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**Via email only**

1 January 2025

Mr. William Webster
Bureau of Land Management, Lake Havasu Office
1785 Kiowa Avenue
Lake Havasu City, AZ 86403
BLM_AZ_CRD_SOLAR@BLM.GOV

RE: Eagle Eye Solar Scoping Comments (DOI-BLM-AZ-C030-2025-0001-EA)

Dear Mr. Webster,

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 northern 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.

Both our physical and email addresses are provided above in our letterhead for your use when providing future correspondence to us. When given a choice, we prefer to receive emails for future correspondence, as mail delivered via the U.S. Postal Service may take several days to be delivered. Email is an "environmentally friendlier way" of receiving correspondence and documents rather than "snail mail."

The International Union for Conservation of Nature's (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, considers the Sonoran desert tortoise, located in Arizona and Sonora, Mexico, to be Vulnerable at this time, but nearly qualifies as Endangered (Averill-Murray et al. 2023). "Steep declines of approximately 54% have occurred in recent years in several formally monitored local subpopulations in Arizona." "Despite evidence that several subpopulations have stabilized or increased, survival rates are predicted to decline with future

drought conditions, which are expected to intensify with global climate change." In Mexico, "patterns of rainfall and drought across Sonora mirror those in Arizona and suggest that Sonoran subpopulations likely increased and decreased similarly over time." According to the IUCN, the Vulnerable designation means that the species is "considered to be facing a high rate of extinction in the wild" and is one step above endangered.

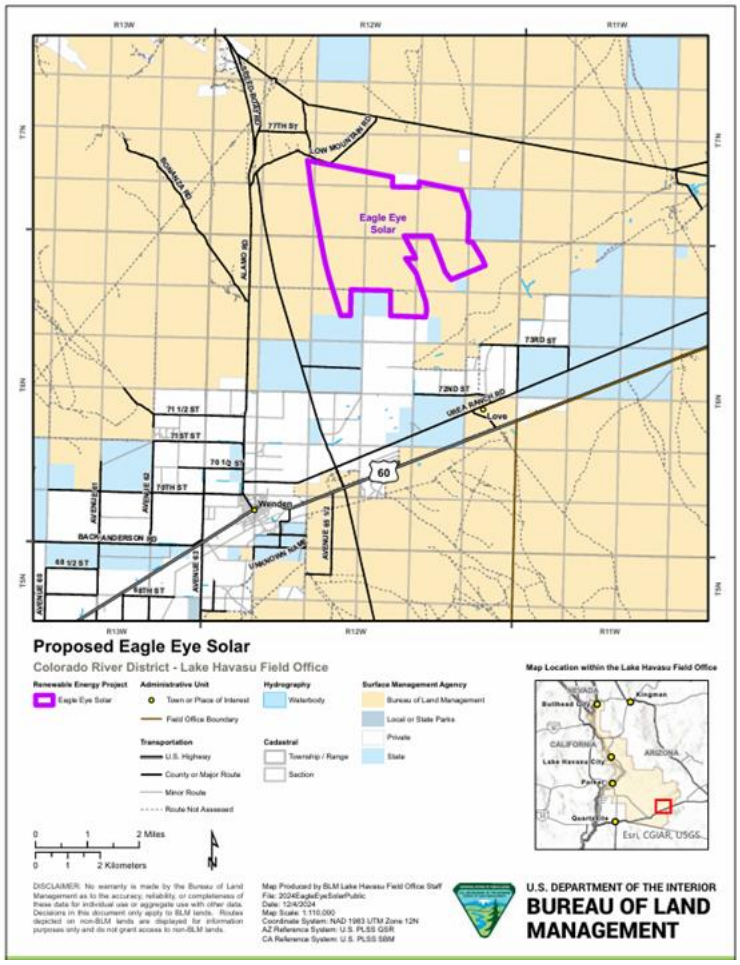
The IUCN identified several threats to the survival of the Sonoran desert tortoise including residential, commercial, and industrial development; ranching and farming; roads and railroads; hunting and trapping; recreational activities; wildfires and fire suppression activities; invasive non-native plant species; and drought/temperature extremes from climate change.

We appreciate this opportunity to provide comments on the above-referenced Project. Given the location of the proposed Project in habitats likely occupied by the Sonoran desert tortoise (*Gopherus morafkai*) (synonymous with Morafka's desert tortoise), our comments include recommendations intended to enhance protection of this species and its habitat during activities authorized by the Bureau of Land Management (BLM), which we recommend be added to Project terms and conditions in the authorizing document (e.g., right of way grant, etc.) as appropriate. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachments for the proposed Project.

**Project Description**

The following Project description is given in the three-page *Notice of Public Scoping for the Eagle Eye Solar Project in the BLM Lake Havasu Field Office, La Paz County, Arizona*, dated 12/12/2024 (Notice): The proposed Project includes "…construction, operation and maintenance, and decommissioning of an up to 400 megawatt (MW) solar photovoltaic (PV) facility with battery storage, a 230-kilovolt (kV) generation tie-in transmission line (gen-tie), and access roads (hereafter referred to as the Eagle Eye Solar Project or Project). The Project is proposed within a 3,962-acre application area on BLM-administered lands. The Applicant is proposing to construct the Project on approximately 3,277 acres designated by the BLM in 2012 as potentially suitable for utility-scale solar development ("variance area") by the *Approved Resource Management Plan Amendments/Record of Decision for Solar Energy Development in Six Southwestern States* and 690 of those acres are also designated as a Renewable Energy Development Area by the *Arizona Restoration Design Energy Project Record of Decision* issued by BLM in January 2013. The requested term of the right-of-way would be for 40 years. The BLM is the lead federal agency for the Project, with Western Area Power Administration (WAPA) as a joint agency. The Project is located within La Paz County on BLM-administered land, approximately 4 miles north of Wenden and 100 miles west of Phoenix."

The Notice includes the following two images:


Eagle Eye Solar
77TH ST
LOW MOUNTAIN RD
ROMANCE RD
ALAND RD
73RD ST
72ND ST
UREA SIDING RD
Love
71 1/2 ST
71ST ST
70 1/2 ST
70TH ST
60
Wenden
AVENUE 67
AVENUE 68
AVENUE 69
BACK ANDERSON RD
68 1/2 ST
68TH ST
UNKNOWN NAME
T7N
T6N
T5N
R13W
R12W
R11W
Proposed Eagle Eye Solar
Colorado River District - Lake Havasu Field Office
Renewable Energy Project
Eagle Eye Solar
Administrative Unit
Town or Place of Interest
Field Office Boundary
Hydrography
Waterbody
Surface Management Agency
Bureau of Land Management
Local or State Parks
Private
State
Transportation
U.S. Highway
County or Major Route
Minor Route
Route Not Assessed
Cadastral
Township / Range
Section
0 1 2 Miles
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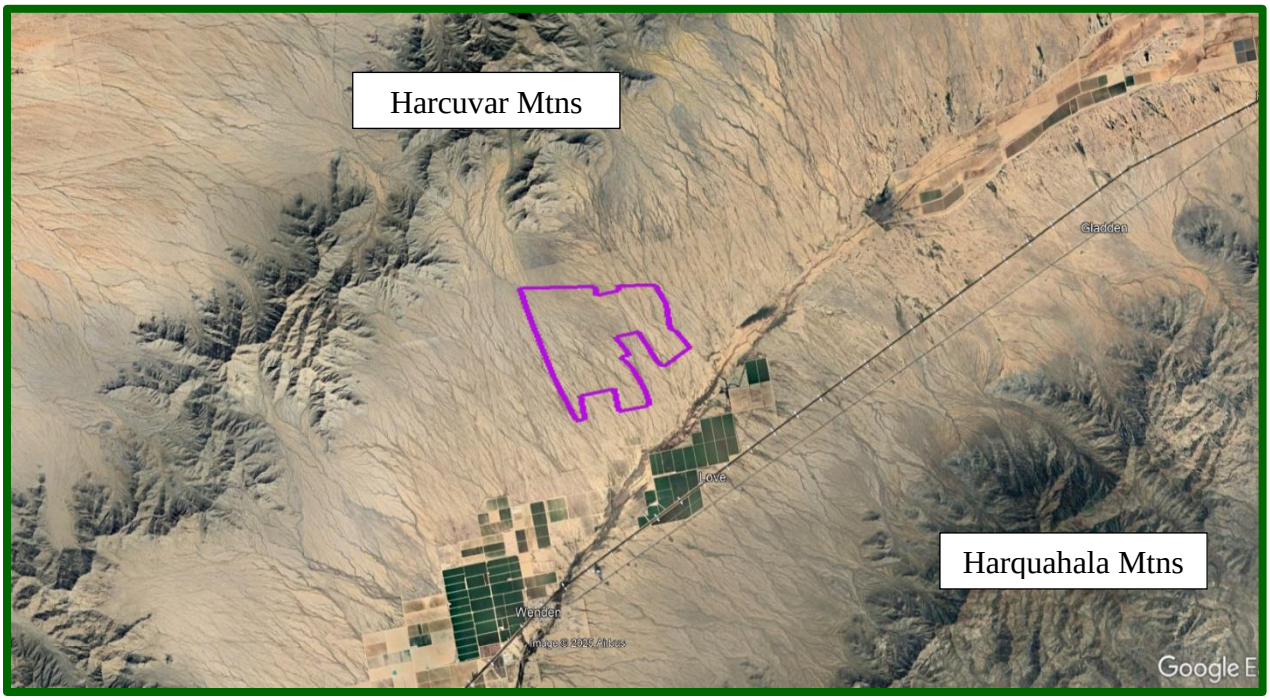
N
Map Location within the Lake Havasu Field Office
Kingman
Bullhead City
CALIFORNIA
ARIZONA
Lake Havasu City
Parker
Quartzsite
Esri, CGIAR, USGS
DISCLAIMER: No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Decisions in this document only apply to BLM lands. Routes depicted on non-BLM lands are displayed for information purposes only and do not grant access to non-BLM lands.
Map Produced by BLM Lake Havasu Field Office Staff
File: 2024EagleEyeSolarPublic
Date: 12/4/2024
Map Scale: 1:110,000
Coordinate System: NAD 1983 UTM Zone 12N
AZ Reference System: U.S. PLSS GSR
CA Reference System: U.S. PLSS SBM
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT


Harcuvar Mtns
Gladden
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Harquahala Mtns
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Google E

**Scoping Comments**

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]. The Draft Environmental Assessment (DEA) should:

1. Discuss how this proposed Project fits within the management structure of the current land management plan for the area. Whereas the Notice indicates that the Project would be analyzed as a variance area under the 2012 Approved Resource Management Plan Amendments/Record of Decision (ROD) for Solar Energy Development in Six Southwestern States (BLM and DOE 2012), we question why BLM is not analyzing the Project under the more recent *Final Programmatic Environmental Impact Statement and Proposed Resource Management Plan Amendments for Utility-Scale Solar Energy Development* for 11 western states, including Arizona while excluding the Desert Renewable Energy Conservation Plan (DRECP) area in California (BLM 2024), which we ask be addressed in the DEA. In a recent public meeting for a solar project in Nevada, BLM revealed that the 2012 ROD has resulted in more development in variance areas than it has in Solar Energy Zones (SEZ) where solar development was to be focused, which was NOT how the 2012 plan was intended to function.

2. Provide maps of Areas of Critical Environmental Concern (ACECs), and other areas identified for special management by BLM [e.g., National Conservation Lands (NCLs)] in the region.

3. Provide maps of all areas identified by BLM, Arizona Game and Fish Department (AZGFD), etc. as managed for the tortoise and other wildlife species, indicating if those lands are mitigation lands for previous projects.

4. AZGFD has performed tortoise monitoring studies for many years in the mountainous areas of Arizona that are known to be occupied by Sonoran desert tortoise. Please summarize the findings of these studies from their inception through to present day, indicate the proximity of the studies to the proposed Project, document trends in tortoise populations in the most proximate study area, describe any specific management prescriptions identified by AZGFD for these study areas, and analyze how the Project may or may not impact movement of tortoises between the pertinent study areas. In particular, we know that AZFGD studies have been performed in both the Harcuvar and Harquahala mountains, which as shown on the previous page are immediately adjacent to the proposed Project. Although there appears to be a substantial amount of agricultural development between these two ranges already, we note that the proposed Project would be situated on the eastern flank of the Harcuvar Mountains, which may result in direct impacts to both resident tortoises and further exacerbate tortoise movement between the two ranges.

5. Provide maps with the locations of *existing* and *proposed* solar development projects and transmission lines in the immediate region.

6. Provide maps that identify the ownership of the lands associated with the proposed Project and ownership of surrounding lands.

Please be sure that the Project adheres to and fully implements measures, regulations, and policies in the following documents:

• Arizona Game and Fish Department. 2010. Desert Tortoise Survey Guidelines for Environmental Consultants.

• Arizona Game and Fish Department. 2014. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects.

• Arizona Interagency Desert Tortoise Team. 2008. Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat.

• BLM Special Status Species Management. Handbook 6840.

• BLM Sensitive Species List for Arizona. Arizona Instructional Memorandum AZ-IM-2017-009.

• BLM Mitigation Handbook (H-1794-1).

• BLM Mitigation Manual (MS-1794).

• BLM Instruction Memorandum IM 2021-046 on Mitigation.

• BLM Habitat Connectivity on Public Lands Instruction Memorandum 2023-005.

• U. S. Fish and Wildlife Service and Cooperating Agencies comprising the Arizona Interagency Desert Tortoise Team. 2015. Candidate Conservation Agreement for the Sonoran Desert Tortoise (*Gopherus morafkai*) in Arizona. Phoenix AZ.

• Council on Environmental Quality's (CEQ) (2023) Policy for Implementing NEPA, "Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors."

**Proposed Action and Alternatives Considered**

We fully expect that BLM will comply with all applicable statutes, regulations, Executive and Departmental Orders, BLM policies, manuals, and other requirements as they pertain to this Project. BLM should demonstrate in the DEA that the proposed Project meets all these requirements with respect to the tortoise, that the proposed Project will:

- Be in conformance with decisions in current land use plan(s) and the Federal Land Policy and Management Act (FLPMA) with respect to sustained yield and to prevent unnecessary or undue degradation of BLM lands;
- be consistent with priority conservation, restoration, and/or adaptation objectives in the best available landscape-scale information (e.g., for tortoise population connectivity, management of native plant species and reduction/elimination of non-native, invasive species, etc.);
- be in an area with low or comparatively low resource conflicts and where conflicts can be resolved;
- be located in, or adjacent to, previously contaminated or disturbed lands;
- minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors including the desert tortoise between the Harcuvar and Harquahala mountains;
- minimize impacts on lands with wilderness characteristics and the values associated with these lands, particularly the adjacent Harcuvar Wilderness Area;
- not adversely affect lands donated or acquired for conservation purposes, or mitigation lands identified in previously approved projects such as translocation areas for desert tortoise; and,

- be sure the applicant has coordinated with governments and agencies, including consideration of consistency with officially adopted plans and policies (e.g., conservation plans).
- Significant cumulative impacts on resources of concern should not occur as a result of the proposed Project (i.e., exceeding an established threshold such as population viability for the tortoise and connectivity between tortoise populations).
- BLM's analyses must use current data on tortoises occurring in the Project area, population, and range wide, as population numbers and densities have substantially declined in many areas along with the recent destruction of habitat from fires, so environmental documents should publish the data/knowledge currently available.

We have serious concerns about BLM's commitment to manage effectively for the sustained yield of the tortoise. These concerns include past actions regarding:

- Mitigation to improve conditions within the connectivity areas, and if these options do not exist, mitigation may be applied toward the nearest tortoise conservation area (e.g., an ACEC for which tortoise has been identified in the Relevant and Important Criteria); and
- a plan included in the DEA that would effectively monitor desert tortoise impacts, including verification that desert tortoise connectivity corridors are functional.

Regarding the first concern, we believe that a multiagency approach is best to ensure BLM is meeting its obligations, soliciting review and input from pertinent federal and state resource agencies, Tribal governments/agencies, and non-governmental organizations (NGOs). Mitigation of impacts should include, in priority order, avoidance, minimization and compensation for unavoidable impacts. Mitigation should at a minimum offset all direct, indirect, and cumulative impacts.

Mitigation should be applied only in areas where the lands are effectively managed for the benefit of the tortoise for both the short-term and long-term. Consequently, mitigation should be implemented on lands with a durable conservation designation, or on privately owned lands with a conservation easement or other legal instrument that ensures conservation in perpetuity. Please see *Mitigation Plans* below for additional concerns and requested requirements.

Regarding the second concern, a monitoring plan should (1) be scientifically and statistically credible; (2) be implementable; and (3) require BLM/Project proponent to implement adaptive management to correct promptly land management practices if the mitigation is not accomplishing its intended purposes. Compliance with Chapter 11 of the BLM National Environmental Policy Act (NEPA) Handbook H-1790-1 BLM (2008a) is needed to ensure this occurs.

We note that a federal appellate court has previously ruled that in an environmental impact statement (EIS) a federal agency must evaluate a reasonable range of alternatives to the Project including other project and mitigation 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)].

While BLM is proposing to prepare an EA for this Project and not an EIS, the Council believes it is in BLM's best interest to demonstrate that it evaluated a reasonable range of alternatives to assure compliance with NEPA and with FLPMA and that it is complying with the Candidate Conservation Agreement (CCA) for the Sonoran Desert Tortoise (USFWS et al. 2015), of which BLM is a signatory agency. Therefore, the Council requests that the BLM describe the purpose and need for this Project and develop and analyze other viable alternatives, such as rooftop solar, which we believe constitute "other reasonable courses of actions" (40 CFR 1508.25).

The Council supports alternatives to reduce the need for additional solar energy projects in relatively undisturbed tortoise habitats in the Sonoran Desert. For example, the City of Los Angeles has implemented a rooftop solar Feed-in Tariff (FiT) program, the largest of its kind in America. The FiT program enables the owners of large buildings to install solar panels on their roofs, and sell the power they generate back to utilities for distribution into the power grid.

We request that BLM include an urban solar alternative in the DEA. Under this alternative, owners of large buildings or parking areas would grant the Project proponent permission to install solar panels on their roofs and cover parking areas, 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; greenhouse gas emissions from constructing energy projects far from the sources of power demand and materials for construction; carbon sequestration lost from degrading/destroying thousands of acres of native vegetation for decades or longer to construct and operate this one Project; the number of affected resources in the desert that must be analyzed under the NEPA; and mitigation costs for all direct, indirect, and cumulative impacts; monitoring and adaptive management costs; and habitat restoration costs following decommissioning. The DEA should include an analysis of where the energy generated by this Project would be sent and the needs for energy in those targeted areas that may be satisfied by urban solar. We request that at least one viable alternative be analyzed in the DEA where electricity generation via solar energy is located much closer to the areas where the energy will be used, including generation in urban/suburban areas.

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.

The latter two alternatives are important to consider to minimize or avoid the loss of vegetation that sequesters carbon. Studies around the world have shown that desert ecosystems can act as important carbon sinks. For example, the California deserts account for nearly 10 percent of the state's carbon sequestration; below ground in soil and root systems, and above ground in biomass. Protecting this biome can contribute to securing carbon stores in the state (MDLT 2021). This situation is likely true for Arizona. Given the current climate change conditions, there is an increasing need for carbon sequestration. Because vascular plants are a primary user of carbon and the proposed Project would result in the loss/degradation of thousands of acres of plants and their ability to sequester carbon for decades or longer unless successful measures are implemented to restore the same biomass of native vegetation as it is being destroyed, it is imperative that the proposed Project not result in the loss of vegetation.

The DEA 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 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. 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 Sonoran desert tortoise populations and movements/connectivity between populations, which is an important issue for this species, particularly over the long-term (see *Desert Tortoise Habitat Linkages/Connectivity among Populations and Recovery Units* below). Long-term monitoring for the life of the Project would need to be included to accurately evaluate the effectiveness of this strategy.

**Connected Actions**

Pursuant to Section 1508.25 of the Council on Environmental Quality's (CEQ) regulations (40 CFR 1508.25), any DEA must cover the entire scope of a proposed action, considering all connected, cumulative, and similar actions in one document. Pursuant to Section 1506.1(a) of these regulations, an agency action cannot "[l]imit the choice of reasonable alternatives" before reaching a final decision in a published ROD. These regulations ensure agencies will prepare a complete environmental analysis that provides a "hard look" at the environmental consequences of all proposed actions instead of segmenting environmental reviews (Novack 2015). Please explain whether any current proposed or existing Federal actions within the region are connected and if not, why. In addition, be sure to include all reasonably foreseeable federal and non-federal actions in the cumulative impacts analysis section of the DEA.

**Affected Environment**

The desert tortoise is an indicator species and umbrella species of ecosystem health (Berry and Medica 1995). Indicator species are used to monitor environmental changes, assess the efficacy of management, and provide warning signals for impending ecological shifts. An umbrella species is a species whose conservation is expected to confer protections to a large number of co-occurring species. Thus, when the desert tortoise is declining in density, numbers, and recruitment, this decline is an indicator of environmental change that is degrading the desert environment, ineffective management by land management agencies, and a warning that ecological shifts in the southwestern deserts are occurring. In addition, this decline may indicate that other species in the deserts are also declining in density, numbers, and recruitment. Consequently, BLM should consider the data on the demographic trend of the tortoise as a "wake-up call" that more must be done to effectively manage for the tortoise and other species in southwestern deserts. Impacts to other local and wide-ranging species and their habitats should be analyzed in the DEA.

The Council believes that the Sonoran desert tortoise meets the definition of a threatened species. As provided earlier in this letter, the IUCN has designated the Sonoran desert tortoise as Vulnerable, which means that the species is "considered to be facing a high rate of extinction in the wild" (Averill-Murray et al. 2023) and is one step above endangered. Under the FESA, one step above endangered is threatened.

**Standardized Surveys – Desert Tortoise and Other Species**

For the DEA to fully analyze the effects and identify potentially significant impacts, the following surveys must be performed to determine the extent of rare plant and animal populations occurring within areas to be directly and indirectly impacted, and therefore adequately and accurately analyze the direct, indirect, and cumulative impacts to theses resource issues.

The Project proponent should fund focused surveys for all rare plant and animal species reported from the vicinity of the proposed Project. Results of the surveys will determine appropriate permits from BLM, AZFGD, and USFWS and associated avoidance, minimization, and mitigation measures. Focused plant and animal surveys should be conducted by knowledgeable biologists for respective taxa (e.g., rare plant surveys should be performed by botanists), and to assess the likelihood of occurrence for each rare species or resource (e.g., plant community) that has been reported from the immediate region. Focused plant surveys should occur only if there has been sufficient winter rainfall to promote germination of annual plants in the spring. Alternatively, the environmental documents may assess the likelihood of occurrence with a commitment by the proponents to perform subsequent focused plant surveys prior to ground disturbance, assuming conditions are favorable for germination.

Migratory Birds/Eagles: BLM should ensure that all actions it authorizes are implemented in compliance with the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and associated regulations, executive orders, and policies (e.g., Driscoll 2010, Pagel et al. 2010) to avoid mortality or injury to migratory birds and harassment of eagles.

Burrowing owl: Burrowing Owl: Surveys for western burrowing owl (*Athene cunicularia*) should be coordinated with the USFWS as the species is protected under the Migratory Bird Treaty Act. BLM should require the implementation of the Burrowing Owl Project Clearance Guidance for Landowners (AZGFD 2009). Surveys for burrowing owls should be conducted by persons with both knowledge and field experience in the biology, ecology, and behavior of burrowing owls and identifying burrowing owl sign. BLM should also require implementing surveys at 30-, 60-, 90-, 120-, and 150-meter intervals in all suitable habitats adjacent to the subject property to collect data to help assess the potential indirect impacts of the Project on this species. If burrowing owl sign is found, AZGFD (2007) describes appropriate minimization and mitigation measures to offset these impacts.

In addition, BLM should demonstrate in the DEA how it will comply with "E.O. 13186 – Responsibilities of Federal Agencies To Protect Migratory Birds." If burrowing owl sign is found, BLM and the Project proponent should develop a science-based relocation/mitigation/ monitoring/adaptive management plan with the USFWS and AZGFD and ensure that this plan is implemented. We recommend that researchers with expertise on the western burrowing owl from the U.S. Geological Survey, the scientific research branch of the Department of the Interior, be included in the development of the relocation, mitigation, monitoring, adaptive management plans.

The Council's persisting concern is that proponents of solar projects continue to identify a single site for development without any attempt to identify alternative sites. As such, when focused studies reveal significant accumulations of tortoises on the proponent's selected site, because there is only one site identified for the Project, there is no opportunity to select an alternative site where impacts would be minimized.

Too often, a single impact footprint is identified, all surveys are restricted to that site, and no alternative sites are assessed, as required by NEPA. We are concerned that this Project may have already pre-determined the Project footprint. As such, there may be other areas of lower tortoise densities or more degraded habitats where impacts could be minimized. However, those habitats would not be avoided if the Project footprint is predetermined before survey data are available. As such, we request that more than one site, preferably three, be identified and analyzed in the DEA and that the alternative with the fewest impacts to tortoises be selected for development.

If that is not feasible, we ask that the "action area" of the proposed Project be several times larger than the Project footprint so that those portions of the site with fewer tortoises could be selected. Proponents of the Gemini Solar Site in southern Nevada, for example, ignored these recommendations, and displaced more than 100 tortoises, when based on their presence-absence tortoise surveys, a shift of the site to the east would have avoided many of those animals.

It is current management to require desert tortoise protocol surveys (USFWS 2019) on a given site, but all too often translocation sites are ignored. We feel strongly that protocol surveys should occur on multiple or enlarged sites as given above *and* on all proposed translocation sites, assuming tortoises will be translocated.

Sonoran Desert Tortoise Impacts Analysis:

*Analysis of Direct and Indirect Impacts*: The alternatives analysis should include an economic analysis that provides the total cost of constructing the proposed Project versus other alternatives, so the public can see how much the total cost of each alternative is. This would include an analysis of the costs of replacing all public resources that would be lost from granting the proposed Project including direct, indirect, and cumulative impacts. Please note, this analysis would include habitat replacement or restoration costs including the time needed to achieve full replacement, not just acquisition, management, monitoring, and adaptive management costs.

The DEA should include a thorough analysis of the status and trend of the tortoise in the action area (particularly in the adjacent Harcuvar Mountains), tortoise conservation area(s), recovery unit(s), and rangewide. Tied to this analysis should be a discussion of all likely sources of mortality for the tortoise and degradation and loss of habitat from implementation of solar development including construction, operation and maintenance, decommissioning, and restoration of the public lands. The DEA should use the data from focused plant and wildlife surveys in their analysis of the direct, indirect, synergistic, and cumulative impacts of the proposed Project on the Sonoran desert tortoise and its habitat, any listed species, and species of special concern designated by USFWS, AZGFD, and BLM.

We expect that the DEA 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, laydown areas, internal access roads, access roads along gen-tie lines, perimeter roads, perimeter fencing, substations, battery storage (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., "heat island effect" (Devitt et al. 2022) and its effect on the physiology, behavior, and occurrence of the tortoise and other wildlife (Slade 2023), "road effect zone," etc.) by the proposed Project. As given below, these acreages should be based on field surveys for tortoises, not just available models.

*Road Effect Zone*: We request that the DEA include information on the locations, sizes, and arrangements of roads to the proposed Project and within it, who will have access to them, whether the access roads will be secured to prevent human access or vandalism, and if so, what methods would be used. The presence/use 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.

Vehicle use on new roads and increased vehicle use on existing roads equates to increased direct mortality and an increased road effect zone for desert tortoises. Road construction, use, and maintenance adversely affect wildlife through numerous mechanisms that can include mortality from vehicle collisions, and loss, fragmentation, and alteration of habitat (Nafus et al. 2013; von Seckendorff Hoff and Marlow 2002).

In von Seckendorff Hoff and Marlow (2002), they reported reductions in Mojave desert tortoise numbers and sign from infrequent use of roadways to major highways with heavy use. There was a linear relationship between traffic level and tortoise reduction. For two graded, unpaved roads, the reduction in tortoises and sign was evident 1.1 to 1.4 km (3,620 to 4,608 feet) from the road. Nafus et al. (2013) reported that roads may decrease tortoise populations via several possible mechanisms, including cumulative mortality from vehicle collisions and reduced population growth rates from the loss of larger reproductive animals. Other documented impacts from road construction, use, and maintenance include increases in roadkill of wildlife species as well as tortoises, creating or increasing food subsidies for common ravens, and contributing to increases in raven numbers and predation pressure on the desert tortoise.

Please include the five major categories of primary road effects to the tortoise and special status species in the DEA analyses: (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). These analyses should be at the population, recovery unit, and rangewide levels.

In summary, road establishment/increased use 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 the two mountain ranges that form the valley in which the Project is proposed and areas identified as important linkage habitat for connectivity as these linkage areas serve as corridors for maintaining genetic and demographic connectivity between populations and rangewide (see *Desert Tortoise Habitat Linkages/Connectivity among Populations and Recovery Units* below). These and other indirect impacts to the Sonoran desert tortoise should be analyzed in the DEA from Project construction, operations and maintenance, decommissioning, and habitat restoration.

*Desert Tortoise Habitat Linkages/Connectivity among Populations*: The DEA should analyze how this proposed Project will impact the movement of tortoises relative to linkage habitats/corridors. The DEA should include an analysis of the minimum linkage design necessary for conservation of the desert tortoise (e.g., Averill-Murray et al. 2013, Hromada et al. 2020), and how the Project, along with other existing projects, would impact the linkages between adjacent tortoise populations. We strongly request that the environmental consequences section of the DEA include a thorough analysis of this indirect effect (40 Code of Federal Regulations 1502.16) and appropriate mitigation to maintain the function of population connectivity for the Sonoran desert tortoise and other wildlife species. Similarly, please document how this Project may impact proximate conservation areas, such as BLM-designated ACECs.

Feral Burros Impacts on Tortoises/Tortoise Habitat: The DEA should analyze how the implementation of the proposed Project will affect the use of the area by burros as this habitat will be removed from their use. This suggests their use on remaining nearby areas will be concentrated with the loss of these thousands of acres for solar development. How will this increased use by burros affect the tortoise and tortoise habitat? Is BLM proposing to reduce the size of the burro herd because it would reduce the availability of habitat to burros? Please analyze these issues in the DEA.

**Mitigation Plans**

The DEA should include effective mitigation for all direct, indirect, and cumulative effects to the tortoise and its habitats. The mitigation should use the best available science with a commitment to implement the mitigation commensurate to impacts to the tortoise and its habitats. Mitigation should include a fully-developed desert tortoise translocation plan, including protection of tortoise translocation area(s) from future development and human disturbance in perpetuity; raven management plan; non-native plant species management plan; fire prevention 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; and habitat restoration plan when the lease is terminated and the proposed Project is decommissioned.

All plans should be provided in the DEA so the public and the decision maker can determine their adequacy (i.e., whether they are scientifically rigorous and would be effective in mitigating for the displacement and loss of tortoises and degradation and loss of tortoise habitat from Project implementation). Too often, such plans are alluded to in the draft environmental document and promised later, which does not allow the reviewers to assess their adequacy, which we find unacceptable. If not available as appendices in draft documents, all indicated plans must be published in the final environmental documents. Their inclusion is necessary to determine their adequacy for mitigating direct, indirect, synergistic, and cumulative impacts, and monitoring for effectiveness and adaptive management regarding the desert tortoise. If these plans are not provided, it is not possible for BLM, other decision makers, and the interested public to determine the environmental consequences of the Project to the tortoise.

These mitigation plans should include an implementation schedule that is tied to key actions of the construction, operation, 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 an effectiveness monitoring plan to collect data to determine whether success criteria have been met, and identify/implement actions that would be required if the mitigation measures do not meet the success criteria.

BLM Manual 6840: Special Status Species Management includes the following BLM directives (BLM 2008b) that are applicable to the Mojave/Sonoran desert tortoise:

*6840.01 Purpose*. The purpose of this manual is to provide policy and guidance for the conservation of BLM special status species (e.g., Sonoran desert tortoise) and the ecosystems upon which they depend on BLM-administered lands. BLM special status species are: (1) species listed or proposed for listing under the FESA, and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the FESA, which are designated as BLM sensitive by the State Director(s).

*6840.02 Objectives*. The objectives of the BLM special status species policy are (1) to conserve and/or recover FESA-listed species and the ecosystems on which they depend so that FESA protections are no longer needed for these species, and (2), to initiate proactive conservation measures that reduce or eliminate threats to BLM-sensitive species to minimize the likelihood of and need for listing of these species under the FESA. With respect to the Sonoran desert tortoise, we request that the Proposed action or other alternatives contribute to meeting objectives in BLM Manual 6840 – Special Status Species Management (BLM 2008b).

Translocation Plan - Translocated Tortoises & Translocation Sites: How many tortoises will be displaced by the proposed Project? How long will translocated tortoises be monitored? Will the monitoring report show how many of those tortoises lived and died after translocation and over time? Are there any degraded habitats or barren areas that may impair success of the translocation? Are there incompatible human uses in the new translocation area that need to be eliminated or managed to protect newly-translocated tortoises? Were those translocation areas sufficiently isolated that displaced tortoises were protected by existing or enhanced land management? How will the proponent minimize predation of translocated tortoises and avoid adverse climatic conditions, such as low winter rainfall conditions that may exacerbate translocation success? Were tortoises translocated to a site where they would be protected from threats (e.g., off-highway vehicles, future development, etc.)? These questions should be answered in the Environmental Consequences section of the DEA.

The Project proponent should implement the USFWS' Translocation Guidance (USFWS 2020) and coordinate translocation with BLM and AZGFD. In addition, the proponent's Project-specific translocation plan should be based on current data and developed using lessons learned from earlier translocation efforts (e.g., increased predation, drought). (see *Desert Tortoise Translocation Bibliography of Peer-Reviewed Publications*[1] in the footnote).

[1] https://www.fws.gov/library/collections/mojave-desert-tortoise-translocation-plans-and-reports

The Translocation Plan should include implementation of a science-based monitoring plan approved by the USFWS and AZGFD that will accurately assess these and other issues to minimize losses of translocated tortoises and impacts to their habitat. For example, the health of tortoises may be jeopardized if they are translocated during drought conditions, which is known to undermine translocation successes (Esque et al. 2010). If drought conditions are present at the time of Project development, we request that the proponent confer with the USFWS and AZGFD immediately prior to translocating tortoises and seek input on ways to avoid loss of tortoises due to stressors associated with drought. One viable alternative if such adverse conditions exist is to postpone site development until which time conditions are favorable to enhance translocation success.

Moving tortoises from harm's way, the focus of the Translocation Guidance, does not guarantee their survival and persistence at the translocation site, especially if it will be subject to increased human use or development. In addition to the Translocation Guidance and because translocation sites are mitigation for the displacement of tortoises and loss of habitat, these sites should be managed for the benefit of the tortoise in perpetuity. Consequently, a conservation easement or other durable legal designation should be placed on the translocation sites. The Project proponent should fully fund management of the site to enhance it for the benefit of the tortoise in perpetuity.

Tortoise Predators and a Predator Management Plan: Common ravens are known predators of the 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 et al. 2006). Coyotes and badgers are also predators of tortoises. Because ravens can fly at least 30 miles in search of food and water daily (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, and particularly as they may impact occupied tortoise habitats in the two adjacent mountain ranges.

The DEA should analyze if this new use would result in an increase in common ravens and other predators of the desert tortoise in the action area. During construction, operations and maintenance, decommissioning, and restoration phases of the proposed Project, the BLM should require science-based management of common raven, coyote, and badger predation on tortoises in the action area. This would include the translocation sites.

For local impacts, the Predator Management Plan should include reducing/eliminating human subsidies of food and water, and for the common raven, sites for nesting, roosting, and perching to address local impacts (footprint of the proposed Project). This includes buildings, fences, and other vertical structures associated with the Project site. In addition, the Predator Management Plan should include provisions that eliminate the pooling of water on the ground or on roofs.

The Predator Management Plan should include science-based monitoring and adaptive management throughout all phases of the Project to collect data on the effectiveness of the Plan's implementation and implement changes to reduce/eliminate predation on the tortoise if existing measures are not effective.

We request that for any of the transmission options, the Project use infrastructure (particularly towers) that prevent raven nesting and perching for hunting. For example, for gen-tie/transmission lines 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. New fencing should not provide resources for ravens, like new perching and nesting sites.

Fire Prevention/Management Plans: The proposed Project could include numerous infrastructure components that are known to cause fires. Lithium-ion batteries at the Project site have the potential to explode and cause fires and are not compatible with using water for fighting fires. Photovoltaic panel malfunctions have caused vegetation to burn onsite. We request that the DEA include a Fire Prevention Plan in addition to a Fire Management Plan specifically targeting methods to deal with explosions/fires produced by these batteries/panels as well as other sources of fuel and explosives on the Project site.

Habitat Compensation Plan: The DEA should include an analysis of all proposed mitigation and how its implementation (including monitoring for effectiveness and adaptive management) would result in "no net loss in quantity and quality of Sonoran desert tortoise habitat….and using offsite mitigation (compensation) for unavoidable residual habitat loss."

**Climate Change and Non-native Plants**

Climate Change: We request that the DEA address the effects of the proposed action on climate change warming and the effects that climate change may have on the proposed action. For the latter, we recommend including an analysis of habitats within the Project area that may provide refugia for tortoise populations; an analysis of how the proposed action would contribute to the spread and proliferation of nonnative invasive plant species; how this spread/proliferation would affect the desert tortoise and its habitats (including the frequency and size of human-caused fires); and how the proposed action may affect the likelihood of human-caused fires. We strongly urge that the BLM require 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 prevention and fire response.

Impacts from Proliferation of Nonnative Plant Species and Management Plan: The DEA should include an analysis of how the proposed Project would contribute to the spread and proliferation of non-native invasive plant species; how this spread/proliferation would affect the desert tortoise and its habitats (including the frequency and size of human-caused fires); and how the proposed Project may affect the frequency, intensity, and size of human-caused and naturally occurring fires. For reasons given in the previous paragraph, we strongly urge that the BLM require the Project proponent to develop and implement a management and monitoring plan for nonnative plant species. The plan should integrate management/enhancement of native vegetation with fire prevention and fire response to wildfires.

## Hydrology and Water Quality

Regarding water quality, quantity, and location of ground water and ephemeral surface water, the DEA should include an analysis of the impacts of water acquisition, use, and discharge for panel washing, potable uses, and any other uses associated with this proposed Project, and indirect and cumulative impacts from water use and discharge on native perennial shrubs and annual vegetation used for forage by the Sonoran desert tortoise, including downstream/down gradient impacts. The DEA should analyze how much water is proposed to be used during construction and operation; how any grading, placement, and/or use of any Project facilities will impact downstream/downgradient flows that are reduced, altered, eliminated, or enhanced (Devitt et al. 2022). This analysis should include impacts to native and non-native vegetation and habitats for wildlife species including the Sonoran desert tortoise, for which washes are of particular importance for feeding, shelter, and movements.

In addition, we request that the DEA include an analysis of how water use during construction, operations and maintenance, decommissioning, and habitat restoration will impact the levels of ground water in the region. These levels may then impact surface and near-surface flows at springs, seeps, wetlands, pools, and groundwater-dependent vegetation in the basin. 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).

## Federal Land Policy and Management and Federal Endangered Species Act

Federal Land Policy and Management Act (FLPMA): Congress wrote a lengthy definition of "multiple use" for the management of public lands and their various resource values. The definition included "… the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."

Congress 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 consider Sonoran desert tortoise and its habitats to be renewable resources.

The definition of "environmental quality" is a set of properties and characteristics of the environment, either generalized or local, as they impinge on human beings and other organisms. It is a measure of the condition of an environment relative to the requirements of one or more species and or to any human need or purpose. Thus, BLM must consider the quality or condition of the environment of the Sonoran desert tortoise with respect to the species' requirements for persistence and must maintain this habitat quality to comply with FLPMA. Please analyze in the DEA how BLM would achieve these mandates if it approves this Project especially when including cumulative impacts to the tortoise in its analysis.

**Cumulative Effects**

With regards to cumulative effects, the DEA should list and analyze all Project impacts within the region including future state, federal, and private actions affecting listed species on state, federal, and private lands. The Council asks that the relationship between this proposed Project and the Solar PEIS (BLM and DOE 2012) as well as the 2024 PEIS for 11 states (BLM 2024) be analyzed, as the Project area is not in a designated SEZ identified in the 2021 Solar PEIS. Further, we expect that the environmental documents will provide a detailed analysis of the "heat sink" effects of solar development on adjacent desert areas and particularly Sonoran desert tortoises occurring in the adjacent Harcuvar Mountains.

In the cumulative effects analysis of the DEA, please ensure that the CEQs "Considering Cumulative Effects under the National Environmental Policy Act" (1997) is followed, including the eight principles, when analyzing cumulative effects of the proposed action to the tortoise and its habitats. CEQ states, "Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern. The range of actions that must be considered includes not only the Project proposal but all connected and similar actions that could contribute to cumulative effects." The analysis "must describe the response of the resource to this environmental change." Cumulative impact analysis should "address the sustainability of resources, ecosystems, and human communities." For example, the DEA should include data on the estimated number of acres of tortoise habitats degraded/lost and the numbers of tortoises that may be lost to growth-inducing impacts in the region.

CEQs guidance on how to analyze cumulative environmental consequences is given in the eight principles listed below:

**1. Cumulative effects are caused by the aggregate of past, present, and reasonable future actions.**
The effects of a proposed action on a given resource, ecosystem, and human community, include the present and future effects added to the effects that have taken place in the past. Such cumulative effects must also be added to the effects (past, present, and future) caused by all other actions that affect the same resource.

**2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, non-federal, or private) has taken the actions.**
Individual effects from disparate activities may add up or interact to cause additional effects not apparent when looking at the individual effect at one time. The additional effects contributed by actions unrelated to the proposed action must be included in the analysis of cumulative effects.

**3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.**
Environmental effects are often evaluated from the perspective of the proposed action. Analyzing cumulative effects requires focusing on the resources, ecosystem, and human community that may be affected and developing an adequate understanding of how the resources are susceptible to effects.

**4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.**
For cumulative effects analysis to help the decision maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully. The boundaries for evaluating cumulative effects should be expanded to the point at which the resource is no longer affected significantly or the effects are no longer of interest to the affected parties.

**5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.**
Resources are typically demarcated according to agency responsibilities, county lines, grazing allotments, or other administrative boundaries. Because natural and sociocultural resources are not usually so aligned, each political entity actually manages only a piece of the affected resource or ecosystem. Cumulative effects analysis on natural systems must use natural ecological boundaries and analysis of human communities must use actual sociocultural boundaries to ensure including all effects.

**6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.**
Repeated actions may cause effects to build up through simple addition (more and more of the same type of effect), and the same or different actions may produce effects that interact to produce cumulative effects greater than the sum of the effects.

**7. Cumulative effects may last for many years beyond the life of the action that caused the effects.**
Some actions cause damage lasting far longer than the life of the action itself (e.g., acid mine damage, radioactive waste contamination, species extinctions). Cumulative effects analysis need to apply the best science and forecasting techniques to assess potential catastrophic consequences in the future.

**8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.**
Analysts tend to think in terms of how the resource, ecosystem, and human community will be modified given the action's development needs. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource.

To help BLM understand the complexity of the cumulative and interactive nature of multiple anthropogenic threats to desert tortoise populations and to help develop BLM's analysis of cumulative impacts in the DEA for this Project, we have included a map of some of these multiple threats and their relationships to other threats (Tracy et al. 2004) (please see Figure 1).

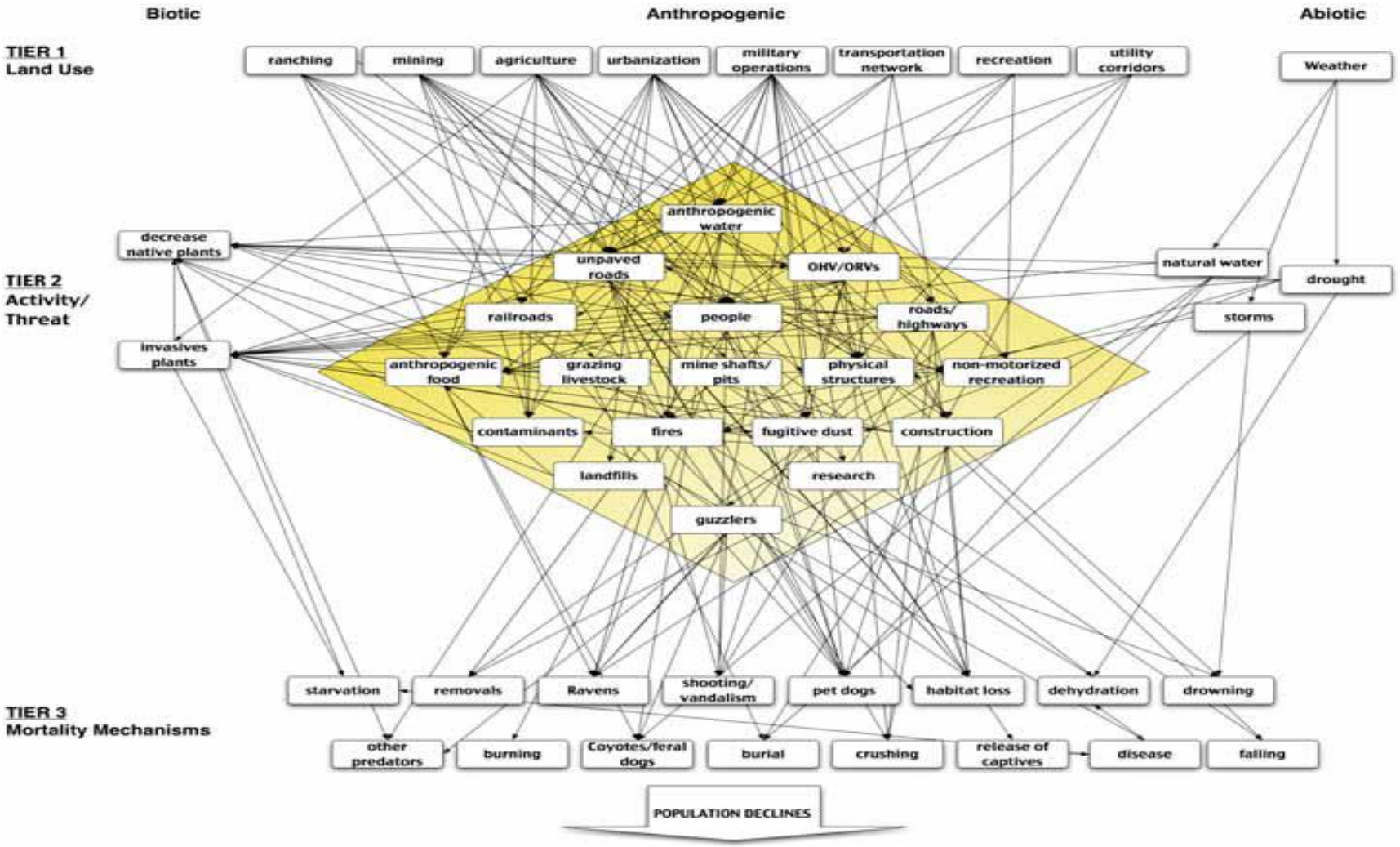



Figure 1. Network of threats demonstrating the interconnectedness between multiple human activities that interact to cause mortality and prevent conservation of tortoise populations. Tier 1 includes the major land use patterns that facilitate various activities (Tier 2) that impact tortoise populations through a suite of mortality factors (Tier 3). Just one land use results in several activities that are threats to the tortoise and cause numerous mortality mechanisms (from Tracy et al. 2004).

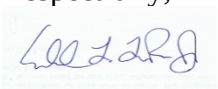
Note that CEQ includes analysis of interactive and synergistic impacts with cumulative impacts. We request that the DEA (1) include these eight principles in its analysis of cumulative impacts to the Sonoran desert tortoise; (2) address the sustainability of the tortoise in adjacent mountainous ranges; and (3) include mitigation along with monitoring and adaptive management plans that protect desert tortoises and their habitats during construction, operation, maintenance, and decommissioning of approved facilities.

In addition, we request that BLM add this Project and its impacts to a database and geospatial tracking system for special status species, including Sonoran desert tortoises, that track cumulative impacts (e.g., surface disturbance, paved and unpaved routes, linear projects, invasive species occurrence, herbicide /pesticide use, wildfires, etc.), management decisions, and effectiveness of mitigation for each project.

Without such a tracking system, BLM is unable to determine whether its management for the tortoise complies with its commitment in the CCA for the Sonoran Desert Tortoise (USFWS et al. 2015) to implement landscape level conservation measures (Section 9.1.1), local conservation measures (Section 9.1.2), and Agency-Specific Species and Habitat Conservation Actions (Section 9.2.1 for BLM). Please add these proposed projects to this data base and geospatial tracking system and explain in the DEA how the proposed Project with required mitigation will adhere to these commitments in the CCA including in section 9.2.1 "[r]enewable energy projects have been sited to avoid all occupied SDT [Sonoran desert tortoise] habitat. Roads, pipelines and transmission lines have been designed to minimize impacts to SDT habitat or mitigated to achieve no net loss."

We appreciate this opportunity to provide scoping comments on this Project and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the Desert Tortoise Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the BLM that may affect desert tortoises, and that any subsequent environmental documentation for this Project is provided to us at the contact information listed above. Additionally, we ask that you respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this Project.

Respectfully,



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Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

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