequately Address Impacts to Multiple Use Class L Lands and Loss of Multiple Use in Favor of a Single Use for Industrial Purposes.

As FLPMA declares, public lands are to be managed for multiple uses “in a manner that will protect the quality of the scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values.” 43 U.S.C. § 1701(a)(7) & (8). The CDCA Plan as amended provides for four distinct multiple use classes based on the sensitivity of resources in each area. The proposed project site is in MUC class L lands. DEIS at C.13-4. Under the CDCA Plan, Multiple-use Class L (Limited Use) “protects sensitive, natural, scenic, ecological, and cultural resources values. Public lands designated as Class L are managed to provide for generally *lower-intensity, carefully controlled multiple use of resources, while*

ensuring that sensitive values are not significantly diminished.” CDCA Plan at 13 (emphasis added). The proposed project is a high-intensity, single use of resources that will displace all other uses and that will significantly diminish (indeed, completely destroy) of over 7,000 acres of habitat including nearly 3 miles of rare Colorado desert microphyll woodlands. The DEIS does consider alternative configurations that would avoid impacts to some resources but still fails to consider how the loss of this rare habitat type along with the loss of a large area of habitat will affect the biological resources of this area. Moreover, BLM does not address how the loss of multiple uses in such a large area might affect other nearby public lands in the CDCA such as creating greater pressures on those land for the remaining multiple uses.

For example, to the extent that the proposal would require changes in the route network resulting in several routes which would need to be moved—those changes to the route network are simply not addressed in the DEIS (nor are the likely direct, indirect and cumulative impacts of changing those route designations adequately identified or analyzed, as discussed in detail below). Any changes to routes would require BLM to amend the route designations in the area because these routes are part of a network that was adopted through a plan amendment. When BLM does consider these issues, as it must, in a revised or supplemental DEIS, a range of alternatives must be considered in addition to the fact that such changes will undoubtedly change use of the previously existing nearby routes, most likely causing increased use on other nearby routes. Even if BLM attempts to simply reroute along the fenceline for the proposed project a plan amendment would be required and BLM must then consider that new unauthorized routes to provide connections to the other routes, and/or entirely new unauthorized routes may be created by off-road vehicle users *to avoid the industrial site entirely*. There is no evidence that recreational off-road vehicle users will be content to drive for miles along a fence adjoining an industrial site rather than striking off cross-country to connect with more scenic routes. Past experience shows that the latter is quite understandably a much more likely outcome and BLM should recognize this in analyzing the impacts of this project on the existing route network and any proposal to amend that network.

C. Fails to Adequately Address Other Ongoing Planning Efforts

The DEIS fails to adequately address the proposed project in the context of other connected projects (including multiple renewable energy projects, substations and additional transmission lines) and the ongoing PEIS planning process for solar development in six western states undertaken by BLM and DOE which does not identify this area as a proposed solar energy study area⁴. Direct, indirect and cumulative impacts of the proposed project in conjunction with others may lead to sprawl development in the area and undermine the *planning* for renewable energy industrial zones that BLM has undertaken.

Of particular concern is the failure of the DEIS to analyze the impacts of the gen-tie and the Colorado River substation in Mojave fringe-toed lizard habitat and the BLM’s failure to explore alternatives that would minimize impacts. The BLM cannot lawfully piecemeal this project approval. Moreover, the BLM has failed to explain how this site specific approval would interface with, or alternatively undermine, the solar programmatic planning by federal agencies for the western states. This critical issue regarding planning on public lands is not adequately

⁴ http://solareis.anl.gov/documents/maps/studyareas/Solar_Study_Area_CA_Ltt_7-09.pdf

addressed in the DEIS which only mentions the PEIS process briefly (DEIS at B.2-19), and then includes the PEIS as a foreseeable future project with no explanation (DEIS at B.3-13). The BLM does not analyze how the PEIS could be affected by the approval of this and other projects in the area and does not address how the piecemeal analysis of the substation and gen-tie line may undermine the planning for a solar zone in this area. Such analysis *after the fact* is not consistent with the planning requirements of FLPMA or, indeed, any rational land use planning principles.

D. BLM Failed to Inventory the Resources of these Public Lands Before Making a Decision to Allow Destruction of those Resources

FLPMA states that “[t]he Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values,” and this “[t]his inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values.” 43 U.S.C. § 1711(a). FLPMA also requires that this inventory form the basis of the land use planning process. 43 U.S.C. § 1701(a)(2). See *Center for Biological Diversity v. Bureau of Land Management*, 422 F.Supp.2d 1115, 1166-67 (N.D. Cal. 2006) (discussing need for BLM to take into account known resources in making management decisions); *ONDA v. Rasmussen*, 451 F.Supp. 2d 1202, 1212-13 (D. Or. 2006) (finding that BLM did not take a hard look under NEPA by relying on outdated inventories and such reliance was inconsistent with BLM’s statutory obligations to engage in a continuing inventory under FLPMA). It is clear that BLM should not approve a management plan amendment based on outdated and inadequate inventories of affected resources on public lands.

As detailed below in the NEPA sections, here BLM has failed to compile an adequate inventory of the resources of the public lands that could be affected by the proposed project *before* preparing the DEIS (including, e.g., rare plant surveys including late-summer/early-fall flowering plants, Mojave fringe-toed lizard, and other biological resources) which is necessary in order to adequately assess the impacts to resources of these public lands in light of the proposed plan amendment and BLM has also failed to adequately analyze impacts on known resources. Indeed, the DEIS states that surveys are ongoing after the DEIS was issued See DEIS at C.2-2 (“Follow-up spring and fall 2010 special-status plant surveys will be performed for 15 plant species within the Project Disturbance Area and along the proposed transmission line alignment.) Similarly, the DEIS states that the agencies were still waiting for a Army Corps of Engineers jurisdictional determination in order to analyze compliance with the Clean Water Act. See DEIS at C.9-2. Therefore, it appears that a revised DEIS or supplemental DEIS must be prepared to include the new information including new survey data about the resources of the site and potential impacts of the project on resources of our public land and water, and that document must be circulated for public review and comment.

E. The DEIS Fails to Provide Adequate Information to Ensure that the BLM will Prevent Unnecessary and Undue Degradation of Public lands

FLPMA requires BLM to “take any action necessary to prevent unnecessary or undue degradation of the lands” and “minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the

public lands involved.” 43 U.S.C. §§ 1732(b), 1732(d)(2)(a). Without adequate information and analysis of the current status of the resources of these public lands, BLM cannot fulfill its duty to prevent unnecessary or undue degradation of the public lands and resources. Thus, the failure to provide an adequate current inventory of resources and environmental review undermines BLM’s ability to protect and manage these lands in accordance with the statutory directive.

BLM has failed to properly identify and analyze impacts to the resources including the impacts from all of the project components. As detailed below, the BLM’s failure in this regard violates the most basic requirements of NEPA and in addition undermines the BLM’s ability to ensure that the proposal does not cause unnecessary and undue degradation of public lands. *See Island Mountain Protectors*, 144 IBLA 168, 202 (1998) (holding that “[t]o the extent BLM failed to meet its obligations under NEPA, it also failed to protect public lands from unnecessary or undue degradation.”); *National Wildlife Federation*, 140 IBLA 85, 101 (1997) (holding that “BLM violated FLPMA, because it failed to engage in any reasoned or informed decisionmaking process” or show that it had “balanced competing resource values”).

II. The DEIS Fails to Comply with NEPA.

NEPA is the “basic charter for protection of the environment.” 40 C.F.R. § 1500.1(a). In NEPA, Congress declared a national policy of “creat[ing] and maintain[ing] conditions under which man and nature can exist in productive harmony.” *Or. Natural Desert Ass’n v. Bureau of Land Mgmt.*, 531 F.3d 1114, 1120 (9th Cir. 2008) (quoting 42 U.S.C. § 4331(a)). NEPA is intended to “ensure that [federal agencies] ... will have detailed information concerning significant environmental impacts” and “guarantee[] that the relevant information will be made available to the larger [public] audience.” *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998).

Under NEPA, before a federal agency takes a “‘major [f]ederal action[] significantly affecting the quality’ of the environment,” the agency must prepare an environmental impact statement (EIS). *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1067 (9th Cir. 2002) (quoting 43 U.S.C. § 4332(2)(C)). “An EIS is a thorough analysis of the potential environmental impact that ‘provide[s] full and fair discussion of significant environmental impacts and ... inform[s] decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.’” *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993 (9th Cir. 2004) (citing 40 C.F.R. § 1502.1). An EIS is NEPA’s “chief tool” and is “designed as an ‘action-forcing device to [e]nsure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government.’” *Or. Natural Desert Ass’n*, 531 F.3d at 1121 (quoting 40 C.F.R. § 1502.1).

An EIS must identify and analyze the direct, indirect, and cumulative effects of the proposed action. This requires more than “general statements about possible effects and some risk” or simply conclusory statements regarding the impacts of a project. *Klamath Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 995 (9th Cir. 2004) (citation omitted); *Oregon Natural Resources Council v. BLM*, 470 F.3d 818, 822-23 (9th Cir. 2006). Conclusory statements alone “do not equip a decisionmaker to make an informed decision about alternative courses of action

or a court to review the Secretary's reasoning." *NRDC v. Hodel*, 865 F.2d 288, 298 (D.C. Cir. 1988).

NEPA also requires BLM to ensure the scientific integrity and accuracy of the information used in its decision-making. 40 CFR § 1502.24. The regulations specify that the agency "must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential." 40 C.F.R. § 1500.1(b). Where complete data is unavailable, the EIS also must contain an analysis of the worst-case scenario resulting from the proposed project. *Friends of Endangered Species v. Jantzen*, 760 F.3d 976, 988 (9th Cir. 1985) (NEPA requires a worst case analysis when information relevant to impacts is essential and not known and the costs of obtaining the information are exorbitant or the means of obtaining it are not known) *citing Save our Ecosystems v. Clark*, 747 F.2d 1240, 1243 (9th Cir. 1984); 40 C.F.R. § 1502.22.

A. Purpose And Need and Project Description are Too Narrowly Construed and Unlawfully Segment the Analysis

1. Purpose and Need:

Agencies cannot narrow the purpose and need statement to fit only the proposed project and then shape their findings to approve that project without a "hard look" at the environmental consequences. To do so would allow an agency to circumvent environmental laws by simply "going-through-the-motions." It is well established that NEPA review cannot be "used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5; *Metcalf v. Daley*, 214 F.3d 1135, 1141-42 (9th Cir. 2000) ("the comprehensive 'hard look' mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.") As Ninth Circuit noted an "agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-by-the-Sea v. U.S. Dept. of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F. 3d 900, 812 (9th Cir. 1999). The statement of purpose and alternatives are closely linked since "the stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *City of Carmel*, 123 F.3d at 1155. The Ninth Circuit recently reaffirmed this point in *National Parks Conservation Assn v. BLM*, 586 F.3d 735, 746-48 (9th Cir. 2009) (holding that "[a]s a result of [an] unreasonably narrow purpose and need statement, the BLM necessarily considered an unreasonably narrow range of alternatives" in violation of NEPA).

The purpose behind the requirement that the purpose and need statement not be unreasonably narrow, and NEPA in general is, in large part, to "guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The agency cannot camouflage its analysis or avoid robust public input, because "the very purpose of a draft and the ensuing comment period is to elicit suggestions and criticisms to enhance the proposed project." *City of Carmel-by-the-Sea*,

123 F.3d at 1156. The agency cannot circumvent relevant public input by narrowing the purpose and need so that no alternatives can be meaningfully explored or by failing to review a reasonable range of alternatives.

The BLM's purpose and need for the Blythe project is "to respond to Palo Verde Solar I's application under Title V of FLPMA (43 U.S.C. 1761) for a ROW grant to construct, operate, and decommission a solar thermal facility on public lands in compliance with FLPMA, BLM ROW regulations, and other Federal applicable laws", and also states that the "BLM authorities include:

- Executive order 13212, dated May 18, 2001, which mandates that agencies act expediently and in a manner consistent with applicable laws to increase the "production and transmission of energy in a safe and environmentally sound manner."
- The EPAct, which requires the Department of the Interior (BLM's parent agency) to approve at least 10,000 MW of renewable energy on public lands by 2015.
- Secretarial Order 3285, dated March 11, 2009, which "establishes the development of renewable energy as a priority for the Department of the Interior."

DEIS at A-12. The DEIS notes that an amendment to the CDCA Plan is needed in order to approve the project but does not clearly identify the plan amendment as a part of the project being evaluated. Rather, the DEIS states: "The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW . . . The BLM's actions will also include consideration of amending the CDCA Plan concurrently." DEIS at A-11. BLM's purpose and need is very narrowly construed to the proposed project itself and an amendment to the Plan *for the project only*. The purpose and need provided in the DEIS is impermissibly narrow under NEPA for several reasons, most importantly because it foreclosed meaningful alternatives review in the DEIS. Because the purpose and need and the alternatives analysis are at the "heart" of NEPA review and affect nearly all other aspects of the EIS, on this basis and others, BLM must revise and re-circulate the DEIS.

The DOE purpose and need statement provides:

The Applicant has applied to the Department of Energy (DOE) for a loan guarantee under Title XVII of the Energy Policy Act of 2005 (EPAct 05), as amended by Section 406 of the American Recovery and Reinvestment Act of 2009, P.L. 111-5 (the —Recovery Act). DOE is a cooperating agency on this EIS pursuant to an MOU between DOE and BLM signed in January 2010. The purpose and need for action by DOE is to comply with its mandate under EPAct by selecting eligible projects that meet the goals of the Act.

DEIS at A-12.

In discussing the cumulative scenario, the DOE loan guarantee program is also described as one of the incentive programs for funding renewable energy projects:

Example[s] of incentives for developers to propose renewable energy projects on private and public lands in California, Nevada and Arizona, include the following:

- U.S. Treasury Department's Payments for Specified Energy Property in Lieu of Tax Credits under §1603 of the American Recovery and Reinvestment Act of 2009 (Public Law 1115) - Offers a grant (in lieu of investment tax credit) to receive funding for 30% of their total capital cost at such time as a project achieves commercial operation (currently applies to projects that begin construction by December 31, 2010 and begin commercial operation before January 1, 2017).
- U.S. Department of Energy (DOE) Loan Guarantee Program pursuant to §1703 of Title XVII of the Energy Policy Act of 2005 - Offers a loan guarantee that is also a low interest loan to finance up to 80% of the capital cost at an interest rate much lower than conventional financing. The lower interest rate can reduce the cost of financing and the gross project cost on the order of several hundred million dollars over the life of the project, depending on the capital cost of the project.

DEIS at B.3-2.

The Center is well aware that deadlines for funding, particularly for the American Recovery and Reinvestment Act (“ARRA”) funds, have driven the pace of the environmental review for this project and others and, while such funding mechanisms are important, deadlines cannot be used as an excuse for rushed and inadequate NEPA review. The BLM and DOE must be concerned with the adequate NEPA review and even if the agencies can properly have an objective of *timely* approval of projects they cannot properly have as purpose and need of the project a *rushed* inadequate environmental impact review.

Moreover, in its discussion of the need for renewable energy production the DEIS fails to address risks associated with global climate change in context of including both the need for climate change mitigation strategies (e.g., reducing greenhouse gas emissions) and the need for climate change adaptation strategies (e.g., conserving intact wild lands and the corridors that connect them). All climate change adaptation strategies underline the importance of protecting intact wild lands and associated wildlife corridors as a priority adaptation strategy measure.

The habitat fragmentation, loss of connectivity for terrestrial wildlife, and introduction of predators and invasive weed species associated with the proposed project in the proposed location may run contrary to an effective climate change adaptation strategy. Siting the proposed project in the proposed location impacting major washes and fragile desert resources could undermine a meaningful climate change adaptation strategy with a poorly executed climate change mitigation strategy. Moreover, the project itself will emit greenhouse gases and the DEIS contains no discussion of ways to avoid, minimize or off set these emissions although such mitigation is clearly feasible and other technologies have far less or no GHG emissions during operations are also likely to have fewer emissions when calculated on a lifecycle basis. The way to maintain healthy, vibrant ecosystems is not to fragment them and reduce their biodiversity.

B. The DEIS Does Not Adequately Describe Environmental Baseline

BLM is required to “describe the environment of the areas to be affected or created by the alternatives under consideration.” 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a practical requirement of the NEPA process. In *Half Moon Bay Fisherman’s Marketing Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit states that “without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA.” Similarly, without a clear understanding of the current status of these public lands BLM cannot make a rational decision regarding proposed project. See *Center for Biological Diversity v. U.S. Bureau of Land Management, et al.*, 422 F. Supp. 2d 1115, 1166-68 (N.D. Cal. 2006) (holding that it was arbitrary and capricious for BLM to approve a project based on outdated and inaccurate information regarding biological resources found on public lands).

The DEIS fails to provide adequate baseline information and description of the environmental setting in many areas including in particular the status of rare plants, animals and communities.

The baseline descriptions in the DEIS are inadequate particularly for the areas where surveys are ongoing. As discussed below, because of the deficiencies of the baseline data for the proposed project area, the DEIS fails to adequately describe the environmental baseline. Many of the rare and common but essential species and habitats have incomplete and/or vague on-site descriptions that make determining the proposed project’s impacts difficult at best. Some of the rare species/habitats baseline conditions are totally absent, therefore no impact assessment is provided either. A supplemental document is required to fully identify the baseline conditions of the site, and that baseline needs to be used to evaluate the impacts of the proposed project.

C. Failure to Identify and Analyze Direct and Indirect Impacts to Biological Resources

The EIS fails to adequately analyze the direct, indirect, and cumulative impacts of the proposed project on the environment. The Ninth Circuit has made clear that NEPA requires agencies to take a “hard look” at the effects of proposed actions; a cursory review of environmental impacts will not stand. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150-52, 1154 (9th Cir. 1998). Where the BLM has incomplete or insufficient information, NEPA requires the agency to do the necessary work to obtain it where possible. 40 C.F.R. §1502.22; see *National Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 733 (9th Cir. 2001) (“lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it.”)

Moreover, BLM must look at reasonable mitigation measures to avoid impacts in the DEIS but failed to do so here. Even in those cases where the extent of impacts may be somewhat

uncertain due to the complexity of the issues, BLM is not relieved of its responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset. Even if the discussion may of necessity be tentative or contingent, NEPA requires that the BLM provide some information regarding whether significant impacts could be avoided. *South Fork Band Council of Western Shoshone v. DOI*, 588 F.3d 718, 727 (9th Cir. 2009).

The lack of comprehensive surveys is particularly problematic. Failure to conduct sufficient surveys prior to construction of the project also effectively eliminates the most important function of surveys - using the information from the surveys to minimize harm caused by the project and reduce the need for mitigation. Often efforts to mitigate harm are far less effective than preventing the harm in the first place. In addition, without understanding the scope of harm before it occurs, it is difficult to quantify an appropriate amount and type of mitigation.

The DEIS recognizes (at pg. ES-15) that based on the information provided in the biological resources analysis it is undetermined if the project proposal and mitigations complies with all of the laws, ordinances, regulations, and standards (LORS). Additionally it is undetermined if impacts could be mitigated. For this reason alone, a supplemental or revised DEIS needs to be provided that determines if LORS are complied with and the status of mitigation.

1. Desert Tortoise

The desert tortoise has lived in the western deserts for tens of thousands of years. In the 1970's their populations were noted to decline. Subsequently, the species was listed as threatened by the State of California in 1989 and by the U.S. Fish and Wildlife Service in 1990, which then issued a Recovery Plan for the tortoise in 1994. The U.S. Fish and Wildlife Service is in the process of updating the Recovery Plan, and a Draft Updated Recovery Plan was issued in 2008, however it has not been finalized. Current data indicate a continued decline across the range of the listed species⁵ despite its protected status and recovery actions.

The original and draft Updated Recovery Plans both recognize uniqueness in desert tortoise populations in California. This particular subpopulation of tortoise at the proposed project site are part of the Eastern Colorado Recovery unit⁶. Recent population genetics studies⁷ have further confirmed 1994 Recovery Plan conclusions the Eastern Colorado Recovery unit was one of the most genetically unique recovery units. While the proposed project site may have low desert tortoise densities, this particular recovery unit has also been documented to have the second highest declines in population over the last two years – 37% decline⁸. The DEIS fails to identify and consider the localized impact to this recovery unit that is already in steep decline.

While Bio-10 requires a Desert Tortoise Relocation/Translocation Plan (DEIS at pg. C.2-130), no desert tortoise relocation/translocation plan was included in the DEIS. Recent desert tortoise translocations have resulted in significant short-term mortality up to 45%⁹ and unknown

⁵ USFWS 2009

⁶ USFWS 1994

⁷ Murphy et al. 2007

⁸ USFWS 2009.

⁹ Gowan and Berry 2010.

long-term survivorship. It is imperative to have this important plan available in the revised DEIS.

Mechanisms need to be included to assure that any and all mitigation acquisitions will be conserved in perpetuity for the conservation of the desert tortoise. If those acquisitions are within existing Desert Wildlife Management Areas (DWMAs), higher levels of protection than are currently in place for DWMAs need to be put in place. NEPA mandates consideration of the relevant environmental factors and environmental review of “[b]oth *short- and long-term effects*” in order to determine the significance of the project’s impacts. 40 C.F.R. § 1508.27(a) (emphasis added). BLM has clearly failed to do so in this instance with respect to the impact to the desert tortoise. If tortoises are relocated, then the relocation areas need to be secured for tortoise conservation, to preclude moving the animals subsequently if additional projects are on the relocation site.

2. Desert Bighorn Sheep

Comprehensive surveys for desert bighorn in the McCoy mountains has not been completed and therefore impacts assessment from of the proposed project can not be done. Without this basic information about the status of the bighorn population in the adjacent areas and their potential use of the alluvial fan for seasonal browsing where the proposed project site is located, it is impossible to assess the extent of the impacts to the bighorn population in this area from the proposed project. Without site-specific data on the details of habitat use patterns of the bighorn in the area, the DEIS cannot properly assess the importance of the alluvial fan and wash habitat to the bighorn population or the impact of its loss on the population. Additional field study needs to be conducted by a knowledgeable researcher in the Mc Coy Mountains and on the proposed solar site. Absent any real information in the field, any suggested mitigation or perceived impacts are pure conjecture.

3. Rare and Special Status Plants

While five different species of rare plants are noted to occur on the project site (DEIS at C.2-2), only two of the species (Las Animas colubrine and Harwood’s milkvetch) were analyzed for impacts. As noted in the DEIS (at C.2-2), additional surveys for rare plants are being done in 2010, although the results of those surveys are not available. Absent the basic data on on-site resources, impact analysis is impossible, as is appropriate avoidance, minimization and mitigation strategies. Clearly a supplemental DEIS is required to present these missing data.

4. Migratory and Other Birds and Burrowing Owls

Birds

The proposed project area is rich in bird resources. The Palo Verde Valley, which is

directly adjacent to the site, is noted as an Important Bird Area¹⁰. Birds migrate up and down the Colorado River Valley, undoubtedly using the projects site and the microphyll woodland on site. The DEIS fails to evaluate the impact to this migratory pathway from the proposed project.

The DEIS fails to address the fatalities that have been documented to occur from birds running into mirrors¹¹. Adjacent to the proposed project site are agricultural fields, which also attract birds. The DEIS does not quantify the number of birds (rare, migratory or otherwise) that use/traverse the project site from the avian point count surveys, nor does it evaluate the impact to birds. McCrary¹² estimated 1.7 birds deaths per week on a 32 ha site with mirrors and a power tower configuration. The proposed project site is approximately 2845 ha (over 90 times larger). While it is a solar trough technology, other researchers have evaluated impacts to avian species from reflective surfaces and powerlines¹³ and has a different kind of mirror and power plant configuration. The revised DEIS needs to analyze likely impacts to birds from the proposed project mirror configuration. The failure to provide the baseline data from which to make any impact assessment violates NEPA. This failure to analyze impacts is not only a NEPA violation, but for migratory birds, may also lead to a violation of the Migratory Bird Treaty Act, 16 U.S.C. §§ 703 -711, because migratory birds may be “taken” if the proposed project is constructed. Bio-15 requires an Avian Protection Plan which is proposed to “provide the information needed to determine if operation of the Project posed a collision risk for birds, and would provide adaptive management measures to mitigate those impacts to less than significant levels” (DEIS at pg. C.2-77). However, the Avian Protection Plan is not available to provide an assessment of impacts to migratory birds.

Additionally, while evaporation ponds noted as being part of the project in the DEIS and “are discussed in the Soil and Water Resources section of this document” (DEIS at pg. C.13-17) actually we could not locate additional discussion of them in the DEIS. Open water of any kind in the desert is an attractant to wildlife, and this very important issue needs to be addressed in the supplemental DEIS particularly with regards to the number and size of the basins, attraction to animals including birds (including ravens), and strategies to keep them from attracting animals.

Burrowing Owls

The DEIS notes that “One burrowing owl was observed within the Project Disturbance Area at an active burrow during Phase II burrowing owl surveys in March 2009. In total, 92 burrows with burrowing owl sign were observed during 2009 Phase II and III surveys. An additional burrow with sign was observed near the transmission line Disturbance Area during fall 2009 surveys (Solar Millennium 2009b, Western Burrowing Owl Technical Report)” (DEIS at C.2-32). Preliminary results from the 2006-7 statewide census identified that the Sonoran desert harbors Western burrowing owls.¹⁴ However, the DEIS fails to evaluate the potential impact of the proposed project on this regional distribution of owls.

¹⁰ Audubon IBA http://ca.audubon.org/maps/pdf/Lower_Colorado_River_Valley.pdf

¹¹ McCrary 1986

¹² Ibid

¹³ Klem 1990, Erickson et al. 2005

¹⁴ IBP 2008

While “passive relocation” does minimize immediate direct take of burrowing owls, ultimately the burrowing owls’ available habitat is reduced, and “relocated” birds are forced to compete for resources with other resident burrowing owls and may move into less suitable habitat, ultimately resulting in “take”. While Bio-18 requires a Burrowing Owl mitigation plan, that plan is not provided. Additionally, the requirements of the plan do not explicitly include long-term monitoring of passively relocated birds in order to evaluate survivorship of passively relocated birds.

Golden Eagle

While no golden eagles were documented to use proposed project site as a foraging the results of the surveys in the McCoy Mountains were not available to the EIS. The proposed mitigation measure BIO-12 proposes to reduce impacts to the species to less than significant levels, however the DEIS fails to present exactly how it will mitigate the loss of a substantial amount of foraging habitat for the golden eagle. The fact still remains that significant amounts of foraging habitat will decrease carrying capacity of the landscape and could result in a potential loss of habitat needed to support a nesting pair, which would impact reproductive capacity.

Scientific literature on this subject is clear - the presence of humans detected by a raptor in its nesting or hunting habitat can be a significant habitat-altering disturbance even if the human is far from an active nest¹⁵. Regardless of distance, a straight-line view of disturbance affects raptors, and an effective approach to mitigate impacts of disturbance for golden eagles involves calculation of viewsheds using a three-dimensional GIS tool and development of buffers based on the modeling¹⁶. Golden eagles have also been documented to avoid industrialized areas that are developed in their territory.¹⁷ Additionally, the DEIS does not actually clearly analyze the impacts to and mitigations for the golden eagle under the Bald Eagle and Golden Eagle Protection Act, which prohibits, except under certain specified conditions, the take, possession, and commerce of such birds.

5. Badger and Desert Kit Foxes

Badgers and desert kit foxes were identified to occur throughout the project area (DEIS C.2-152). Literature on the highly territorial badger indicates that badger home territories range from 340 to 1,230 hectares¹⁸. Therefore, the proposed project could displace *at least* one badger territory. While surveys prior to construction are clearly essential, even passive relocation of badgers into suitable habitat may result “take”. Excluding badger from the site is likely to cause badgers to move into existing badger’s territory. The same scenario of passive relocation for kit fox may also result in “take”. Studies need to be provided on both on- and off-site badger and kit fox territories if animals are to be passively relocated in order to increase chances of persistence. At a minimum, the revised or supplemental DEIS should identify suitable habitat nearby if the project is relying on passive relocation as a mitigation strategy.

¹⁵ Richardson and Miller 1997

¹⁶ Camp et al. 1997; Richardson and Miller 1997

¹⁷ Walker et al. 2005

¹⁸ Long 1973, Goodrich and Buskirk 1998

6. *Cryptobiotic soil crusts and Desert Pavement*

The proposed project is located in the Mojave Desert Air Quality Management District area, which is already in non-attainment for PM-10 particulate matter¹⁹. The construction of the proposed project further increase emissions of these types of particles because of the disruption and elimination of potentially thousands of acres of cryptobiotic soil crusts. Cryptobiotic soil crusts are an essential ecological component in arid lands. They are the “glue” that holds surface soil particles together precluding erosion, provide “safe sites” for seed germination, trap and slowly release soil moisture, and provide CO₂ uptake through photosynthesis²⁰.

The FEIS does not describe the on-site cryptobiotic soil crusts. The proposed project will disturb an unidentified portion of these soil crusts and cause them to lose their capacity to stabilize soils and trap soil moisture. The DEIS fails to provide a map of the soil crusts over the project site, and to present any avoidance or minimization measures. It is unclear how many acres of cryptobiotics soils will be affected by the project. The DEIS must identify the extent of the cryptobiotic soils on site and analyze the potential impacts to these diminutive, but essential desert ecosystem components as a result of this project.

While desert pavements are mentioned as occurring on the proposed project site (DEIS at D.2-7), quantitative acreage of pavement are not identified. The DEIS recognizes that “desert pavement is resistant to further wind erosion. If this protective layer is disturbed, the underlying layer of Aeolian material is subject to high levels of wind erosion, comparable to the Aco Series. The Aco Series on the eastern third of the site has the highest erosion rates for undisturbed, disturbed, and operational conditions and may be considered a potentially significant impact from the Project.” (at C.9-41 [Soil and Water Resources Section]). However, the impact to air quality from disturbance of this highly erodible soil type is not analyzed.

7. *Insects*

The DEIS fails to address insects on the proposed project site. In fact no surveys or evaluation of rare or common insects are included in the DEIS. Dune habitats are notorious for supporting endemic insects, typically narrow habitat specialists²¹.

8. *Decommissioning and Reclamation Plan*

Desert lands are notoriously hard to revegetate or rehabilitate²² and revegetation never supports the same diversity that originally occurred in the plant community prior to disturbance²³. The task of revegetating almost eleven square miles will be a Herculean effort that will require significant financial resources. In order to assure that the ambitious goals of the revegetation effort is met post project closure, it will be necessary to bond the project, so that all revegetation obligations will met and assured. The bond needs to be structured so that it is tied to meeting the specific revegetation criteria.

¹⁹ <http://www.mdaqmd.ca.gov/index.aspx?page=214>

²⁰ Belnap 2003, Belnap et al 2003, Belnap 2006, Belnap et al. 2007

²¹ Dunn 2005.

²² Lovich and Bainbridge 1999

²³ Longcore 1997

The project will cause permanent impacts to the on-site plant communities and habitat for wildlife despite “revegetation”, because the agency’s regulations based on the Northern and Eastern Colorado Plan’s rehabilitation strategies²⁴ only requires 40% of the original density of the “dominant” perennials, only 30% of the original cover. Dominant perennials are further defined as “any combination of perennial plants that originally accounted cumulatively for at least 80 percent of relative density”.²⁵ These requirements fail to truly “revegetate” the plant communities to their former diversity and cover even over the long term. While Bio-23 requires the development of a Decommissioning and Reclamation Plan, that plan is not available for public review. While BLM’s own regulations 43 CFR 3809.550 et seq. require a detailed reclamation plan and a cost estimate, they need to be included in the revised EIS.

9. Fire Plan

Fire in desert ecosystems is well documented to cause catastrophic landscape scale changes²⁶ and impacts to the local species²⁷. The DEIS mentions the impacts of fire via the proliferation of nonnative weeds (DEIS at C.2-32), it fails to analyze the impacts of fire on adjacent natural desert habitat. The DEIS fails to adequately analyze the impact that an escaped on-site-started fire could have on the natural lands adjacent to the project site if it escaped from the site. The likelihood of fire is of particular concern for this proposal which includes large amounts of flammable hydrogen manufactured and stored on site and piped throughout the site. The DEIS also fails to address the mitigation of this potential impact. Instead it defers it to the Worker Environmental Awareness Program (WEAP) and only requires “a discussion of fire prevention measures to be implemented by workers during project activities” (DEIS at C.2-77). A fire prevention and protection plan needs to be developed and required to prevent the escape of fire onto the adjacent landscape (avoidance), lay out clear guidelines for protocols if the fire does spread to adjacent wildlands (minimization) and a revegetation plan if fire does occur on adjacent lands originating from the project site (mitigation) or caused by any activities associated with construction or operation of the site even if the fire originates off of the project site.

10. Failure to Identify Appropriate Mitigation

Because the DEIS fails to provide adequate identification and analysis of impacts, inevitably, it also fails to identify adequate mitigation measures for the project’s environmental impacts. “Implicit in NEPA’s demand that an agency prepare a detailed statement on ‘any adverse environmental effects which cannot be avoided should the proposal be implemented,’ 42 U.S.C. § 4332(C)(ii), is an understanding that an EIS will discuss the extent to which adverse effects can be avoided.” *Methow Valley*, 490 U.S. at 351-52. Because the DEIS does not adequately assess the project’s direct, indirect, and cumulative impacts, its analysis of mitigation measures for those impacts is necessarily flawed. The DEIS must discuss mitigation in sufficient

²⁴ <http://www.blm.gov/ca/st/en/fo/cdd/neco.html>

²⁵ Ibid

²⁶ Brown and Minnich 1986, Lovich and Bainbridge 1999, Brooks 2000, Brooks and Draper 2006, Brooks and Minnich 2007

²⁷ Ducher 2009

detail to ensure that environmental consequences have been fairly evaluated.” *Methow Valley*, 490 U.S. at 352; *see also Idaho Sporting Congress*, 137 F.3d at 1151 (“[w]ithout analytical detail to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a ‘mere listing’ of good management practices”). As the Supreme Court clarified in *Robertson*, 490 U.S. at 352, the “requirement that an EIS contain a detailed discussion of possible mitigation measures flows both from the language of [NEPA] and, more expressly, from CEQ’s implementing regulations” and the “omission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action forcing’ function of NEPA.”

Although NEPA does not require that the harms identified actually be mitigated, NEPA does require that an EIS discuss mitigation measures, with “sufficient detail to ensure that environmental consequences have been fairly evaluated” and the purpose of the mitigation discussion is to evaluate whether anticipated environmental impacts *can be avoided*. *Methow Valley*, 490 U.S. at 351-52. As the Ninth Circuit recently noted: “[a] mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination.” *South Fork Band Council of Western Shoshone v. DOI*, 588 F.3d 718, 727 (9th Cir. 2009) (emphasis in original).

Here, the DEIS does not provide a full analysis of possible mitigation measures to avoid or lessen the impacts of the proposed project and therefore the BLM cannot properly assess the likelihood that such measures would actually avoid the impacts of the proposed project.

E. Key Plans are Not Included

The DEIS fails to include key plans for public review. Plans relied upon for adequate mitigation but which are unavailable include:

- Weed Management Plan (DEIS at C.2-72 and 137)
- Biological Resources Mitigation Implementation and Monitoring Plan (DEIS at C.2-56)
- Raven Management and Monitoring Plan (DEIS at C.2-1 and 136)
- detailed revegetation plan for temporary disturbance (DEIS at C.2-110 and 126)
- Decommissioning and Reclamation Plan (for permanent closure) (DEIS at C.2-4) [Closure, Conceptual Restoration Plan (DEIS at C.2-121)]
- Burrowing Owl Mitigation and Monitoring Plan (DEIS at C.2-65)
- Burrowing Owl Relocation/Translocation Plan (DEIS at C.2-65)
- Avian Protection Plan (DEIS at C.2-3 and 137)
- Plan for restoring sheet flow to the terrain downslope of the Project boundaries (DEIS at C.2-55)
- Desert Tortoise Relocation/Translocation Plan (DEIS at C.2-58 and 130)
- Desert Tortoise Management Plan for Mitigation Lands (DEIS at C.2-60) [also possibly called the Desert Tortoise Compensatory Mitigation Plan (DEIS at C.2-87) [also including management plan of site-specific enhancement of drainages (DEIS C.2-146)
- Special-status Plant Impact Avoidance and Mitigation Plan (DEIS at C.2-72 and 142)
- Reclamation Plan as required by BLM at 43 CFR 3809.550 et seq. including cost estimates 43 CFR 3715 (DEIS at C.2-77-78)
- Channel Decommissioning and Reclamation Plan (DEIS at C.2-78 and 149)

- Project Hazardous Materials Plan (DEIS at C.2-125)
- Management Plan for Sand Dune/Fringe-toed Lizard (DEIS at C.2-144)

While the Management Plan for Acquired Lands (DEIS at C.2-50 and 146) is a key document that is missing and needs to have public review to ascertain if, in fact, acquired lands actually do mitigate for the impacts, the DEIS fails to identify the acquisition lands, or if acquisition lands are actually even available. Clearly, if the proposed project was to move forward, acquired lands are a key component of a mitigation strategy. The supplemental EIS must provide a better evaluation if lands are available, and where those lands are, and how they will fulfill the mitigation scenario.

The Special Status Plant Survey and Protection Plan (DEIS at C.2-72 and 142) is also missing. While this plan is proposed as a mitigation requirement, that position is unsupported because the special status plant surveys need to be done to provide the baseline data from which evaluation for potential project impacts can be analyzed. Surveys are not a mitigation strategy.

E. Impacts to Water Resources—Groundwater and Surface Water Impacts

As with the biological resources, the DEIS recognizes (at pg. ES-15) that based on the information provided in the soils and water analysis it is undetermined if the project proposal and mitigations complies with all of the LORS. Additionally it is undetermined if impacts could be mitigated. For this reason alone, a supplemental or revised DEIS needs to be provided that determines if LORS are complied with and the status of mitigation for the soils and water.

F. The DEIS Fails to Adequately Identify, Analyze and Off-set Impacts to Air Quality and GHG Emissions.

Federal courts have squarely held that NEPA requires federal agencies to analyze climate change impacts. *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508 F.3d 508 (9th Cir. 2007). As most relevant here, NEPA requires consideration of greenhouse gas emissions (“GHG emissions”) associated with all projects and, in order to fulfill this requirement the agencies should look at all aspects of the project which may create greenhouse gas emissions including operations, construction, and life-cycle emissions from materials. Where a proposed project will have significant GHG emissions, the agency should identify alternatives and/or mitigation measures that will lessen such effects.

As part of the NEPA analysis federal agencies must assess and, wherever possible, quantify or estimate GHG emissions by type and source by analyzing the direct operational impacts of proposed actions. Assessment of direct emissions of GHG from on-site combustion sources is relatively straightforward. For many projects, as with the proposed project, energy consumption will be the major source of GHGs. The indirect effects of a project may be more far-reaching and will require careful analysis. Within this category, for example, the BLM should evaluate, GHG and GHG-precursor emissions associated with construction, electricity use, fossil fuel use, water consumption, waste disposal, transportation, the manufacture of building materials (lifecycle analysis), and land conversion. Moreover, because many project may undermine or destroy the value of carbon sinks, including desert soils, projects may have

additional indirect effects from reduction in carbon sequestration, therefore both the direct and quantifiable GHG emissions as well as the GHG effects of destruction of carbon sinks should be analyzed.

The discussion of greenhouse gas emissions (“GHG”) in the DEIS notes that the solar project will produce GHGs primarily from the gas boilers and Heat Transfer Fluid (“HTF”) heaters. The GHG emissions from the boilers during project operations is estimated to be 12,102 metric tons CO₂ equivalent and from the HTF heaters an additional 3,724 metric tons CO₂ equivalent annually for total operations emissions (including all sources) of 17,679 metric tons CO₂ equivalent annually. DEIS at C.1-70 (Greenhouse gas table 3). The boilers and heaters are stated to be for start up or freeze control but the DEIS assumes that they may be allowed to be used for very long periods of time – up to 15 hours per day for the boilers up to 5,000 hours per year and up to 10 hours per day for the HTF heaters up to 500 hours per year. *See* DEIS at C.1-16 to 17; C.1-52 (HTF heater limits); C.1-50 (condition of maximum natural gas use for gas boilers). No explanation is provided for these long hours of supplemental natural gas use for this solar power plant and no additional limits are discussed or analyzed in violation of NEPA. The DEIS also fails to adequately explore whether an alternative solar technology (such as PV) would reduce greenhouse gas emissions both during operations and over the life-cycle of the components of the proposed project. There is no discussion of reducing these sources by using alternative fuels or highly efficient vehicles and equipment and no discussion of providing off sets for these GHG emissions.

Another GHG emission source for this proposed project is SF₆ from electrical equipment leakage. DEIS at C.1-70. However, the DEIS does not mention additional sources of SF₆ from transmission lines associated with the project. Moreover, leakage of SF₆ is of particular concern as it is many times more potent greenhouse gas than CO₂—indeed, its potential as a GHG has been estimated at 23,900 times that of CO₂ (for a 100 year time horizon) and it can persist in the atmosphere far longer than CO₂ as well—up to 3,200 years.²⁸ The DEIS fails to state the actual amount of SF₆ that is estimated to leak from equipment and provides only that 24 MTCO₂E is expected in emissions each year. No information is provided on the calculation. Moreover, the DEIS does not analyze any alternatives to avoid or minimize the long-term emissions of this powerful GHG from operations and no mitigation measures are provided.

The GHG emissions from the construction phase of the project are stated to be over 130,000 metric tons CO₂ equivalent (Greenhouse gas table 2, DEIS C.1-70). Again, there is no discussion of reducing these emissions by using more efficient equipment or vehicles.

The DEIS also fails to adequately address other air quality issues including PM₁₀ both during construction and operation which is of particular concern in this area which is a nonattainment area for PM₁₀ and ozone. It is clear that extensive on-site grading will result in significant amounts of bare soils and increased PM₁₀ may be introduced into the air by wind and

²⁸ P. Forster et al., *Changes in Atmospheric Constituents and in Radiative Forcing*, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Solomon, S., et al. eds., Cambridge University Press 2007) at p. 212, Table 2.14.

that the use of the area during construction and operations will lead to additional PM10 emissions from the site.

BLM fails to identify any significant GHG emissions and therefore does not provide for avoidance, minimization, or mitigation. BLM has also failed to include the loss of carbon sequestration from soils in its calculations or to provide a lifecycle analysis of GHG emissions that include manufacturing and disposal. Moreover, it is undisputed that in the near-term GHG emissions will increase emissions during construction, and in the manufacturing and transportation of the components. BLM fails to consider any alternatives to the project that would minimize such emissions or to require that these near-term emissions be off set in any way.

Although the proposed project may reduce GHG's overall it will also emit GHGs during both construction and operations that are not accounted for or off-set, BLM completely fails to explore this aspect of the impacts of the project in the DEIS in violation of NEPA.

G. The Analysis of Cumulative Impacts in the DEIS Is Inadequate

A cumulative impact is “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7. The Ninth Circuit requires federal agencies to “catalogue” and provide useful analysis of past, present, and future projects. *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997); *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 809-810 (9th Cir. 1999).

“In determining whether a proposed action will significantly impact the human environment, the agency must consider ‘[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.’ 40 C.F.R. § 1508.27(b)(7).” *Oregon Natural Resources Council v. BLM*, 470 F.3d 818, 822-823 (9th Cir. 2006). NEPA requires that cumulative impacts analysis provide “some quantified or detailed information,” because “[w]ithout such information, neither courts nor the public . . . can be assured that the Forest Service provided the hard look that it is required to provide.” *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998); *see also id.* (“very general” cumulative impacts information was not hard look required by NEPA). The discussion of future foreseeable actions requires more than a list of the number of acres affected, which is a necessary but not sufficient component of a NEPA analysis; the agency must also consider the actual environmental effects that can be expected from the projects on those acres. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004) (finding that the environmental review documents “do not sufficiently identify or discuss the incremental impact that can be expected from each [project], or how those individual impacts might combine or synergistically interact with each other to affect the [] environment. As a result, they do not satisfy the requirements of the NEPA.”) Finally, cumulative analysis must be done as early in the environmental review process as possible, it is not appropriate to “defer consideration of

cumulative impacts to a future date. ‘NEPA requires consideration of the potential impacts of an action *before* the action takes place.’” *Neighbors*, 137 F.3d at 1380 *quoting City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990) (emphasis in original).

The DEIS identifies many of the cumulative projects but does not meaningfully analyze the cumulative impacts to resources in the California desert from the many proposed projects (including renewable energy projects and others). Moreover, because the initial identification and analysis of impacts unfinished, the cumulative impacts analysis cannot be complete. For example, the identification of plant communities on site is unfinished and incomplete as is the evaluation of the impacts of the gen-tie line and the Colorado River substation, the cumulative impacts are also therefore inadequate.

The DEIS also fails to consider all reasonably foreseeable impacts in the context of the cumulative impacts analysis. *See Native Ecosystems Council v. Dombek, et al*, 304 F.3d 886 (9th Cir. 2002) (finding future timber sales and related forest road restriction amendments were “reasonably foreseeable cumulative impacts”). The DEIS also fails to provide the needed analysis of how the impacts might combine or synergistically interact to affect the environment in this valley or region. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004).

The NEPA regulations also require that indirect effects including changes to land use patterns and induced growth be analyzed. “Indirect effects,” include those that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include *growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.*” 40 C.F.R. s.1508.8(b) (emphasis added). *See TOMAC v. Norton*, 240 F. Supp.2d 45, 50-52 (D.D.C. 2003) (finding NEPA review lacking where the agency failed to address secondary growth as it pertained to impacts to groundwater, prime farmland, floodplains and stormwater run-off, wetlands and wildlife and vegetation); *Friends of the Earth v. United States Army Corps of Eng’rs*, 109 F. Supp.2d 30, 43 (D.D.C. 2000) (finding NEPA required analysis of inevitable secondary development that would result from casinos, and the agency failed to adequately consider the cumulative impact of casino construction in the area); *see also Mullin v. Skinner*, 756 F. Supp. 904, 925 (E.D.N.C. 1990) (Agency enjoined from proceeding with bridge project which induced growth in island community until it prepared an adequate EIS identifying and discussing in detail the direct, indirect, and cumulative impacts of and alternatives to the proposed Project); *City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (requiring agency to prepare an EIS on effects of proposed freeway interchange on a major interstate highway in an agricultural area and to include a full analysis of both the environmental effects of the exchange itself and of the development potential that it would create).

The cumulative impacts to the resources of the California deserts has not been fully identified or analyzed, and mitigation measures have not been fully analyzed as well.

H. The EIS’ Alternatives Analysis is Inadequate

NEPA requires that an EIS contain a discussion of the “alternatives to the proposed action.” 42 U.S.C. §§ 4332(C)(iii),(E). The discussion of alternatives is at “the heart” of the NEPA process, and is intended to provide a “clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. §1502.14; *Idaho Sporting Congress*, 222 F.3d at 567 (compliance with NEPA’s procedures “is not an end in itself . . . [but] it is through NEPA’s action forcing procedures that the sweeping policy goals announced in § 101 of NEPA are realized.”) (internal citations omitted). NEPA’s regulations and Ninth Circuit case law require the agency to “rigorously explore” and objectively evaluate “all reasonable alternatives.” 40 C.F.R. § 1502.14(a) (emphasis added); *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 Fed. Appx. 440, 442 (9th Cir. 2007). “The purpose of NEPA’s alternatives requirement is to ensure agencies do not undertake projects “without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means.” *Envtl. Defense Fund, Inc. v. U.S. Army Corps of Engrs.*, 492 F.2d 1123, 1135 (5th Cir. 1974). An agency will be found in compliance with NEPA only when “all reasonable alternatives have been considered and an appropriate explanation is provided as to why an alternative was eliminated.” *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1246 (9th Cir. 2005); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-1229 (9th Cir. 1988). The courts, in the Ninth Circuit as elsewhere, have consistently held that an agency’s failure to consider a reasonable alternative is fatal to an agency’s NEPA analysis. *See, e.g., Idaho Conserv. League v. Mumma*, 956 F.2d 1508, 1519-20 (9th Cir. 1992) (“The existence of a viable, but unexamined alternative renders an environmental impact statement inadequate.”).

If BLM rejects an alternative from consideration, it must explain why a particular option is not feasible and was therefore eliminated from further consideration. 40 C.F.R. § 1502.14(a). The courts will scrutinize this explanation to ensure that the reasons given are adequately supported by the record. *See Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 813-15 (9th Cir. 1999); *Idaho Conserv. League*, 956 F.2d at 1522 (while agencies can use criteria to determine which options to fully evaluate, those criteria are subject to judicial review); *Citizens for a Better Henderson*, 768 F.2d at 1057.

Here, BLM too narrowly construed the project purpose and need such that the DEIS did not consider an adequate range of alternatives to the proposed project.

The alternatives analysis is inadequate even with the inclusion of the alternative site configuration and a reduced acreage alternative. Additional feasible alternatives should be considered which would avoid all Colorado desert microphyll woodlands as well as alternatives that would have looked at alternative sites for the substation to avoid impacts to the Mojave fringe-toed lizard. In addition a phased alternative should have been included which would allow the portions of the project that have the fewest impacts to move forward (in this case the eastern segments of the proposed project) while also affording the project proponent time to find and acquire permits for more appropriate sites for one or more additional phases of the project on previously degraded disturbed lands in this area (for example those adjacent to the proposed site discussed in the Blythe Mesa alternative) and also to explore other off-site alternatives.

The document also includes other alternatives that were stated as being “Site Alternatives Evaluated only under CEQA” which includes the proposed site and one off-site alternative – the

Blythe Mesa alternative. The document eliminated from consideration a distributed renewable energy alternative. The BLM (as well as the CEC) should have also looked alternative siting on previously degraded lands such as nearby farmlands, distributed solar alternatives, and other alternatives that could avoid impacts of the proposed project as well as impacts of the associated transmission lines and substations. In addition, as discussed above, the BLM should have looked at alternatives for construction and operations that would reduce GHG emissions by using alternative technology and/or on site conservation measures and offsets.

The BLM failed to consider any off-site alternative that would significantly reduce the impacts to biological resources including desert wash habitat/microphyll woodlands. Because such alternatives are feasible, on this basis and other the range of alternatives is inadequate. The Center urges the BLM to revise the DEIS to adequately address a range of feasible alternatives and other issues detailed above and then to re-circulate a revised or supplemental DEIS for public comment.

In addition, in order to meet the DOE's purpose and need states that: "The two principal goals of the loan guarantee program are to encourage commercial use in the United States of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. The purpose and need for action by DOE is to comply with their mandate under EPAct by selecting eligible projects that meet the goals of the Act." DEIS at B.2-11. Assuming for the sake of argument alone that these are proper project objectives, the DEIS should have considered alternatives that would provide funding to other types of projects. Such alternatives could include, for example, conservation and efficiency measures that both avoid and reduce energy use within high-energy use load-centers including the Los Angeles area.

Alternative measures could include funding community projects for training and implementation of conservation measures such as increased insulation, sealing and caulking, and new windows for older buildings and new or improved technologies for accomplishing these important goals. For example, air conditioning creates the largest demand for energy during peak times and there already exist methods to reduce the energy use from air conditioning but implementation has lagged well behind technology. Conservation and efficiency measures are an excellent and quick way of reducing demand in both the short- and long-term and reduce the need for additional power sources. In addition, many of the existing conservation and efficiency measures can provide immediate jobs and training in high population areas with significant unemployment (particularly among low skilled workers and youth).

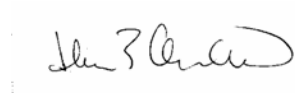
The existence of these and other feasible but unexplored alternatives shows that the BLM's analysis of alternatives in the DEIS is inadequate.

IV. Conclusion

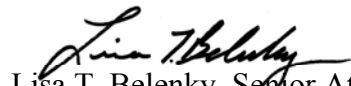
Thank you for your consideration of these comments. In light of the many omissions in the environmental review to date, we urge the BLM to revise and re-circulate the DEIS or prepare a supplemental DEIS before making any decision regarding the proposed plan amendment and right-of-way application. In the event BLM chooses not to revise the DEIS and provide adequate analysis, the BLM should reject the right-of-way application and the plan

amendment. Please feel free to contact us if you have any questions about these comments or the documents provided.

Sincerely,



Ileene Anderson
Biologist/Desert Program Director
Center for Biological Diversity
PMB 447, 8033 Sunset Blvd.
Los Angeles, CA 90046
(323) 654-5943
ianderson@biologicaldiversity.org



Lisa T. Belenky, Senior Attorney
Center for Biological Diversity
351 California St., Suite 600
San Francisco, CA 94104
(415) 436-9682 x307
Fax: (415) 436-9683
lbelenky@biologicaldiversity.org

cc: (via email)

Alan Solomon, Project Manager,
Siting, Transmission and Environmental Protection Division,
California Energy Commission,
asolomon@energy.state.ca.us

Brian Croft, USFWS, brian_croft@fws.gov
Kevin Hunting, CDFG, khunting@dfg.ca.gov,

References: (Provided in electronic format on disk)

- Belnap, J., S. L. Phillips, J. E. Herrick, J. R. Johansen. 2007. Wind erodibility of soils at Fort Irwin, California (Mojave Desert), USA, before and after trampling disturbance: Implications for land management. *Earth Surface Processes and Landforms* 32(1):75-84.
- Belnap, J. 2006. The potential roles of biological soil crusts in dryland hydrologic cycles. *Hydrological Processes* 20: 3159-3178.
- Belnap J. 2003. The world at your feet: Desert biological soil crusts. *Frontiers in Ecology and the Environment* 1(5):181-189.
- Belnap J., S. L. Phillips, M. Duniway, R. Reynolds. 2003. Soil fertility in deserts: A review on the influence of biological soil crusts and the effect of soil surface disturbance on nutrient inputs and losses. In: A. S. Alsharhan, W. W. Wood, A. Goudie, A. R. Fowler, and E. M. Abdellatif, editors. *Desertification in the Third Millennium*: Lisse, The Netherlands, Swets & Zeitlinger (Balkema), pp.245-252.
- Brooks, M.L. 2000. Competition Between Alien Annual Grasses and Native Annual Plants in the Mojave Desert. *American Midland Naturalist* 144: 92-108.
- Brooks, M. L. and J. V. Draper. 2006. Fire effects on seed banks and vegetation in the Eastern Mojave Desert: implications for post-fire management, extended abstract, U.S. Geological Survey, Western Ecological Research Center, Henderson, Nevada, 3 p.
- Brooks, M.L. and R.A. Minnich. 2007. Fire in the Southeastern Deserts Bioregion. Chp 16 in: Sugihara, N.G., J.W. van Wagtendonk, J. Fites-Kaufman, K.E. Shaffer, and A.E. Thode (eds.). *Fire in California Ecosystems*. University of California Press, Berkeley.
- Brown, D.E. and R.A. Minnich. 1986. Fire and Changes in Creosote Bush Scrub of the Western Sonoran Desert, CA. *American Midland Naturalist* 116(2): 411-422.
- Camp, R.J., D.T. Sinton and R.L. Knight 1997. Viewsheds: a Complementary Management Approach to Buffer Zones. *Wildlife Society Bulletin* 25(3): 612-615.
- Dunn, R.R. 2005. Modern Insect Extinctions, the Neglected Majority. *Conservation Biology* 19 (4): 1030-1036.
- Dutcher, K. E. 2009. The effects of wildfire on reptile populations in the Mojave National Preserve, California. Final Report to the National Park Service, California State University, Long Beach, 28 p.
- Erickson, W.P., G. D Johnson, and D.P. Young, Jr. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191. pgs. 1029-1042.
- Goodrich, J.M. and S.W. Buskirk 1998. Spacing and Ecology of North American Badgers (*Taxidea taxus*) in a Prairie-dog (*Cynomys leucurus*) Complex. *Journal of Mammology* 79(1): 171-179.
- Gowan, T. and K.H. Berry 2010. Health, Behavior and Survival of 158 Tortoises Translocated from Ft. Irwin: Year 2. Desert Tortoise Council Symposium Abstracts 2010. <http://www.deserttortoise.org/abstract/2010DTCSymposiumAbstracts.pdf>

Institute for Bird Populations (IBP) 2008. Breeding Burrowing Owl Survey Newsletter, Spring 2008. pgs.4.

Klem, D. 1990. Collisions Between Birds and Windows: Mortality and Prevention. *Journal of Field Ornithology* 61(1): 120-128.

Long, C.A. 1973. *Taxidea taxus*. *Mammalian Species* 26: 1-4.

Longcore, T., R. Mattoni, G. Pratt and C. Rich. 1997. On the Perils of Ecological Restoration: Lessons from the El Segundo Blue Butterfly. In 2nd *Interface between Ecology and Land Development in California*. J. Keely eds.

Lovich, J. E. and D. Bainbridge 1999. Anthropogenic Degradation of the Southern California Desert Ecosystem and Prospects for Natural Recovery and Restoration. *Environmental Management* 24(3): 309-326.

McCrary, M.D. 1986. Avian Mortality at a Solar Energy Power Plant. *Journal of Field Ornithology* 57(2): 135-141

Murphy R.W., K.H.Berry, T. Edwards and A.M. McLuckie. 2007. Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, *Gopherus agassizii*. *Chelonian Conservation and Biology* 6(2): 229-251.

Richardson, C.T. and C.K. Miller. 1997. Recommendations for protecting raptors from human disturbance: a review. *Wildlife Society Bulletin* 25(3): 634-638.

United States Fish and Wildlife Service (USFWS)

1994 Desert tortoise (Mojave population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pages plus appendices.

2009. Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2007 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. Pgs. 77.

Walker, D., M. McGrady, A. McCluskie, M. Madders and D.R.A. McLeod 2005. Resident Golden Eagle Ranging Behaviour Before and After Construction of a Windfarm in Argyll. *Scottish Birds* 25: 24-40.

References not provided:

P. Forster et al., *Changes in Atmospheric Constituents and in Radiative Forcing*, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Solomon, S., et al. eds., Cambridge University Press 2007) at p. 212, Table 2.14.