

DESERT TORTOISE COUNCIL

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Via email only

Renewable Energy Project Manager, Bureau of Land Management

Southern Nevada District, 4701 N. Torrey Pines Drive

Las Vegas, NV 89130-2301

Attn: Attn: Nicolle Gaddis

blm_nv_sndo_yellowpine@blm.gov

RE: Comment Letter on the Bureau of Land Management's Notice of Intent to Prepare an Environmental Impact Statement and a Notice of Segregation for the Proposed Yellow Pine Solar Project, Clark County, NV

Dear Ms. Gaddis:

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public's understanding of desert tortoise species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and Mexico, the Council routinely provides information and other forms of assistance to individuals, organizations, and regulatory agencies on matters potentially affecting desert tortoises within their geographic ranges.

We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats likely occupied by Agassiz's desert tortoise (*Gopherus agassizii*) (synonymous with "Mojave desert tortoise"), our comments pertain to enhancing protection of this species during activities authorized by the Bureau of Land Management (BLM).

Notice of Intent

In the Bureau of Land Management's (BLM) Notice of Intent (NOI) in the *Federal Register* (Vol. 83, No. 51 /Friday, June 1, 2018), the BLM Las Vegas Field Office intends to prepare a Draft Environmental Impact Statement (Draft EIS) for the Yellow Pine Solar Project (Project). Yellow Pine Solar, LLC, has requested an amendment to a 2011 right-of-way (ROW) authorization filed by Boulevard Associates, LLC, for the construction, operation, maintenance, and decommissioning of a 250-megawatt (MW) photovoltaic (PV) power plant. The Project includes 9,290 acres of lands managed by the BLM and would generate up to 1,200 jobs at peak construction. Once construction is completed, it would provide renewable energy to Nevada's electrical transmission grid and an interconnection point with the Valley Electric grid for connection to California.

The proposed Project would be located at the intersection of Nevada State Route 160 and Tecopa Road, about 10 miles southeast of Pahrump, Nevada, and 32 miles west of Las Vegas.

Scoping

The purpose of scoping is to allow the public to participate in an “early and open process for determining the scope of issues to be addressed, and for identifying the significant issues related to a proposed action” (40 Code of Federal Regulations (CFR) 1501.7). Although BLM published an NOI and invited the public’s comments on the proposed Project, BLM should have provided information in the NOI that clarified why BLM believes there is a need to segregate 9,290 acres of BLM land when the proposed Project is about 3,000 acres. We believe that providing incomplete information in the NOI hampered the public’s ability to understand the proposed Project. This then hampered their ability to determine the scope of the issues for the Project and to identify their issues or concerns regarding the proposed Project to BLM. We request that BLM reissue the NOI and provide clarifying information on why there is a need to segregate 9,290 acres for a 3,000-acre Project, what BLM has planned for the remaining 6,290 acres (approximately), and how the remaining acreage relates to land uses in adjacent/nearby areas. In addition, there was no mention of a new feature, installation and use of lithium-ion batteries, to provide power at night or cloudy days. We learned of this feature from a newspaper article.

Compliance with BLM’s Current Land Management Plan

The Draft EIS should discuss how this proposed Project fits within the management structure of the current land management plan for the area, the Las Vegas Resource Management Plan (BLM 1998). It should provide maps of critical habitat for the Mojave desert tortoise (USFWS 1994a), Areas of Critical Environmental Concern (ACECs), and other areas identified as necessary for special management by BLM [e.g., National Conservation Lands (NCLs)]; U.S. Fish and Wildlife Service (USFWS) (e.g., linkage habitats between desert tortoise populations); Nevada Department of Wildlife (NDOW); other federal, state, and local agencies; and tribal lands.

Analysis of Alternatives

The Council supports alternatives to reduce the need for additional solar energy projects in the relatively undisturbed habitats in the Mojave Desert. One such alternative is rooftop solar. The owners of large buildings should install solar panels on their roofs, and sell the power they generate back to utilities for distribution into the power grid. This approach puts the generation of electricity where the demand is greatest, in populated areas. It may also reduce transmission costs; the number of affected resources that are analyzed under the National Environmental Policy Act (NEPA) and other environmental laws; mitigation costs for direct, indirect, and cumulative impacts; monitoring and adaptive management costs; and habitat restoration costs following decommissioning. The Draft EIS should include an analysis of where the energy generated by this Project will be sent/used, and how the need for energy in those targeted areas may be satisfied by rooftop solar. We request that at least one viable alternative be analyzed in the Draft EIS where electricity generation via solar energy is located much closer to the areas where the energy use has the greatest demand, including generation in urban/suburban areas (i.e., “rooftop solar”).

In addition, BLM should include another viable alternative of locating solar projects on bladed or highly degraded tracts of land (e.g., abandoned agricultural fields). Such an alternative would not result in the destruction of desert habitats and mitigation for the lost functions and values of these habitats. These losses and mitigation are costly from an economic, environmental, and social perspective. To support the development of these additional alternatives, we note that a federal appellate court has previously ruled that in its EIS the BLM must evaluate a reasonable range of alternatives to the project including other sites and must give adequate consideration to the public's needs and objectives in balancing ecological protection with the purpose of the proposed project, along with adequately addressing the proposed project's impacts on the desert's sensitive ecological system (*National Parks & Conservation Association v. Bureau of Land Management*, Ninth Cir. Dkt Nos. 05-56814 *et seq.* (11/10/09)).

The Draft EIS should consider the monitoring results of recently developed solar projects where soils have been bladed versus those facilities where the vegetation has been mowed or crushed and allowed to revegetate the area. In the latter case, it may be appropriate to allow tortoises to enter into the facilities and re-establish residency (i.e., repatriate) under the solar panels as vegetation recolonizes the area. This could be an option for the currently described Project alternative in the NOI. It should be designed/implemented as a scientific experiment to add to the limited data on this approach to determine the extent of effects on Mojave desert tortoise populations and movements/connectivity between populations, which is an important issue for this species.

The Draft EIS should include a discussion of the minimum linkage design necessary for conservation and recovery of the desert tortoise (USFWS 2011), and how the Project, along with other existing projects, would impact the linkages between tortoise populations that is needed for survival and recovery.

Standardized Surveys for Flora and Fauna

For the Draft EIS to fully assess the effects and identify potentially significant impacts including cumulative impacts, the following surveys should be performed to determine the extent of rare plant and animal populations occurring within the area that will be affected both directly and indirectly by the proposed Project. Results of these surveys will help determine appropriate permits/authorizations that will be needed from federal and state agencies (e.g., USFWS, Nevada Department of Forestry, Nevada Department of Wildlife, etc.), avoidance and other mitigation measures, monitoring, and adaptive management.

- Prior to conducting surveys, a knowledgeable biologist should perform a records search of the Nevada Natural Heritage Program (NNHP) (http://heritage.nv.gov/get_data) for rare plant and animal species reported from the region. The results of the NNHP review would be reported in the Draft EIS with an indication of suitable and occupied habitats for all rare species reported from the region based on performing species specific surveys described below.

- Formal protocol surveys for the Mojave desert tortoise (USFWS 2017) must be conducted at the proper times of year. As per this protocol, because the impact area is larger than 500 acres, the surveys must be performed from April to May or September to October so that a statistical estimate of adult tortoise densities can be determined for all areas that may be

adversely affected and reported in the Draft EIS. If any tortoise signs are found, federal authorization for incidental take must be obtained prior to ground disturbance. We strongly recommend that BLM require that only experienced biologists perform protocol surveys, which may mean that USFWS biologists review their credentials prior to conducting the surveys (USFWS 2009).

- To determine the full extent of impacts to tortoises, the Project Proponent's biologist should consult with the Las Vegas office of the USFWS to determine the action area for this Project. The USFWS defines "action area" in 50 CFR 402.2 and their Desert Tortoise Field Manual (USFWS 2009) as "all areas to be affected directly or indirectly by proposed development and not merely the immediate area involved in the action." To facilitate compliance with the Federal Endangered Species Act (FESA), it is imperative that the Project Proponent and BLM coordinate early with the USFWS to identify the action area for this Project and determine the full extent of surveys that should be performed.

- BLM should ensure that actions are implemented to comply with the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and associated regulations, executive orders, and policies to avoid mortality or injury to migratory birds. Because of their use of burrows for shelter and breeding, surveys for western burrowing owl (*Athene cunicularia*) should be completed. If burrowing owl sign is found, BLM and the Project Proponent should develop a science-based mitigation/monitoring/adaptive management plan with the USFWS and Nevada Department of Wildlife and ensure that this plan is implemented.

- There are likely to be special status plant species found in/near the Project Area. This information should be assessed by accessing the Nevada Natural Heritage Program (NNHP) literature review prior to conducting field surveys. Species or their habitats known to occur in/near the Project Area should be sought during field surveys and their presence/absence discussed in the Draft EIS. Surveys should be completed at the appropriate time of year by qualified biologists (preferably botanists) using the latest acceptable methodologies. In addition, Nevada Administrative Code (NAC) 527 provides a list of species and subspecies of native plants to be critically endangered and threatened with extinction. These fully protected species may not be removed or destroyed except pursuant to a permit issued by the State Forester (NAC 527.090). The methods used to survey for special status plant species, the results, and the mitigation/monitoring/adaptive management that will be implemented to avoid or otherwise mitigate adverse effects to these species and their habitats should be included in the Draft EIS.

Direct and Indirect Impacts including the Road Effect Zone

We expect that the Draft EIS will document how many acres would be impacted directly by solar arrays, access roads to the site, administration/maintenance buildings, parking areas, transmission towers, switchyards, internal access roads, access roads along gen-tie lines, a perimeter road, perimeter fencing, substations (e.g., the Project footprint). We also request that separate calculations document how many acres of desert tortoise habitats would be temporarily and permanently impacted both directly and indirectly (e.g., "road effect zone," etc.) by the proposed Project. As given below, these acreages should be based on field surveys for tortoises rather than available models.

We request that the Draft EIS include information on the locations, sizes, and arrangements of these roads to the proposed Project and within it, who will have access to them, whether the Project area will be secured to prevent human access or vandalism, and if so, what methods would be used. The presence of roads even with low vehicle use has numerous adverse effects on the desert tortoise and its habitats that have been reported in the scientific literature. These include the deterioration/loss of wildlife habitat, hydrology, geomorphology, and air quality; increased competition and predation (including by humans); and the loss of naturalness or pristine qualities.

BLM states that up to 1,200 workers per day (during peak construction periods) would be required during the construction of the proposed Project. We presume that workers would travel from Pahrump, Las Vegas, or farther away on a daily basis. This increased traffic on Tecopa Road may increase the risk of death or injury to the Mojave desert tortoise and other wildlife species. All direct and indirect impacts from the road effect zone should be analyzed in the Draft EIS and fully mitigated. Exclusion fencing for tortoises and other wildlife species along the edges of access roads should be considered.

Please include in the Draft EIS analyses, the five major categories of primary road effects to the tortoise and special status species: (1) wildlife mortality from collisions with vehicles; (2) hindrance/barrier to animal movements thereby reducing access to resources and mates; (3) degradation of habitat quality; (4) habitat loss caused by disturbance effects in the wider environment and from the physical occupation of land by the road; and (5) subdividing animal populations into smaller and more vulnerable fractions (Jaeger et al. 2005a, 2005b, Roedenbeck et al. 2007).

Road establishment is often followed by various indirect impacts such as increased human access causing disturbance of species' behavior, increased predation, spread of invasive species that alters/degrades habitat, and vandalism and/or collection. The analysis of the impacts from road establishment and use should include cumulative effects to the tortoise with respect to nearby critical habitat, areas identified as important for connectivity between nearby critical habitat units as these linkage areas serve as corridors for maintaining genetic and demographic connectivity between populations, for the recovery unit, and range wide. These and other indirect impacts to the Mojave desert tortoise should be analyzed in the Draft EIS from Project construction, operations and maintenance, decommissioning, and habitat restoration.

Hazardous Materials

According to a newspaper article on the proposed Project, Yellow Pine would include storage of power in lithium-ion batteries. These batteries have the potential to explode and cause fires and are not compatible with using water for fighting fires. We request that the Draft EIS include a fire prevention plan in addition to a fire management plan specifically targeting methods to deal with explosions/fires produced by these batteries as well as other sources of fuel and explosives on the Project site.

Hydrology and Water Quality

We have concerns about impacts to the quantity and flow of surface and ground water and its water quality. There is a major wash system in the Project area that flows from the Spring

Mountains north-northeast of the Project site to the south-southwest to the Amargosa River. This wash system is likely important to the well-being of the tortoise and many species of special concern. Non-point or accidental discharges of chemicals (e.g., chemicals used to wash solar panels, oil and toxicants from vehicles, etc.) have high potential to damage the wash system and to reach the Amargosa River. Regarding water quality of surface and ground water, the Draft EIS should include an analysis of the impacts of water use and discharge for panel washing, potable uses, and any other uses associated with this proposed Project, and cumulative impacts from water use and discharge on native perennial shrubs and annual vegetation used for forage by the Mojave desert tortoise, including downstream impacts.

Regarding quantity of surface water, the Draft EIS should analyze how any grading, placement, and/or use of any Project facilities will impact downstream/downslope flows that are reduced, altered, eliminated, or enhanced. This analysis should include impacts to native and non-native vegetation and habitats for wildlife species including the Mojave desert tortoise. Washes are of particular importance to the Mojave desert tortoise for feeding, shelter, and movements.

We note that western Clark County near Pahrump is experiencing reductions in ground water. Therefore, we request that the Draft EIS include an analysis of how water use during construction, operations and maintenance, decommissioning, and habitat restoration will impact the levels of ground water in western Clark County and eastern Inyo County, California, including the Amargosa River groundwater basin. These levels may then impact surface and near-surface flows at springs, seeps, wetlands, and pools in the basin. Because the groundwater basin under the Project site extends into California, we request that the analysis of impacts also extend into California and include habitats for the Amargosa vole, Shoshone pupfish and 30 endemic species of plants and animals at Ash Meadows National Wildlife Refuge.

The analyses of water quality and quantity of surface and ground water should include appropriate measures to ensure that these impacts are fully mitigated, preferably beginning with avoidance and continuing through CEQ's other forms of mitigation (40 CFR 1508.20).

Mitigation

The mitigation that is determined to be appropriate to fully offset the direct, indirect, and cumulative impacts from the proposed Project should use the best available science in its development and implementation. It should include a commitment to implement the mitigation commensurate to impacts to the tortoise and its habitats. Mitigation should include a fully-developed desert tortoise repatriation plan (and translocation plan if repatriation is not possible); predator management plan; weed management plan; fire management plan; compensation plan for the degradation and loss of tortoise habitat that includes protection of the acquired, improved, and restored habitat in perpetuity for the tortoise from future development and human use; a plan to protect tortoise translocation area(s) in perpetuity from future development and human use; and habitat restoration plan when the lease is terminated and the proposed Project is decommissioned. If the Project is located in the important linkage areas for the desert tortoise identified by the USFWS (2011), the Project Proponent should monitor tortoise populations in the adjacent tortoise conservation areas (e.g., Ivanpah and Piute Eldorado ACEC) to identify any impacts of the Project and be prepared to implement additional mitigation, as appropriate, in coordination with BLM and USFWS.

These mitigation plans should include an implementation schedule that is tied to key actions of the construction, operations and maintenance, decommissioning, and restoration phases of the Project so that mitigation occurs concurrently with or in advance of the impacts. The plans should specify success criteria, include a monitoring plan to collect data to determine whether success criteria have been met, and identify actions that would be required if the mitigation measures do not meet the success criteria.

The Draft EIS should analyze if this new use would result in an increase in the predation of desert tortoise by common ravens, coyotes, and other predators in the region. The Moapa Solar Energy Project resulted in high (>60%) mortality of small translocated tortoises compared to control animals (Burroughs 2018 in litt.). Regardless of whether tortoise are repatriated to the Project site or translocated, management of coyote predation on tortoises should be included in the predator management plan.

Common ravens are known predators of the Mojave desert tortoise and their numbers have increased substantially because of human subsidies of food, water, and sites for nesting, roosting, and perching to hunt (Boarman 2003). Because ravens are able to fly at least 30 miles in search of food and water on a daily basis (Boarman et al. 2006) and coyotes can travel an average of 7.5 miles or more daily (Servin et al. 2003), this analysis should extend out at least 30 miles from the proposed Project site. Future operations should include provisions for monitoring and managing raven and coyote predation on tortoises because of or assisted by the proposed Project. The monitoring and management plan should include reducing/eliminating human subsidies for food, water, and sites for nesting, roosting, and perching to address local impacts (footprint of the proposed Project). The Project Proponent should participate in an effort to address regional and cumulative impacts. We request that for any of the transmission options, the Project should use towers that prevent raven nesting and perching for hunting. For example, the tubular design pole with a steep-pointed apex and insulators on down-sloping cross arms is preferable to lattice towers, which should not be used.

Please ensure that all standard measures to mitigate the local, regional, and cumulative impacts of raven predation on the tortoise are included in this Draft EIS, including developing a raven management plan for this specific Project. USFWS (2010) provides a template for a project-specific management plan for common ravens. This template includes sections on construction, operation and maintenance, and decommissioning (including restoration) with monitoring and adaptive management during each project phase (USFWS 2010).

We request that the Draft EIS address the effects of the proposed Project on climate change and the effects that climate change may have on the proposed Project. For the latter, we recommend including: an analysis of habitats within the Project that may provide refugia for tortoise populations; an analysis of how the proposed Project would contribute to the spread and proliferation of nonnative invasive plant species; how this spread/proliferation would affect the Mojave desert tortoise and its habitats (including the frequency and size of human-caused fires); and how the proposed Project may affect the likelihood of human-caused fires. We strongly urge the Project Proponent to develop and implement a management and monitoring plan using this analysis and other relevant data that would reduce the transport to and spread of nonnative seeds

and other plant propagules within the Project area and eliminate/reduce the likelihood of human-caused fires. The plan should integrate vegetation management with fire management and fire response. We also expect that the Draft EIS will provide a detailed analysis of the “heat sink” effects of solar development on desert habitats in adjacent areas to the proposed Project and particularly the habitats of the Mojave desert tortoise, in addition to climate change.

Cumulative Effects

There are other existing, approved, and pending renewable energy projects in the area that should be included in the cumulative effects analysis of the Draft EIS. In addition, the Draft EIS should analyze the effects of other existing, approved, and pending projects and land management plans on nearby tribal lands and in Clark County (e.g., Clark County Multi-Species Habitat Conservation Plan, etc.). This analysis should include lands near the Project area that have been identified as mitigation lands for previous or ongoing actions, and the effects of the proposed Project on them. We recommend that mitigation areas be avoided and that sufficient buffers be established so that the proposed Project does not directly or indirectly impact their functions and values.

Status of Mojave Desert Tortoise

The Council has serious concerns about sources of human mortality for the tortoise given the status and trend of the species range wide and the proposed Project’s location within the Northeastern Mojave Recovery Unit, and within an area identified by the USFWS as a linkage areas or corridors between critical habitat units. A few years after listing the Mojave desert tortoise under the FESA, the USFWS published a Recovery Plan for the Mojave desert tortoise (USFWS 1994a). It contained a detailed population viability analysis. In this analysis, the minimum viable density of a Mojave desert tortoise population is 10 adult tortoises per mile² (3.9 adult tortoises per km²). This assumed a male-female ratio of 1:1 (USFWS 1994a, page C25). Populations of Mojave desert tortoises with densities below this amount are in danger of extinction (USFWS 1994a, page 32).

Between 2004 and 2014, 10 of 17 monitored populations of the Mojave desert tortoise declined from 26% to 64% and 11 have a density that is less than 3.9 adult tortoises per km² (USFWS 2015). Of the two populations of Mojave desert tortoises that are near the proposed Project, the Ivanpah and El Dorado populations are below the minimum viable density, and both populations have a declining trend (USFWS 2015). We are concerned that the proposed Project would bring additional indirect impacts to these populations and their densities and trend would further decline.

Population Data on Agassiz’s or Mojave Desert Tortoise: The Mojave desert tortoise was listed as threatened under the federal Endangered Species Act in 1990. The listing was warranted because of ongoing population declines throughout the range of the tortoise from multiple human-caused activities. Since the listing, the status of the species has changed. Population numbers and densities continue to decline substantially (see Table 1).

Table 1. Summary of 10-year trend data for 5 Recovery Units and 17 Critical Habitat Units (CHU)/Tortoise Conservation Areas (TCA) for Agassiz’s desert tortoise, *Gopherus agassizii* (=Mojave desert tortoise). The table includes the area of each Recovery Unit

and Critical Habitat Unit (CHU)/Tortoise Conservation Area (TCA), percent of total habitat for each Recovery Unit and Critical Habitat Unit/Tortoise Conservation Areas, density (number of breeding adults/km² and standard errors = SE), and the percent change in population density between 2004-2014. Populations below the viable level of 3.9 breeding individuals/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) and showing a decline from 2004 to 2014 are in red.

Recovery Unit Designated Critical Habitat Unit/Tortoise Conservation Area	Surveyed area (km ²)	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/km ² (SE)	% 10-year change (2004–2014)
Western Mojave, CA	6,294	24.51	2.8 (1.0)	-50.7 decline
Fremont-Kramer	2,347	9.14	2.6 (1.0)	-50.6 decline
Ord-Rodman	852	3.32	3.6 (1.4)	-56.5 decline
Superior-Cronese	3,094	12.05	2.4 (0.9)	-61.5 decline
Colorado Desert, CA	11,663	45.42	4.0 (1.4)	-36.25 decline
Chocolate Mtn AGR, CA	713	2.78	7.2 (2.8)	-29.77 decline
Chuckwalla, CA	2,818	10.97	3.3 (1.3)	-37.43 decline
Chemehuevi, CA	3,763	14.65	2.8 (1.1)	-64.70 decline
Fenner, CA	1,782	6.94	4.8 (1.9)	-52.86 decline
Joshua Tree, CA	1,152	4.49	3.7 (1.5)	+178.62 increase
Pinto Mtn, CA	508	1.98	2.4 (1.0)	-60.30 decline
Piute Valley, NV	927	3.61	5.3 (2.1)	+162.36 increase
Northeastern Mojave	4,160	16.2	4.5 (1.9)	+325.62 increase
Beaver Dam Slope, NV, UT, AZ	750	2.92	6.2 (2.4)	+370.33 increase
Coyote Spring, NV	960	3.74	4.0 (1.6)	+ 265.06 increase
Gold Butte, NV & AZ	1,607	6.26	2.7 (1.0)	+ 384.37 increase
Mormon Mesa, NV	844	3.29	6.4 (2.5)	+ 217.80 increase
Eastern Mojave, NV & CA	3,446	13.42	1.9 (0.7)	-67.26 decline
El Dorado Valley, NV	999	3.89	1.5 (0.6)	-61.14 decline
Ivanpah, CA	2,447	9.53	2.3 (0.9)	-56.05 decline
Upper Virgin River	115	0.45	15.3 (6.0)	-26.57 decline
Red Cliffs Desert	115	0.45	15.3 (6.0)	-26.57 decline
Total amount of land	25,678	100.00		-32.18 decline

Definition of an Endangered Species: Agassiz’s desert tortoise is now on the list of the world’s most endangered tortoises and freshwater turtles. It is in the top 50 species. The International Union for Conservation of Nature’s (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers Agassiz’s desert tortoise to be Critically Endangered (Turtle Conservation Coalition 2018).

The IUCN places a taxon in the Critically Endangered category when the best available evidence indicates that it meets one or more of the criteria for Critically Endangered.” These criteria are 1) population decline - a substantial (>80 percent) reduction in population size in the last 10 years; 2) geographic decline - a substantial reduction in extent of occurrence, area of occupancy, area/extent, or quality of habitat, and severe fragmentation of occurrences; 3) small population size with continued declines; 4) very small population size; and 5) analysis showing the probability of extinction in the wild is at least 50 percent within 10 years or three generations.

In the FESA, Congress defined an “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range...” Given the density and trend of the populations of the Mojave desert tortoise in Table 1, one may conclude that the Mojave desert tortoise is in danger of extinction throughout all or a significant portion of its range. Because most of the populations of the Mojave desert tortoise in 2014 had densities that were below the viable level of 3.9 tortoises per square kilometer, most are declining, and the threats to the Mojave desert tortoise are numerous and have not been substantially reduced throughout the species’ range, the Desert Tortoise Council believes the Mojave desert tortoise should be uplisted to endangered by the USFWS.

The Draft EIS should include a thorough analysis and discussion of the status and trend of the Mojave desert tortoise in the action area, nearby TCAs, recovery unit, and range wide. Tied to this analysis should be a discussion of all likely direct and indirect sources of mortality for the tortoise and degradation and loss of habitat from implementation of leasing the area for solar energy development including construction, operations and maintenance, decommissioning, and restoration of the leased lands. We request that the above information on the status of the Mojave desert tortoise be presented and included in BLM’s analysis of direct, indirect, and cumulative impacts of the proposed Project to the Mojave desert tortoise and its habitats.

Distribution of the Mojave Desert Tortoise and Tortoise Habitat in/near the Project Area

Relative to the Mojave desert tortoise, the Draft EIS should identify occupied versus unoccupied habitats and suitable versus unsuitable habitats throughout the action area with the help of protocol-level surveys. To derive these calculations, we expect USFWS (2017) protocol surveys to be performed in all areas within the “action area” (see above) so that an estimated number of tortoises that could be directly and indirectly impacted by the proposed Project can be determined. Based on these data, the Project Proponent will be able to include in the Draft EIS the number of tortoises that may be displaced and the number of acres of both suitable and occupied tortoise habitats that will be permanently and temporarily lost or degraded.

We request that BLM define “temporary” and “permanent” from the perspective of use by and biological needs of the Mojave desert tortoise rather than use by people. Given the lengthy time it takes for restoration of degraded or destroyed vegetation in the Mojave Desert, and even longer times for soils, we conclude that most if not all impacts will be permanent (i.e., more than a few decades for restoration). This information will be important in helping to determine appropriate type and amount of mitigation, monitoring, and adaptive management for the tortoise. The Draft EIS should then show how Project features would be placed to minimize or avoid loss of occupied habitats or habitats needed for connectivity and how this avoidance includes indirect impacts.

Section 7(a)(1) of the Endangered Species Act

Section 7(a)(1) of the Endangered Species Act states that all federal agencies "...shall... utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act." In section 3 of the ESA, "conserve", "conserving," and "conservation" mean "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition..." When analyzing and implementing the proposed Project, we request that BLM demonstrate how it is contributing effectively to the conservation and recovery of the Mojave desert tortoise, and how its mitigation for the proposed Project will do more than offset all direct, indirect, and cumulative impacts so that the status of the tortoise will improve.

Federal Land Policy and Management Act

In the Federal Land Policy and Management Act (FLPMA), Congress declared that is the nation's policy that "public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values;" and that public lands "will provide food and habitat for fish and wildlife." Congress further stated in FLPMA that "management be on the basis of multiple use and sustained yield." It defined "sustained yield" as "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use." We request that BLM analyze in the Draft EIS how its implementation of the proposed Project will comply with FLPMA with regard to the Mojave desert tortoise.

We appreciate this opportunity to provide input and trust that our comments will further protect tortoises during authorized Project activities. Herein, we ask that the Desert Tortoise Council be identified as an Affected Interest for this and all other BLM projects that may affect species of desert tortoises, and that any subsequent environmental documentation for this particular Project is provided to us at the contact information listed above.

Regards,



Edward L. LaRue, Jr., M.S.

Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

Literature Cited

- Boarman, W.I. 2003. Managing a subsidized predator population: reducing common raven predation on desert tortoises. *Environmental Management* 32(2):205–217. <https://doi.org/10.1007/s00267-003-2982-x>.
<https://link.springer.com/article/10.1007/s00267-003-2982-x>
- Boarman, W.I, M.A. Patten, R.J. Camp, and S.J. Collis. 2006. Ecology of a population of subsidized predators: Common ravens in the central Mojave Desert, California. *Journal of Arid Environments* 67 (2006) 248–261.
- Jaeger, J., L. Fahrig, and K. Ewald. 2005a. Does the configuration of road networks influence the degree to which roads affect wildlife populations? *International Conference on Ecology and Transportation 2005 Proceedings, Chapter 5 - Integrating Transportation and Resource Conservation Planning - Landscapes and Road Networks*, pages 151-163. August 29, 2005.
- Jaeger, J., J. Bowman, J. Brennan, L. Fahrig, D. Bert, J. Bouchard, N. Charbonneau, K. Frank, B. Gruber, and K. Tluk von Toschanowitz. 2005b. Predicting when animal populations are at risk from roads: an interactive model of road avoidance behavior. *Ecological Modelling* 185 (2005) 329–348.
- Mulder, K., A. Walde, W.I. Boarman, A.P. Woodman, E. Latch, and R.C. Fleischer. 2017. No paternal genetic integration in desert tortoises (*Gopherus agassizii*) following translocation into an existing population. *Biological Conservation*. 210. 318-324. 10.1016/j.biocon.2017.04.030
- Roedenbeck, I., L. Fahrig, C. Findlay, J. Houlahan, J. Jaeger, N. Klar, S. Kramer-Schadt, and E. van der Grift. 2007. The Rauschholzhausen Agenda for Road Ecology. *Ecology and Society* 12(1): 11. [online]
URL: <http://www.ecologyandsociety.org/vol12/iss1/art11/>
- Servin, J., V. Sanchez-Cordero, and S. Gallina. 2003. Distances traveled daily by coyotes, *Canis latrans*, in a pine–oak forest in Durango, Mexico. *Journal of Mammalogy* 84(2):547–552.
- Turtle Conservation Coalition. 2018. Turtles in Trouble: The World’s 25+ Most Endangered Tortoises and Freshwater Turtles. www.iucn-tftsg.org/trouble
- U.S. Fish and Wildlife Service. 1993. Proposed determination of Critical Habitat for the Mojave Population of the Desert Tortoise. 58 *Federal Register* 45748-45768.
- U.S. Fish and Wildlife Service. 1994a. Desert tortoise (Mojave population) Recovery Plan. U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. 73 pages plus appendices.
- U.S. Fish and Wildlife Service. 1994b. Determination of critical habitat for the Mojave population of the desert tortoise. 59 *Federal Register* 5820-5866.

- U.S. Fish and Wildlife Service. 2009. Desert Tortoise (Mojave Population) Field Manual: (*Gopherus agassizii*). Region 8, Sacramento, California.
- U.S. Fish and Wildlife Service. 2010. Common raven predation on the desert tortoise. USFWS, Ventura Fish and Wildlife Office, Ventura, CA.
- U.S. Fish and Wildlife Service. 2011. U.S. Fish and Wildlife Service comments on the Bureau of Land Management/Department of Energy Draft Programmatic Environmental Impact Statement for Solar Energy Development. Comments dated May 6, 2011. Washington, D.C.
- U.S. Fish and Wildlife Service. 2015. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2013 and 2014 Annual Reports. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. Author: Linda Allison.
- U.S. Fish and Wildlife Service. 2017. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). USFWS Desert Tortoise Recovery Office. Dated 21 August 2017. Reno, NV.