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Working to protect and restore Western Watersheds

By Express Mail, Email, and Facsimile

August 27, 2012

BLM Director (210)
Attention: Brenda Williams
20 M Street SE., Room 2134LM
Washington, DC 20003

Email: bhudgens@blm.gov
Fax: (202) 452-5112

PROTEST OF THE FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES

Dear Ms. Hudgens-Williams:

Pursuant to the Bureau of Land Management ("BLM") planning regulations at 43 CFR 1610.5-2, Western Watersheds Project hereby protests the Proposed Programmatic Environmental Impact Statement For Solar Energy Development In Six Southwestern States "Solar PEIS"). This protest is filed on behalf of the staff and members of Western Watersheds Project in accordance with 43 C.F.R. §1610.5-2 and contains: a description of the interests of the protesting party; a statement of the issues being protested; a statement of the parts of the Proposed RMP being protested; and, a concise statement explaining the various ways that the BLM acted unlawfully or in error. Western Watersheds Project submitted extensive comments during the scoping and various comment periods, proposed alternatives that would avoid or minimize environmental impacts, and repeatedly raised issues and concerns that remain unaddressed in the Final Environmental Impact Statement ("FEIS").

This protest is being submitted on behalf of Western Watersheds Project and its staff and members by Michael J. Connor, Ph.D., California Director for Western Watersheds Project.

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Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, research, public policy initiatives and litigation. Our staff and members use and enjoy the region's public lands and fragile resources. Western Watersheds Project has offices and staff in all six affected states including California, Nevada, Utah, Arizona, Colorado and New Mexico. Western Watersheds Project has a particular interest in the conservation and protection of BLM managed lands and resources.

Western Watersheds Project recognizes that global climate change poses new challenges to our already stressed public lands. Scientists consider the challenges of conserving biodiversity to be even larger than mitigating the negative effects of global climate change.[1] The Nation's public lands play a central role in conserving biodiversity and species resiliency in the face of climate change. While climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and its biodiversity. Responsible siting of energy projects requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant locations if we are to minimize the threats posed by human response to climate change. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance and minimize further fragmentation of fragile, native ecosystems. Unfortunately, although the BLM was supposedly guided by a purpose and need statement that requires "minimize potential negative environmental impacts" the ecological impacts from all the alternatives considered in the Solar PEIS are massive, and the BLM has simply failed to consider alternatives that would avoid or minimize significant environmental impacts. In doing so, the BLM is in violation of the National Environmental Policy Act ("NEPA"), the Federal Land Policy and Management Act ("FLPMA"), the Endangered Species Act ("ESA"), and other applicable laws and regulations. Approval of the Solar PEIS will affect the interests of Western Watersheds Project and its members because it will impact and degrade large tracts of public land, will impact endangered and threatened species and their habitats, will impact sensitive species and their habitats, will impact rare plants, will impact cultural resources, and will impact visual resources.

Western Watersheds Project has been actively and extensively involved in the environmental review for this project. Prior documents submitted by Western Watersheds Project include:

- Scoping comments from submitted from our Boise, Idaho Office on July 7, 2008.
- Scoping comments submitted from our California Office on July 15, 2008.
- Additional scoping comments submitted from our California Office on September 11, 2009.
- Comments on the DPEIS submitted on May 2, 2011
- Comments on the SDEIS submitted on January 26, 2012.

We have included copies of these letters with this protest. In so far as these letters include comments that have not been addressed by the BLM in the FEIS we incorporate their contents by reference as part of this protest letter.

[1] University of Copenhagen (2012, January 20). Biodiversity crisis is worse than climate change, experts say. ScienceDaily. Retrieved January 26, 2012, from http://www.sciencedaily.com-/releases/2012/01/120120010357.htm

Because Western Watersheds Project has actively participated throughout the planning process and because Western Watersheds Project and its members have interests that will be adversely affected by the approval of this PEIS, Western Watersheds Project has standing under 43 CFR § 1610.5-2 to file this protest. The EPA Notice of Availability was published in the Federal Register on July 27, 2012. Because the 30th day falls on a Sunday, the deadline for filing protests is August 27, 2012. Accordingly, this protest is timely.

ISSUES AND PARTS OF THE PROPOSED PLAN AMENDMENT FEIS BEING PROTESTED

Purpose and Need
Description of Alternatives
Affected Environment
Analysis
Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Arizona
Affected Environment and Impact Assessment for Proposed Solar Energy Zones in California
Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Nevada
Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Utah
Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Colorado
Affected Environment and Impact Assessment for Proposed Solar Energy Zones in New Mexico
Appendices A-O
Response to Comments

CONCISE STATEMENT EXPLAINING THE VARIOUS WAYS THE BUREAU OF LAND MANAGEMENT ACTED UNLAWFULLY OR IN ERROR

Western Watersheds Project protests that the BLM has failed to analyze a range of reasonable alternatives. The selection and clear presentation of alternatives is the "the heart" of the NEPA process. NEPA requires the agencies to evaluate and compare a range of reasonable alternatives. In our scoping comments and comments on prior drafts of the FEIS we urged the BLM to set out a Purpose and Need that addresses the Secretary's clear mandate to protect and enhance the Nation's water, wildlife, and other natural resources on the nation's public lands, to consider a range of alternatives in the FEIS including alternatives that meet energy needs but require no or minimal use of public lands, and to fully analyze the environmental impacts of current management and any proposed energy zones. We asked the BLM to consider the following five alternatives:

> (A) A climate change alternative that would exclude all public lands from solar energy development to provide maximum flexibility and opportunity for species and their habitats to survive climate change impacts;
> (B) An alternative that would use presence of an endangered, threatened or candidate species as an exclusion in the screening criteria so that SEZ are not designated on habitat for endangered, threatened or candidate species;

(C) An alternative that constrains the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints;
(D) An alternative that focuses development on private land; and,
(E) A distributed energy alternative.

The BLM discussed three alternatives in the FEIS: (1) A no action alternative that continues the issuance of right-of-way ("ROW") authorizations for utility-scale solar energy development on BLM administered lands on a project-by-project basis. (2) The proposed action under which approximately 19 million acres of BLM-administered lands would be available for solar energy ROW applications of which approximately 285,000 acres (1,153 km^2) would be in 17 solar energy zones ("SEZ"), where the BLM would prioritize development; and (3) A solar energy zone alternative that restricts applications to the SEZs only.

All three alternatives considered in the FPEIS would result in similar levels of industrial-scale solar power plant development on the Nation's public lands. The "no action" alternative would allow development to continue as it currently proceeds. The preferred alternative purports to restrict development to SEZ but allows for new SEZ to be developed and establishes a variance for proposed projects outside the SEZ. Alternative (3) the modified SEZ alternative purports to restrict solar power plant development to the designated SEZ, but SEZ can be expanded, added, or reduced in the future. NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives. BLM's analysis of a limited number of similar action alternatives makes this a grossly inadequate range of alternatives.

Western Watersheds Project protests the BLM's failure to consider alternatives proposed by the public and by other agencies such as focusing development on private lands and heavily disturbed lands or emphasizing development of distributed energy. These alternatives would have avoided industrial scale development on and the whole-scale destruction of hundreds of square miles of public lands and would have avoided impacting a multitude of special status species, cultural resources, recreational opportunities, visual resources, and a host of other resources of these multiple-use lands.

Western Watersheds Project protests the BLM's failure to consider and analyze alternatives to the proposed action that would avoid impacts to desert tortoise, rare plants and other scarce and sensitive resources in siting SEZ on public lands. Despite public concerns and BLMs responsibility to work to conserve and recover listed species, the BLM considered no alternative that would avoid habitat for listed species.

Western Watersheds Project protests that none of the alternatives BLM considered in the FEIS completely avoids impacts to designated habitat management areas, critical habitats and ACEC.

Western Watersheds Project protests that none of the BLM's alternatives meets the objective laid down in the purpose and need statement (at FEIS 1-9) of "minimize potential negative environmental impacts". Alternatives that focused development on private lands and heavily disturbed lands or emphasized development of distributed energy would have achieved this objective.

Western Watersheds Project protests the BLM's failure to follow its own exclusion criteria in designating SEZ and areas available for solar development. According to the FEIS at ES-8, certain sensitive species habitats are excluded from solar development:

> All areas where the BLM has made a commitment to state agency partners and other entities to manage sensitive species habitat, including but not limited to sage grouse core areas, nesting habitat, and winter habitat; Mohave ground squirrel habitat; flat-tailed horned lizard habitat; and fringe-toed lizard habitat.

However, some of the SEZ include such habitat. The BLM's Northern and Eastern Colorado ("NECO") Plan amendment identified both Multispecies Wildlife Habitat Management Areas and Bighorn Sheep WHMAs within the proposed Riverside East SEZ. NECO Plan Maps 2-19 and 2-21. According to the 2002 NECO Plan, "To aid cooperative implementation of the plan for such tasks as habitat management actions and monitoring for all special status species and natural communities, this plan will also be developed as a Sikes Act Plan. This will be done in cooperation with CDFG under the authorities of the Federal Land Policy and Management Act of 1976 (P.L. 94-579) and the Sikes Act, Title II (P.L. 93-452 and P.L. 95-420) and the Master Memorandum of Understanding (MOU) between BLM and CDFG to cooperatively prepare comprehensive wildlife habitat management plans." NECO Plan at 1-2. Clearly then the proposed Riverside East SEZ includes lands that are supposed to be excluded under the BLM's exclusion criteria. This is also true for Imperial East SEZ which is located entirely within the East Mesa flat-tailed horned lizard habitat management area identified on Map 3 and Table 2 page 34 of the 1980 California Desert Conservation Area ("CDCA") Plan.

The Exclusion Criteria also include "Greater sage-grouse habitat (currently occupied, brooding, and winter habitat) as identified by the BLM in California, Nevada, and Utah, and Gunnison's sage-grouse habitat (currently occupied, brooding, and winter habitat) as identified by the BLM in Utah." and, "All areas where the BLM has made a commitment to state agency partners and other entities to manage sensitive species habitat, including but not limited to sage-grouse core areas, nesting habitat, and winter habitat; Mohave ground squirrel habitat; flat-tailed horned lizard habitat; and fringe-toed lizard habitat." FEIS at ES-8. The FEIS fails to include any maps showing these sage-grouse habitats in Utah. The SEZ identified in southwest Utah all occur within the Southwest Desert Adaptive Resource Management area. Local agency management is guided by the "Southwest Desert Greater Sage-Grouse (*Centrocercus urophasianus*) Local Conservation Plan" dated February 7, 2007[2]. The intent of the Plan is to maintain and where possible, increase sage-grouse populations and improve habitat conditions in the Southwest Desert. The proposed Milford Flat SEZ overlaps habitat described as Priority 2 by the Natural Resources Conservation Service (NRCS).[3] The BLM is currently undertaking an extensive Resource Management Plan ("RMP") revision process to assure the adequacy of regulatory mechanisms aimed at conserving greater sage-grouse. In our scoping comments for the RMP revision process, we proposed that BLM protect all the scattered, isolated greater sage-grouse populations in Utah by designating these populations' habitats as ACECs. The BLM's failure to avoid greater sage-grouse habitat in designating the Utah SEZ undermines not just the

[2] Plan available online at: http://www.utahcbcp.org/files/uploads/southwest/SWARM_final_plan.pdf
[3] Map available online on the NRCS website at:
http://www.ut.nrcs.usda.gov/programs/sage-grouse/fy11/Sage-Grouse Priority Map_2011.pdf

Solar PEIS but also the BLM's separate ongoing planning efforts to ensure the adequacy of regulatory mechanisms for greater sage-grouse.

Western Watersheds Project protests the BLM's failure to define and objectively determine "low-resource conflict" areas. In response to concerns expressed by Western Watersheds Project and other organizations and concerned members of the public, the BLM has dropped the Bullard Wash, Iron Mountain, Pisgah, Delamar Valley, East Mormon Mountain, Mason Draw and Red Sands SEZ. It has also reduced the sizes of the proposed Riverside East, De Tilla Gulch, Fourmile East, Los Mogotes East, Amargosa Valley, Dry Lake, Dry Lake Valley North and Afton SEZ. While we certainly support the BLM's proposal to eliminate some of the SEZ and some of the acreage of others, parts of these eliminated areas do not seem to be safe from being industrialized under the proposed variance nor indeed do they seem to be safe from re-designation as SEZ in the future. The Exclusion Criteria table states, "Lands previously proposed for inclusion in SEZs that were determined to be inappropriate for development through the NEPA process for the Solar PEIS (limited to parts of the Brenda SEZ in Arizona; the previously proposed Iron Mountain SEZ area and parts of the Pisgah and Riverside East SEZs in California; parts of the De Tilla Gulch, Fourmile East, and Los Mogotes East SEZs in Colorado; and parts of the Amargosa Valley SEZ in Nevada)." FEIS at 2-21. <u>All areas that have been eliminated from SEZ should be designated as unavailable for energy development</u>.

Furthermore, the BLM recognizes that the SEZ it has removed from further consideration "had substantive resource conflicts." SDPEIS at 2-80. The BLM does not explain how these areas were selected in the first place since the SEZ were supposedly areas of "low resource conflict". In order to minimize potential adverse impacts, the BLM should drop the remaining proposed Solar Energy Zones too because they were not selected as areas of "low resource conflict" at all, but were selected based on slope, proximity to utility corridors (which invariable pass through valleys and over bajadas) and existing land use designations. This has resulted in the BLM effectively targeting desert tortoise habitat in California, Nevada, and Arizona. This process is epitomized in the Riverside East SEZ. As the FEIS admits,

> A recent inventory of wilderness characteristics has identified an area of about 20,000 acres (81 km^2) that possesses wilderness characteristics located on the valley floor adjacent to the foot of the eastern side of the McCoy Mountains. This area contains numerous channels that are tributary to McCoy Wash and is part of the area identified as desert tortoise connectivity habitat. Portions of the area likely would be classified as microphyll woodland because of the density of ironwood present. Approximately 11,925 acres (48.3 km^2) of this area is located within the boundary of the proposed SEZ (Figure 9.4.3.1-1).

FEIS vol 2. At 9.4-8. How can an area that includes extensive wilderness quality lands, that provides important connectivity for desert tortoise within the Desert Tortoise Colorado Recovery Unit, and that includes portions of one of the most significant washes in the region - the McCoy Wash – be considered as being an area of low resource conflict? To the contrary, the BLM should be proposing to designate this area not as a sacrifice zone for industrial solar power plants but as an Area of Critical Environmental Concern.

FLPMA § 201 [43 U.S.C. 1711] (a) requires the Secretary to prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." BLM needs to follow the law, develop an inventory of the public lands that is adequate for the job at hand, and then make a determination as to whether any of those lands have "low resource conflict". Without this comprehensive approach the BLM is simply making an arbitrary decision to sacrifice public resources for private gain.

Western Watersheds Project protests the BLM's failure to minimize avoidable impacts to special status species and other important wildlife and rare plant species. The proposed action will result in direct take of unknown numbers of these species, will result in significant habitat loss, will fragment habitat and populations, and will result in the loss of linkage habitat that may be essential to connectivity and the continued viability of many of these species. For example, the golden eagle (*Aquila chrysaetos*) is a fully protected species under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The species is declining. Golden eagles use many of the solar development areas including most of the proposed SEZ as foraging areas. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". We asked the BLM to avoid and minimize any take of golden eagles by restricting the areas open to development and by restricting the technologies used to those that do not require structures that may place eagles at risk.

Western Watersheds Project protests that the BLM's Proposed Decision violates the FLPMA mandate to minimize adverse impacts. FLPMA requires that 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)] FLPMA requires the BLM to "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(d)(2)(a)] FLPMA states that public lands should be managed, "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values…" [43 U.S.C. 1701 § 102] In this case, the proposed action does the exact opposite of the Congressional intent so clearly expressed in FLPMA. The proposed action will result in direct take of unknown numbers of these species, will result significant habitat loss, will fragment habitat and populations, and will result in the loss of connective habitat that may be essential to the continued viability of many of these species. The BLM is simply failing its FLPMA mandate to minimize adverse impacts.

Western Watersheds Project protests the BLM's failure to inventory special status species populations in designating proposed SEZ and consider the significance of these species habitats in designating SEZ. Both FLPMA and BLM sensitive species policy require the agency to inventory the populations present. Throughout the FEIS, the BLM discounts impacts to special status species by making unsubstantiated claims that development will lead

only to small amount of habitat being lost, but fails to establish the significance of the population on that habitat. For example, for the dark kangaroo mouse - "The overall impact on the dark kangaroo mouse from construction, operation, and decommissioning of utility-scale solar energy facilities within the Escalante Valley SEZ is considered small because the amount of potentially suitable habitat for this species in the area of direct effects represents less than 1% of potentially suitable habitat in the SEZ region." FEIS at 13.1-42. But the BLM makes no attempt to quantify the quality and significance of that habitat, nor provide any estimate of the size of the affected dark kangaroo mouse population.

Listed species, such as the Mojave desert tortoise, *Gopherus agassizii*, and candidate species, such as the greater sage-grouse, fare no better. For example the FEIS admits that for the Riverside East SEZ:

> The USFWS has also determined that some portions of the SEZ are within high-priority connectivity areas, which are necessary to facilitate natural processes of gene exchange between populations in order to maintain population viability. Solar energy development on the Riverside East SEZ, therefore, may isolate and fragment these tortoise populations by creating impediments to natural migration patterns. The SEZ is situated between the Chuckwalla and Pinto Mountains DWMAs (these DWMAs also contain USFWS-designated critical habitat for desert tortoise), and the SEZ may provide important connectivity for desert tortoise movements between the DWMAs (BLM and CDFG 2002; Stout 2009). Therefore, development on the SEZ may disrupt desert tortoise population dynamics in nearby DWMAs and designated critical habitat. Fragmentation would be exacerbated by the installation of exclusionary fencing at the perimeter of the SEZ or individual project areas.

FEIS vol 2. at 9.4-85. The SEZ is also situated between the Chemehuevi and Chuckwalla DWMAs. These two DWMAs make up most of the conserved habitat within the Desert Tortoise Colorado Desert Recovery Unit. Connectivity between these DWMA is essential since neither unit is believed large enough to maintaining the target population for the recovery unit of 10,000 adults, as explained to the agency in the January 2012 letter from the USFWS Desert Tortoise Recovery Office (Averill-Murray, 2010[4]). Yet, despite recognizing the significance of habitat within the SEZ boundary as importance linkage habitat the BLM has simply failed to look at the impacts to the population and future viability of the Colorado Desert Recovery Unit. In addition to its obligations under FLMPA, the ESA makes BLM directly responsible for decisions affecting listed species. 16 U.S.C. § 1536(a)(1) & (2). The ESA is a substantive statute which requires agencies to ensure that their actions do not jeopardize listed species. 16 U.S.C. § 1536(a)(2). It is astounding that the BLM is even considering potentially compromising the viability of a Recovery Unit. To do so would be a blatant violation of the ESA.

Western Watersheds Project protests the BLM's inadequate analysis of the risks of hydrological disruption posed by industrial-scale power plant development in the proposed SEZ and variance areas. Water is one of the most precious desert resources, and maintaining

[4] Averill-Murray, R. Connectivity of Mojave Desert Tortoise Populations. January 2012. Desert Tortoise Recovery Office. 17 pp.

surface waters and flows, and ground water supplies is essential for conserving desert ecosystem function. Developing large tracts of land for solar power plants impact surface waters and groundwater. Many of the desert basins are already in a serious water overdraft situation and the entire western United States is facing serious water shortages under all climate change scenarios. The FEIS analysis of the risks of hydrological disruption posed by large-scale power plants is inadequate. The BLM should require uniform mitigation and monitoring measures for all the ephemeral washes on the public lands. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). In some states, such as California, state agencies assert jurisdiction and require mitigation for impacts to ephemeral streambeds. However, this is not true in Arizona. The BLM must require full mitigation in the form of purchase of replacement ephemeral streambed habitat.

Western Watersheds Projects protests that the BLM is failing to protect designated wilderness and wilderness quality lands from the direct and indirect impacts of industrial development. BLM identifies "wilderness characteristics" to include naturalness or providing opportunities for solitude or primitive recreation. See, Instruction Memoranda (IMs) 2003-274 and 2003-275. Wilderness character is a valuable resource and important use of these lands. Values associated with wilderness character include:

(a) Scenic Values – FLPMA specifically identifies "scenic values" as a resource of BLM lands for purposes of inventory and management (43 U.S.C. § 1711(a)).

(b) Recreation – FLPMA also identifies "outdoor recreation" as a valuable resource to be inventoried and managed by BLM. 43 U.S.C. § 1711(a). Lands with wilderness characteristics provide opportunities for primitive recreation, such as hiking, camping, hunting and wildlife viewing. Most, if not all primitive recreation experiences will be foreclosed or severely impacted if the naturalness and quiet of these lands are not preserved.

(c) Plant and Wildlife Habitat – FLPMA acknowledges the value of wildlife habitat found in public lands and recognizes habitat as an important use. 43 U.S.C. § 1702(c). Due to their unspoiled state, lands with wilderness characteristics provide valuable habitat for wildlife, thereby supporting additional resources and uses of the public lands. Wilderness quality lands support biodiversity, watershed protection and overall healthy ecosystems. The low route density, absence of development activities and corresponding dearth of motorized vehicles, which are integral to wilderness character, also ensure the clean air, clean water and lack of disturbance necessary for productive wildlife habitat.

(d) Cultural Resources – FLPMA recognizes the importance of "historical values" as part of the resources of the public lands to be protected. 43 U.S.C. § 1702(c). The lack of intensive human access and activity on lands with wilderness characteristics helps to protect these resources.

(e) Economic Benefits – The recreation opportunities provided by wilderness quality lands also yield direct economic benefits to local communities.

Although the BLM is legally obligated to ensure that its actions do not impair wilderness values and qualities, allowing the development in SEZ and variance areas near wilderness

directly and indirectly impacts all of the above listed characteristics. Even worse, the BLM admits that wilderness quality lands exist within some SEZ, even though it claims these SEZ are "low resource conflict areas". For example, the Riverside East SEZ includes a 12,000 acres area showing wilderness characteristics:

> A recent inventory of wilderness characteristics has identified an area of about 20,000 acres (81 km^2) that possesses wilderness characteristics located on the valley floor adjacent to the foot of the eastern side of the McCoy Mountains. This area contains numerous channels that are tributary to McCoy Wash and is part of the area identified as desert tortoise connectivity habitat. Portions of the area likely would be classified as microphyll woodland because of the density of ironwood present. Approximately 11,925 acres (48.3 km^2) of this area is located within the boundary of the proposed SEZ (Figure 9.4.3.1-1).

PEIS vol 2. 9.4-8. The figures of 20,000 acres for the entire area with wilderness characteristics and the 11,925 acres with wilderness characteristics within the proposed SEZ are well above the five thousand acre minimum size for wilderness as defined in the Wilderness Act of 1964. 16 U.S. C. 1131-1136 2(c)(3)

Western Watersheds Project protests the BLM's failure to consider the effects of climate warming around industrial scale solar development on sensitive resources. We repeatedly asked the BLM to consider the effects of the proposed power plants on climate and on carbon sequestration. Large scale alterations of desert habitat such as solar farms alter local albedo, elevate local thermal environments, and thus increase extinction risks for lizards and other species (Sinervo, 2012[5]).

Western Watersheds Project protests the BLM's allowance of solar development in variance areas outside of SEZs (approximately 19 million acres). The program alternative allows for utility scale solar development in variance areas outside of SEZs (approximately 19 million acres). The variance that allows developers to build power plants on approximately 19 million acres of public lands outside the SEZ completely undermines any credibility behind the BLM's argument for designating SEZ in the first place.

The BLM is responsible for preparing and maintaining, on a continuing basis, a current inventory of the public land and its resources (FLPMA, 43 U.S.C. 1701 Sec.201 (a)). This inventory information, along with monitoring data collected under a variety of programs, shall be used to evaluate the current status and trends of plants and animals and their habitats on BLM-administered lands, and to respond to FWS and/or NMFS Federal Register Notices of species status review (e.g., 90-day, 12-month, 5-year, and annual candidate reviews). BLM Manual 6840 at 1B1a. The BLM must therefore define important connective habitat for all special status species found in the six western states that will potentially be affected under the variance

[5] Sinervo, B. 2012. Climate Forced Lizard Extinctions Are Coupled To Dieback Events and Successional Change In Plants. Abstracts of the SCB North American Congress for Conservation Biology. Oakland, California. Page 203. Available online at: http://www.xcdtech.com/SCBNA/abstractbook/NACCB2012_Final_Abstracts_Book.pdf

propgram, including bighorn sheep. Without this information, the BLM cannot provide assurance that its action will "minimize the likelihood of and need for listing of these species under the ESA." *Ibid*. at .02.

Western Watersheds Project protests the BLM's failure to consider modifying RMPs to allow for grazing allotment buyout and voluntary relinquishment to provide opportunities for impacts to special status species and their habitats. In our various comments, we proposed that BLM modify the affected RMPs to specifically allow the voluntary retirement of grazing allotments as compensatory mitigation for impacts to special status species and their habitat. Senator Feinstein recently authored legislation authorizing a similar process throughout the California Desert Conservation Area. The Solar PEIS should be modified to include language for all alternatives that will programmatically modify all subject RMPs to allow for buyout and voluntary relinquishment of grazing allotments for conservation purposes. This would both reduce cumulative effects on sensitive resources by removing livestock and would provide opportunities for meaningful mitigation to offset impacts from energy projects.

Conclusions and Relief Sought

The BLM's Solar PEIS is in error for the reasons stated in this protest and the attached comment letters. The BLM has failed to analyze a reasonable range of alternatives in the FEIS, has failed to minimize environmental impacts, has failed to take a hard look at the environmental impacts of each alternative, has failed to demonstrate that proposed mitigations are adequate to compensate for the impacts, and has failed to respond to public and agency comments. To correct these problems, Western Watersheds Project requests that BLM revise the FEIS to comply with all applicable laws and regulations and then re-circulate that revised document for public review.

Sincerely,

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Thank you for your comment, katie fite.

The comment tracking number that has been assigned to your comment is SolarS50133.

Comment Date: July 7, 2008 12:01:38PM
Solar Energy Development PEIS
Comment ID: SolarS50133

First Name: katie
Middle Initial:
Last Name: fite
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Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

July 7, 2008

To:

http://solareis.anl.gov/involve/comments

Solar Energy PEIS Scoping
Argonne National Laboratory
9700 S. Cass Ave. – EVS/900
Argonne IL 60439

Dear BLM, Here are comments of Western Watersheds project on the Programmatic Solar EIS that you are preparing. We may be submitting additional comments.

We have submitted many of these comments in association with the Westwide Energy Corridors EIS. There are striking parallels to the effect the DOE Corridors (and associated rampant wind and other "renewable" mega-projects would have on the sagebrush biome, and the effects these proposals would hae on the Mojave and other southwest desert areas.

Of particular concern is the devastating impact solar projects built on public lands would have on species like the desert tortoise, and other increasingly rare and imperiled native biota.

As part of this Solar EIS process, BLM/Argonne (who we note is in charge of BOTH the DOE Corridors and this EIS) must fully examine a broad range of alternatives. It is clear the Solar and DOE processes are inter-linked, and alternatives that site any facilities much closer to urban areas, that focus on private land development, and that focus on de-centralized energy and home or other solar generation must be fully explored.

Please incorporate the full range of ecological concerns (such as habitat loss and fragmentation for solar-targeted lands biota), the tremendous ecological footprint of a host of linked developments – ranging from powerlines to road networks that these projects would spawn) to this Solar process.

Please fully consider the full range of cumulative effects of

Please also examine the national security threats pose by large-often foreign-owned or financed corporations/consortiums/entities controlling power production on remote public lands. This makes it much easier for process to be manipulated, consumers, gouged, and America's energy supply be much less secure.

What is the full disturbance and fragmentation Footprint for these facilities for species lie the desert tortoise? Especially in a landscape faced with increasing human development, sprawl, military base expansions, threats of brome grasses that thrive on disturbance drastically altering fire cycles, and other ongoing or foreseeable threats?

How will these facilities promote expansion of brome and other weeds? How many areas where these facilities are placed would be grazed by public lands livestock? What are the cumulative adverse effects of livestock grazing?

How will dust stirred up and promoted by livestock grazing disturbance to sites upwind of solar facilities affect solar power generation? Will dust collect on solar panels? As a climate sidenote: Recent studies show the adverse effects of livestock-generated dust deposition on speeding up snow melt.

How will siting of giant solar complexes alter localized weather and other patterns? We understand that vast areas of arid lands will be bladed/bulldozed – cleared of vegetation, paved and solar panels placed. This will certainly alter local winds, local temperatures, and have other effects.

Please describe the current structure of the solar industry –and parties involved in mega-projects vs. small projects.

What areas, close to cities and close to existing grids, would provide suitable solar sites?

Please consider alternatives that would fully bury powerlines in association with any of these facilities.

As with the USFWS Interim Guidelines for Wind Facility Siting, an appropriate set of guidelines must be drawn up and this EIS under all alternatives must establish a careful and systematic process to evaluate ecological and other impacts of facility siting. Under all alternatives, prohibition of solar facility development in biologically, culturally, or other "sensitive" areas and important habitats must be mandatory.

As mitigation here – please require purchase of private lands with important biological values, as well as pubic lands grazing permits and permanent permit retirement for the specific region where any facility might be built.

Will these arrays - and any shine, reflection or other effect from arrays somehow attract wildlife, and be detrimental in affecting migration, or other behavior?

How much power will be lost in remote siting, vs. siting closer to metro areas and/or emphasis on local and more self-sufficient generation of solar and other power? How might local or self-sufficient generation of power alleviate or reduce rolling black-outs, and other effects of an overloaded centralized grid?

Please compare apparatus and effects of large solar arrays vs. smaller home units.

Again, please apply these comments and the concerns expressed in WWP's comments on the DOE Corridors EIS (See Below) to this process as appropriate.

Sincerely,

Katie Fite
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Western Watersheds Project
PO Box 2863
Boise, ID 83701

February 14, 2008

DOE West-wide Corridor PEIS
Argonne National Laboratory
9700 S. Cass Ave., Bldg. 900, Mail Stop 4
Argonne, IL 60439

Dear DOE,

Here are amended comments by Western Watersheds Project and the Idaho Wildlife Federation on the West-wide Energy Corridor PEIS. This EIS would authorize 6,055 miles of Energy Corridors that are 3300 feet (3/4 of a mile wide) ripped across some of the most remote areas of the American West. 61% of the project area has existing rights-of-way (either utility and/or transportation –DEIS at 2-43) – but large portions do not. Plus, a road right-of-way is nowhere near ¾ mile in width as these corridors are. In many areas with existing rights-of-way (Nevada, Oregon critical sagebrush habitats for example), roads or powerlines may currently exist, but they are relatively small (two lane) and do not open the door to colossal development of public lands as the Westwide corridors will.

WWP has also previously submitted comments as part of this process. We ask that all those comments be carried forward, and

applied to this EIS. Plus, we are Attaching comments and letters on SWIP, Browns Bench/China Mountain, Cotterell wind development, and other energy projects that demonstrate the very significant ecological problems with the type and manner of large industrial development in wild land or remote areas of public lands and critical sage grouse and pygmy rabbit habitats that this EIS is designed to facilitate.

We are dismayed that DOE could not be bothered to provide sufficient Hard Copies of the EIS. Sufficient copies were not printed to be provided to the public, and that some parties - even government agencies – are being charged for documents. This appears designed to limit both public agency and private landowners and citizens whose interests are affected by this mega land grab that lays down a network to facilitate fragmentation and mega energy company exploitation of some of the West's most important wild and currently undeveloped landscapes.

Critical information is absent from many of the maps. The DEIS fails to show all existing powerline, utility or other corridors in or near these areas, and across the Interior West. This is necessary to understand the full level of cumulative effects of additional development, and to rationally develop a range of reasonable alternatives. It also fails to show a plethora of highly foreseeable proposed new energy lines that may be punched across critical sage grouse habitats (examples: Ruby, Spectra Energy Bronco, etc). There is no requirement that any energy company or utility use the DOE corridors – in fact a company could get a right-of-way right beside this ¾ mile swath. In our discussions of SWIP leg with BLM officials, we have been infirmed that MULTIPLE corridors may need to be designated – just in that area alone if all the industrial energy developments of public lands that is anticipated happens. Why designate this massive corridor if additional mushrooming corridors, even in the same area can be obtained at any time? Or –if distance separation is needed between various energy conduits in the corridor and ¾ mile won't even suffice – DOE must also fully address this issue.

We are dismayed at either the purposeful gross mistakes and inaccuracies of the DEIS or purposefully misleading presentation – all, apparently, designed to underestimate the impacts of corridor designation and bias outcomes. For example, DEIS at 3-91, Table 3.5-6 claims that only 15 or so "named streams and canals" in Idaho are crossed by Corridors. This is wildly off. What scale of map is this based on? A view from the Moon? For example, the Corridor in Owyhee County crosses many more named streams. The title of the Table is "Aquifer systems" - aquifer systems do not in any way adequately reflect the number of perennial and intermittent streams these Corridors cut across. When this deficient info is carried forward into a summarized effects analysis (EIS-25), it is clearly mis-represented as the number of perennial and intermittent drainages and canals. As will be discussed later, the same applies even to the estimation of foreseeable wind energy development sites, which is grossly under-estimated in association with the Corridor.

The DEIS fails to consider an adequate range of alternatives, including those focused on locally generated and locally used power – instead of transport (and much associated loss of electrical power) across long-distances ripping apart critical big game winter ranges, sage grouse habitats, pygmy rabbit habitats, loggerhead shrike habitats, cultural and historical sites, landscapes and ecosystems critical to the integrity of National Parks and Monuments, ACEC, WSAs and Wilderness Areas, etc.

There is also no adequate analysis of how these mega corridors that are to serve as the basis for siting hideous polluting coal or other plants, as well as dynamiting public lands to carve out mega corporate-owned wind farms, will devalue private lands and negatively impact the human residents of the region.

Adverse impacts to residents and wildlife and potential health hazards include: Gas explosions and release of all kinds of toxic fumes, routine venting or other operations release of toxic chemicals, herbicide use along huge disturbed corridors and the disturbance associated with the development that will be spawned, pollutants associated with linked/facilitated coal plants and other development, spills or leakage of all manner of nasty chemicals ranging from PCBs to chemical solvents, ground and surface water contamination from materials transported when lines break or rupture, chemical contamination from materials/substances transported or spilled/leaked by the uses of the pipeline, or that may contaminate water used or "run-through" or re-injected in association with geothermal or other development that will be spawned. There may also be cumulative impacts of herbicides and chemicals used with roadways in areas where the Corridor and road r-o-w-s overlap.

There is no analysis of the necessary reduction in livestock AUMs across the entire public lands path of the pipeline. Infrastructure placed into this corridor, and all of the roading and facilities including those potentially fenced, that would be associated with this uses of this mega swath will remove or reduce available livestock "forage" across thousands of miles of the interior West. Necessary AUM reductions will have to occur on all associated public lands grazing permits.

Understanding of the current ecological health of all pubic lands grazing allotments in and near this mega corridor will also be necessary in order to conduct a necessary NEPA analysis of all the direct, indirect, cumulative, and additive/synergistic adverse effects of this pipeline – on top of chronic grazing disturbance. It is necessary to understand the effects of the additional disturbance associated with the pipeline, which may be much more likely to result in new invasive species problems in landscapes already degraded and disturbed by livestock, and thus "primed" for invasions. See Fleischner (1994), Belsky and Gelbard (2000), Gelbard and Belnap 2003.

A Supplemental EIS is clearly required to fully address the effects on public lands of this tremendous new Corridor disturbance on top of the adverse effects of habitat degradation, loss and fragmentation caused by livestock grazing, and often linked wildfire, roading, vegetation "treatments" and other disturbances. Please see Fleischner (1994), Belsky et al. 1999, Belsky and Gelbard

2000, USDI BLM 2001 Belnap et al. Technical Bulletin on microbiotic crusts) to understand just some of the broad array of adverse impacts from livestock grazing that chronically occur across many portions of the corridor and areas where new development would be promoted. If portions (or all?) of this corridor is not fenced off – then how will livestock grazing be dealt with? How will it be possible to rehab disturbed Corridor lands (soils, microbiotic crusts, native vegetation communities, fragile habitats) with continued chronic grazing disturbance? There is no annual monitoring, Ecological Site Inventory, Rangeland Health, allotment evaluation, lentic or lotic PFC monitoring or examination of condition of aquatic habitat components or other data essential to understand the current condition of the lands the Corridor slices across.

All of this is necessary to understand both indirect and cumulative impacts, as well the feasibility or likelihood of any rehab of disturbance being successful, risk of weed invasions with disturbance, current chronic grazing disturbance and degradation stressors on sage grouse and other habitats. There is no baseline information provided on the existing livestock facilities that serve to degrade or fragment essential species habitat components across the Corridor and landscape impacts – this includes livestock fences, water developments (spring "development" and de-watering projects, water pipelines and troughs, wells) salting sites, etc. – all of which may have spawned an extensive road network over time and are also deleteriously affecting sage grouse, pygmy rabbit and other important and sensitive species habitats. Fleischner (1994), Frelich (2003), Connelly et al. 2004. This is also essential to understand the impacts additional fencing, roading and other development that the Corridor projects and linked wild land industrial developments would spawn.

There is not adequate mitigation or other action associated with this EIS to adequately address the deleterious effects of pipeline, powerline, transformer station, new or expanded roading, etc. associated with placement construction and maintenance disturbance. This will be amplified by livestockdegradation of the corridor area and its surrounding areas where development will be promoted. This is essential to understand, because any disturbance effects of livestock grazing are likely to be exacerbated by global warming processes. Global warming is also likely to increase cheatgrass and other invasive species problems resulting from Corridor and livestock disturbance. This will lead to further altered wildfire cycles (Whisenant 1991, Billings 1994) related to corridor projects and grazing. See Pellant 2007 USDI BLM Congressional Testimony. How much will the risk of wild land fires (and thus significant losses of habitat) increase with Corridor development? Wildfires that start due to construction and operation accidents (raptor collisions with lines, explosions, maintenance or operation of vehicles, etc.) may spread well beyond the Corridor and affect a vast area of important and critical habitats for ESA-listed species and sensitive species like sage grouse and pygmy rabbit.

Fences (livestock or corridor-related or r-o-w associated) may have serious adverse effects on mule deer, elk, bighorn sheep, antelope, sage grouse, and many migratory bird species (Connelly et al. 2004). How many miles of fencing will be associated with this pipeline – under a range of development scenarios? How will that block or impede big game use and movement – including during periods of snow accumulation when any supposed "wildlife friendly" spacing will not be "friendly", movement to seasonal ranges, etc. Where are all critical or seasonal ranges located in the landscape impacted? During nesting season for migratory birds, any Corridor or linked facility fences - as well as Corridor power lines, gas lines, compressor stations, etc. – will provide even more elevated perches for brown-headed cowbird nest parasites on species like sage sparrow, Brewer's sparrow, sage thrasher, loggerhead shrike, etc., or perches for egg predators like ravens, or predators on nesting birds.

Plus, as DEIS Appendices show, the Corridors slice across or impinge on Wildlife Refuges, Wilderness areas and other important wild lands. Note: We can find no mention of Forest Inventoried Roadless Areas. Placement of high tension lines in or near Wildlife Refuges, sage grouse leks, migratory bird flyways, etc. may have serious adverse impacts to migratory birds – and result in mortality and population losses, including of birds that breed in Canada, and are internationally significant. Where are all known migration corridors or pathways? Please conduct necessary baseline studies to determine migratory bird routes, especially in the Great Basin and other areas where such routes may be less known. What percentage of the population of each species may use each route? How might this Corridor, and also the development that may be spawned such as industrial wind farms on remote ranges affect population viability?

All of this must be determined NOW in a comprehensive EIS analysis– as many of the Land Use Plans to be amended contain specific protections for big game and sensitive species, as well as some wildlife species "forage" allocations and population goals. The consequences of any Amendment can not be understood unless current and comprehensive wildlife information is provided.

Please provide a full and detailed analysis of how any rehab of disturbed areas would occur, how any rehabbed areas would be protected from grazing – will entire pastures be closed? – or more fencing built? Will native species only be used in any site rehab? How will global warming impede rehab of Corridor disturbance zones? This is no small question – because invasive species like cheatgrass (promotes wildfires – see Billings 1994) and tumbleweeds thrive in disturbed areas. Windblown tumbleweeds and tumblemustards at times endanger motorists on roads, clog fences, heighten fire danger, etc.

There is no detailed analysis of the adverse effects on health and safety of motorists on federal, state, and local highways in the area of these corridors. What dangers does the infrastructure foreseeable here pose? Besides windblown weeds - What effects might fencing have in concentrating livestock or big game use on roadways? What exposure will passing motorists have to herbicides used to control weeds thriving in corridor disturbance zones? Please note that the BLM Weed EIS (Vegetation Treatment EIS) is considered by many to be greatly inadequate in addressing ecological and human and wildlife health concerns related to the use of a great number of herbicides across public lands. Will corridors be blocked off from motorists – or will all of the roading necessary to construct and maintain the corridor infrastructure

How will this (especially transmission lines) affect the safety of small plane operation, and landing at smaller airstrips across this vast area? This can have ramifications for emergency medical service on remote areas, state or federal agency monitoring of land conditions or wildlife populations, wildland fire fighting, and many other increasing uses of small plane airstrips.

There is no discussion or analysis of the current ecological health or importance of all the lands that will be affected by this swath, or the lands where new development is likely to occur as a result of this corridor. This is important not only to understand the difficulty of any rehabbing and the likelihood of invasive species dominance, altered fire cycles, etc. with Corridor development, but also to understand the relative scarcity/tremendous ecological importance – of tearing apart the remaining less developed landscapes and habitat areas especially in shrubsteppe, salt desert shrub and other arid habitats. Landscapes will be fragmented and torn apart once the Corridor infrastructure is in place. Example: Figure 2.2.4 shows areas of potential wind development in remote areas. We stress that this map seems to be greatly understating possibilities – vs. western Wind Potential maps that we have often seen! Such wind development - as by mega often foreign-owned corporations like RES UK to export power to Las Vegas or some other big city (as discussed below, see Attached Times-News 2008 article on Browns Bench (China Mountain). However, the real point here is that the lands in the Owyhee region of Oregon and Idaho shown for Potential Wind Energy contain some of the largest remaining relatively intact blocks of shrubsteppe habitat. This was shown in ICBEMP and other analyses (Wisdom et al. 2002, Connelly et al. 2004). Siting this mega Corridor that will promote huge corporate and potentially foreign-owned wind facilities in remote areas of the Owyhee Canyonlands would doom sage grouse, pygmy rabbit and other imperiled wildlife species populations in one of the few remaining "core" population areas. Please conduct a full-scale analysis of the effects of this development on short term, mid term, and long-term viability of all BLM sensitive species populations, and the significance of these core habitat areas and populations to the species as a whole (see Wisdom et al. 2002, Connelly et al. 2004 as a starting point for this analysis).

We again note that the mapping in Figure 2.2.4 (page 2-17) greatly underplays areas of potential wind development – including large areas of Nevada BLM lands where MET towers may already be placed, and where wind facilities have been discussed. Perhaps this is being done to minimize public understanding the tremendous damage that would occur with the long north-south leg of the Corridor associated with the greatly inadequate SWIP segmented EAs being conducted in bits and pieces to also minimize public understanding of the full effects of energy corridor development in the West?

There has been a large amount of discussion and promotion of wind energy development on remote public lands in areas in and near the SWIP swaths. Ely and Elko BLM know this – why have you not included that here? The windy ridges and plateaus (both in the area colored purple on your map as well as across of the Nevada landscape that you have omitted) lands are critical to maintaining viable populations of sage grouse and pygmy rabbit. They are also critical migration corridors for migratory birds, and placement of hazardous powerlines, wind facilities, likely lighting that may lure some species during migration, etc. would have international significance – as these serve as migration corridors for raptor, migratory songbird and perhaps bat movement north to Canada and south to Mexico. The bottom line is that the EIS appears to have purposefully downplayed the linked and foreseeable industrial wind farm development areas to cover up the tremendous ecological footprint that these corridors would have.

Figure 2.2.4 does, however, show areas of "Potential Geothermal Energy Development". This includes the entire range of sage grouse and pygmy rabbit in Nevada including the Nevada Owyhee Canyonlands, the SWIP zone of development north-south through Nevada, significant wild and undeveloped areas of Oregon including the Trout Creek, Alvord Desert and Steens region and portions of the Owyhee. It also includes large swaths of the Jarbidge BLM lands, Bruneau BLM lands, and much the northern Snake River Plain and portions of the Idaho batholith. Anything that facilitates industrialization of this landscape will have a tremendous adverse impacts to sage grouse, pygmy rabbit and other important and sensitive species in this region, as well as rare aquatic biota.

Development of geothermal energy facilitated by this Corridor would have a broad array of adverse effects to wildlife, recreational uses of public lands, and potentially even agriculture. For example, the Bruneau snail is an ESA-listed species that is tied to hot water springs in the lower Bruneau River watershed. It is already on a trajectory headed towards extinction due to Simplot and other large irrigators depleting ground water. Further tapping into or altering geothermal waters would accelerate aquifer depletion and snail extinction. Geothermal development would also deplete, alter and potentially destroy important recreational hot springs, or areas with important cultural importance to Native Americans.

Large geothermal facilities themselves have a significant Footprint on the environment, and lead to further habitat loss, alterations and fragmentation. The Footprint includes new and/or expanded road networks to facilities, new spur powerline corridors – and all the adverse effects associated with these - from elevated perches for sage grouse nest predators or pygmy rabbit predators in livestock-degraded landscapes that have suffered extensive alteration of shrub structure and denser sagebrush - to weed invasions from disturbed areas choking pygmy rabbit habitats. There is also greatly increased human activity (including during sensitive wildlife wintering, birthing or nesting periods) associated with siting energy facilities in remote areas, as well as increased wildlife mortality on roads, or from collisions with infrastructure.

As this EIS will result in new roading, new development, transport or use of hazardous substances and environmental pollutants/contaminants, a broad array of effects on ground and surface waters may occur. These effects range from increased sedimentation (for new or expand road networks) that pollute and clog endangered or sensitive salmonid, springsnail or other habitats, to pollution/contamination from PCBs, petroleum products, herbicides, etc. contaminating ground and surface waters – with impacts to aquatic species, wildlife, human populations especially rural well water users, and even wild horses.

Construction of new roads or facilities with this mega-Corridor will alter hydrological processes, and may affect both ground and surface waters – and a broad range of native wildlife species, and human uses and enjoyment of wild land waters – including fishing opportunities. For example, sage grouse brood rearing, especially in desertified livestock-depleted landscapes is tied to green vegetation on wet meadow and other areas. Roading that alters hydrological flows, or energy development linked to this EIS that depletes ground or surface waters, may have significant adverse impacts to sage grouse.

On top of this, geothermal or other development linked to or spawned by this mega-Corridor will further later or deplete surface and ground waters. Of great importance are the effects of potential depletion on exceedingly scarce spring sources in high desert regions of Nevada, Idaho, Oregon, California. Springs are critical to a broad array of wildlife, and many have already suffered large-scale degradation, depletion and in some cases been killed entirely by the effects of livestock grazing and BLM and forest service "development" for livestock. See Sada et al. 2001, BLM Technical Bulletin, describing the sad and sorry state of many of the region's springs. A Supplemental EIS must fully examine the current condition (including both water quantity and quality and any documented changes over time up to this point) of springs, seeps and riparian areas across the affected landscape. It must then determine the effects of Corridor and associated, linked or foreseeable development on these critical riparian/watershed areas.

Riparian areas across the arid West will be under even greater stress, and facing further flow reductions due to diminished snow pack, increased temperatures, and other factors linked to global warming. How will this Corridor and the linked and foreseeable development amplify global warming effects and losses to riparian areas?

How will development of this corridor affect municipal watersheds?

There is no analysis of the enhanced national security protection for energy (not to mention the energy conservation that could occur) with locally generated and used power vs. this mega swath where many energy structures/facilities would be concentrated.

The effort appears aimed at promoting and continuing large corporate control of the nation's energy supply. Now the Bush administration has run this country into trillions of dollars of debt, at the same time as large energy companies have profited. It is now many of the same giant energy corporations that would most benefit from opening up vast swaths of public land to large-scale corporate energy facility development with this West-wide Energy Corridor DEIS. Many of the corporate entities are foreign-owned or have significant foreign ownership. How can it be considered energy independence, or in the interests of "national security" to push in these mega-corridors – when the energy that is developed will often be controlled by foreign money interests, and thus to an unknown and unassessed degree – subject to foreign control? This seems sort of like the energy equivalent of the Dubai Ports deal. With wind, geothermal or other energy development across pubic lands, even remote areas in the heart of the country will come under control of energy giants. Reliance on this system only facilitates the Enron-type crises engineered for financial speculation and other purposes – and that could run counter to national security.

Plus, this EIS also encourages remote siting of coal or natural gas plants – again something that could only be done with a tremendous investment and under control of a few powerful corporations. It also thus promotes the large-scale environmental ravages of public lands to obtain coal, natural gas, oil shale, tar sands, or other fossil energy.

The bottom line is that part of the purpose behind this appears to be to facilitate and ensure continued large corporation dominance of energy by encouraging remote public wild land "development" that is only likely to occur with massive investments of capital. Under this EIS, both "renewable" – even though it is hard to consider dynamiting an industrial wind facility into a mountain on top of sage grouse leks "renewable"– and non-renewable energy on an industrial scale, and exporting energy across long distances - is the focus. A Supplemental EIS must be prepared to examine the full economic and energy "security" effects of the energy structure of the U. S. that this promotes.

We are also very concerned that sufficient independent analysis of chokepoints and solutions for chokepoints has not occurred. It is in the interests of large energy producers and power companies the may be in league with to claim problems exist where there are none. Look at Enron! We ask that court records and proceedings related Enron be analyzed as part of this EIS to determine any real need, and the way energy companies may currently be gaming the system to claim chokepoints.

A much broader range of alternatives must be developed to focus on smaller, less destructive energy production - and that includes using existing corridors wherever possible. There has been no systematic and fact-based examination of any "need" for the particular swaths of the singl

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Working to protect and restore Western Watersheds

July 15, 2008

Solar Energy PEIS Scoping
Argonne National Laboratory
9700 S. Cass Avenue—EVS/900
Argonne, IL 60439

Filed electronically through: http://solareis.anl.gov

RE: Department Of Energy, Department Of The Interior Bureau of Land Management. Notice of Intent To Prepare a Programmatic Environmental Impact Statement To Evaluate Solar Energy Development, Develop and Implement Agency-Specific Programs, Conduct Public Scoping Meetings, Amend Relevant Agency Land Use Plans, and Provide Notice of Proposed Planning Criteria

Dear Sir or Madam:

Western Watersheds Project's (WWP) California office is pleased to submit these comments in addition to comments that are being provided by WWP offices in other states. Solar energy development is of particular concern in California where over 600,000 acres of have already been proposed for solar energy development in the California Desert Conservation Area (CDCA) alone.

Western Watersheds Project is a non-profit organization dedicated to protecting and improving wildlife habitat, riparian areas, water quality, and other natural resources and ecological values of watersheds throughout the West. Western Watersheds Project has over 1,600 members nationwide with offices in California, Idaho, Utah, Wyoming and Arizona. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve the wildlife, riparian areas, water quality, and other natural resources and ecological values of watersheds throughout the West.

The proposed action in this PEIS is for the Agencies to develop and implement agency-specific programs that will facilitate environmentally responsible, utility-scale solar energy development by establishing environmental policies and mitigation strategies related to solar energy development in six western states (Arizona, California, Colorado, New Mexico, Nevada, and Utah). We fully support adopting an "environmentally responsible" approach to solar energy development and propose the following suggestions to bring this about.

(a) Establish a balanced approach to locating sites for energy development.

The desert southwest is a fragile, delicate ecosystem. Its public lands have been exploited for multiple resources for hundreds of years. Encroachment from development combined with unsustainable consumptive use of its fragile resources has resulted in many once common Mojave Desert animal and plant species becoming listed under the Endangered Species Act, or at risk of becoming eligible for listing. It is important, and absolutely central to the concept of "environmentally responsible", that we manage the remaining resources to ensure that listed species recover, and that candidate species, species proposed for listing, and sensitive species are fully conserved and not threatened by public lands management practices. In addition to following the precept of "environmentally responsible", the BLM is mandated to protect sensitive species [BLM Manual 6840 - Special Status Species Management] and, like all federal agencies, must comply with the Endangered Species Act.

A single solar energy plant may cover thousands of acres from which native plants and animals are permanently excluded. Obviously, multiple solar energy plants will multiply this impact to the desert's flora and fauna. However, multiple developments bring in additional cumulative impacts that must be carefully and fully analyzed.

Adding the impact of the loss of hundreds of thousands of acres of habitat to solar energy development on top of other consumptive impacts such as livestock grazing and off-road vehicle use to which the habitat of many animals and plants is already subject, is both unsustainable and inappropriate. In order to compensate for the presence of solar power plants, the PEIS must provide clear guidance on the need to balance these impacts. The Federal land Policy and Management Act (FLPMA) mandates the BLM to prevent unnecessary or undue degradation of the lands it manages. Accordingly, the multiple impacts of all other consumptive uses authorized by any given land use plan will need to be reduced to the point at which there is a net decrease in cumulative impacts to remaining sensitive and listed species habitat to compensate for the habitat loss. Mechanisms to achieve this could include eliminating uses such livestock grazing from the entire land use planning area.

(b) Locate Solar Developments Outside of the Most Environmentally Sensitive Areas.

To be "environmentally responsible" any solar energy developments must be located outside areas that are environmentally sensitive. Environmentally sensitive sites that must be avoided include:

- Designated and proposed critical habitats;
- Areas of Critical Environmental Concern (ACEC);
- Desert Tortoise Desert Wildlife Management Areas (DWMA);
- Designated species habitat areas such the CDCA Plan's Mohave Ground Squirrel Conservation Area;
- CDCA Plan designated Unusual Plant Assemblages (UPA);
- Desert riparian areas, and important watersheds;
- Other designated conservation areas including habitat that has been acquired to mitigate for impacts elsewhere to listed and sensitive species.

It is especially important that cumulative impacts to habitat for rare endemic, sensitive species (such as the Mohave ground squirrel and other state listed species) receive special

consideration since the scale of this PEIS is such that an inappropriate site location policy could further compromise their status and accelerate their listing which will then effect all other multiple uses of these lands.

The developments must also be sited to avoid impacting these environmentally sensitive areas indirectly. The policy should direct the agencies to avoid locations that will increase habitat fragmentation and result in increased isolation of populations. The policy should require full consideration of the impact of any site on habitat connectivity, and use of the sites by migratory birds and mammals.

The developments must also be sited to avoid decreasing the biodiversity of the land use planning area and thus avoid sites that are "hot spots" of species diversity.

(c) Locate Solar Developments Outside of Culturally Sensitive Areas.

The PEIS must fully conform to the letter and spirit of the National Historic Preservation Act. The PEIS should direct that the various BLM resource areas complete their cultural resource inventories prior to modifying land use plans and designating areas within them as suitable for solar plant development. The PEIS should include a full reckoning of the direct and indirect impacts of the program on our irreplaceable cultural resources. The PEIS should fully document the cumulative impacts of all authorized activities for each land use planning area on cultural, historical, archeological and paleontological resources.

(d) Solar Development Projects Should Include Alternative Project Sites.

The clear presentation of alternatives is the "the heart" of the NEPA process." To be "environmentally responsible" the policy should enshrine the requirement that each solar development proposal should consider multiple project sites in subsequent NEPA analysis, including due consideration of sites outside the jurisdiction of the agency and alternative methods of producing the energy that would be generated. This would help ensure the feasibility of projects by allowing the selection of the environmentally preferred alternative from a full range of alternatives.

(e) Water needs.

The PEIS should include a full review and analysis of the water requirements of these solar power plants and how these water needs will be met. The PEIS should include a full cumulative impacts analysis of all programmatic uses of water in the land use plans it seeks to modify.

(f) Cumulative Impacts of Toxic Treatments and Wastewater.

The PEIS should analyze the cumulative impacts of herbicides and other toxic substances used to control vegetation on the sites on the surrounding habitat and on the water table, and on the watersheds. Likewise, it should analyze the water quality of runoff from the sites following rain and other precipitation events.

The PEIS should fully review and analyze the impacts of wastewater from the plants on the area's wildlife, on the water table and on water quality within the significant watershed. The cumulative impact of any cooling ponds or other waters that offer potential watering sites for ravens and other opportunistic predatory species must be analyzed. The PEIS should be fully consistent with the USFWS "Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise" of March 2008.

(g) Climate change.

According to the Federal Register notice, the BLM will consider and analyze relevant climate change impacts in its land use plans and associated NEPA documents, including the anticipated climate change benefits of solar energy.

It has been established that the Mojave Desert acts as a carbon dioxide sink on a par with grasslands and temperate forests (Wohlfahrt et al, 2008[1]). In order to assure a net climate change benefit, the BLM should require that all solar energy projects demonstrate a clear net carbon dioxide reduction benefit, and that the loss of the project site's carbon dioxide sink capability be factored in to this calculation.

The PEIS should require any land use plan modification to include a full review of that plan's carbon footprint so that in the subsequent NEPA analysis for individual solar energy plants alternative methods of reducing the carbon footprint can be considered.

(h) Preferred locations.

Solar energy plants should be preferentially located on previously disturbed sites. Within the CDCA planning area, sites should only be considered in lands designated as class I. In addition, the sites should be located:

- As near to the point of use of the power as possible to minimize environmental impacts and conflicts.
- Near to existing utility corridors in order to minimize the environmental impacts and conflicts of new transmission lines.
- Close to existing water pipelines to minimize impacts to watersheds and sensitive riparian systems.
- Along major roads or railroads if water needs to be imported to the site, so that water can be trucked or freighted in.
- Placed such that new road development is minimized.

(i) Mitigation and Restoration bonds.

Historically, solar energy plants in the Mojave Desert have had a checkered economic record. For example, following the construction of the solar plant at Harper Lake in San

[1] Wohlfahrt, G., Fenstermaker, L. F. and Arnone, J. A. III. 2008. Large annual net ecosystem CO2 uptake of a Mojave Desert ecosystem. Global Change Biology. 14(7): 1475-1487.

Bernardino County, California the operator filed for bankruptcy. The new operator then baulked at paying the costs of the environmental mitigations that had been a condition of the plant's approval in the first place. This then required subsequent legal action by the agencies to resolve the situation. This could be avoided if mitigation bonds are required up front or are structured so that they are tied to stages of project development.

In addition, the PEIS should develop policies recognizing that these are public lands and require the posting of bonds for the subsequent restoration of any solar plant development site once the life of the project is at an end. There are several, obsolete solar power plants in the Mojave Desert. As more interest is focused on solar technology, the technology itself will also change and improve and we can expect rates of obsolescence to increase. The PEIS should develop a policy requiring the posting of bonds to cover environmental restoration as part of the approval process.

(j) Mitigation Requirements.

The PEIS should consider a full range of alternative mitigation strategies to offset the loss of public resources afforded to the developers of these projects. These should range from "no net loss" of public land whereby an equivalent acreage of private lands and inholdings are acquired by the project developers and conserved in perpetuity, to a fully mitigated alternative whereby private lands and in holdings are acquired at a five to one ratio with use of the replacement lands restricted to conservation purposes only.

We thank you for the opportunity to provide scoping comments on this very important process. Please include Western Watersheds Project's California Office to your list of interested public for future mailings. Contact information for the California Office is:

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Sincerely,

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Working to protect and restore Western Watersheds

September 11, 2009

Solar Energy PEIS Scoping
Argonne National Laboratory
9700 S. Cass Avenue—EVS/900
Argonne, IL 60439

Filed electronically through: http://solareis.anl.gov

RE: Bureau of Land Management. Notice of Availability of Maps and Additional Public Scoping for Programmatic Environmental Impact Statement to Develop and Implement Agency-Specific Programs for Solar Energy Development; Bureau of Land Management Approach for Processing Existing and Future Solar Applications

Dear Sir or Madam:

Western Watersheds Project thanks you for the opportunity to submit additional scoping comments and comments on the maps released as part of the BLM's Programmatic Environmental Impact Statement to Develop and Implement Agency-Specific Programs for Solar Energy Development ("PEIS").

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project has over 1,600 members nationwide with offices in Arizona, California, Idaho, Montana, Utah, and Wyoming. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve wildlife habitats, riparian areas, water quality, and other sensitive resources and ecological values. We submitted scoping comments for this PEIS from our Boise, Idaho Office on July 7, 2008 and from our California Office on July 15, 2008.

The maps are part of the PEIS the agencies are undertaking to facilitate environmentally responsible, utility-scale solar energy development in six western states (Arizona, California, Colorado, New Mexico, Nevada, and Utah). The Solar PEIS will help BLM identify lands appropriate for solar energy development and establish a comprehensive list of mitigation requirements applicable to all future solar energy development on BLM administered lands. As part of the Solar PEIS, the agencies will conduct in depth environmental analyses of 24 solar energy study areas for the purpose of determining whether such areas should be designated as Solar Energy Zones (SEZs), specific locations determined best suited for large-scale production of solar energy.

The Federal Register notice announced that the BLM issued the maps and notice to inform the public of the availability of the solar energy study area maps; to solicit public comments for consideration in identifying environmental issues, existing resource data, and industry interest with respect to the solar energy study areas in particular; and to explain how the BLM will address existing and future solar energy development applications on BLM-administered lands.

The Federal Land Management Policy Act ("FLPMA") mandates the BLM to manage the public lands "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values" and to "manage the public lands under principles of multiple use and sustained yield." The utility-scale solar energy developments envisioned in the PEIS would require landscape level conversion of desert lands into vast industrial tracts. These tracts will be permanently and irreversibly degraded, and will no longer be available for multiple-use. Although the life of the solar power plants themselves is only expected to be 20-30 years, the character of these public lands will be permanently changed.

The National Environmental Policy Act ("NEPA") requires agencies to take a "hard look" at the potential environmental impacts of its proposed actions. The PEIS must fully consider the direct, indirect and cumulative effects of the proposed policy and actions. Further, NEPA directs agencies to "rigorously explore and objectively evaluate all reasonable alternatives" [40 C.F.R. 1502.14] A consideration of alternatives that lead to similar results is not sufficient to meet the intent of NEPA. The PEIS must address all substantial questions raised by the public. The PEIS should present the environmental impacts of the proposal and the alternatives in comparative form based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16). This more sharply defines the issues, provides a clear basis for choice among options by the decisionmaker and the public, and ensures that the choice not be arbitrary and capricious.

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We offer the following comments and recommendations to help BLM comply with its responsibilities under FLPMA, NEPA and other applicable laws; and, include specific concerns related to the PEIS maps. All of these concerns must be addressed if the PEIS is to pass NEPA's required "hard look" at the environmental effects.

1. Criteria Used In Selecting Sites for Utility-scale Solar Energy Development

The southwestern deserts are fragile, delicate ecosystems. In our scoping comments we outlined criteria that should be addressed to ensure that any locations selected for utility-scale solar energy development are sited in an environmentally responsible manner. These criteria include:

(a) <u>Locate solar developments outside of the most environmentally sensitive areas.</u> Environmentally sensitive sites to avoid include: designated and proposed critical habitats; Areas of Critical Environmental Concern (ACEC); Desert Tortoise Desert Wildlife Management Areas (DWMA); designated species habitat areas such the CDCA Plan's Mohave Ground Squirrel Conservation Area; CDCA Plan designated Unusual Plant Assemblages (UPA); desert riparian

areas, and important watersheds; National Landscape Conservation System (NLCS) Lands including federally-designated national monuments; other designated conservation areas including habitat that has been acquired to mitigate for impacts elsewhere to listed and sensitive species; locations that will increase habitat fragmentation and isolate populations; habitat providing connectivity with allowance for climate change effects; areas used by migratory birds and mammals; and, sites that are "hot spots" of species diversity to avoid decreasing the biodiversity of the land use planning area.

(b) Take a balanced approach to locating sites for energy development.
Development of utility-scale, solar energy facilities will transform the lands upon which they are located and preclude most other uses.[1] In order to compensate for the presence of solar power plants, the multiple impacts of all other consumptive uses authorized by any given land use plan will need to be reduced to achieve a net decrease in cumulative impacts to sensitive and listed species and their habitats to compensate for the habitat loss. The loss of the project sites carbon dioxide sink capability should be factored in to these calculations. Mechanisms to achieve this could include eliminating uses such livestock grazing from entire land use planning areas.

(c) Locate solar developments outside of Culturally Sensitive Areas.
Archeological and historic resources are non-renewable. Avoidance of cultural and heritage resources should thus be a key factor in locating study sites.

(d) Consideration of water requirements of solar power plants
Deserts are by definition regions that receive little precipitation and where water resources are at an ecological premium. All power plants require water to function. Construction of utility-scale solar power plants requires extensive engineering that will change hydrological processes. Identifying water needs, how these water needs will be met, impacts to site hydrology, and the cumulative impacts on all programmatic uses of water in the land use plans the PEIS will modify are key considerations. Again, the use of water for these developments must be mitigated by a decrease in other extractive multiple uses, including water developments for livestock operations.

(e) Consideration of the impacts of toxic treatments and wastewater.
The operation and maintenance of utility-level solar power plants generates potentially toxic waste products including herbicides and other toxic substances used to control vegetation, and wastewater. The water quality of runoff from the sites, the impacts of wastewater on surrounding wildlife, vegetation and habitat, the beneficial effects to opportunistic predatory species such as the raven and to invasive plants, and impacts on the water table and on water quality within the significant watershed are key considerations.

(f) Preferred locations.
Solar energy developments should be preferentially located on previously disturbed sites located near to point of use of the power. This will facilitate use of existing utility corridors and transmission lines, will help minimize impacts to watersheds and sensitive riparian systems, and will minimize the need for new water pipeline and new road construction. In Arizona, the BLM

[1] As noted by the BLM in Instruction Memorandum No. 2007-097., other uses of these sites "are unlikely due to the intensive use of the site for PV or CSP facility equipment."

has initiated a pilot project to consider energy installations in areas where there is already substantial disturbance, such as abandoned mine sites. This idea - to repurpose already degraded areas - is far better than initiating degradation on otherwise ecologically-intact lands.

2. Range of Alternatives

The clear presentation of alternatives is the "the heart" of the NEPA process. BLM must fully examine a broad range of alternatives as part of this Solar PEIS process. Alternatives that propose locating Solar Energy Zones close to urban areas, that focus on development on private land, and that focus on de-centralized energy and home or other solar generation should be fully explored. Locating Solar Energy Zones close to urban areas and facilitating private land development will provide for local government engagement by enhancing local revenue sources for them. Locating study areas near to points of use would also allow solar energy developments to be located on previously disturbed sites, near to existing utility corridors, close to existing water pipelines, and would minimize the need for new road development.

To be "environmentally responsible" the policy should enshrine the requirement that each solar development proposal should consider multiple project sites in the subsequent NEPA analyses, including due consideration of sites outside the jurisdiction of the agency and alternative methods of producing the energy that would be generated. This would help ensure the feasibility of projects by allowing the selection of the environmentally preferred alternative from a full range of alternatives. The PEIS should also consider alternatives that constrain the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints.

The BLM must also analyze how the alternatives it reviews comply with FLPMA. The scale of the size of the study sites and areas selected for review under the PEIS are unprecedented. The actions that may take place in these areas are industrial-scale conversions of open desert lands to vast industrial tracts. These tracts will be permanently and irreversibly degraded, and the character of these public lands permanently changed.

The analysis should incorporate the full range of ecological concerns associated with identified study areas and the enormous ecological footprint of the associated developments including power-lines, road networks, increased recreation via enhanced access, and impacts to hydrologic systems. Ecological concerns include direct, indirect and cumulative impacts to wildlife, sensitive species, listed species, rare plants, soils, riparian systems, habitats, cultural resources, and special areas identified in the criteria listed above. The analysis should also focus attention on the risks these massive disturbances place on the surrounding desert from invasive alien plants, changes in fire regimes, and changes in hydrology.

3. Cumulative Effects

In the PEIS, the agencies must consider the proposed actions along with other actions, "which when viewed with other proposed actions have cumulatively significant impacts." 40

C.F.R. § 1508.25(a)(2). A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the actions when added to other past, present, and reasonably foreseeable future actions regardless of what agency [...] or person undertakes such actions." Save the Yaak Comm., 840 F.2d at 721. Under NEPA, cumulative impacts include both direct effects and indirect effects, "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(a).

The PEIS should consider the cumulative effects of all existing, planned and proposed energy developments (including all solar, wind, and geothermal projects), all existing planned and proposed utility developments (including transmission lines and gas lines), all projects that rely on groundwater extraction, all activities authorized under the land use plans to be amended by the PEIS, and global climate change, on all of the sensitive natural, ecological, cultural, hydrological, and geological resources that will impacted by the utility-scale solar developments that will be facilitated by the PEIS.

4. General Comment on the Maps

The maps show both proposed solar energy study areas (blue) and larger areas in light blue that are largely unexplained in the Federal Notice and released maps but based on the map legends constitute areas that would be covered by the PEIS. The BLM should clarify the difference between these areas and identify the criteria by which they were identified. Parts of the study areas and larger identified areas include lands that fall within the sensitive resource criteria that BLM lists in the Federal Register as being removed from consideration. The BLM should use consistent, objective, criteria in reviewing all the areas identified in the maps.

The maps do not include the large number of pending solar development Right-of-Way (ROW) applications. Many of these are in environmentally sensitive areas that undermine the BLM's stated goal of promoting environmentally responsible, utility-scale solar energy development. These current and pending and reasonably foreseeable future ROW applications must be considered in the NEPA effects analysis and should therefore have been included on the maps.

We have addressed the need for BLM to fully consider the direct, indirect and cumulative effects of solar energy development in our scoping letters. Below we outline concerns related to specific state maps. All of these concerns must be addressed in the PEIS if that document is to satisfy NEPA's required "hard look" at the environmental effects.

5. Comments on Specific State Maps

We have reviewed the maps for California, Arizona, Nevada and Utah in the light of the criteria we listed in section 1 above.

California

California gets the lion's share of the acreage of the proposed solar study areas. The maps depict four study areas within the FLPMA designated California Desert Conservation

Area: Imperial East (12,830 acres), Iron Mountain (109,642 acres), Pisgah (26,282 acres), and Riverside East (202,295 acres). The maps also depict vast tracts of land sweeping across the Mojave and Colorado Deserts that are lands being considered for development in the PEIS. Development of these four solar study areas would result in a massive loss of habitat, major fragmentation of entire desert ecosystems and loss of connectivity. This is clearly incompatible with the purpose of the California Desert Conservation Area espoused in FLPMA, that is "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality". Accordingly, the BLM should reconsider all the study sites it has proposed.

Pisgah Study Area:
There are multiple resource conflicts at this study area. Desert tortoise, bighorn sheep, Mojave fringe-toed lizard, raptors, rare plants including white-margined beardtongue, small flowered androstephium and Emory's crucifixion-thorn, and cultural resources would be directly and indirectly impacted by utility-scale projects. A recent study has cautioned identification of this area because of multiple impacts to desert tortoise and bighorn sheep movement.[2] This area provides the only connectivity between tortoises in the Southern Mojave and Central Mojave populations as identified by Murphy et al, 2007[3], and it will impact connectivity between the West Mojave Recovery Unit and the eastern desert tortoise recovery units. The site is immediately adjacent to two ACECs and a Wilderness Study area, and includes part of the Pisgah Lava Flow Research Natural Area. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes. For all these reason, this sensitive and significant area should be removed from further consideration as a Solar Energy Zone.

Iron Mountain Study Area:
There are multiple resource conflicts at this site. The large mapped polygon includes parts of the Turtle Mountains and Iron Mountain which would not appear to even fit the slope criterion BLM claims to have used in identifying the study areas. The polygon includes the southern swathe of Ward Valley, well known to the public from the long-running controversy over the nuclear waste facility that was once proposed. Northern Colorado Recovery Unit desert tortoise populations, bighorn sheep, raptors, hepatic tanager, rare plants including Harwood's eriastrum, and important cultural resources would be directly and indirectly impacted by large-scale projects. The study area abuts a number of Wilderness Areas and provides important wildlife connectivity in the heart of the more remote areas of California's Mojave Desert. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes. For all these reason, this study area should be removed from further consideration as a Solar Energy Zone.

[2] Bare, L., Bernhardt, T., Chu, T., Gomez, M., Noddings, C. and Viljoen, M. 2009. Cumulative Impacts of Large-scale Renewable Energy Development in the West Mojave. Effects on habitat quality, physical movement of species, and gene flow. Masters Thesis. University of California, Santa Barbara. 144 pp. *Available at*: http://fiesta.bren.ucsb.edu/~westmojave/images/Wemo_Final.pdf

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

Riverside East Study Area:
There are multiple resource conflicts at this site in part because the study site is extremely large and sprawls across California's Colorado Desert region. The northeastern portion includes extensive occupied desert tortoise habitat. The entire polygon effectively divides the Northern Colorado Desert Tortoise Recovery Unit from the Eastern Colorado Desert Tortoise Recovery Unit. The proposed study area also includes bighorn sheep, raptor, and sensitive bat habitats, and would impact several rare plant species including Coachella valley milkvetch, jackass clover at Palen Lake, and Harwood's milkvetch. There are important cultural sites particularly those associated with the dry lakes. The polygon also includes Ford Dry Lake and development would impact off-road vehicle use. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes. For these reason, the BLM should reconsider the size and boundaries of this study area. The boundaries should be significantly reduced and the study area restricted to previously disturbed habitat or this sensitive and significant area should be removed from further consideration as a Solar Energy Zone.

Imperial East Study Area:
This study area includes a 1985 occurrence of the endangered Yuma clapper rail (CNDDB occurrence 17) and significant occupied flat-tailed horned lizard habitat. The study area boundaries should be altered to exclude the Yuma clapper rail occurrence and to provide an appropriate buffer to eliminate potential impacts on the hydrology at the occurrence. The study area boundaries should be reconfigured to minimize impacts to the flat-tailed horned lizard.

Arizona

Three Solar Energy Study areas have been identified in Arizona: Brenda (4,321 acres), Bullard Wash (8,201 acres), and Gillespie (3,970 acres). The map also identifies vast tracts of "BLM Lands Being Analyzed for Solar Development in PEIS" throughout southwestern Arizona. This region provides habitat for Sonoran desert tortoise populations. On August 28, 2009 the USFWS issued a positive 90-day finding on a petition to list the Sonoran desert tortoise for which Western Watersheds Project was a co-petitioner.[4] The BLM must consider effects to the Sonoran desert tortoise at all three of the Arizona solar study areas and on the other "BLM Lands Being Analyzed for Solar Development in PEIS." The identified solar study areas are outside of the classified Sonoran desert tortoise habitat, but indirect and cumulative effects will still occur. Desert tortoises must cross ephemeral washes and open flats to move between habitats, and will be affected by the increased road densities, development, and infrastructure that electricity generating plants entail. This is true for all native wildlife species, but impacts to at-risk species such as bighorn, tortoise, and recovering Sonoran pronghorn are a particular concern.

The BLM must provide a careful analysis of the increased potential for invasion and infestation by non-native or noxious species, including Sahara mustard (*Brassica tournefortii*) and buffelgrass (*Pennisetum ciliare*) that would be posed by development. These species have been spreading in recent years, increasing the flammability of desert habitats and displacing

[4] USFWS. 2009. Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Sonoran Population of Desert Tortoise (Gopherus agassizii) as a Distinct Population Segment (DPS) With Critical Habitat. Federal Register August 28, 2009. Vol 74(166): 44335-44344.

native species. This must be considered as a cumulative effect to the ecosystems proposed for development.

All the Arizona study sites are in livestock grazing allotments. We note that in Arizona, the BLM does not routinely evaluate effects to ephemeral drainages or arroyos in its environmental assessments for grazing authorizations. Rangeland Health Assessments conducted on Arizona grazing allotments only consider upland and riparian areas. As such, predicting and monitoring the effects of the proposed solar installations on ephemeral drainages or arroyos will require additional quantitative studies and analysis. Moreover, many of the water developments on Arizona BLM lands are unmonitored and un-assessed for their effects of groundwater and surface water availability. The BLM will need to conduct new hydrologic studies before determining the cumulative consequence of the solar developments.

The Solar PEIS should consider closing livestock grazing allotments as one of the mitigation measures. In Arizona, many of the allotments that would be affected by solar development are not economically or ecologically viable and are only available for infrequent ephemeral use. If the BLM and the Arizona State Trust Land Department worked towards permanent grazing closure of high-ratio acreage, this might help offset the new impacts to desert dwelling species.

Brenda Study Area:
The BLM must consider the cumulative impacts of multiple uses on the Brenda study area, which is within the Crowder-Weisser grazing allotment administered by the BLM. The Crowder-Weisser allotment is classed by the BLM as being in poor to fair condition. This allotment has experienced soil compaction and overutilization. Bouse Wash, critical for wildlife, flows through the study area and its significance should be emphasized and impacts to it analyzed in the PEIS. Additionally, the lands around the town of Brenda have been subject to heavy off-road vehicle use in recent years. The NRCS ecological site guide for the area identifies the susceptibility of the substrate to sheet and gully erosion, and indicates that, once gullied, this deprives the surrounding area of the scant moisture 2-7 inches of annual precipitation provides. The Solar PEIS must fully consider and analyze these concerns.

Gillespie Study Area: The Gillespie study area covers four grazing allotments and is very close to Sonoran desert tortoise habitat. It is also within the viewshed of the Sonoran Desert National Monument and the Signal Mountain and Woolsey Peak Wilderness Areas. This area is home to many significant archeological and historic sites, including rock art and scattered artifacts. This area also provides important bighorn sheep habitat, and the effects of fencing on this species as it crosses between rocky habitats are well known. The Solar PEIS must describe how it plans to mitigate the infrastructure impacts to this species. The cumulative impacts in this area include the nuclear power plant, vast agricultural fields, recreation, and development.

Bullard Wash Study Area:
The Bullard Wash study area is not accessible by major roads. If roads are to be built to develop or maintain the site, the effects of these roads must be disclosed and fully analyzed in the PEIS. The study area occurs on three grazing allotments and is within the habitat of bighorn sheep and

desert tortoise. It is not clear why the outline of the Bullard Wash study area encloses one entire parcel of private land. Please explain how this is feasible in the PEIS.

Nevada

Seven study areas have been identified in Nevada: Amargosa Valley (32,699 acres), Dry Lake (16,516 acres), Delamar Valley (17,932 acres), Dry Lake Valley North (49,775 acres), East Mormon Mountain (7,418 acres), Gold Point (5,830 acres), and Miller's (19,205 acres).

Four of these study areas (Amargosa Valley, Dry Lake, Delamar Valley and, East Mormon Mountain) are in desert tortoise habitat.

Six of the seven study areas are located within BLM grazing allotments: Millers (Monte Cristo Allotment), Gold Point (Magruder Mountain Allotment), Dry Lake (Dry Lake Allotment) Mormon Mountain (Gourd Springs and Summit Springs allotments), Dry Lake Valley (Wilson Springs, Simpson and Ely allotments), and Delamar (Buckhorn and Oak Springs allotments.

The Nevada map shows extensive areas classified as "BLM Land Being analyzed for Solar Development in PEIS". Many of these areas in the northern half of the map include sage grouse nesting, and summer and winter sue areas. The BLM must therefore consider the direct, indirect and cumulative impacts to sage grouse. These areas also include wintering areas for other sagebrush passerines in southern sagebrush, Mojave transition country.

There are many major utility projects underway throughout the area including Southern Nevada Water Authorities' Clark, Lincoln and White Pine Counties Groundwater Development Project, and the Southwest Intertie Project and related transmission lines. These must be addressed in the cumulative impacts analysis for the Nevada study sites.

Three of the solar study areas (Amargosa Valley, Dry Lake Valley North, and Delamar Valley are situated in regions of the state with limited ground and surface waters. These water-related issues make these areas unsuitable for further consideration.

<u>Amargosa Valley</u>:
The Amargosa Valley site lies between Death Valley National Park and Ash Meadows National Wildlife Refuge and is part of the Death Valley regional groundwater flow system.

The 23,000 acre Ash Meadows National Wildlife Refuge provides habitat for 12 species listed under the Endangered Species Act. The refuge was established specifically to protect these threatened and endangered species. Most of the listed species are dependent on aquatic or wetland environments within the refuge. The refuge also includes the National Park Service administered Devil's Hole, the only known habitat for the Devil's Hole pupfish. On November 4, 2008, the Nevada State Engineer issued Order 1197 announcing that new applications to appropriate additional water from the Amargosa Desert basin within 25 miles of Devil's Hole would be denied due to concern over the effect of groundwater pumping on the water level in Devil's Hole. Based on the above, the Amargosa Valley study area should be eliminated from further consideration as a Solar Energy Zone.

Dry Lake Valley North & Delamar Valley:
The Dry Lake and Delamar Valleys are part of the White River Flow System. Groundwater in these two basins has been fully appropriated over-appropriated in down gradient basins. These two study areas are inappropriate locations for solar energy project development due to the lack of groundwater.

East Mormon Mountain & Dry Lake:
Both these study areas include desert tortoise habitat. East Mormon Mountain is immediately adjacent to the Mormon Mesa DWMA and Beaver Dam Slope DWMA in the Northeastern Mojave Recovery Unit. Recent monitoring reports from USFWS indicate that the genetically distinct Northeastern Mojave desert tortoise population appears to be declining. Because environmental stressors are indicated as a reason for this species decline, this area should be withdrawn from further consideration as Solar Energy Zones.

Utah

Three study areas have been identified in Utah: Escalante Valley (6,648 acres), Milford Flats South (6,440 acres), and Wah Wah Valley (3,676 acres).

All three study areas are in pygmy rabbit habitat. The Fish and Wildlife Service is currently reviewing the status of the pygmy rabbit as it considers listing the species under the Endangered Species Act.[5] Milford Flats South is sage grouse habitat. The Fish and Wildlife Service is currently reviewing the status of the greater sage grouse as it considers listing the species under the Endangered Species Act.[6] Western Watersheds Project was a co-petitioner on the petitions that lead to these status reviews.

The three study areas lie within BLM grazing allotments. Escalante Valley is within Butte Allotment, Milford Flats South is within the Minersville allotment group, Wah Wah Valley is in Wah-Wah Watson Allotment.

6. Mitigation Measures

BLM is obligated under FLPMA to "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(d)(2)(a)] Other laws, including the Endangered Species Act, also entail the need for mitigations to minimize impacts. BLM is required to consider measures to mitigate potential environmental consequences in its NEPA analysis. [40 C.F.R. § 1502.16] The NEPA implementing regulations define "Mitigation" to include:

[5] USFWS 2008. Endangered and Threatened Wildlife and Plants: 90-Day Finding on a Petition To List the Pygmy Rabbit (*Brachylagus idahoensis*) as Threatened or Endangered. Federal Register. January 8, 2008. Vol. 73(5): 1312-1313.
[6] USFWS 2008. Endangered and Threatened Wildlife and Plants; Initiation of Status Review for the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. Federal Register. February 26, 2008. Vol. 73(38): 10218-10219.

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.
(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
(e) Compensating for the impact by replacing or providing substitute resources or environments.
[40 C.F.R. §1508.20]

The scale of the degradation and loss of the public lands that could result from the PEIS process is unprecedented, which makes consideration of appropriate mitigation measures difficult. All of the mitigation measures outlined in §1508.20 are applicable to various aspects of solar energy development.

As we have outlined above, a number of the proposed study areas should be dropped from consideration as Solar Energy Zones. The BLM should establish "Best Management Practice" measures to minimize impacts during construction and operation of facilities, and establish requirements for restoration of any transient facilities impacts such as temporary roads. These practices should be incorporated as terms and conditions of any permit issued for energy development projects and they should be conducted at the expense of the operator by third-parties.

In order to compensate for the enormous habitat losses, and the additional direct, indirect, and cumulative impacts to sensitive resources caused by the presence of solar power plants and associated infrastructure, the acquisition of off-site compensation lands will be needed and the BLM will need to reduce the multiple impacts of all other consumptive uses authorized by any given land use plan.

A combination of both acquisition of compensation lands and an overall reduction of impacts will be required to achieve a net decrease in cumulative impacts to sensitive and listed species to offset the habitat loss and other impacts,. In addition, the Mojave Desert acts as a carbon dioxide sink on a par with grasslands and temperate forests.[7] In order to assure a net climate change benefit, the BLM should require that all solar energy projects demonstrate a clear net carbon dioxide reduction benefit. The loss of the project sites carbon dioxide sink capability should be factored into the mitigation calculations.

The BLM should adopt a policy of "no net loss" of sensitive species habitat whereby an equivalent acreage of private lands and inholdings are acquired by the project developers and conserved in perpetuity. Compensation habitat must be of an equal or better quality than the habitat lost to solar projects. The BLM developed a compensation process for projects in desert

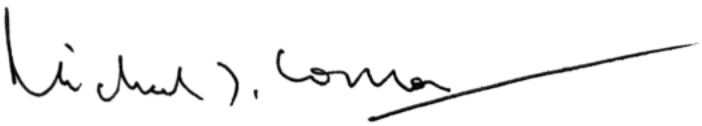
[7] Wohlfahrt, G., Fenstermaker, L. F. and Arnone, J. A. III. 2008. Large annual net ecosystem CO2 uptake of a Mojave Desert ecosystem. Global Change Biology. 14(7): 1475-1487.

tortoise habitat in 1991.[8] The process includes determining values for five factors: category of habitat, term of effect, existing disturbance on site, growth inducement, and effect on adjacent lands. The acreage impacted is multiplied by the sum of these factors to determine the compensation acreage required. We recommend that the BLM use this process for all impacted desert tortoise habitat in Arizona, California and Nevada.

There are opportunities for the BLM to offset impacts by decreasing impacts from other authorized activities on public lands. BLM could change land use designations to more restrictive categories in certain areas and eliminate some uses. For example, the BLM should consider closing livestock grazing allotments as a component of the mitigation measures. The ecological benefits of retiring allotments are high and this action may be easier to accomplish than other proposed management solutions. Livestock grazing is a landscape level impact, and the action area for livestock impacts tends to very large with a footprint indicated by the size of the allotment itself. Removing livestock removes direct and indirect impacts at a landscape level as well as reducing impacts on specific, sensitive resources such as riparian areas, cultural sites, and sensitive species and rare plant habitats. Removal of livestock benefits wildlife by removing negative interspecies interactions, reducing competition for forage, and reducing the risk of spread of invasive plants. Combined with the removal of range improvements, this measure would also help reduce the impacts of other threats such as OHV activities and unauthorized route use by eliminating "attractive nuisances", and would reduce subsidized predators such as ravens and coyotes that use those range improvements. It would also reduce trampling impacts to biological crusts and allow allotment lands to reach full potential as carbon sinks, thus helping to offset the loss of carbon sequestration from utility-scale developments. After the initial buyout, it would potentially reduce BLM costs associated with rangeland management and administration.

We thank you for the opportunity to provide additional scoping comments on the Solar PEIS process. Please continue to include Western Watersheds Project on your list of interested public for future mailings.

Sincerely,



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[8] Hastey et al. 1991. Compensation for the Desert Tortoise. A report prepared for the Desert Tortoise Management Oversight Group by the Desert Tortoise Compensation Team. Approved by the MOG in November 1991. 15 pp., appendices.

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Working to protect and restore Western Watersheds

May 2, 2011

Solar Energy Draft PEIS
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Filed electronically through: http://solareis.anl.gov

COMMENTS ON THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES

To whom it may concern:

Western Watersheds Project thanks you for the opportunity to comment on the Department of Interior Bureau of Land Management ("BLM") and Department of Energy ("DOE") joint Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("DPEIS").

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project has over 1,600 members nationwide with offices in Arizona, California, Idaho, Montana, Utah, and Wyoming. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve wildlife habitats, riparian areas, water quality, and other sensitive resources and ecological values.

Western Watersheds Project recognizes that global climate change poses new challenges to our already stressed public lands. However, while climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and their wildlife. Accordingly, WWP supports responsible development of power plant projects. Responsible development requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant locations. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance or further fragmentation of fragile, native ecosystems. The ecological impacts from renewable energy project development should be fully mitigated with significant and lasting actions.

Western Watersheds Project has actively participated in the scoping process. We submitted scoping comments from our Boise, Idaho Office on July 7, 2008, from our California Office on July 15, 2008, and additional scoping comments from our California Office on September 10, 2009.

In our comments on the DPEIS we have followed the general approach of the DPEIS documents, and address the overall evaluation first followed by some comments on the individual state analyses. Because the mission of Western Watersheds Project is to protect public lands and their resources most of our comments are directed to the BLM.

1. INTRODUCTION, AND PURPOSE AND NEED

Western Watersheds Project does not believe that the best use of any of our Nation's multiple-use public lands is for single-use, industrial-scale energy development, nor do we believe industrial-scale energy development on public lands to be consistent with the Federal Land Policy Management Act ("FLPMA"). We do believe that the federal government should look to ways it can promote distributed energy, and use of brown fields, and other degraded areas within urban areas for industrial production to ensure that as many diverse wildlife habitats and areas of connectivity persist to facilitate changes species distribution due to climate change. That approach best protects and enhances the Nation's water, wildlife, and other natural resources as required by Secretarial Order 3285A1.

FLPMA mandates the BLM to manage the public lands "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values" and to "manage the public lands under principles of multiple use and sustained yield." The utility-scale solar energy developments envisioned in the PEIS would require landscape level conversion of desert lands into vast industrial tracts. These tracts will be permanently and irreversibly degraded, and will no longer be available for multiple-use. Although the life of the solar power plants themselves is only expected to be 20-30 years, the character of these public lands will be permanently changed. FLPMA's mandates should be the primary driver for this planning process.

The DPEIS cites a number of Executive Orders, Congressional acts, and federal agency orders and policies that it states establish requirements for the agencies related to renewable energy development and that provide the drivers for specific actions being taken or being proposed by these agencies to facilitate solar energy development. DEIS at 1-2.

Executive Order 13212: Signed by President Bush on May 18, 2001 this Executive Order states "For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, ***and environmental protections***. (Our emphasis added).

Energy Policy Act of 2005: Section 211 of the Act states, "It is the sense of the Congress that the Secretary of the Interior should, before the end of the 10-year period beginning on the

date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity."

This is a recommendation by Congress, not a mandate. There is no obligatory requirement for the Secretary to do so, nor is there language in the Energy Policy Act that allows the Secretary to short-change environmental protections or identify large slabs of public lands for industrial development. The repeated claim made in the DPEIS that the Energy Policy Act requires the Secretary to approve 10,000 megawatts of new energy plants is simply untrue.

Energy Independence and Security Act of 2007: Section 603 of the Energy Independence and Security Act of 2007 requires the DOE to assess methods to integrate electric power from utility-scale solar facilities into regional electricity transmission systems, to identify transmission system expansions needed to move solar-generated electricity to growing electricity demand centers, and to consider methods to reduce the amount of water consumed by concentrating solar power systems. There is no mandate to use public lands for industrial solar development.

Secretarial Order 3285A1: This amended secretarial order dated February 22, 2010 sets a policy of "Encouraging the production, development, and delivery of renewable energy is one of the Department's highest priorities. Agencies and bureaus within the Department will work collaboratively with each other, and with other Federal agencies, departments, states, local communities, and private landowners to encourage the timely and responsible development of renewable energy and associated transmission ***while protecting and enhancing the Nation's water, wildlife, and other natural resources***. (Our emphasis added). It also calls for development of a strategy for "identifying and prioritizing the specific locations in the United States best suited for large-scale production of solar, wind, geothermal, incremental or small hydroelectric power on existing structures, and biomass energy (e.g., renewable energy zones)."

National Environmental Policy Act ("NEPA") Sec. 1502.13 requires that an EIS specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action. 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 statement of purpose and need is closely tied to the alternatives reviewed in a NEPA process 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 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).

According to the DPEIS:

The scope of this PEIS is limited to utility-scale solar development, in part, because the Energy Policy Act of 2005 and DOI Secretarial Order 3285A1 require that the BLM take steps to facilitate development at that scale (see Section 1.1). The development of distributed generation, small-scale solar energy

facilities, such as roof-top mounted PV systems, is not included in the scope of this PEIS. While such solar energy development will be an important component of future electricity supplies (and is the focus of separate DOE initiatives; see Section 2.5.1), current research indicates that development of both distributed generation and utility-scale solar power will be needed, along with other energy resources and energy efficiency technologies (NREL 2010c). One analysis of available roof space concluded that up to 23% of required electricity supplies could be met with roof-top PV systems, although integrating PV into the electric grid at levels that high could be challenging (Denholm and Margolis 2008). On a per watt basis, small-scale PV systems are more expensive than utility-scale systems (NREL 2010c). DPEIS at 1-4;

The DPEIS states that BLM has identified utility-scale solar energy development as a potentially critical component in meeting the applicable orders and mandates discussed in Section 1.1. However, the DPEIS provides no meaningful justification as to why utility scale solar on public land is a critical component in meeting the listed Executive Orders, Congressional acts, and federal agency orders. It provides no justification for eliminating other alternatives off the bat such as distributed generation, promotion of small-scale facilities, and facilitating the use of private lands (even though Secretarial Order 3285A1 expressly requires "agencies and bureaus to work collaboratively with … private landowners to encourage the timely and responsible development of renewable energy and associated transmission."). The citations provided such as NREL 2010c are not primary references, not comprehensive, and not up to date.

The Purpose and Need section ignores the large amount of public land that is already being developed for solar power plants and the expected amounts of energy that would be generated. In the California Desert Conservation Area alone current solar energy project planning and development that is underway would produce over 19,100 MW from public lands, and a number of additional projects on public lands have been approved in Nevada.

Nor does the Purpose and Need section address the Secretary's clear direction to protect and enhance the Nation's water, wildlife, and other natural resources. Our public lands are the last, best places for native wildlife and rare plants. In the context of climate change, maintaining broad swaths of untrammeled landscapes connected by matrix habitat is the only approach to maintaining the flexibility needed to ensure that the greatest number of species will be able to move and adapt to changing conditions. Fragmentation through solar developments, and the accompanying transmission lines and roadways, reduces the chances of these species survival.

In sum, the BLM's Purpose and Need section is overly narrow and constrained in violation of NEPA, and does not even meet the requirements of many of the orders, acts and policies that the BLM claims to be driving this process.

2. RANGE OF ALTERNATIVES

The selection and clear presentation of alternatives is the "the heart" of the NEPA process. NEPA requires the agencies to evaluate and compare a range of reasonable alternatives.

The BLM considers the following three alternatives in the DPEIS:

(1) A **no action** alternative that continues the issuance of right-of-way (ROW) authorizations for utility-scale solar energy development on BLM administered lands by implementing the requirements of the BLM's existing solar energy policies on a project-by-project basis. Lands available for solar energy development would include those areas currently allowable under existing applicable laws and statutes (approximately 99 million acres in the six-state study area) and in conformance with the approved land use plan(s).

(2) The **proposed action**. A solar energy development program alternative that applies new program administration and authorization policies and design features for utility-scale solar energy development on BLM-administered lands to a subset of BLM administered lands that would be available for solar energy ROW applications (approximately 22 million acres. Within the available lands, the BLM would identify approximately 677,400 acres (2,741 km^2) in solar energy zones, which are lands identified by the BLM as best-suited for utility-scale production of solar energy and where the BLM would prioritize development (as well as development of associated transmission infrastructure).

(3) A **solar energy zone (SEZ) alternative** that applies the same new program administration and authorization policies and design features to utility-scale solar energy development but restricts applications to SEZs only (up to approximately 677,400 acres in the six-state study area).

All three alternatives considered in the EIS would result in similar levels of industrial-scale solar power plant development in the desert and/or would not achieve the stated purpose and need:

Alternative (1) the "no action" alternative would allow development to continue as it currently proceeds. Since all approved projects are now being litigated, this is clearly not an efficient and effective approach;

Alternative (2) the preferred alternative is poorly and incompletely described. It consists of identifying solar energy zones (SEZ) where BLM staff would prioritize applications and an additional, enormous area that would be open for development but where applications would receive a lower priority treatment from staff. The DPEIS does not explain why the BLM even wants to propose opening up 100 times more land than it has identified any need for, nor has staff to handle. How is this going to help the BLM respond in a more efficient and effective manner to solar power plant applications? How does this alternative protect and enhance the Nation's water, wildlife, and other natural resources? In fact, this alternative appears to have been thrown in at the last minute given the statement in the DPEIS that "Only those species that are known to occur in the SEZ regions are discussed in Appendix J because the need for an expanded species analysis by alternative was identified too late in preparation of the Draft PEIS to be accommodated in

this version of the document. It is anticipated that a discussion of all species with potential for impacts under each alternative will be developed between the Draft and Final PEIS." DEIS at RG-8. How could the BLM not be aware of the need to consider the impacts of its proposed action on threatened and endangered species?

Alternative (3) the SEZ alternative is the DPEIS' "Goldilocks alternative". Unfortunately, although it purports to restrict solar power plant development to the designated SEZ, this SEZ alternative is effectively the same as the proposed action since BLM can expand, add, remove, or reduce SEZs in the future.

NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives. BLM's analysis of a limited number of similar alternatives makes this a grossly inadequate range of alternatives.

The BLM has not considered the following alternatives:

(A) A climate change alternative that would exclude all public lands from solar energy development to provide maximum flexibility and opportunity for species and their habitats to survive climate change impacts;
(B) An alternative that would use presence of an endangered, threatened or candidate species as an exclusion in the screening criteria so that SEZ are not designated on habitat for endangered, threatened or candidate species;
(C) An alternative that constrains the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints;
(D) An alternative that focuses development on private land; and,
(E) A distributed energy alternative.

These five alternatives would promote responsible energy production, would minimize or avoid impacts to sensitive resources, and would protect and enhance the Nation's water, wildlife, and other natural resources. BLM has ignored or unfairly dismissed these alternatives.

3. IMPACTS OF SOLAR ENERGY DEVELOPMENT AND POTENTIAL MITIGATION MEASURES

FLPMA § 201 [43 U.S.C. 1711] (a) requires the Secretary to prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values."

Despite this inventory requirement, the BLM states in the DPEIS that for its preferred alternative it was unable to obtain complete geographic information system (GIS) data across the six-state study area and thus could not map the exact footprint of the alternative nor calculate the exact acreage. DPEIS at 2-3. It has compounded this by failing to provide a quantitative analysis

of the cumulative effects of the preferred alternative on listed and candidate species. These obvious, gross deficiencies need to be rectified.

Based on data in Tables 2.2-1 and ES 2-1, the approximate areas by alternative are:

State	Total State	BLM-Administered lands (Acres)		
	Acreage	No Action	Preferred Alternative	SEZ Alternative
Arizona	72,700,000	9,218,009	4,485,944	13,735
California	100,200,000	11,067,366	1,766,543	339,090
Colorado	66,500,000	7,282,061	148,072	21,050
Nevada	70,300,000	40,794,055	*9,084,050	171,265
New Mexico	77,800,000	12,188,361	4,068,324	113,052
Utah	52,700,000	18,182,368	2,028,222	19,192
Total	440,200,000	98,732,220	21,581,154	677,384

*The estimate for Nevada given in Table ES.2-1 is 9,587,828; we do not know which is the BLM's actual estimate.

The scale of the permanent degradation and loss of the public lands and public resources that could result from this PEIS process is unprecedented.

BLM is obligated under FLPMA to "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(d)(2)(a). Other laws, including the Endangered Species Act, also entail the need for mitigations to minimize impacts. BLM is required to consider measures to mitigate potential environmental consequences in its NEPA analysis. 40 C.F.R. § 1502.16. The NEPA implementing regulations define "Mitigation" to include:

> (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
> (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
> (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
> (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
> (e) Compensating for the impact by replacing or providing substitute resources or environments.
> [40 C.F.R. §1508.20]

The scale of the degradation and the potential massive loss of public resources will make development of appropriate mitigation measures extremely costly and difficult. All of the mitigation measures outlined in §1508.20 are applicable to various aspects of solar energy development.

In order to minimize adverse impacts, the BLM should drop many of the proposed study areas from further consideration as Solar Energy Zones. The BLM's siting approach, based on

slope, proximity to utility corridors (which invariable pass through valleys and over bajadas) and existing land use designations has effectively resulted in the targeting of desert tortoise habitat in California, Nevada, and Arizona. The BLM's preferred alternative opens 12 percent of "desert tortoise" habitat to solar development. DPEIS at ES-21. That BLM is even willing to entertain opening up 12 percent of the habitat of any listed species is problematic; that fact that this is the BLM's preferred action is simply outrageous. BLM should reconsider its siting criteria to promote avoidance of listed species.

Section 5.10.5.1 Siting and Design must be modified to include a requirement to avoid species habitat that provides important connectivity between populations, and to avoid habitat that provides important corridors for wildlife movement. Without this, the DPEIS will need to undertake an extensive analysis of impacts to habitat connectivity for all special status species.

High quality Mojave Desert shrublands and high quality sagebrush habitats or those that have good restoration potential should not be developed for solar energy in areas where ESA listed or candidate species and other Special Status Species or rare species occur. This applies in particular to desert tortoise, greater sage-grouse, and Gunnison sage-grouse which require landscape level conservation measures to promote recovery.

In order to compensate for the enormous habitat losses, and the additional direct, indirect, and cumulative impacts to sensitive resources caused by the presence of solar power plants and associated infrastructure, the acquisition of off-site compensation lands will be needed and the BLM will need to reduce the multiple impacts of all other consumptive uses authorized by any given land use plan. The BLM should use the PEIS to modify all subject land use plans to allow voluntary buyout of grazing permits. This would then provide a win-win situation for the developers and permittees. Developers could use buyout to offset site-specific impacts from their projects on wildlife, sensitive species, riparian zones, and other resources; permittees who would have their grazing privileges restricted would benefit from the ability to cash out. The ecological benefits of retiring allotments are high and this action may be easier to accomplish than other proposed management solutions. Livestock grazing is a landscape level impact, and the action area for livestock impacts tends to very large with a footprint indicated by the size of the allotment itself. Removing livestock removes direct and indirect impacts at a landscape level as well as reducing impacts on specific, sensitive resources such as riparian areas, cultural sites, and sensitive species and rare plant habitats. Removal of livestock benefits wildlife by removing negative interspecies interactions, reducing competition for forage, and reducing the risk of spread of invasive plants. Combined with the removal of range improvements, this measure would also help reduce the impacts of other threats such as OHV activities and unauthorized route use by eliminating "attractive nuisances", and would reduce subsidized predators such as ravens and coyotes that use those range improvements. It would also reduce trampling impacts to biological crusts and allow allotment lands to reach full potential as carbon sinks, thus helping to offset the loss of carbon sequestration from utility-scale developments. After the initial buyout, it would potentially reduce BLM costs associated with rangeland management and administration.

A combination of both acquisition of compensation lands and an overall reduction of impacts will be required to achieve a net decrease in cumulative impacts to sensitive and listed species to offset the habitat loss and other impacts,.

In addition, the Mojave Desert acts as a carbon dioxide sink on a par with grasslands and temperate forests.[1] In order to assure a net climate change benefit, the BLM should require that all solar energy projects demonstrate a clear net carbon dioxide reduction benefit. The loss of the project sites carbon dioxide sink capability should be factored into the mitigation calculations. Any requirement for the operation of gas-powered or other fossil fuel power plants to accommodate loads etc should also be factored into the calculation.

The BLM should clearly adopt a policy of "no net loss" of public lands whereby an equivalent acreage of private lands and inholdings are acquired by project developers and these compensation lands are conserved in perpetuity. Habitat quality of compensation habitat must be of an equal or better quality than the habitat lost to solar projects. This would protect and mitigate for impacts for common desert flora and fauna, and would be in addition to any habitat acquisition required to offset impacts to special status species.

4. IMPACTS AND CUMULATIVE EFFECTS

The National Environmental Policy Act ("NEPA") requires agencies to take a "hard look" at the potential environmental impacts of its proposed actions. The PEIS must fully consider the direct, indirect and cumulative effects of the proposed policy and actions. Further, NEPA directs agencies to "rigorously explore and objectively evaluate all reasonable alternatives" [40 C.F.R. 1502.14] A consideration of alternatives that lead to similar results is not sufficient to meet the intent of NEPA. The PEIS must address all substantial questions raised by the public. The PEIS should present the environmental impacts of the proposal and the alternatives in comparative form based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16). This more sharply defines the issues, provides a clear basis for choice among options by the decisionmaker and the public, and ensures that the choice not be arbitrary and capricious.

Emissions and Climate Change Effects

The DPEIS repeatedly states or implies that the use of solar facilities to generate electricity "would displace air emissions that would otherwise be released from fossil fuel-fired power plants." DPEIS at 8.1-163. There is no support in the DPEIS or elsewhere for this statement; the solar power plants proposed in the preferred alternative are apparently *in addition to*, not *in lieu of*, fossil fuel energy generation. Nowhere does the DPEIS discuss the fossil fuel-fired power plants that will be displaced by the construction of the proposed industrialized, decentralized solar power plants proposed here. Even if solar power plants were to displace coal fired plants, additional power generation or extensive storage facilities would be needed to offset

[1] Wohlfahrt, G., Fenstermaker, L. F. and Arnone, J. A. III. 2008. Large annual net ecosystem CO2 uptake of a Mojave Desert ecosystem. Global Change Biology. 14(7): 1475-1487.

the imbalance between solar electric generation which is sunlight dependent and actual demand for power. The DPEIS does not explain how many new fossil-fuel power plants (and their emissions output) will be needed to ensure continuity of energy generation to match consumption.

Effects on Wildlife and Special Status Species

The DPEIS does not take the requisite hard look at impacts to the wildlife, vegetation, and threatened and endangered species in the massive action area for the preferred alternative. This is a major omission that merits recirculation of the DPEIS.

DESERT TORTOISE

The BLM's preferred alternative opens 12 percent of "desert tortoise" habitat to solar development. DPEIS at ES-21. First, this statement does not distinguish between the listed *Mojave* desert tortoise population and the candidate *Sonoran* desert tortoise. Second, this habitat consists largely of the essential matrix habit that connects desert tortoise populations and conservation areas. Third, this habitat includes peripheral desert tortoise populations that may be important in the species' response to climate change. Thus decisions made in this PEIS process could have highly significant consequences for both these taxa. Despite the requirements to do so, the PEIS does not provide quantitative estimates of the size of the impacted population. This is particularly problematic given the BLM's recent need to re-initiate consultation with te USFWS over impacts to desert tortoise at the Ivanpah Solar Electric Generating System project where it seriously underestimated the number of affected tortoises.

Mojave desert tortoises, listed as threatened under the ESA, occur in the affected areas of the following 8 SEZs: Amargosa Valley, Delamar Valley, Dry Lake, Dry Lake Valley North, East Mormon Mountain, Iron Mountain, Pisgah, and Riverside East. Sonoran desert tortoises, candidate species for ESA listing, may occur in the affected areas of the following 3 SEZs: Brenda, Bullard Wash, and Gillespie. These SEZ will directly impact desert tortoises in at least four of the six Recovery Units identified in the 1994 Recovery Plan[2], and may seriously compromise connectivity and gene flow between the Evolutionarily Significant Units of desert tortoise that occupy them.

The BLM needs to analyze the cumulative effects of development on desert tortoise for each alternative. It needs to determine the affected population size, fully analyze the cumulative effects of fragmentation, and fully analyze the impacts to connectivity between desert tortoise genetic units and between desert tortoise conservation areas. Unless additional safeguards are built in, we do not see how the USFWS will be able to avoid issuing a jeopardy finding over impacts to desert tortoise.

GOLDEN EAGLE

[2] Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pages plus appendices.

Golden eagle (*Aquila chrysaetos*) is a fully protected species under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". The DPEIS recognizes that golden eagles use many of the solar power development areas including most of the proposed SEZ as foraging areas.

McCrary et al. 1986[3] studied a small, prototype thermosolar facility. They found that bird mortality occurred through collisions with structures such heliostats and from burning when birds flew through points where energy was focused from the heliostats. They cautioned that "Since Solar One is only a 10 megawatt pilot facility, future project designed to produce hundreds of megawatts will require several thousand heliostats and much taller receiver towers. The greater magnitude of these facilities may produce non-linear increases in the rate of avian mortality when compared to Solar One and extrapolations from this study should be made with caution. The removal of large tracts of desert from biological production for solar power generation and the ecological effects caused thereby should also be of concern." Given the large areas that may be developed, the range of technologies, and the existing database we believe that there is ample information regarding the potential risk to golden eagles, and believe that this program will take golden eagles. BLM should propose avoidance of any take by restricting the areas open to development and by restricting the technologies used to those that do not require structures that may place eagles at risk.

GREATER SAGE-GROUSE & GUNNISON'S SAGE-GROUSE

High quality sagebrush habitats or those that have good restoration potential should not be developed for solar energy in areas where greater sage-grouse and Gunnison sage-grouse occur because these species require landscape level conservation measures to promote their recovery. The cumulative effects analysis does not quantify the impacts to the species populations, nor does it provide a quantitative analysis of the cumulative effect of the transmission lines and fences, and access roads that will be engender by each alternative. These deficits must be addressed.

FISH & AQUATIC SPECIES

Many aquatic species will be affected or may be affected by water drawdown and by water use. However, there is no analysis of the cumulative impacts of water use on fish and wildlife and their habitats within each SEZ.

Livestock Grazing

The DPEIS proposes "Wherever there are reductions in grazing use, opportunities for mitigating this loss through changes in livestock management or installation of range improvements should be considered." DPEIS at 5-12. There is no analysis of the cumulative effects of this proposal on sensitive resources including wildlife.

[3] McCrary, M. D., McKernan, R. L., Schreiber, R. W., Wagner ,W. D. and Sciarrotta, T. C. 1986. Avian Mortality at a Solar Energy Power Plant. Journal of Field Ornithology. 57(2): 135- 141.

Water Resources

Water is one of the most precious desert resources, and maintaining surface waters and flows, and ground water supplies is essential for conserving desert ecosystem function. Developing large tracts of land for solar power plants impact surface waters and groundwater. Many of the desert basins are already in a serious water overdraft situation and the entire western United States is facing serious water shortages under all climate change scenarios. It is critical that the BLM ensures that solar development does not allow unacceptable impacts to both the quantity and quality of water resources and the ecosystems, habitat and species that depend on them. The BLM should require that any water needs for authorized power plants be completely offset by reductions in other uses within the basin.

The DPEIS analysis of the risks of hydrological disruption posed by large-scale power plants is inadequate. The DPEIS should include uniform mitigation and monitoring measures for the ephemeral washes on the public lands. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). In some states, such as California, state agencies assert jurisdiction and require mitigation for impacts to ephemerals streambeds. However, this is not true in Arizona. The BLM must require full mitigation in the form of purchase of replacement ephemeral streambed habitat.

5. CALIFORNIA PROPOSED SOLAR ENERGY ZONES

California gets the lion's share of the acreage of the proposed solar study areas. The maps depict four study areas within the FLPMA designated California Desert Conservation Area: Imperial East (12,830 acres), Iron Mountain (109,642 acres), Pisgah (26,282 acres), and Riverside East (202,295 acres). The maps also depict vast tracts of land sweeping across the Mojave and Colorado Deserts that are lands being considered open development in the DPEIS preferred alternative.

Development of these four solar study areas would result in a massive loss of habitat, major fragmentation of entire desert ecosystems and loss of connectivity. This is clearly incompatible with the purpose of the California Desert Conservation Area espoused in FLPMA, which is "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality". Contrary to the BLM's goal of facilitating siting of solar power plants, the proposed SEZ themselves are located in relatively resource rich locations. This makes them both controversial and inappropriate.

There is a considerable amount of solar energy power plant development already underway in California with 19,100 MW on public lands within the CDCA alone, and the goal of 10,000 MW mentioned in the Energy Policy Act and Secretarial orders has clearly been exceeded. Given the large amount of public land which is already slated for development for

solar power plants in California, the BLM should readdress its purpose and need, and reconsider the need for locating any Solar Energy Zones in the state.

Comments Specific to the Proposed Imperial East SEZ (California)

The proposed Imperial East SEZ includes 5,722 acres of public land. It is located in Imperial County in southeastern California, near the United States–Mexico border between I-8 and State Route 98, and just north of the All-American Canal.

We do not support the designation of the Imperial SEZ. There are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ. It is located immediately east of a cultural ACEC (Lake Cahuilla – C) and immediately southwest of East Mesa ACEC.

Existing transmission lines in the area are inadequate to deal with the assumed output and "upgrades of existing transmission lines would be required to bring electricity from the proposed Imperial East SEZ to load centers; however, at this time the location and size of such new transmission facilities are unknown." DPEIS at 9.1-3.

Cultural Resources: The Imperial East SEZ lies between Lake Cahuilla cultural ACECs C and D and is an area rich in important cultural resources. According to the DPEIS, "One archaeological survey has been conducted within the Imperial East SEZ in the northwest corner of the SEZ." The size of this surveyed area is not provided but appears cover only a small proportion of the SEZ. The DPEIS recognizes that Lake Cahuilla ACECs C and D could be exposed to additional human traffic, resulting in an increased risk of loss of prehistoric resources. DPES at 9.1-6. The Specific Design Feature to deal with this issue is: "Once construction of solar energy facilities begins, the BLM would monitor to determine whether increases in traffic in the ACECs occurs and whether additional management measures are required to protect the resources in these areas." This is inadequate since it only monitors for impacts. The emphasis should be on avoidance. The BLM should survey the entire SEZ for cultural significance prior to making any decision to designate this SEZ. It should establish clear measures to avoid any impacts to the adjacent and nearby ACECs.

Yuma Clapper Rail: The proposed Imperial East SEZ is immediately north of a "wetland" mitigation north of the All American Canal area that provides a nesting location for the endangered Yuma clapper rail (CNDDB occurrence 17). The proposed SEZ includes 44 acres of potentially suitable habitat for the species. The Yuma clapper rail is a California fully protected species. This means that state agencies cannot issue take permits for the species. The SEZ area boundary should be altered to exclude actual and potential Yuma clapper rail habitat and to provide an appropriate buffer to eliminate potential impacts on the local hydrology.

Flat-tailed Horned Lizard: The proposed Imperial East SEZ includes significant amounts of occupied flat-tailed horned lizard habitat. The proposed SEZ falls within the BLM's designated East Mesa Flat-tailed Horned Lizard Wildlife Habitat Management Area and is adjacent to the East Mesa ACEC. The DPEIS estimates that development of this SEZ will have indirect impacts on 9.0% of available potentially suitable habitat in the region. DPEIS at 9.1-133.

The USFWS's recent decision to withdraw its proposed listing decision for the Flat-tailed horned lizard relied in part on the assumption that "the overall acreage of potential impacts from development of energy facilities is likely to be small compared to the total range of the species". FWS 2011[4] at 14228. Designation and development of this SEZ will clearly jeopardize this USFWS assumption. The proposed Imperial East SEZ boundaries should be reconfigured to avoid impacts to the flat-tailed horned lizard or the proposed SEZ should be abandoned.

Bighorn Sheep: The proposed Imperial East SEZ includes bighorn sheep habitat. According to the DPEIS (at 9.1-105), "Because it is a BLM sensitive species, the desert bighorn sheep is discussed in Section 9.1.12." However, there is no mention of bighorn sheep in section 9.1.12 let alone any discussion. Nor are bighorn sheep discussed anywhere else in the proposed Imperial East SEZ write-up with the exception of a mention in the cumulative effects section (DPEIS at 9.1-287) that projects may block bighorn sheep dispersal corridors. This inadequacy needs to be rectified.

Golden Eagle: The DPEIS recognizes that the fully protected golden eagle (*Aquila chrysaetos*) may forage on the proposed Imperial East SEZ. The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". Required upgrades to existing transmission lines may exacerbate the risks of take.

Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should withdraw the proposed Imperial East SEZ from further consideration.

Comments Specific to the Proposed Iron Mountain SEZ (California)

The proposed Iron Mountain SEZ includes 106,522 acres of public land. It is located in San Bernardino County in southeastern California in Ward Valley between an ACEC, the Chemehuevi Desert Wildlife Management Area (DWMA), and state highway 62.

We do not support the designation of the Iron Mountain SEZ. There are multiple conflicts with wildlife and habitat resources associated with this proposed SEZ. It is located immediately south of the Chemehuevi DWMA and provides patches of desert tortoise habitat that provide the connectivity between the Northern and Eastern Colorado Desert Tortoise Recovery Units. It is also habitat for several rare plants including multiple occurrences of Harwood's eriastrum and Harwood's milkvetch. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes.

The proposed SEZ includes the southern swathe of Ward Valley, well known to the public from the long-running controversy over the nuclear waste facility that was once proposed there. Northern Colorado Recovery Unit desert tortoise populations, bighorn sheep, raptors, hepatic tanager, rare plants including Harwood's eriastrum, and important cultural resources would be directly and indirectly impacted by any power plant projects in this area.

[4] FWS. 2011. Endangered and Threatened Wildlife and Plants; Withdrawal of Proposed Rule To List the Flat-Tailed Horned Lizard as Threatened. Federal Register. 76(50): 14210- 14268. Tuesday, March 15, 2011.

The proposed Iron Mountain SEZ overlies the Chocolate Mountains - Turtle Mountains - Ward Valley connectivity area, an essential habitat connectivity linkage which provides habitat for species occupation and movement between ecotypes in the region (Spencer *et al*., 2010). It provides important connectivity and linkage matrix for the desert tortoise, bighorn sheep and other species.

Since designation of the proposed Iron Mountain SEZ is opposed by many state agencies including the California Energy Commission we do not understand why the BLM has continued to waste public resources and not dropped the proposed SEZ from further study. Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should immediately withdraw the proposed Iron Mountain SEZ from further consideration.

Comments Specific to the Proposed Pisgah SEZ (California)

The proposed Pisgah SEZ includes 23,950 acres of public land. It is located in San Bernardino County in southeastern California, about 100 mi (160 km) northeast of Los Angeles. The proposed Pisgah SEZ would be sandwiched between two ACECs, the Ord-Rodman DWMA to the west and the Pisgah ACEC to the east, and the Cady Wilderness Study Area to the north.

We oppose the designation of the proposed Pisgah SEZ. This is a resource rich area and there are multiple resource conflicts which make this area highly unsuitable as a SEZ. Desert tortoise, bighorn sheep, Mojave fringe-toed lizard, raptors, rare plants including white-margined beardtongue, small flowered androstephium and Emory's crucifixion-thorn, other sensitive species and cultural resources would be directly and indirectly impacted by utility-scale projects. A recent study has cautioned identification of this area because of multiple impacts to desert tortoise and bighorn sheep movement.[5] The SEZ is adjacent to known pockets of high desert tortoise density, and this area provides the only connectivity between tortoises in the Southern Mojave and Central Mojave populations as identified by Murphy et al, 2007[6], and it will impact connectivity between the West Mojave Recovery Unit and the eastern desert tortoise recovery units. The site is immediately adjacent to two ACECs and a Wilderness Study area, and includes part of the Pisgah Lava Flow Research Natural Area. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes. For all these reason, this sensitive and significant area should be removed from further consideration as a Solar Energy Zone.

Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should immediately withdraw the proposed Pisgah SEZ from further consideration.

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[5] Bare, L., Bernhardt, T., Chu, T., Gomez, M., Noddings, C. and Viljoen, M. 2009. Cumulative Impacts of Large-scale Renewable Energy Development in the West Mojave. Effects on habitat quality, physical movement of species, and gene flow. Masters Thesis. University of California, Santa Barbara. 144 pp. *Available at*: http://fiesta.bren.ucsb.edu/~westmojave/images/Wemo_Final.pdf

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

Comments Specific to the Proposed Riverside East SEZ (California)

The proposed Riverside East SEZ is the largest of the proposed SEZs in the six-state study area, with a total area of 202,896 acres. It sprawls along Interstate 10 from the Joshua Tree National Park/Desert Center area to Blythe, California.

There are multiple resource conflicts at this site in part because the study site is extremely large and ranges across the heart of California's Colorado Desert region.

We oppose the designation of the proposed Riverside East SEZ. The northeastern portion includes extensive occupied desert tortoise habitat. The entire polygon effectively divides the Northern Colorado Desert Tortoise Recovery Unit from the Eastern Colorado Desert Tortoise Recovery Unit, and development thus threatens to sever connectivity entirely. The proposed study area also includes bighorn sheep, raptor, and sensitive bat habitats, and would impact many rare plant species including Coachella valley milkvetch, jackass clover at Palen Lake, and Harwood's milkvetch. There are important cultural sites particularly those associated with the dry lakes. The polygon also includes Ford Dry Lake and development would impact off-road vehicle use. A number of ACECs are entirely surrounded and isolated by the proposed SEZ. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes.

Because there are multiple resource conflicts with this sprawling proposed SEZ, the BLM should remove this area from further consideration as a Solar Energy Zone.

6. ARIZONA PROPOSED SOLAR ENERGY ZONES

The BLM's preferred alternative opens 7,009 square miles of land in Arizona to solar development, an area 326 times the size of the SEZ-designated lands. DPEIS at ES-6, Table ES.2-1. No other state has such a large percentage of total BLM acres open to solar development as Arizona under the preferred alternative (49 percent), nor such a great disparity between the SEZ alternative and the preferred alternative.

The BLM anticipates that 214,000 acres will be developed within the next 20 years under the reasonably foreseeable development scenario (RFDS). DPEIS at ES-14. This is well within the SEZ acreage of 677,384 acres. DPEIS at ES-6, Table ES.2-1. It is therefore entirely unclear why the BLM's preferred alternative entails opening over ten times the amount of land necessary for solar development under its own projections; the ratio of land under the SEZ alternative meets the criteria the BLM specifies for the preferred alternative, that is "adequate amounts of land available to support the level of development projected in the RFDS and would provide a great deal of flexibility in siting both solar energy facilities and associated transmission infrastructure." DPEIS at ES-29. There is no justification as to why the BLM needs to designate so many acres as open to power plant development.

The SEZ-specific design features for the Arizona SEZs include the development of additional range infrastructure and changes to grazing management to mitigate the loss of AUM that may be associated with the solar developments. Range "improvements"/developments need a separate NEPA process to ensure against adverse effects.

We are concerned with the estimated fresh surface water and groundwater use the solar developments would entail. Arizona is facing serious water shortages under all climate change scenarios, including a tenuous allocation from the Colorado River. Allocating potable water for solar development, either through allowing surface water transfers or groundwater pumping, is giving away precious public trust resources for private development. We do not believe that the DPEIS does an accurate or thorough analysis of the risks of hydrological disruption the proposed action poses to Arizona's public lands. The threats of drawdown are too easily dismissed in the DPEIS. See, for example, DPEIS at 8.1-62. Overdraft in the Brenda SEZ groundwater basin has already caused substantial ecological and geologic impacts from subsidence. If the BLM were proposing to allow solar development on existing in-holdings, urban-adjacent lands, or other areas that might already have infrastructural support for it, the agency could be requiring the use of non-potable water (effluent) in the generation of these "renewable" energy supplies. Given the slow rate of aquifer recharge, we don't believe that the current proposals are truly "renewable."

The DPEIS should be amended to reflect the current status of the Sonoran desert tortoise which is a candidate species for listing. 75 FR 78094-78146, December 14, 2010. The USFWS specifically identified the disturbance anticipated by the Sterling Solar Generating Facility, a solar development not included in the DPEIS and apparently not considered in the reasonable foreseeable development scenario on the Black Mountains desert tortoise population. The USFWS determination that the Sonoran desert tortoise warranted listing discussed the threats from new transmission lines and roads from solar development. The FWS makes plain that solar developments, combined with other threats in the species habitat, makes Sonoran desert tortoise eligible for endangered species status. In the finding, the agency acknowledges that new threats may elevate the species for full ESA protection. We believe that if the BLM goes forward with the locations listed in the DPEIS for Arizona, this alone may compel full listing of this taxon.

The BLM relies up the implementation of programmatic design features to reduce impacts to special status species and, presumably, finds these suitable reductions in the threat to Sonoran desert tortoise as well. However, desert tortoise is a highly mobile species, known to move across large distances and between mountain ranges. *See* Connor and Rosmarino, 2008. Thus, even if the solar installations are not directly on top of tortoise burrows, the impacts within the habitats of this species cannot be dismissed.

While the DPEIS minimizes the scale of the impacts to the Sonoran desert tortoise by isolating the acreage at each SEZ, it is important to acknowledge the range-wide threats this species faces, including the cumulative effects of solar development at other SEZs and on other solar project sites. Where the BLM discusses compensatory mitigation by improving habitats on acquired lands, we propose the agency consider retiring grazing allotments and reducing this known adverse effect in tortoise habitat.

The DPEIS does not include mitigation or monitoring measures for the ephemeral washes on the public lands proposed for development. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). Because the Arizona BLM does not measure or monitor rangeland health attributes in washes, the downstream impacts of the SEZ developments will go unquantified and unmitigated. The BLM must simultaneously develop land health standards and practices that will capture any consequences of the solar developments, with baseline data on the ephemeral wash environment collected before any development takes place. See, for example, the wetlands on the Bullard Wash SEZ; the ecological health of these important habitats would not be monitored under any existing monitoring protocols employed by the BLM. DPEIS at 8.2-68.

Comments Specific to the Proposed Brenda SEZ (Arizona)

The SEZ-specific design features for the Brenda SEZ in Arizona include the development of additional range infrastructure and changes to grazing management to mitigate the loss of AUM on the Crowder-Weisser allotment. DPEIS at 8.1-5. As we suggested in our earlier comments, the BLM should have considered simply allowing for relinquishment of those AUM as well. This is especially pertinent because the Crowder-Weisser allotment provides habitat for the Sonoran desert tortoise, a species that would be adversely affected by additional range developments and grazing concentration areas. By range "improvements," the agency usually means additional water supplies, a cumulative impact that the DPEIS fails to analyze at this SEZ location. DPEIS at 8.1-7.

The DPEIS hints at potential compensatory mechanisms to balance acreage of habitat loss but does not commit to a mitigation program for the solar proposal. DPEIS at 8.1-148. It suggests improving the carrying capacity for tortoise on acquired lands or enhancing tortoise habitat on federal land, but it does not commit to any clear course of action to do so. The proposed action should have specific offsets and actions identified if the BLM expects the public to have any faith in these mitigation measures. For example, the BLM could have used the PEIS to modify all land use plans to allow voluntary buyout of grazing permits

The DPEIS posits a reduction in 315 AUM from the Crowder-Weisser allotment due to the footprint of the Brenda SEZ. DPEIS at 8.1-29. The DPEIS discusses absorption of the AUM on other parts of the vast acreage associated with this allotment. The DPEIS should acknowledge, and the BLM should clarify, that earlier assessments of the rangeland health of this allotment have specifically indicated, "The public lands [of the allotment] do not regularly produce sufficient amounts of forages to sustain a consistent livestock grazing program throughout the allotment." Crowder-Weisser Standards and Guidelines Assessment. The active use on the allotment has been substantially lower than the permitted use for this reason. Therefore, the proposed action should be to simply eliminate the acreage associated with the solar development and adjust the AUM on the permit to the actual forage remaining on the allotment.

We're concerned about the "should" statements in the SEZ-specific design features tables (e.g. "Bouse Wash should be avoided… Tyson Wash should be spanned by the transmission line," DPEIS at 8.1-9). Because these are supposed to be mitigation measures for reducing the impact of solar development on wildlife resources, the DPEIS must use imperative language ("will" and "shall") to make these hard and fast commitments. Without this, the mitigation measures promised in the DPEIS are merely suggested remedies and the contingent effects analysis is meaningless.

We note that the DPEIS only assesses the impact of the acoustic environment on the human communities surrounding the Brenda SEZ. DPEIS at 8.1-14. It does not consider the acoustic impacts of the proposed developments on the native and migratory wildlife species of the region, an oversight that must be remedied before the final EIS. The sonic considerations are not even addressed in the species-specific analysis later in the chapter. See, for example, DPEIS 8.1-152.

In our scoping comments, we specifically raised the issue of invasive species infestation in the Brenda SEZ. The DPEIS does not respond specifically, but generally describes, "Noxious weeds could become established." DPEIS at 8.1-8. This ignores the site-specific information that problematic invasive weeds are already there. The DPEIS reports that no noxious weeds are present on the Brenda SEZ (DPEIS at 8.1-72) but does not consider whether weeds are nonetheless present, including *Brassica tournefortii*, a highly flammable and invasive pest plant. Moreover, while BLM does not report these species being on the proposed SEZ in August 2009, it does not describe whether they are present on the proposed transmission line footprint or within the cumulative impact area.

The DPEIS claims that there are no ground-disturbing activities associated with the project developments within the area of indirect effects. DPEIS at 8.1-146. This disregards the effects of hazardous waste spills travelling through the soil, affecting biological soil components, reductions to soil integrity and stability.

Section 8.1.11 of the DPEIS describes the impacts to wildlife and aquatic biota that could occur with the potentially affected area of the proposed Brenda SEZ. DPEIS at 8.1-79. We find it remarkable that the same justification is provided for nearly every species that the BLM considers: "Small overall impact." The reality is, cumulatively, the impact will be profound within the area that the SEZ is located, likely the complete obliteration of suitable habitat for many dozens of species and hundreds of individuals. The DPEIS should not minimize but rather disclose the extent and intensity of the proposal.

It is not clear from the DPEIS whether the BLM has considered the cumulative impacts of the Brenda SEZ in context of the "Quartzsite Solar Energy Project" in La Paz County, Arizona. The Quartzsite project was scoped in January 2010, and it is also located on a section of the Crowder-Weisser allotment very near to the proposed SEZ. The potential for this additional (and undescribed in the DPEIS) development in the same area is a present and reasonably foreseeable future action that should have been analyzed and disclosed. The Quartzsite project is likely to have serious visual impacts (given the extent of proposed infrastructure) and cumulative effects on wildlife species in the area.

Comments Specific to the Proposed Bullard Wash SEZ (Arizona)

The Bullard Wash SEZ is in a remote desert area, with the nearest major road approximately 5 miles away to the south and the nearest transmission line 5 miles to the north of the SEZ. DPEIS at 8.2-1. The extent to which this area has already been impacted by human activities is unspecified, but its remoteness and inaccessibility make it an inappropriate site for new, industrial development. The BLM should have considered lands that are already along roadway corridors or transmission lines in order to minimize the footprint of the solar development.

The Bullard Wash SEZ is situated in an area recognized for its remoteness and inaccessibility, as signified by the high number of Wilderness Areas and Areas of Critical Environmental Concern in the surrounding public lands. DPEIS at 8.219. The experience of visitors to these places and the integrity of the habitats for non-human species reflect the lack of industrialized landscapes, exactly the opposite of what the BLM is now proposing. The BLM must commit to limiting types of solar development at this SEZ to those which would not impact the viewshed. DPEIS at 8.2-21. Moreover, the experience of Wilderness is not only visual, but a feeling of solitude that cannot be calculated in spatial analysis. BLM has not conducted a social assessment to determine these impacts to human experience of the natural environment.

We note that the DPEIS only assesses the impact of the acoustic environment on the human communities surrounding the Bullard Wash SEZ. DPEIS at 8.2-14. This does not consider the acoustic impacts of the proposed developments on the native and migratory wildlife species of the region, an oversight that must be remedied before the final EIS. The sonic considerations are not even addressed in the species-specific analysis later in the chapter.

The Bullard Wash SEZ occurs on three perennial/ephemeral grazing allotments. DPEIS at 8.2-27. Similar to the Brenda SEZ, the BLM cannot posit a ratio-based reduction in AUM on these allotments scaled to acreage lost; desert vegetation is extremely patchy and a new "carrying capacity" estimate would need to be done before grazing is reauthorized on the newly-demarcated boundaries of each allotment. Where the DPEIS says, "Quantification of the impact on the grazing permittees would require a specific analysis..." (DPEIS at 8.2-28) it should more appropriately read, "A new EIS will be completed to determine a range of alternatives for the downsized allotments."

The calculations of the impacts to groundwater inflows from the Bullard Creek SEZ's groundwater basin from solar development are an issue not just for the geological stability of the area (subsidence), but because the contribution of groundwater to the nearby surface waters of the Havasu Lake and Bill Williams river also relates to the extent of riparian habitat available for imperiled species. The DPEIS does not address these "downstream" impacts of the proposed solar development. DPEIS at 8.2-64. Stating that withdrawals "should" be limited to prevent impacts to riparian areas is insufficient protection for these special habitats. DPEIS at 8.2-80.

Comments Specific to the Proposed Gillespie SEZ (Arizona)

The Gillespie SEZ is described in the PEIS as "undeveloped and rural" and "undeveloped scrubland characteristic of a semiarid desert valley." DPEIS at 8.3-1. The proposed action would completely change the description of this landscape, converting the undeveloped character to an industrialized power generation station, permanently stripping these lands of their rural and desert valley character.

We note that the map included in the DPEIS does not address the designation of the nearby BLM lands. DPEIS at 8.3-2. The lands to the east to the east of the SEZ are within the Sonoran Desert National Monument, a place so special and remarkable that it was so designated in 2001. The proclamation describes this area as having "an extraordinary array of biological, scientific, and historic resources. The most biologically diverse of the North American deserts…. excellent habitat for a wide range of wildlife species." Surely, the BLM does not expect the public to believe those values stop at the arbitrary boundaries of the monument? The Gillespie SEZ and the surrounding public lands are equally important to the ecological integrity of the region.

The DPEIS discusses mitigating the loss of 14.6 percent reduction in future ephemeral grazing authorizations in the Layton allotment as a result of development in the Gillespie SEZ. Table 8.3.1.3-1. It is unclear how the BLM determined this reduction; carrying capacity is not arbitrarily determined by acreage, but should be based on actual available resources. DPEIS at 8.3-30. This description also fails to correspond with descriptions later in the document that admit the Gillespie SEZ would affect four grazing allotments. DPEIS at 8.3-29.

It is similarly unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands.

The amount of water being discussed in the DPEIS is enormous. Table 8.3.1.3-1. The availability of this water has not been demonstrated. DPEIS at 8.3-56. Water availability in Arizona is extremely uncertain, and the idea that Arizona will give up a share of its precious water to produce electricity for export to California and the west-wide grid is highly speculative. The DPEIS fails to account for these transfers or substantiate its claims about available water resources in the Phoenix AMA.

Impacts to the riparian areas dependent on the same aquifer should be considered more thoroughly than the DPEIS currently considered them. The admissions in the cultural resources section of Table 8.3.1.3-1 are striking: "Development in the proposed SEZ would eliminate some traditionally important plants and some habitat of traditionally important animal species." This conflicts with statements elsewhere in the DPEIS that downplay the significance of the effects on habitat.

It is clear from the map in Figure 8.3.3.1-1 that the areas being considered by the BLM for solar development would completely fragment and isolate the specially-reserved areas on BLM lands. The continuity and connectivity benefits of adjacent Wilderness, monuments, and

special resource management areas would be utterly undone by opening all the other BLM lands in the region. With industrialized solar development in the interstices, the value of the habits at each otherwise protected area is diminished. The preferred alternative would have isolating consequences for wildlife populations.

The statements in the DPEIS regarding the decommissioning and reclamation of the solar site are entirely unrealistic. The DPEIS states that the site would be reclaimed it its preconstruction state. 8.3-61. One only need to watch this video (http://www.youtube.com/watch?feature=player_embedded&v=5BGRD21H07Y) to understand how impossible it will be to ever restore the Sonoran desert to pre-industrialized state. (The video is taken in California at the BrightSource Energy development on BLM land.) The unlikelihood that this site can ever be "reclaimed" (and we note that BLM is using the language of the 1872 Mining Act rather than the contemporary "restoration") is demonstrated by the inclusion of precipitation data later in the DPEIS. DPEIS at 8.3-65. The area averages 7.6 inches of rain annually. Id. Perennial vegetation in this desert is slow-growing and would take centuries to re-colonize the development site. This realistic time-frame should be made more explicit in the DPEIS. Statements such as "Re-establishment of desert scrub communities in temporarily disturbed areas would likely be very difficult and might require extended periods of time," (DPEIS at 8.3-73) are misleading because the use of the descriptor "temporary" is inaccurate and the "extended periods of time" is vague. This is a permanent and wholesale destruction of native vegetation that will take centuries, if ever, to restore.

7. NEVADA PROPOSED SOLAR ENERGY ZONES

Seven SEZ have been proposed in Nevada: Amargosa Valley (32,699 acres), Dry Lake (16,516 acres), Delamar Valley (17,932 acres), Dry Lake Valley North (49,775 acres), East Mormon Mountain (7,418 acres), Gold Point (5,830 acres), and Miller's (19,205 acres).

Four of these SEZ (Amargosa Valley, Dry Lake, Delamar Valley and, East Mormon Mountain) are in desert tortoise habitat.

Six of the seven SEZ are located within BLM grazing allotments: Millers (Monte Cristo Allotment), Gold Point (Magruder Mountain Allotment), Dry Lake (Dry Lake Allotment) Mormon Mountain (Gourd Springs and Summit Springs allotments), Dry Lake Valley (Wilson Springs, Simpson and Ely allotments), and Delamar (Buckhorn and Oak Springs allotments.

Three of the SEZ (Amargosa Valley, Dry Lake Valley North, and Delamar Valley) are situated in regions of the state with very limited ground and surface waters. These water-related issues make these areas unsuitable for further consideration.

Comments Specific to the Proposed Amargosa Valley SEZ (Nevada)

The proposed 31,625 acre Amargosa Valley SEZ is located in Nye County in southern Nevada near the California border. The proposed Amargosa Valley site lies between Death

Valley National Park and Ash Meadows National Wildlife Refuge and is part of the Death Valley regional groundwater flow system.

The 23,000 acre Ash Meadows National Wildlife Refuge provides habitat for 12 species listed under the Endangered Species Act. The refuge was established specifically to protect these threatened and endangered species. Most of the listed species are dependent on aquatic or wetland environments within the refuge. The refuge also includes the National Park Service administered Devil's Hole, the only known habitat for the Devil's Hole pupfish. On November 4, 2008, the Nevada State Engineer issued Order 1197 announcing that new applications to appropriate additional water from the Amargosa Desert basin within 25 miles of Devil's Hole would be denied due to concern over the effect of groundwater pumping on the water level in Devil's Hole. Based on the above, the Amargosa Valley study area should be eliminated from further consideration as a Solar Energy Zone.

The desert tortoise section does not discuss important information relevant to the analysis of impacts. The desert tortoise population in the local area (Amargosa Desert/Pahrump Valley) can be genetically delineated from other desert tortoise populations in Nevada, yet none of the established Nevada desert tortoise ACECs adequately conserves this population (Britten *et al*., 1997[7]). The genetic lineation of the "Amargosa" desert tortoise sub-type has been confirmed and refined by Haggerty, 2008[8].

The Amargosa desert tortoise subtype is also of scientific interest since it occupies the northern end of the species range. The limited occurrence, importance to genetic diversity and under representation of the sub-type in conservation areas underlies the need to conserve this desert tortoise population. This is especially important given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan noted, "Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as "refuges" or critical habitat for the species." (USFWS 2008 at 133) The proposed Amargosa SEZ will block any northward shift of this population because it crosses the Amargosa Valley.

The cumulative effects analysis points out that there are 14,070 acres in the proposed SEZ that already have approved projects or projects under NEPA analysis. The SEZ estimates that another 25,300 acres would be developed over a 20 year analysis horizon. However, the DPEIS does not include any analysis of the potential impacts and effects of over 39,000 acres of desert tortoise habitat being destroyed.

[7] Britten, H. B., Riddle, B. R., Brussard, P. F., Marlow, R. and Lee, Jr., T. E. 1997. Genetic delineation of management units for the desert tortoise, *Gopherus agassizii*, in the northeastern Mojave Desert. Copeia 1997: 523-530.

[8] Hagerty, B. 2008. Ecological Genetics of the Mojave Desert Tortoise. PhD. Dissertation. University of Nevada, Reno. 244 pp.

Because of resource conflicts related to water resources, desert tortoise, other threatened and endangered species, and other special status species, BLM should remove the Amargosa SEZ from further consideration.

Comments Specific to the Proposed Dry Lake Valley North SEZ & Delamar Valley SEZ (Nevada)

The Dry Lake and Delamar Valleys are part of the White River Flow System. Groundwater in these two basins has been fully appropriated over-appropriated in down gradient basins. These proposed Dry Lake Valley North SEZ and Delamar Valley SEZ are inappropriate locations for solar energy project development due to the lack of groundwater. BLM should remove the proposed Dry Lake Valley North SEZ and the Delamar Valley SEZ from further consideration.

Comments Specific to the Proposed East Mormon Mountain SEZ & Dry Lake SEZ (Nevada)

The proposed Dry Lake SEZ is located on the Dry Lake playa. Playas are significant ecotypes that are underrepresented in conservation areas. Barren, usually alkaline desert playas (dry lakebeds), are found in closed basins in the Intermountain West. These basins are intermittently (once every few years) or seasonally (every year) flooded. Water is prevented from percolating through the soil by an impermeable subsurface layer and is left to evaporate. Salt crusts and high salt in the soils greatly affect species composition. While the appearance is barren, some species such as iodinebush, black greasewood, spiny hopsage, Lemmon's alkali grass, Great Basin wildrye, saltgrass, or saltbush occur around the margins of the playa. This system grades into salt-desert scrub and sagebrush habitats. Downwind of playas, active and stabilized sand dunes often form. Thus if the subsurface of a playa is disturbed, the playa's integral role in the ecosystem may irreversibly untangle.

Both the proposed East Mormon Mountain SEZ and the proposed Dry Lake SEZ include desert tortoise habitat. East Mormon Mountain is immediately adjacent to the Mormon Mesa DWMA and Beaver Dam Slope DWMA in the Northeastern Mojave Recovery Unit. Recent monitoring reports from USFWS indicate that the northern populations within the Northeastern Mojave desert tortoise Recovery Unit are low and appear to be declining. Because environmental stressors are indicated as a reason for this species decline, these SEZ should be withdrawn from further consideration as Solar Energy Zones.

Comments Specific to the Proposed Gold Point SEZ (Nevada)

The proposed Gold Point SEZ, totaling an area of 4,810 acres, is located in upper Lida Valley, a closed basin lying between MacGruder Mountain and Slate Ridge. The locale is currently pristine and remote from load centers, and a new transmission line would be needed to provide access from the SEZ to the transmission grid. There resident pronghorn herd that stays in the Valley year-round. No other active energy development projects have been proposed near this site. Because of its remoteness, pristine condition, lack of water, and other conflicts, BLM should withdraw the proposed Gold Point SEZ from further consideration.

8. UTAH PROPOSED SOLAR ENERGY ZONES

Three proposed SEZ have been identified in Utah: Escalante Valley (6,614 acres), Milford Flats South (6,480 acres), and Wah Wah Valley (6,097 acres).

The ground water situation in the region is critical with most of the basins currently over-appropriated and closed to new surface water and groundwater appropriations (Utah DWR 2010).

The three study areas lie within BLM grazing allotments. Escalante Valley is within Butte Allotment, Milford Flats South is within the Minersville allotment group, Wah Wah Valley is in Wah-Wah Watson Allotment.

Bald eagle, *Haliaeetus leucocephal*, may occur on all the Utah SEZ. Bald eagles are protected under the under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Although the DPEIS mentions the loss of foraging habitat it fails to analyze risks from structures associated with solar power plants. This deficit must be addressed. The DPEIS recognizes that the fully protected golden eagle (*Aquila chrysaetos*) may forage on the proposed Utah SEZ. The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". Although the DPEIS mentions the loss of foraging habitat it fails to analyze risks from structures associated with solar power plants. Required upgrades to existing transmission lines may exacerbate the risks of take.

Comments Specific to Escalante Valley SEZ (Utah)

The proposed 6,614 acres Escalante Valley SEZ is located in Iron County in southwestern Utah.

This relatively remote site would need construction of extensive new access roads. New transmission lines or upgrades of existing transmission lines would be required to bring electricity from the proposed Escalante Valley SEZ to load centers. The size and location of these are not described further in the DPEIR. However, since these will have similar impacts to the SEZ itself, they must be described in the cumulative effects analysis.

The proposed Escalante Valley SEZ is within Butte grazing allotment and would remove about 20% of the allotment. The SEZ-Specific Design Features states "Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment." DPEIS at 13.1-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands.

If development of additional range improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis.

The proposed Escalante Valley SEZ provides habitat for a number of candidate species and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, and the Utah prairie dog. The Escalante Valley SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species.

Although it has not been surveyed, the BLM believes that the proposed Escalante Valley SEZ has a high potential for containing prehistoric sites in the dune area on the west side of the SEZ; it also has some potential for containing historic sites. The BLM states that "A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties." But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low resource conflicts.

Comments Specific to Milford Flats South SEZ (Utah)

The proposed 6,480 acres Milford Flats South SEZ is located in Beaver County in southwestern Utah about 21 mi (34 km) northeast of the proposed Escalante Valley SEZ.

This SEZ would need construction of extensive new access roads (about 5 miles). About 19 miles of new transmission lines or upgrades of existing transmission lines would be required to bring electricity from the proposed Milford Flats South SEZ to load centers. The size and location of these are not described further in the DPEIR. However, since these will have similar impacts to the SEZ itself, these reasonably foreseeable projects must be considered in the cumulative effects analysis.

The proposed Milford Flats South SEZ is within the Minersville allotment group and would remove about 10-15% of the allotments. DPEIS 13.2-5. The SEZ-Specific Design Features states "Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment." DPEIS at 13.2-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands. If development of additional range

improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis.

The proposed Milford Flats SEZ provides habitat for a number of list, candidate, and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, and the Utah prairie dog. The Milford Flats SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species.

The BLM states that "A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties." But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low cultural resource conflicts.

Comments Specific to Wah Wah Valley SEZ (Utah)

The proposed 6,097 acres Wah Wah Valley SEZ is located in Beaver County in southwestern Utah about 21 miles northwest of the proposed Milford Flats South SEZ.

The proposed Wah Wah Valley SEZ will have serious impacts on special status species particularly the greater sage-grouse. Transmission access to the proposed Wah Wah Valley SEZ currently does not exist. The nearest existing transmission line is a north–south running 130-kV about 42 miles east of the SEZ. As of February 2010, there were no ROW applications for solar projects within the SEZ. Because of the resource conflicts, the lack of transmission and the lack of demand, BLM should drop this SEZ from further consideration.

The proposed Wah Wah Valley SEZ will occupy about 2.6% of the Wah-Wah Lawson allotment. DPEIS 13.3-23. The SEZ-Specific Design Features states "Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment." DPEIS at 13.1-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands. If development of additional range improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis. In this case, the effect on the permittee would be so small that BLM should simply decrease the authorized AUM pro rata.

The proposed Wah Wah Valley SEZ provides habitat for a number of candidate species and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, the golden eagle, and the Utah prairie dog. The Wah Wah Valley SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species. The proposed transmission line that would be required to develop this SEZ passes through crucial greater sage-grouse brooding habitat. That conflict alone is sufficient to enough to invalidate any further selection of this proposed SEZ

Only one small, 2-acre survey for a gravel pit has been conducted within the proposed Wah Wah Valley SEZ; consequently, no archaeological sites have been recorded by the BLM. DPEIS at 13.3-231. Although it has not been surveyed, the BLM believes that the proposed Wah Wah Valley SEZ has the potential to contain significant cultural resources, although the potential is relatively low. The BLM states that "A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties." But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low resource conflicts.

9. THE DPEIS IS FATALLY FLAWED AND WILL REQUIRE RECIRCULATION OF A REVISED DPEIS

The DPEIS is fatally flawed in a number of respects that will require the BLM to prepare a supplemental NEPA document for recirculation for public comment. The DPEIS provides no quantitative estimates of the numbers of affected individuals for the many threatened and endangered, and special status species that will be affected by the three alternatives. It fails to even list the threatened and endangered species that occur in the areas opened to development under the preferred alternative.

The BLM states in the DPEIS that for its preferred alternative it was unable to obtain complete geographic information system (GIS) data across the six-state study area and thus could not map the exact footprint of the alternative nor calculate the exact acreage. DPEIS at 2-3.

These deficiencies amount to failure to comply with provisions of the Endangered Species Act, FLPMA as well as NEPA. The BLM should prepare a revised Draft PEIS that reviews an adequate range of alternatives, that adequately describes the direct, indirect, and cumulative impacts, and that takes a hard look at those environmental impacts.

We thank you for the opportunity to provide these comments on the Draft PEIS, and we look forward to seeing our recommendations incorporated in the next iteration of this document.

Please continue to include Western Watersheds Project on your list of interested public for all future mailings.

Sincerely,

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Working to protect and restore Western Watersheds

January 26, 2012

Solar Energy Draft PEIS
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9700 S. Cass Avenue-EVS/240
Argonne, IL 60439

Filed electronically through: http://solareis.anl.gov

COMMENTS ON THE SUPPLEMENT TO THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES

To whom it may concern:

Western Watersheds Project thanks you for the opportunity to comment on the Department of Interior Bureau of Land Management ("BLM") and Department of Energy ("DOE") joint Supplemental Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("SDEIS").

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project has over 1,600 members nationwide with offices in Arizona, California, Idaho, Montana, Utah, and Wyoming. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve wildlife habitats, riparian areas, water quality, and other sensitive resources and ecological values.

Western Watersheds Project recognizes that global climate change poses new challenges to our already stressed public lands. Scientists consider the challenges of conserving biodiversity to be even larger than mitigating the negative effects of global climate change.[1] While climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and their wildlife. Thus, responsible siting of energy projects requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant

[1] University of Copenhagen (2012, January 20). Biodiversity crisis is worse than climate change, experts say. ScienceDaily. Retrieved January 26, 2012, from http://www.sciencedaily.com-/releases/2012/01/120120010357.htm

locations. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance or further fragmentation of fragile, native ecosystems. The ecological impacts from renewable energy project development should be fully mitigated with significant and lasting actions.

Western Watersheds Project has actively participated in the NEPA process for this program proposal. We submitted scoping comments from our Boise, Idaho Office on July 7, 2008, from our California Office on July 15, 2008, and additional scoping comments from our California Office on September 10, 2009. Western Watersheds Project submitted comments on the DPEIS on May 2, 2011.

1. INTRODUCTION

In our comments on the DPEIS we urged the BLM to set out a Purpose and Need that addresses the Secretary's clear mandate to protect and enhance the Nation's water, wildlife, and other natural resources on the nation's public lands, to consider a range of alternatives in the PEIS including alternatives that meet energy needs but require no or minimal use of public lands, and to fully analyze the environmental impacts of current management and any proposed energy zones. We asked the BLM to consider the following five alternatives:

> (A) A climate change alternative that would exclude all public lands from solar energy development to provide maximum flexibility and opportunity for species and their habitats to survive climate change impacts;
> (B) An alternative that would use presence of an endangered, threatened or candidate species as an exclusion in the screening criteria so that SEZ are not designated on habitat for endangered, threatened or candidate species;
> (C) An alternative that constrains the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints;
> (D) An alternative that focuses development on private land; and,
> (E) A distributed energy alternative.

Because these issues and alternatives have not been addressed in the SDEIS we are attaching and re-submitting our comments on the DPEIS comments as part of this comment letter on the SDEIS.

2. RANGE OF ALTERNATIVES

The selection and clear presentation of alternatives is the "the heart" of the NEPA process. NEPA requires the agencies to evaluate and compare a range of reasonable alternatives.

The BLM proposed three alternatives in the DPEIS: (1) A **no action** alternative that continues the issuance of right-of-way ("ROW") authorizations for utility-scale solar energy development on BLM administered lands on a project-by-project basis. (2) The **proposed action** under which approximately 22 million acres of BLM-administered lands would be available for

solar energy ROW applications of which approximately 677,400 acres (2,741 km^2) would be in solar energy zones ("SEZ"), where the BLM would prioritize development; and (3) A **solar energy zone alternative** that restricts applications to the SEZs only.

In the SDPEIS, the BLM now considers variations on the original alternatives. The BLM has dropped the Bullard Wash, Iron Mountain, Pisgah, Delamar Valley, East Mormon Mountain, Mason Draw and Red Sands SEZ; and, has reduced the sizes of the proposed Riverside East, De Tilla Gulch, Fourmile East, Los Mogotes East, Amargosa Valley, Dry Lake, Dry Lake Valley North and Afton SEZ reducing the acreage of the proposed SEZ to about 285,000 acres (1,153 km^2). The BLM now calls its Preferred Alternative the "Modified Solar Energy Development Program Alternative." Under this alternative, the BLM proposes categories of lands to be excluded from utility-scale solar energy development, identifies SEZs "where the BLM would prioritize development", proposes a process to identify additional SEZs, and allows for utility-scale solar development in variance areas outside of SEZs through what it calls a variance process. The second action alternative restricts applications to the modified SEZs only.

As with the alternatives considered in the DPEIS, all three alternatives considered in the SDPEIS would result in similar levels of industrial-scale solar power plant development on the Nation's public lands. The "no action" alternative would allow development to continue as it currently proceeds. The preferred alternative purports to restrict development to SEZ but allows for new SEZ to be developed and establishes a variance for proposed projects outside the SEZ. Alternative (3) the modified SEZ alternative purports to restrict solar power plant development to the designated SEZ, but SEZ can be expanded, added, or reduced in the future. BLM has not considered a single alternative that would avoid the whole-scale destruction of hundreds of square miles of important public lands and that would avoid impacted a multitude of special status species, recreational opportunities, visual resources, and host of other resources of these multiple-use lands.

NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives. BLM's analysis of a limited number of similar action alternatives makes this a grossly inadequate range of alternatives.

3. IMPACTS ANALYSIS AND POTENTIAL MITIGATION MEASURES

Relevant New Publications

Please consider and incorporate into your NEPA analysis the content and findings from the following publications that have appeared since the DPEIS was originally released. We have attached copies or provided a URL where the documents are available:

Hagerty, B. E, Nussear, K. E., Esque, T. C. and Tracy, C. R. 2011. Making molehills out of mountains: landscape genetics of the Mojave desert tortoise. Landscape Ecol. 26: 267–280.

Murphy R. W., Berry K. H., Edwards, T., Leviton, A. E., Lathrop, A., and Riedle, J. D. 2011. The dazed and confused identity of Agassiz's land tortoise, *Gopherus agassizii* (Testudines: Testudinidae) with the description of a new species and its consequences for conservation. ZooKeys, 113: 39-71. [Available at: <http://www.pensoft.net/journals/zookeys/article/1353/the-dazed-and-confused-identity-of-agassiz>]

Lovich, J. E. and Ennen, J. R. 2011. Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States. BioScience, 61(12): 982-992.

U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp. Dated May 6, 2011. Released August 25, 2011. [Available at: <http://www.fws.gov/endangered/recovery/index.html#plans>]

Selection of Solar Energy Zones

In response to concerns expressed by Western Watersheds Project and other organizations and concerned members of the public, the BLM has dropped the Bullard Wash, Iron Mountain, Pisgah, Delamar Valley, East Mormon Mountain, Mason Draw and Red Sands SEZ. It has also reduced the sizes of the proposed Riverside East, De Tilla Gulch, Fourmile East, Los Mogotes East, Amargosa Valley, Dry Lake, Dry Lake Valley North and Afton SEZ reducing the acreage of the proposed SEZ. While we certainly support the BLM's proposal to eliminate some of the SEZ and some of the acreage of others, even these eliminated areas do not seem to be safe from being industrialized under the proposed variance nor indeed do they seem to be safe from re-designation as SEZ down the road. The BLM must make it clear that once an area has been deemed unsuitable for energy development or as a SEZ it is taken of the table for the foreseeable future.

The SEZ that the BLM has removed from further consideration "had substantive resource conflicts." SDPEIS at 2-80. The SDEIS does not explain how the BLM managed to select these areas in the first place since the SEZ were supposedly areas of low resource conflict. In order to minimize potential adverse impacts, the BLM should drop the remaining proposed Solar Energy Zones too because they were not selected as areas with low resource conflicts at all, but were selected based on slope, proximity to utility corridors (which invariable pass through valleys and over bajadas) and existing land use designations. This resulted in the BLM effectively targeting desert tortoise habitat in California, Nevada, and Arizona. FLPMA § 201 [43 U.S.C. 1711] (a) requires the Secretary to prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." BLM needs to follow the law, develop an inventory of the public lands that is adequate for the job at hand, and then make a determination as to whether any of those lands lack resource conflicts. Without this comprehensive approach the BLM is simply making an arbitrary decision to sacrifice public resources for private gain.

Variance & Desert Tortoise

The proposed variance that would allow developers to build power plants on public lands outside the SEZ completely undermines any credibility behind the BLM's argument for designating SEZ in the first place.

The criteria suggested for allowing a variance to be considered are arbitrary, subjective, and based on unsubstantiated data. For example, for the connectivity criteria, the BLM provides a small map (FIGURE 2.2-2 Desert Tortoise Conservation Areas and Proposed Connectivity Areas) ostensibly showing "connectivity areas" but provides no explanation of how this map was developed, nor does it provide larger scale maps that would actually help the public understand where these connectivity areas are. We suggest the BLM provide more a more detailed explanation of the underlying science and a more detailed presentation of the results of the analysis. The BLM should also explain to what extent power plants that they have already authorized, such as the ISEGS plant, have compromised this connectivity. Without that, there is no baseline from which to determine the impacts.

The BLM is responsible for preparing and maintaining, on a continuing basis, a current inventory of the public land and its resources (FLPMA, 43 U.S.C. 1701 Sec.201 (a)). This inventory information, along with monitoring data collected under a variety of programs, shall be used to evaluate the current status and trends of plants and animals and their habitats on BLM-administered lands, and to respond to FWS and/or NMFS Federal Register Notices of species status review (e.g., 90-day, 12-month, 5-year, and annual candidate reviews). BLM Manual 6840 at 1B1a. The BLM should therefore repeat the connectivity exercise for all special status species found in the western states such as bighorn sheep that will be affected. Without this information, the BLM cannot provide assurance that its action will "minimize the likelihood of and need for listing of these species under the ESA." *Ibid*. at .02.

The BLM also provides a series of cut-offs decided by results of desert tortoise surveys. These are inadequate for many reasons. For one thing, the USFWS no longer considers population numbers as targets but rather relies on determining trends – is a population stable, declining or increasing? For another, just because current numbers in a particular area may be low does not imply that the population is unimportant. The population may be of considerable genetic significance (Murphy *et al*., 2011[2]; Brittan *et al*., 1997[3]). The area may provide connectivity but have no resident tortoises (see for example, Hagerty et al, 2011 identifying "least cost" pathways for potential gene flow; see Dr. Hagerty's thesis for a more detailed treatment of this issue[4]).

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

[3] Britten, H. B., Riddle, B. R., Brussard, P. F., Marlow, R. and Lee, Jr., T. E. 1997. Genetic delineation of management units for the desert tortoise, *Gopherus agassizii*, in the northeastern Mojave Desert. Copeia 1997: 523-530.

[4] Hagerty, B. 2008. Ecological Genetics of the Mojave Desert Tortoise. Ph.D. Dissertation. University of Nevada, Reno. 244 pp.

Utah & Greater Sage-grouse

The SDEIS states, "To meet the objectives of BLM's sage-grouse conservation policy, the Solar PEIS has excluded specifically identified sage-grouse habitat (currently occupied, brooding, and winter habitat) located on BLM public lands in Nevada and Utah." SDEIS at 2-18. However, although we raised repeated concerns over greater sage-grouse, none of the proposed Utah SEZ has been modified to remove sage-grouse habitat.

Mitigation

In our previous comments and scoping comments, we proposed that BLM allow the retirement of grazing allotments as compensatory mitigation for impacts to special status species and their habitat. Senator Feinstein recently successfully authored legislation authorizing a similar process throughout the California Desert Conservation Area. The PEIS should include language for all alternatives that will programmatically modify all subject RMPs to allow for buyout and voluntary relinquishment of grazing allotments for conservation purposes. This will both reduce cumulative effects and provide opportunities for meaningful mitigation of impacts.

Western Watersheds Project thanks you for the opportunity to provide comments on the Supplement. We look forward to seeing these and our earlier recommendations incorporated in the next iteration of this document.

Sincerely,

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Working to protect and restore Western Watersheds

May 2, 2011

Solar Energy Draft PEIS
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Filed electronically through: http://solareis.anl.gov

COMMENTS ON THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES

To whom it may concern:

Western Watersheds Project thanks you for the opportunity to comment on the Department of Interior Bureau of Land Management ("BLM") and Department of Energy ("DOE") joint Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("DPEIS").

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project has over 1,600 members nationwide with offices in Arizona, California, Idaho, Montana, Utah, and Wyoming. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve wildlife habitats, riparian areas, water quality, and other sensitive resources and ecological values.

Western Watersheds Project recognizes that global climate change poses new challenges to our already stressed public lands. However, while climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and their wildlife. Accordingly, WWP supports responsible development of power plant projects. Responsible development requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant locations. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance or further fragmentation of fragile, native ecosystems. The ecological impacts from renewable energy project development should be fully mitigated with significant and lasting actions.

Western Watersheds Project has actively participated in the scoping process. We submitted scoping comments from our Boise, Idaho Office on July 7, 2008, from our California Office on July 15, 2008, and additional scoping comments from our California Office on September 10, 2009.

In our comments on the DPEIS we have followed the general approach of the DPEIS documents, and address the overall evaluation first followed by some comments on the individual state analyses. Because the mission of Western Watersheds Project is to protect public lands and their resources most of our comments are directed to the BLM.

1. INTRODUCTION, AND PURPOSE AND NEED

Western Watersheds Project does not believe that the best use of any of our Nation's multiple-use public lands is for single-use, industrial-scale energy development, nor do we believe industrial-scale energy development on public lands to be consistent with the Federal Land Policy Management Act ("FLPMA"). We do believe that the federal government should look to ways it can promote distributed energy, and use of brown fields, and other degraded areas within urban areas for industrial production to ensure that as many diverse wildlife habitats and areas of connectivity persist to facilitate changes species distribution due to climate change. That approach best protects and enhances the Nation's water, wildlife, and other natural resources as required by Secretarial Order 3285A1.

FLPMA mandates the BLM to manage the public lands "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values" and to "manage the public lands under principles of multiple use and sustained yield." The utility-scale solar energy developments envisioned in the PEIS would require landscape level conversion of desert lands into vast industrial tracts. These tracts will be permanently and irreversibly degraded, and will no longer be available for multiple-use. Although the life of the solar power plants themselves is only expected to be 20-30 years, the character of these public lands will be permanently changed. FLPMA's mandates should be the primary driver for this planning process.

The DPEIS cites a number of Executive Orders, Congressional acts, and federal agency orders and policies that it states establish requirements for the agencies related to renewable energy development and that provide the drivers for specific actions being taken or being proposed by these agencies to facilitate solar energy development. DEIS at 1-2.

Executive Order 13212: Signed by President Bush on May 18, 2001 this Executive Order states "For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, ***and environmental protections***. (Our emphasis added).

Energy Policy Act of 2005: Section 211 of the Act states, "It is the sense of the Congress that the Secretary of the Interior should, before the end of the 10-year period beginning on the

date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity."

This is a recommendation by Congress, not a mandate. There is no obligatory requirement for the Secretary to do so, nor is there language in the Energy Policy Act that allows the Secretary to short-change environmental protections or identify large slabs of public lands for industrial development. The repeated claim made in the DPEIS that the Energy Policy Act requires the Secretary to approve 10,000 megawatts of new energy plants is simply untrue.

Energy Independence and Security Act of 2007: Section 603 of the Energy Independence and Security Act of 2007 requires the DOE to assess methods to integrate electric power from utility-scale solar facilities into regional electricity transmission systems, to identify transmission system expansions needed to move solar-generated electricity to growing electricity demand centers, and to consider methods to reduce the amount of water consumed by concentrating solar power systems. There is no mandate to use public lands for industrial solar development.

Secretarial Order 3285A1: This amended secretarial order dated February 22, 2010 sets a policy of "Encouraging the production, development, and delivery of renewable energy is one of the Department's highest priorities. Agencies and bureaus within the Department will work collaboratively with each other, and with other Federal agencies, departments, states, local communities, and private landowners to encourage the timely and responsible development of renewable energy and associated transmission ***while protecting and enhancing the Nation's water, wildlife, and other natural resources***. (Our emphasis added). It also calls for development of a strategy for "identifying and prioritizing the specific locations in the United States best suited for large-scale production of solar, wind, geothermal, incremental or small hydroelectric power on existing structures, and biomass energy (e.g., renewable energy zones)."

National Environmental Policy Act ("NEPA") Sec. 1502.13 requires that an EIS specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action. 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 statement of purpose and need is closely tied to the alternatives reviewed in a NEPA process 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 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).

According to the DPEIS:

The scope of this PEIS is limited to utility-scale solar development, in part, because the Energy Policy Act of 2005 and DOI Secretarial Order 3285A1 require that the BLM take steps to facilitate development at that scale (see Section 1.1). The development of distributed generation, small-scale solar energy

facilities, such as roof-top mounted PV systems, is not included in the scope of this PEIS. While such solar energy development will be an important component of future electricity supplies (and is the focus of separate DOE initiatives; see Section 2.5.1), current research indicates that development of both distributed generation and utility-scale solar power will be needed, along with other energy resources and energy efficiency technologies (NREL 2010c). One analysis of available roof space concluded that up to 23% of required electricity supplies could be met with roof-top PV systems, although integrating PV into the electric grid at levels that high could be challenging (Denholm and Margolis 2008). On a per watt basis, small-scale PV systems are more expensive than utility-scale systems (NREL 2010c). DPEIS at 1-4;

The DPEIS states that BLM has identified utility-scale solar energy development as a potentially critical component in meeting the applicable orders and mandates discussed in Section 1.1. However, the DPEIS provides no meaningful justification as to why utility scale solar on public land is a critical component in meeting the listed Executive Orders, Congressional acts, and federal agency orders. It provides no justification for eliminating other alternatives off the bat such as distributed generation, promotion of small-scale facilities, and facilitating the use of private lands (even though Secretarial Order 3285A1 expressly requires "agencies and bureaus to work collaboratively with … private landowners to encourage the timely and responsible development of renewable energy and associated transmission."). The citations provided such as NREL 2010c are not primary references, not comprehensive, and not up to date.

The Purpose and Need section ignores the large amount of public land that is already being developed for solar power plants and the expected amounts of energy that would be generated. In the California Desert Conservation Area alone current solar energy project planning and development that is underway would produce over 19,100 MW from public lands, and a number of additional projects on public lands have been approved in Nevada.

Nor does the Purpose and Need section address the Secretary's clear direction to protect and enhance the Nation's water, wildlife, and other natural resources. Our public lands are the last, best places for native wildlife and rare plants. In the context of climate change, maintaining broad swaths of untrammeled landscapes connected by matrix habitat is the only approach to maintaining the flexibility needed to ensure that the greatest number of species will be able to move and adapt to changing conditions. Fragmentation through solar developments, and the accompanying transmission lines and roadways, reduces the chances of these species survival.

In sum, the BLM's Purpose and Need section is overly narrow and constrained in violation of NEPA, and does not even meet the requirements of many of the orders, acts and policies that the BLM claims to be driving this process.

2. RANGE OF ALTERNATIVES

The selection and clear presentation of alternatives is the "the heart" of the NEPA process. NEPA requires the agencies to evaluate and compare a range of reasonable alternatives.

The BLM considers the following three alternatives in the DPEIS:

(1) A **no action** alternative that continues the issuance of right-of-way (ROW) authorizations for utility-scale solar energy development on BLM administered lands by implementing the requirements of the BLM's existing solar energy policies on a project-by-project basis. Lands available for solar energy development would include those areas currently allowable under existing applicable laws and statutes (approximately 99 million acres in the six-state study area) and in conformance with the approved land use plan(s).

(2) The **proposed action**. A solar energy development program alternative that applies new program administration and authorization policies and design features for utility-scale solar energy development on BLM-administered lands to a subset of BLM administered lands that would be available for solar energy ROW applications (approximately 22 million acres. Within the available lands, the BLM would identify approximately 677,400 acres (2,741 km^2) in solar energy zones, which are lands identified by the BLM as best-suited for utility-scale production of solar energy and where the BLM would prioritize development (as well as development of associated transmission infrastructure).

(3) A **solar energy zone (SEZ) alternative** that applies the same new program administration and authorization policies and design features to utility-scale solar energy development but restricts applications to SEZs only (up to approximately 677,400 acres in the six-state study area).

All three alternatives considered in the EIS would result in similar levels of industrial-scale solar power plant development in the desert and/or would not achieve the stated purpose and need:

Alternative (1) the "no action" alternative would allow development to continue as it currently proceeds. Since all approved projects are now being litigated, this is clearly not an efficient and effective approach;

Alternative (2) the preferred alternative is poorly and incompletely described. It consists of identifying solar energy zones (SEZ) where BLM staff would prioritize applications and an additional, enormous area that would be open for development but where applications would receive a lower priority treatment from staff. The DPEIS does not explain why the BLM even wants to propose opening up 100 times more land than it has identified any need for, nor has staff to handle. How is this going to help the BLM respond in a more efficient and effective manner to solar power plant applications? How does this alternative protect and enhance the Nation's water, wildlife, and other natural resources? In fact, this alternative appears to have been thrown in at the last minute given the statement in the DPEIS that "Only those species that are known to occur in the SEZ regions are discussed in Appendix J because the need for an expanded species analysis by alternative was identified too late in preparation of the Draft PEIS to be accommodated in

this version of the document. It is anticipated that a discussion of all species with potential for impacts under each alternative will be developed between the Draft and Final PEIS." DEIS at RG-8. How could the BLM not be aware of the need to consider the impacts of its proposed action on threatened and endangered species?

Alternative (3) the SEZ alternative is the DPEIS' "Goldilocks alternative". Unfortunately, although it purports to restrict solar power plant development to the designated SEZ, this SEZ alternative is effectively the same as the proposed action since BLM can expand, add, remove, or reduce SEZs in the future.

NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives. BLM's analysis of a limited number of similar alternatives makes this a grossly inadequate range of alternatives.

The BLM has not considered the following alternatives:

(A) A climate change alternative that would exclude all public lands from solar energy development to provide maximum flexibility and opportunity for species and their habitats to survive climate change impacts;
(B) An alternative that would use presence of an endangered, threatened or candidate species as an exclusion in the screening criteria so that SEZ are not designated on habitat for endangered, threatened or candidate species;
(C) An alternative that constrains the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints;
(D) An alternative that focuses development on private land; and,
(E) A distributed energy alternative.

These five alternatives would promote responsible energy production, would minimize or avoid impacts to sensitive resources, and would protect and enhance the Nation's water, wildlife, and other natural resources. BLM has ignored or unfairly dismissed these alternatives.

3. IMPACTS OF SOLAR ENERGY DEVELOPMENT AND POTENTIAL MITIGATION MEASURES

FLPMA § 201 [43 U.S.C. 1711] (a) requires the Secretary to prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values."

Despite this inventory requirement, the BLM states in the DPEIS that for its preferred alternative it was unable to obtain complete geographic information system (GIS) data across the six-state study area and thus could not map the exact footprint of the alternative nor calculate the exact acreage. DPEIS at 2-3. It has compounded this by failing to provide a quantitative analysis

of the cumulative effects of the preferred alternative on listed and candidate species. These obvious, gross deficiencies need to be rectified.

Based on data in Tables 2.2-1 and ES 2-1, the approximate areas by alternative are:

State	Total State	BLM-Administered lands (Acres)		
	Acreage	No Action	Preferred Alternative	SEZ Alternative
Arizona	72,700,000	9,218,009	4,485,944	13,735
California	100,200,000	11,067,366	1,766,543	339,090
Colorado	66,500,000	7,282,061	148,072	21,050
Nevada	70,300,000	40,794,055	*9,084,050	171,265
New Mexico	77,800,000	12,188,361	4,068,324	113,052
Utah	52,700,000	18,182,368	2,028,222	19,192
Total	440,200,000	98,732,220	21,581,154	677,384

*The estimate for Nevada given in Table ES.2-1 is 9,587,828; we do not know which is the BLM's actual estimate.

The scale of the permanent degradation and loss of the public lands and public resources that could result from this PEIS process is unprecedented.

BLM is obligated under FLPMA to "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(d)(2)(a). Other laws, including the Endangered Species Act, also entail the need for mitigations to minimize impacts. BLM is required to consider measures to mitigate potential environmental consequences in its NEPA analysis. 40 C.F.R. § 1502.16. The NEPA implementing regulations define "Mitigation" to include:

> (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
> (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
> (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
> (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
> (e) Compensating for the impact by replacing or providing substitute resources or environments.
> [40 C.F.R. §1508.20]

The scale of the degradation and the potential massive loss of public resources will make development of appropriate mitigation measures extremely costly and difficult. All of the mitigation measures outlined in §1508.20 are applicable to various aspects of solar energy development.

In order to minimize adverse impacts, the BLM should drop many of the proposed study areas from further consideration as Solar Energy Zones. The BLM's siting approach, based on

slope, proximity to utility corridors (which invariable pass through valleys and over bajadas) and existing land use designations has effectively resulted in the targeting of desert tortoise habitat in California, Nevada, and Arizona. The BLM's preferred alternative opens 12 percent of "desert tortoise" habitat to solar development. DPEIS at ES-21. That BLM is even willing to entertain opening up 12 percent of the habitat of any listed species is problematic; that fact that this is the BLM's preferred action is simply outrageous. BLM should reconsider its siting criteria to promote avoidance of listed species.

Section 5.10.5.1 Siting and Design must be modified to include a requirement to avoid species habitat that provides important connectivity between populations, and to avoid habitat that provides important corridors for wildlife movement. Without this, the DPEIS will need to undertake an extensive analysis of impacts to habitat connectivity for all special status species.

High quality Mojave Desert shrublands and high quality sagebrush habitats or those that have good restoration potential should not be developed for solar energy in areas where ESA listed or candidate species and other Special Status Species or rare species occur. This applies in particular to desert tortoise, greater sage-grouse, and Gunnison sage-grouse which require landscape level conservation measures to promote recovery.

In order to compensate for the enormous habitat losses, and the additional direct, indirect, and cumulative impacts to sensitive resources caused by the presence of solar power plants and associated infrastructure, the acquisition of off-site compensation lands will be needed and the BLM will need to reduce the multiple impacts of all other consumptive uses authorized by any given land use plan. The BLM should use the PEIS to modify all subject land use plans to allow voluntary buyout of grazing permits. This would then provide a win-win situation for the developers and permittees. Developers could use buyout to offset site-specific impacts from their projects on wildlife, sensitive species, riparian zones, and other resources; permittees who would have their grazing privileges restricted would benefit from the ability to cash out. The ecological benefits of retiring allotments are high and this action may be easier to accomplish than other proposed management solutions. Livestock grazing is a landscape level impact, and the action area for livestock impacts tends to very large with a footprint indicated by the size of the allotment itself. Removing livestock removes direct and indirect impacts at a landscape level as well as reducing impacts on specific, sensitive resources such as riparian areas, cultural sites, and sensitive species and rare plant habitats. Removal of livestock benefits wildlife by removing negative interspecies interactions, reducing competition for forage, and reducing the risk of spread of invasive plants. Combined with the removal of range improvements, this measure would also help reduce the impacts of other threats such as OHV activities and unauthorized route use by eliminating "attractive nuisances", and would reduce subsidized predators such as ravens and coyotes that use those range improvements. It would also reduce trampling impacts to biological crusts and allow allotment lands to reach full potential as carbon sinks, thus helping to offset the loss of carbon sequestration from utility-scale developments. After the initial buyout, it would potentially reduce BLM costs associated with rangeland management and administration.

A combination of both acquisition of compensation lands and an overall reduction of impacts will be required to achieve a net decrease in cumulative impacts to sensitive and listed species to offset the habitat loss and other impacts,.

In addition, the Mojave Desert acts as a carbon dioxide sink on a par with grasslands and temperate forests.[1] In order to assure a net climate change benefit, the BLM should require that all solar energy projects demonstrate a clear net carbon dioxide reduction benefit. The loss of the project sites carbon dioxide sink capability should be factored into the mitigation calculations. Any requirement for the operation of gas-powered or other fossil fuel power plants to accommodate loads etc should also be factored into the calculation.

The BLM should clearly adopt a policy of "no net loss" of public lands whereby an equivalent acreage of private lands and inholdings are acquired by project developers and these compensation lands are conserved in perpetuity. Habitat quality of compensation habitat must be of an equal or better quality than the habitat lost to solar projects. This would protect and mitigate for impacts for common desert flora and fauna, and would be in addition to any habitat acquisition required to offset impacts to special status species.

4. IMPACTS AND CUMULATIVE EFFECTS

The National Environmental Policy Act ("NEPA") requires agencies to take a "hard look" at the potential environmental impacts of its proposed actions. The PEIS must fully consider the direct, indirect and cumulative effects of the proposed policy and actions. Further, NEPA directs agencies to "rigorously explore and objectively evaluate all reasonable alternatives" [40 C.F.R. 1502.14] A consideration of alternatives that lead to similar results is not sufficient to meet the intent of NEPA. The PEIS must address all substantial questions raised by the public. The PEIS should present the environmental impacts of the proposal and the alternatives in comparative form based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16). This more sharply defines the issues, provides a clear basis for choice among options by the decisionmaker and the public, and ensures that the choice not be arbitrary and capricious.

Emissions and Climate Change Effects

The DPEIS repeatedly states or implies that the use of solar facilities to generate electricity "would displace air emissions that would otherwise be released from fossil fuel-fired power plants." DPEIS at 8.1-163. There is no support in the DPEIS or elsewhere for this statement; the solar power plants proposed in the preferred alternative are apparently *in addition to*, not *in lieu of*, fossil fuel energy generation. Nowhere does the DPEIS discuss the fossil fuel-fired power plants that will be displaced by the construction of the proposed industrialized, decentralized solar power plants proposed here. Even if solar power plants were to displace coal fired plants, additional power generation or extensive storage facilities would be needed to offset

[1] Wohlfahrt, G., Fenstermaker, L. F. and Arnone, J. A. III. 2008. Large annual net ecosystem CO2 uptake of a Mojave Desert ecosystem. Global Change Biology. 14(7): 1475-1487.

the imbalance between solar electric generation which is sunlight dependent and actual demand for power. The DPEIS does not explain how many new fossil-fuel power plants (and their emissions output) will be needed to ensure continuity of energy generation to match consumption.

Effects on Wildlife and Special Status Species

The DPEIS does not take the requisite hard look at impacts to the wildlife, vegetation, and threatened and endangered species in the massive action area for the preferred alternative. This is a major omission that merits recirculation of the DPEIS.

DESERT TORTOISE

The BLM's preferred alternative opens 12 percent of "desert tortoise" habitat to solar development. DPEIS at ES-21. First, this statement does not distinguish between the listed *Mojave* desert tortoise population and the candidate *Sonoran* desert tortoise. Second, this habitat consists largely of the essential matrix habit that connects desert tortoise populations and conservation areas. Third, this habitat includes peripheral desert tortoise populations that may be important in the species' response to climate change. Thus decisions made in this PEIS process could have highly significant consequences for both these taxa. Despite the requirements to do so, the PEIS does not provide quantitative estimates of the size of the impacted population. This is particularly problematic given the BLM's recent need to re-initiate consultation with te USFWS over impacts to desert tortoise at the Ivanpah Solar Electric Generating System project where it seriously underestimated the number of affected tortoises.

Mojave desert tortoises, listed as threatened under the ESA, occur in the affected areas of the following 8 SEZs: Amargosa Valley, Delamar Valley, Dry Lake, Dry Lake Valley North, East Mormon Mountain, Iron Mountain, Pisgah, and Riverside East. Sonoran desert tortoises, candidate species for ESA listing, may occur in the affected areas of the following 3 SEZs: Brenda, Bullard Wash, and Gillespie. These SEZ will directly impact desert tortoises in at least four of the six Recovery Units identified in the 1994 Recovery Plan[2], and may seriously compromise connectivity and gene flow between the Evolutionarily Significant Units of desert tortoise that occupy them.

The BLM needs to analyze the cumulative effects of development on desert tortoise for each alternative. It needs to determine the affected population size, fully analyze the cumulative effects of fragmentation, and fully analyze the impacts to connectivity between desert tortoise genetic units and between desert tortoise conservation areas. Unless additional safeguards are built in, we do not see how the USFWS will be able to avoid issuing a jeopardy finding over impacts to desert tortoise.

GOLDEN EAGLE

[2] Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pages plus appendices.

Golden eagle (*Aquila chrysaetos*) is a fully protected species under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". The DPEIS recognizes that golden eagles use many of the solar power development areas including most of the proposed SEZ as foraging areas.

McCrary et al. 1986[3] studied a small, prototype thermosolar facility. They found that bird mortality occurred through collisions with structures such heliostats and from burning when birds flew through points where energy was focused from the heliostats. They cautioned that "Since Solar One is only a 10 megawatt pilot facility, future project designed to produce hundreds of megawatts will require several thousand heliostats and much taller receiver towers. The greater magnitude of these facilities may produce non-linear increases in the rate of avian mortality when compared to Solar One and extrapolations from this study should be made with caution. The removal of large tracts of desert from biological production for solar power generation and the ecological effects caused thereby should also be of concern." Given the large areas that may be developed, the range of technologies, and the existing database we believe that there is ample information regarding the potential risk to golden eagles, and believe that this program will take golden eagles. BLM should propose avoidance of any take by restricting the areas open to development and by restricting the technologies used to those that do not require structures that may place eagles at risk.

GREATER SAGE-GROUSE & GUNNISON'S SAGE-GROUSE

High quality sagebrush habitats or those that have good restoration potential should not be developed for solar energy in areas where greater sage-grouse and Gunnison sage-grouse occur because these species require landscape level conservation measures to promote their recovery. The cumulative effects analysis does not quantify the impacts to the species populations, nor does it provide a quantitative analysis of the cumulative effect of the transmission lines and fences, and access roads that will be engender by each alternative. These deficits must be addressed.

FISH & AQUATIC SPECIES

Many aquatic species will be affected or may be affected by water drawdown and by water use. However, there is no analysis of the cumulative impacts of water use on fish and wildlife and their habitats within each SEZ.

Livestock Grazing

The DPEIS proposes "Wherever there are reductions in grazing use, opportunities for mitigating this loss through changes in livestock management or installation of range improvements should be considered." DPEIS at 5-12. There is no analysis of the cumulative effects of this proposal on sensitive resources including wildlife.

[3] McCrary, M. D., McKernan, R. L., Schreiber, R. W., Wagner ,W. D. and Sciarrotta, T. C. 1986. Avian Mortality at a Solar Energy Power Plant. Journal of Field Ornithology. 57(2): 135- 141.

Water Resources

Water is one of the most precious desert resources, and maintaining surface waters and flows, and ground water supplies is essential for conserving desert ecosystem function. Developing large tracts of land for solar power plants impact surface waters and groundwater. Many of the desert basins are already in a serious water overdraft situation and the entire western United States is facing serious water shortages under all climate change scenarios. It is critical that the BLM ensures that solar development does not allow unacceptable impacts to both the quantity and quality of water resources and the ecosystems, habitat and species that depend on them. The BLM should require that any water needs for authorized power plants be completely offset by reductions in other uses within the basin.

The DPEIS analysis of the risks of hydrological disruption posed by large-scale power plants is inadequate. The DPEIS should include uniform mitigation and monitoring measures for the ephemeral washes on the public lands. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). In some states, such as California, state agencies assert jurisdiction and require mitigation for impacts to ephemerals streambeds. However, this is not true in Arizona. The BLM must require full mitigation in the form of purchase of replacement ephemeral streambed habitat.

5. CALIFORNIA PROPOSED SOLAR ENERGY ZONES

California gets the lion's share of the acreage of the proposed solar study areas. The maps depict four study areas within the FLPMA designated California Desert Conservation Area: Imperial East (12,830 acres), Iron Mountain (109,642 acres), Pisgah (26,282 acres), and Riverside East (202,295 acres). The maps also depict vast tracts of land sweeping across the Mojave and Colorado Deserts that are lands being considered open development in the DPEIS preferred alternative.

Development of these four solar study areas would result in a massive loss of habitat, major fragmentation of entire desert ecosystems and loss of connectivity. This is clearly incompatible with the purpose of the California Desert Conservation Area espoused in FLPMA, which is "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality". Contrary to the BLM's goal of facilitating siting of solar power plants, the proposed SEZ themselves are located in relatively resource rich locations. This makes them both controversial and inappropriate.

There is a considerable amount of solar energy power plant development already underway in California with 19,100 MW on public lands within the CDCA alone, and the goal of 10,000 MW mentioned in the Energy Policy Act and Secretarial orders has clearly been exceeded. Given the large amount of public land which is already slated for development for

solar power plants in California, the BLM should readdress its purpose and need, and reconsider the need for locating any Solar Energy Zones in the state.

Comments Specific to the Proposed Imperial East SEZ (California)

The proposed Imperial East SEZ includes 5,722 acres of public land. It is located in Imperial County in southeastern California, near the United States–Mexico border between I-8 and State Route 98, and just north of the All-American Canal.

We do not support the designation of the Imperial SEZ. There are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ. It is located immediately east of a cultural ACEC (Lake Cahuilla – C) and immediately southwest of East Mesa ACEC.

Existing transmission lines in the area are inadequate to deal with the assumed output and "upgrades of existing transmission lines would be required to bring electricity from the proposed Imperial East SEZ to load centers; however, at this time the location and size of such new transmission facilities are unknown." DPEIS at 9.1-3.

Cultural Resources: The Imperial East SEZ lies between Lake Cahuilla cultural ACECs C and D and is an area rich in important cultural resources. According to the DPEIS, "One archaeological survey has been conducted within the Imperial East SEZ in the northwest corner of the SEZ." The size of this surveyed area is not provided but appears cover only a small proportion of the SEZ. The DPEIS recognizes that Lake Cahuilla ACECs C and D could be exposed to additional human traffic, resulting in an increased risk of loss of prehistoric resources. DPES at 9.1-6. The Specific Design Feature to deal with this issue is: "Once construction of solar energy facilities begins, the BLM would monitor to determine whether increases in traffic in the ACECs occurs and whether additional management measures are required to protect the resources in these areas." This is inadequate since it only monitors for impacts. The emphasis should be on avoidance. The BLM should survey the entire SEZ for cultural significance prior to making any decision to designate this SEZ. It should establish clear measures to avoid any impacts to the adjacent and nearby ACECs.

Yuma Clapper Rail: The proposed Imperial East SEZ is immediately north of a "wetland" mitigation north of the All American Canal area that provides a nesting location for the endangered Yuma clapper rail (CNDDB occurrence 17). The proposed SEZ includes 44 acres of potentially suitable habitat for the species. The Yuma clapper rail is a California fully protected species. This means that state agencies cannot issue take permits for the species. The SEZ area boundary should be altered to exclude actual and potential Yuma clapper rail habitat and to provide an appropriate buffer to eliminate potential impacts on the local hydrology.

Flat-tailed Horned Lizard: The proposed Imperial East SEZ includes significant amounts of occupied flat-tailed horned lizard habitat. The proposed SEZ falls within the BLM's designated East Mesa Flat-tailed Horned Lizard Wildlife Habitat Management Area and is adjacent to the East Mesa ACEC. The DPEIS estimates that development of this SEZ will have indirect impacts on 9.0% of available potentially suitable habitat in the region. DPEIS at 9.1-133.

The USFWS's recent decision to withdraw its proposed listing decision for the Flat-tailed horned lizard relied in part on the assumption that "the overall acreage of potential impacts from development of energy facilities is likely to be small compared to the total range of the species". FWS 2011[4] at 14228. Designation and development of this SEZ will clearly jeopardize this USFWS assumption. The proposed Imperial East SEZ boundaries should be reconfigured to avoid impacts to the flat-tailed horned lizard or the proposed SEZ should be abandoned.

Bighorn Sheep: The proposed Imperial East SEZ includes bighorn sheep habitat. According to the DPEIS (at 9.1-105), "Because it is a BLM sensitive species, the desert bighorn sheep is discussed in Section 9.1.12." However, there is no mention of bighorn sheep in section 9.1.12 let alone any discussion. Nor are bighorn sheep discussed anywhere else in the proposed Imperial East SEZ write-up with the exception of a mention in the cumulative effects section (DPEIS at 9.1-287) that projects may block bighorn sheep dispersal corridors. This inadequacy needs to be rectified.

Golden Eagle: The DPEIS recognizes that the fully protected golden eagle (*Aquila chrysaetos*) may forage on the proposed Imperial East SEZ. The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". Required upgrades to existing transmission lines may exacerbate the risks of take.

Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should withdraw the proposed Imperial East SEZ from further consideration.

Comments Specific to the Proposed Iron Mountain SEZ (California)

The proposed Iron Mountain SEZ includes 106,522 acres of public land. It is located in San Bernardino County in southeastern California in Ward Valley between an ACEC, the Chemehuevi Desert Wildlife Management Area (DWMA), and state highway 62.

We do not support the designation of the Iron Mountain SEZ. There are multiple conflicts with wildlife and habitat resources associated with this proposed SEZ. It is located immediately south of the Chemehuevi DWMA and provides patches of desert tortoise habitat that provide the connectivity between the Northern and Eastern Colorado Desert Tortoise Recovery Units. It is also habitat for several rare plants including multiple occurrences of Harwood's eriastrum and Harwood's milkvetch. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes.

The proposed SEZ includes the southern swathe of Ward Valley, well known to the public from the long-running controversy over the nuclear waste facility that was once proposed there. Northern Colorado Recovery Unit desert tortoise populations, bighorn sheep, raptors, hepatic tanager, rare plants including Harwood's eriastrum, and important cultural resources would be directly and indirectly impacted by any power plant projects in this area.

[4] FWS. 2011. Endangered and Threatened Wildlife and Plants; Withdrawal of Proposed Rule To List the Flat-Tailed Horned Lizard as Threatened. Federal Register. 76(50): 14210- 14268. Tuesday, March 15, 2011.

The proposed Iron Mountain SEZ overlies the Chocolate Mountains - Turtle Mountains - Ward Valley connectivity area, an essential habitat connectivity linkage which provides habitat for species occupation and movement between ecotypes in the region (Spencer *et al*., 2010). It provides important connectivity and linkage matrix for the desert tortoise, bighorn sheep and other species.

Since designation of the proposed Iron Mountain SEZ is opposed by many state agencies including the California Energy Commission we do not understand why the BLM has continued to waste public resources and not dropped the proposed SEZ from further study. Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should immediately withdraw the proposed Iron Mountain SEZ from further consideration.

Comments Specific to the Proposed Pisgah SEZ (California)

The proposed Pisgah SEZ includes 23,950 acres of public land. It is located in San Bernardino County in southeastern California, about 100 mi (160 km) northeast of Los Angeles. The proposed Pisgah SEZ would be sandwiched between two ACECs, the Ord-Rodman DWMA to the west and the Pisgah ACEC to the east, and the Cady Wilderness Study Area to the north.

We oppose the designation of the proposed Pisgah SEZ. This is a resource rich area and there are multiple resource conflicts which make this area highly unsuitable as a SEZ. Desert tortoise, bighorn sheep, Mojave fringe-toed lizard, raptors, rare plants including white-margined beardtongue, small flowered androstephium and Emory's crucifixion-thorn, other sensitive species and cultural resources would be directly and indirectly impacted by utility-scale projects. A recent study has cautioned identification of this area because of multiple impacts to desert tortoise and bighorn sheep movement.[5] The SEZ is adjacent to known pockets of high desert tortoise density, and this area provides the only connectivity between tortoises in the Southern Mojave and Central Mojave populations as identified by Murphy et al, 2007[6], and it will impact connectivity between the West Mojave Recovery Unit and the eastern desert tortoise recovery units. The site is immediately adjacent to two ACECs and a Wilderness Study area, and includes part of the Pisgah Lava Flow Research Natural Area. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes. For all these reason, this sensitive and significant area should be removed from further consideration as a Solar Energy Zone.

Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should immediately withdraw the proposed Pisgah SEZ from further consideration.

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[5] Bare, L., Bernhardt, T., Chu, T., Gomez, M., Noddings, C. and Viljoen, M. 2009. Cumulative Impacts of Large-scale Renewable Energy Development in the West Mojave. Effects on habitat quality, physical movement of species, and gene flow. Masters Thesis. University of California, Santa Barbara. 144 pp. *Available at*: http://fiesta.bren.ucsb.edu/~westmojave/images/Wemo_Final.pdf

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

Comments Specific to the Proposed Riverside East SEZ (California)

The proposed Riverside East SEZ is the largest of the proposed SEZs in the six-state study area, with a total area of 202,896 acres. It sprawls along Interstate 10 from the Joshua Tree National Park/Desert Center area to Blythe, California.

There are multiple resource conflicts at this site in part because the study site is extremely large and ranges across the heart of California's Colorado Desert region.

We oppose the designation of the proposed Riverside East SEZ. The northeastern portion includes extensive occupied desert tortoise habitat. The entire polygon effectively divides the Northern Colorado Desert Tortoise Recovery Unit from the Eastern Colorado Desert Tortoise Recovery Unit, and development thus threatens to sever connectivity entirely. The proposed study area also includes bighorn sheep, raptor, and sensitive bat habitats, and would impact many rare plant species including Coachella valley milkvetch, jackass clover at Palen Lake, and Harwood's milkvetch. There are important cultural sites particularly those associated with the dry lakes. The polygon also includes Ford Dry Lake and development would impact off-road vehicle use. A number of ACECs are entirely surrounded and isolated by the proposed SEZ. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes.

Because there are multiple resource conflicts with this sprawling proposed SEZ, the BLM should remove this area from further consideration as a Solar Energy Zone.

6. ARIZONA PROPOSED SOLAR ENERGY ZONES

The BLM's preferred alternative opens 7,009 square miles of land in Arizona to solar development, an area 326 times the size of the SEZ-designated lands. DPEIS at ES-6, Table ES.2-1. No other state has such a large percentage of total BLM acres open to solar development as Arizona under the preferred alternative (49 percent), nor such a great disparity between the SEZ alternative and the preferred alternative.

The BLM anticipates that 214,000 acres will be developed within the next 20 years under the reasonably foreseeable development scenario (RFDS). DPEIS at ES-14. This is well within the SEZ acreage of 677,384 acres. DPEIS at ES-6, Table ES.2-1. It is therefore entirely unclear why the BLM's preferred alternative entails opening over ten times the amount of land necessary for solar development under its own projections; the ratio of land under the SEZ alternative meets the criteria the BLM specifies for the preferred alternative, that is "adequate amounts of land available to support the level of development projected in the RFDS and would provide a great deal of flexibility in siting both solar energy facilities and associated transmission infrastructure." DPEIS at ES-29. There is no justification as to why the BLM needs to designate so many acres as open to power plant development.

The SEZ-specific design features for the Arizona SEZs include the development of additional range infrastructure and changes to grazing management to mitigate the loss of AUM that may be associated with the solar developments. Range "improvements"/developments need a separate NEPA process to ensure against adverse effects.

We are concerned with the estimated fresh surface water and groundwater use the solar developments would entail. Arizona is facing serious water shortages under all climate change scenarios, including a tenuous allocation from the Colorado River. Allocating potable water for solar development, either through allowing surface water transfers or groundwater pumping, is giving away precious public trust resources for private development. We do not believe that the DPEIS does an accurate or thorough analysis of the risks of hydrological disruption the proposed action poses to Arizona's public lands. The threats of drawdown are too easily dismissed in the DPEIS. See, for example, DPEIS at 8.1-62. Overdraft in the Brenda SEZ groundwater basin has already caused substantial ecological and geologic impacts from subsidence. If the BLM were proposing to allow solar development on existing in-holdings, urban-adjacent lands, or other areas that might already have infrastructural support for it, the agency could be requiring the use of non-potable water (effluent) in the generation of these "renewable" energy supplies. Given the slow rate of aquifer recharge, we don't believe that the current proposals are truly "renewable."

The DPEIS should be amended to reflect the current status of the Sonoran desert tortoise which is a candidate species for listing. 75 FR 78094-78146, December 14, 2010. The USFWS specifically identified the disturbance anticipated by the Sterling Solar Generating Facility, a solar development not included in the DPEIS and apparently not considered in the reasonable foreseeable development scenario on the Black Mountains desert tortoise population. The USFWS determination that the Sonoran desert tortoise warranted listing discussed the threats from new transmission lines and roads from solar development. The FWS makes plain that solar developments, combined with other threats in the species habitat, makes Sonoran desert tortoise eligible for endangered species status. In the finding, the agency acknowledges that new threats may elevate the species for full ESA protection. We believe that if the BLM goes forward with the locations listed in the DPEIS for Arizona, this alone may compel full listing of this taxon.

The BLM relies up the implementation of programmatic design features to reduce impacts to special status species and, presumably, finds these suitable reductions in the threat to Sonoran desert tortoise as well. However, desert tortoise is a highly mobile species, known to move across large distances and between mountain ranges. *See* Connor and Rosmarino, 2008. Thus, even if the solar installations are not directly on top of tortoise burrows, the impacts within the habitats of this species cannot be dismissed.

While the DPEIS minimizes the scale of the impacts to the Sonoran desert tortoise by isolating the acreage at each SEZ, it is important to acknowledge the range-wide threats this species faces, including the cumulative effects of solar development at other SEZs and on other solar project sites. Where the BLM discusses compensatory mitigation by improving habitats on acquired lands, we propose the agency consider retiring grazing allotments and reducing this known adverse effect in tortoise habitat.

The DPEIS does not include mitigation or monitoring measures for the ephemeral washes on the public lands proposed for development. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). Because the Arizona BLM does not measure or monitor rangeland health attributes in washes, the downstream impacts of the SEZ developments will go unquantified and unmitigated. The BLM must simultaneously develop land health standards and practices that will capture any consequences of the solar developments, with baseline data on the ephemeral wash environment collected before any development takes place. See, for example, the wetlands on the Bullard Wash SEZ; the ecological health of these important habitats would not be monitored under any existing monitoring protocols employed by the BLM. DPEIS at 8.2-68.

Comments Specific to the Proposed Brenda SEZ (Arizona)

The SEZ-specific design features for the Brenda SEZ in Arizona include the development of additional range infrastructure and changes to grazing management to mitigate the loss of AUM on the Crowder-Weisser allotment. DPEIS at 8.1-5. As we suggested in our earlier comments, the BLM should have considered simply allowing for relinquishment of those AUM as well. This is especially pertinent because the Crowder-Weisser allotment provides habitat for the Sonoran desert tortoise, a species that would be adversely affected by additional range developments and grazing concentration areas. By range "improvements," the agency usually means additional water supplies, a cumulative impact that the DPEIS fails to analyze at this SEZ location. DPEIS at 8.1-7.

The DPEIS hints at potential compensatory mechanisms to balance acreage of habitat loss but does not commit to a mitigation program for the solar proposal. DPEIS at 8.1-148. It suggests improving the carrying capacity for tortoise on acquired lands or enhancing tortoise habitat on federal land, but it does not commit to any clear course of action to do so. The proposed action should have specific offsets and actions identified if the BLM expects the public to have any faith in these mitigation measures. For example, the BLM could have used the PEIS to modify all land use plans to allow voluntary buyout of grazing permits

The DPEIS posits a reduction in 315 AUM from the Crowder-Weisser allotment due to the footprint of the Brenda SEZ. DPEIS at 8.1-29. The DPEIS discusses absorption of the AUM on other parts of the vast acreage associated with this allotment. The DPEIS should acknowledge, and the BLM should clarify, that earlier assessments of the rangeland health of this allotment have specifically indicated, "The public lands [of the allotment] do not regularly produce sufficient amounts of forages to sustain a consistent livestock grazing program throughout the allotment." Crowder-Weisser Standards and Guidelines Assessment. The active use on the allotment has been substantially lower than the permitted use for this reason. Therefore, the proposed action should be to simply eliminate the acreage associated with the solar development and adjust the AUM on the permit to the actual forage remaining on the allotment.

We're concerned about the "should" statements in the SEZ-specific design features tables (e.g. "Bouse Wash should be avoided… Tyson Wash should be spanned by the transmission line," DPEIS at 8.1-9). Because these are supposed to be mitigation measures for reducing the impact of solar development on wildlife resources, the DPEIS must use imperative language ("will" and "shall") to make these hard and fast commitments. Without this, the mitigation measures promised in the DPEIS are merely suggested remedies and the contingent effects analysis is meaningless.

We note that the DPEIS only assesses the impact of the acoustic environment on the human communities surrounding the Brenda SEZ. DPEIS at 8.1-14. It does not consider the acoustic impacts of the proposed developments on the native and migratory wildlife species of the region, an oversight that must be remedied before the final EIS. The sonic considerations are not even addressed in the species-specific analysis later in the chapter. See, for example, DPEIS 8.1-152.

In our scoping comments, we specifically raised the issue of invasive species infestation in the Brenda SEZ. The DPEIS does not respond specifically, but generally describes, "Noxious weeds could become established." DPEIS at 8.1-8. This ignores the site-specific information that problematic invasive weeds are already there. The DPEIS reports that no noxious weeds are present on the Brenda SEZ (DPEIS at 8.1-72) but does not consider whether weeds are nonetheless present, including *Brassica tournefortii*, a highly flammable and invasive pest plant. Moreover, while BLM does not report these species being on the proposed SEZ in August 2009, it does not describe whether they are present on the proposed transmission line footprint or within the cumulative impact area.

The DPEIS claims that there are no ground-disturbing activities associated with the project developments within the area of indirect effects. DPEIS at 8.1-146. This disregards the effects of hazardous waste spills travelling through the soil, affecting biological soil components, reductions to soil integrity and stability.

Section 8.1.11 of the DPEIS describes the impacts to wildlife and aquatic biota that could occur with the potentially affected area of the proposed Brenda SEZ. DPEIS at 8.1-79. We find it remarkable that the same justification is provided for nearly every species that the BLM considers: "Small overall impact." The reality is, cumulatively, the impact will be profound within the area that the SEZ is located, likely the complete obliteration of suitable habitat for many dozens of species and hundreds of individuals. The DPEIS should not minimize but rather disclose the extent and intensity of the proposal.

It is not clear from the DPEIS whether the BLM has considered the cumulative impacts of the Brenda SEZ in context of the "Quartzsite Solar Energy Project" in La Paz County, Arizona. The Quartzsite project was scoped in January 2010, and it is also located on a section of the Crowder-Weisser allotment very near to the proposed SEZ. The potential for this additional (and undescribed in the DPEIS) development in the same area is a present and reasonably foreseeable future action that should have been analyzed and disclosed. The Quartzsite project is likely to have serious visual impacts (given the extent of proposed infrastructure) and cumulative effects on wildlife species in the area.

Comments Specific to the Proposed Bullard Wash SEZ (Arizona)

The Bullard Wash SEZ is in a remote desert area, with the nearest major road approximately 5 miles away to the south and the nearest transmission line 5 miles to the north of the SEZ. DPEIS at 8.2-1. The extent to which this area has already been impacted by human activities is unspecified, but its remoteness and inaccessibility make it an inappropriate site for new, industrial development. The BLM should have considered lands that are already along roadway corridors or transmission lines in order to minimize the footprint of the solar development.

The Bullard Wash SEZ is situated in an area recognized for its remoteness and inaccessibility, as signified by the high number of Wilderness Areas and Areas of Critical Environmental Concern in the surrounding public lands. DPEIS at 8.219. The experience of visitors to these places and the integrity of the habitats for non-human species reflect the lack of industrialized landscapes, exactly the opposite of what the BLM is now proposing. The BLM must commit to limiting types of solar development at this SEZ to those which would not impact the viewshed. DPEIS at 8.2-21. Moreover, the experience of Wilderness is not only visual, but a feeling of solitude that cannot be calculated in spatial analysis. BLM has not conducted a social assessment to determine these impacts to human experience of the natural environment.

We note that the DPEIS only assesses the impact of the acoustic environment on the human communities surrounding the Bullard Wash SEZ. DPEIS at 8.2-14. This does not consider the acoustic impacts of the proposed developments on the native and migratory wildlife species of the region, an oversight that must be remedied before the final EIS. The sonic considerations are not even addressed in the species-specific analysis later in the chapter.

The Bullard Wash SEZ occurs on three perennial/ephemeral grazing allotments. DPEIS at 8.2-27. Similar to the Brenda SEZ, the BLM cannot posit a ratio-based reduction in AUM on these allotments scaled to acreage lost; desert vegetation is extremely patchy and a new "carrying capacity" estimate would need to be done before grazing is reauthorized on the newly-demarcated boundaries of each allotment. Where the DPEIS says, "Quantification of the impact on the grazing permittees would require a specific analysis..." (DPEIS at 8.2-28) it should more appropriately read, "A new EIS will be completed to determine a range of alternatives for the downsized allotments."

The calculations of the impacts to groundwater inflows from the Bullard Creek SEZ's groundwater basin from solar development are an issue not just for the geological stability of the area (subsidence), but because the contribution of groundwater to the nearby surface waters of the Havasu Lake and Bill Williams river also relates to the extent of riparian habitat available for imperiled species. The DPEIS does not address these "downstream" impacts of the proposed solar development. DPEIS at 8.2-64. Stating that withdrawals "should" be limited to prevent impacts to riparian areas is insufficient protection for these special habitats. DPEIS at 8.2-80.

Comments Specific to the Proposed Gillespie SEZ (Arizona)

The Gillespie SEZ is described in the PEIS as "undeveloped and rural" and "undeveloped scrubland characteristic of a semiarid desert valley." DPEIS at 8.3-1. The proposed action would completely change the description of this landscape, converting the undeveloped character to an industrialized power generation station, permanently stripping these lands of their rural and desert valley character.

We note that the map included in the DPEIS does not address the designation of the nearby BLM lands. DPEIS at 8.3-2. The lands to the east to the east of the SEZ are within the Sonoran Desert National Monument, a place so special and remarkable that it was so designated in 2001. The proclamation describes this area as having "an extraordinary array of biological, scientific, and historic resources. The most biologically diverse of the North American deserts…. excellent habitat for a wide range of wildlife species." Surely, the BLM does not expect the public to believe those values stop at the arbitrary boundaries of the monument? The Gillespie SEZ and the surrounding public lands are equally important to the ecological integrity of the region.

The DPEIS discusses mitigating the loss of 14.6 percent reduction in future ephemeral grazing authorizations in the Layton allotment as a result of development in the Gillespie SEZ. Table 8.3.1.3-1. It is unclear how the BLM determined this reduction; carrying capacity is not arbitrarily determined by acreage, but should be based on actual available resources. DPEIS at 8.3-30. This description also fails to correspond with descriptions later in the document that admit the Gillespie SEZ would affect four grazing allotments. DPEIS at 8.3-29.

It is similarly unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands.

The amount of water being discussed in the DPEIS is enormous. Table 8.3.1.3-1. The availability of this water has not been demonstrated. DPEIS at 8.3-56. Water availability in Arizona is extremely uncertain, and the idea that Arizona will give up a share of its precious water to produce electricity for export to California and the west-wide grid is highly speculative. The DPEIS fails to account for these transfers or substantiate its claims about available water resources in the Phoenix AMA.

Impacts to the riparian areas dependent on the same aquifer should be considered more thoroughly than the DPEIS currently considered them. The admissions in the cultural resources section of Table 8.3.1.3-1 are striking: "Development in the proposed SEZ would eliminate some traditionally important plants and some habitat of traditionally important animal species." This conflicts with statements elsewhere in the DPEIS that downplay the significance of the effects on habitat.

It is clear from the map in Figure 8.3.3.1-1 that the areas being considered by the BLM for solar development would completely fragment and isolate the specially-reserved areas on BLM lands. The continuity and connectivity benefits of adjacent Wilderness, monuments, and

special resource management areas would be utterly undone by opening all the other BLM lands in the region. With industrialized solar development in the interstices, the value of the habits at each otherwise protected area is diminished. The preferred alternative would have isolating consequences for wildlife populations.

The statements in the DPEIS regarding the decommissioning and reclamation of the solar site are entirely unrealistic. The DPEIS states that the site would be reclaimed it its preconstruction state. 8.3-61. One only need to watch this video (http://www.youtube.com/watch?feature=player_embedded&v=5BGRD21H07Y) to understand how impossible it will be to ever restore the Sonoran desert to pre-industrialized state. (The video is taken in California at the BrightSource Energy development on BLM land.) The unlikelihood that this site can ever be "reclaimed" (and we note that BLM is using the language of the 1872 Mining Act rather than the contemporary "restoration") is demonstrated by the inclusion of precipitation data later in the DPEIS. DPEIS at 8.3-65. The area averages 7.6 inches of rain annually. Id. Perennial vegetation in this desert is slow-growing and would take centuries to re-colonize the development site. This realistic time-frame should be made more explicit in the DPEIS. Statements such as "Re-establishment of desert scrub communities in temporarily disturbed areas would likely be very difficult and might require extended periods of time," (DPEIS at 8.3-73) are misleading because the use of the descriptor "temporary" is inaccurate and the "extended periods of time" is vague. This is a permanent and wholesale destruction of native vegetation that will take centuries, if ever, to restore.

7. NEVADA PROPOSED SOLAR ENERGY ZONES

Seven SEZ have been proposed in Nevada: Amargosa Valley (32,699 acres), Dry Lake (16,516 acres), Delamar Valley (17,932 acres), Dry Lake Valley North (49,775 acres), East Mormon Mountain (7,418 acres), Gold Point (5,830 acres), and Miller's (19,205 acres).

Four of these SEZ (Amargosa Valley, Dry Lake, Delamar Valley and, East Mormon Mountain) are in desert tortoise habitat.

Six of the seven SEZ are located within BLM grazing allotments: Millers (Monte Cristo Allotment), Gold Point (Magruder Mountain Allotment), Dry Lake (Dry Lake Allotment) Mormon Mountain (Gourd Springs and Summit Springs allotments), Dry Lake Valley (Wilson Springs, Simpson and Ely allotments), and Delamar (Buckhorn and Oak Springs allotments.

Three of the SEZ (Amargosa Valley, Dry Lake Valley North, and Delamar Valley) are situated in regions of the state with very limited ground and surface waters. These water-related issues make these areas unsuitable for further consideration.

Comments Specific to the Proposed Amargosa Valley SEZ (Nevada)

The proposed 31,625 acre Amargosa Valley SEZ is located in Nye County in southern Nevada near the California border. The proposed Amargosa Valley site lies between Death

Valley National Park and Ash Meadows National Wildlife Refuge and is part of the Death Valley regional groundwater flow system.

The 23,000 acre Ash Meadows National Wildlife Refuge provides habitat for 12 species listed under the Endangered Species Act. The refuge was established specifically to protect these threatened and endangered species. Most of the listed species are dependent on aquatic or wetland environments within the refuge. The refuge also includes the National Park Service administered Devil's Hole, the only known habitat for the Devil's Hole pupfish. On November 4, 2008, the Nevada State Engineer issued Order 1197 announcing that new applications to appropriate additional water from the Amargosa Desert basin within 25 miles of Devil's Hole would be denied due to concern over the effect of groundwater pumping on the water level in Devil's Hole. Based on the above, the Amargosa Valley study area should be eliminated from further consideration as a Solar Energy Zone.

The desert tortoise section does not discuss important information relevant to the analysis of impacts. The desert tortoise population in the local area (Amargosa Desert/Pahrump Valley) can be genetically delineated from other desert tortoise populations in Nevada, yet none of the established Nevada desert tortoise ACECs adequately conserves this population (Britten *et al*., 1997[7]). The genetic lineation of the "Amargosa" desert tortoise sub-type has been confirmed and refined by Haggerty, 2008[8].

The Amargosa desert tortoise subtype is also of scientific interest since it occupies the northern end of the species range. The limited occurrence, importance to genetic diversity and under representation of the sub-type in conservation areas underlies the need to conserve this desert tortoise population. This is especially important given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan noted, "Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as "refuges" or critical habitat for the species." (USFWS 2008 at 133) The proposed Amargosa SEZ will block any northward shift of this population because it crosses the Amargosa Valley.

The cumulative effects analysis points out that there are 14,070 acres in the proposed SEZ that already have approved projects or projects under NEPA analysis. The SEZ estimates that another 25,300 acres would be developed over a 20 year analysis horizon. However, the DPEIS does not include any analysis of the potential impacts and effects of over 39,000 acres of desert tortoise habitat being destroyed.

[7] Britten, H. B., Riddle, B. R., Brussard, P. F., Marlow, R. and Lee, Jr., T. E. 1997. Genetic delineation of management units for the desert tortoise, *Gopherus agassizii*, in the northeastern Mojave Desert. Copeia 1997: 523-530.

[8] Hagerty, B. 2008. Ecological Genetics of the Mojave Desert Tortoise. PhD. Dissertation. University of Nevada, Reno. 244 pp.

Because of resource conflicts related to water resources, desert tortoise, other threatened and endangered species, and other special status species, BLM should remove the Amargosa SEZ from further consideration.

Comments Specific to the Proposed Dry Lake Valley North SEZ & Delamar Valley SEZ (Nevada)

The Dry Lake and Delamar Valleys are part of the White River Flow System. Groundwater in these two basins has been fully appropriated over-appropriated in down gradient basins. These proposed Dry Lake Valley North SEZ and Delamar Valley SEZ are inappropriate locations for solar energy project development due to the lack of groundwater. BLM should remove the proposed Dry Lake Valley North SEZ and the Delamar Valley SEZ from further consideration.

Comments Specific to the Proposed East Mormon Mountain SEZ & Dry Lake SEZ (Nevada)

The proposed Dry Lake SEZ is located on the Dry Lake playa. Playas are significant ecotypes that are underrepresented in conservation areas. Barren, usually alkaline desert playas (dry lakebeds), are found in closed basins in the Intermountain West. These basins are intermittently (once every few years) or seasonally (every year) flooded. Water is prevented from percolating through the soil by an impermeable subsurface layer and is left to evaporate. Salt crusts and high salt in the soils greatly affect species composition. While the appearance is barren, some species such as iodinebush, black greasewood, spiny hopsage, Lemmon's alkali grass, Great Basin wildrye, saltgrass, or saltbush occur around the margins of the playa. This system grades into salt-desert scrub and sagebrush habitats. Downwind of playas, active and stabilized sand dunes often form. Thus if the subsurface of a playa is disturbed, the playa's integral role in the ecosystem may irreversibly untangle.

Both the proposed East Mormon Mountain SEZ and the proposed Dry Lake SEZ include desert tortoise habitat. East Mormon Mountain is immediately adjacent to the Mormon Mesa DWMA and Beaver Dam Slope DWMA in the Northeastern Mojave Recovery Unit. Recent monitoring reports from USFWS indicate that the northern populations within the Northeastern Mojave desert tortoise Recovery Unit are low and appear to be declining. Because environmental stressors are indicated as a reason for this species decline, these SEZ should be withdrawn from further consideration as Solar Energy Zones.

Comments Specific to the Proposed Gold Point SEZ (Nevada)

The proposed Gold Point SEZ, totaling an area of 4,810 acres, is located in upper Lida Valley, a closed basin lying between MacGruder Mountain and Slate Ridge. The locale is currently pristine and remote from load centers, and a new transmission line would be needed to provide access from the SEZ to the transmission grid. There resident pronghorn herd that stays in the Valley year-round. No other active energy development projects have been proposed near this site. Because of its remoteness, pristine condition, lack of water, and other conflicts, BLM should withdraw the proposed Gold Point SEZ from further consideration.

8. UTAH PROPOSED SOLAR ENERGY ZONES

Three proposed SEZ have been identified in Utah: Escalante Valley (6,614 acres), Milford Flats South (6,480 acres), and Wah Wah Valley (6,097 acres).

The ground water situation in the region is critical with most of the basins currently over-appropriated and closed to new surface water and groundwater appropriations (Utah DWR 2010).

The three study areas lie within BLM grazing allotments. Escalante Valley is within Butte Allotment, Milford Flats South is within the Minersville allotment group, Wah Wah Valley is in Wah-Wah Watson Allotment.

Bald eagle, *Haliaeetus leucocephal*, may occur on all the Utah SEZ. Bald eagles are protected under the under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Although the DPEIS mentions the loss of foraging habitat it fails to analyze risks from structures associated with solar power plants. This deficit must be addressed. The DPEIS recognizes that the fully protected golden eagle (*Aquila chrysaetos*) may forage on the proposed Utah SEZ. The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". Although the DPEIS mentions the loss of foraging habitat it fails to analyze risks from structures associated with solar power plants. Required upgrades to existing transmission lines may exacerbate the risks of take.

Comments Specific to Escalante Valley SEZ (Utah)

The proposed 6,614 acres Escalante Valley SEZ is located in Iron County in southwestern Utah.

This relatively remote site would need construction of extensive new access roads. New transmission lines or upgrades of existing transmission lines would be required to bring electricity from the proposed Escalante Valley SEZ to load centers. The size and location of these are not described further in the DPEIR. However, since these will have similar impacts to the SEZ itself, they must be described in the cumulative effects analysis.

The proposed Escalante Valley SEZ is within Butte grazing allotment and would remove about 20% of the allotment. The SEZ-Specific Design Features states "Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment." DPEIS at 13.1-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands.

If development of additional range improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis.

The proposed Escalante Valley SEZ provides habitat for a number of candidate species and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, and the Utah prairie dog. The Escalante Valley SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species.

Although it has not been surveyed, the BLM believes that the proposed Escalante Valley SEZ has a high potential for containing prehistoric sites in the dune area on the west side of the SEZ; it also has some potential for containing historic sites. The BLM states that "A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties." But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low resource conflicts.

Comments Specific to Milford Flats South SEZ (Utah)

The proposed 6,480 acres Milford Flats South SEZ is located in Beaver County in southwestern Utah about 21 mi (34 km) northeast of the proposed Escalante Valley SEZ.

This SEZ would need construction of extensive new access roads (about 5 miles). About 19 miles of new transmission lines or upgrades of existing transmission lines would be required to bring electricity from the proposed Milford Flats South SEZ to load centers. The size and location of these are not described further in the DPEIR. However, since these will have similar impacts to the SEZ itself, these reasonably foreseeable projects must be considered in the cumulative effects analysis.

The proposed Milford Flats South SEZ is within the Minersville allotment group and would remove about 10-15% of the allotments. DPEIS 13.2-5. The SEZ-Specific Design Features states "Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment." DPEIS at 13.2-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands. If development of additional range

improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis.

The proposed Milford Flats SEZ provides habitat for a number of list, candidate, and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, and the Utah prairie dog. The Milford Flats SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species.

The BLM states that "A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties." But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low cultural resource conflicts.

Comments Specific to Wah Wah Valley SEZ (Utah)

The proposed 6,097 acres Wah Wah Valley SEZ is located in Beaver County in southwestern Utah about 21 miles northwest of the proposed Milford Flats South SEZ.

The proposed Wah Wah Valley SEZ will have serious impacts on special status species particularly the greater sage-grouse. Transmission access to the proposed Wah Wah Valley SEZ currently does not exist. The nearest existing transmission line is a north–south running 130-kV about 42 miles east of the SEZ. As of February 2010, there were no ROW applications for solar projects within the SEZ. Because of the resource conflicts, the lack of transmission and the lack of demand, BLM should drop this SEZ from further consideration.

The proposed Wah Wah Valley SEZ will occupy about 2.6% of the Wah-Wah Lawson allotment. DPEIS 13.3-23. The SEZ-Specific Design Features states "Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment." DPEIS at 13.1-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands. If development of additional range improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis. In this case, the effect on the permittee would be so small that BLM should simply decrease the authorized AUM pro rata.

The proposed Wah Wah Valley SEZ provides habitat for a number of candidate species and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, the golden eagle, and the Utah prairie dog. The Wah Wah Valley SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species. The proposed transmission line that would be required to develop this SEZ passes through crucial greater sage-grouse brooding habitat. That conflict alone is sufficient to enough to invalidate any further selection of this proposed SEZ

Only one small, 2-acre survey for a gravel pit has been conducted within the proposed Wah Wah Valley SEZ; consequently, no archaeological sites have been recorded by the BLM. DPEIS at 13.3-231. Although it has not been surveyed, the BLM believes that the proposed Wah Wah Valley SEZ has the potential to contain significant cultural resources, although the potential is relatively low. The BLM states that "A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties." But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low resource conflicts.

9. THE DPEIS IS FATALLY FLAWED AND WILL REQUIRE RECIRCULATION OF A REVISED DPEIS

The DPEIS is fatally flawed in a number of respects that will require the BLM to prepare a supplemental NEPA document for recirculation for public comment. The DPEIS provides no quantitative estimates of the numbers of affected individuals for the many threatened and endangered, and special status species that will be affected by the three alternatives. It fails to even list the threatened and endangered species that occur in the areas opened to development under the preferred alternative.

The BLM states in the DPEIS that for its preferred alternative it was unable to obtain complete geographic information system (GIS) data across the six-state study area and thus could not map the exact footprint of the alternative nor calculate the exact acreage. DPEIS at 2-3.

These deficiencies amount to failure to comply with provisions of the Endangered Species Act, FLPMA as well as NEPA. The BLM should prepare a revised Draft PEIS that reviews an adequate range of alternatives, that adequately describes the direct, indirect, and cumulative impacts, and that takes a hard look at those environmental impacts.

We thank you for the opportunity to provide these comments on the Draft PEIS, and we look forward to seeing our recommendations incorporated in the next iteration of this document.

Please continue to include Western Watersheds Project on your list of interested public for all future mailings.

Sincerely,

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