

Thank you for your comment, Michael Connor.

The comment tracking number that has been assigned to your comment is SolarM60184.

Comment Date: September 11, 2009 16:53:34PM  
Solar Energy Development PEIS  
Comment ID: SolarM60184

First Name: Michael  
Middle Initial: J  
Last Name: Connor  
Organization: Western Watersheds Project  
Address: California Office  
Address 2:  
Address 3:  
City: Reseda  
State: CA  
Zip: 91337  
Country: USA  
Email: [mjconnor@westernwatersheds.org](mailto:mjconnor@westernwatersheds.org)  
Privacy Preference: Don't withhold name or address from public record  
Attachment: 09-10-09-WWPBLMSEZSolarPEIScomments.pdf

Comment Submitted:

Comments from Western Watersheds Project are attached as a pdf file.



**Michael J. Connor, Ph.D.**  
**California Director**  
**P.O. Box 2364, Reseda, CA 91337-2364**  
**Tel: (818) 345-0425**  
**Email: [mjconnor@westernwatersheds.org](mailto:mjconnor@westernwatersheds.org)**  
**Web site: [www.westernwatersheds.org](http://www.westernwatersheds.org)**

*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.

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) Locate solar developments outside of the most environmentally sensitive areas.**

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.<sup>1</sup> 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

---

<sup>1</sup> 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 be 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.<sup>2</sup> This area provides the only connectivity between tortoises in the Southern Mojave and Central Mojave populations as identified by Murphy et al, 2007<sup>3</sup>, 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.

---

<sup>2</sup> 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/~westmojav/e/images/Wemo\\_Final.pdf](http://fiesta.bren.ucsb.edu/~westmojav/e/images/Wemo_Final.pdf)

<sup>3</sup> 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 (CNDDDB 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.<sup>4</sup> 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

---

<sup>4</sup> 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.

#### Amargosa Valley:

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.<sup>5</sup> 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.<sup>6</sup> 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:

---

<sup>5</sup> 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.

<sup>6</sup> 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.<sup>7</sup> 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

---

<sup>7</sup> Wohlfahrt, G., Fenstermaker, L. F. and Arnone, J. A. III. 2008. Large annual net ecosystem CO<sub>2</sub> uptake of a Mojave Desert ecosystem. *Global Change Biology*. 14(7): 1475-1487.

tortoise habitat in 1991.<sup>8</sup> 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,

A handwritten signature in black ink that reads "Michael J. Connor". The signature is written in a cursive style and is underlined with a single horizontal line.

Michael J. Connor, Ph.D.,  
California Director  
Western Watersheds Project  
P.O. Box 2364  
Reseda, CA 91337-2364.  
(818) 345-0425  
<mjconnor@westernwatersheds.org>

---

<sup>8</sup> 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.