



DESERT TORTOISE COUNCIL

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Via email and BLM NEPA ePlanning Portal

Date: 16 August 2024

Attn: Kenny Kendrick, Supervisory Resource Management Specialist
Bureau of Land Management
Las Vegas Field Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
[BLM NV LVFO Muddy Mt TMP@blm.gov](mailto:BLM_NV_LVFO_Muddy_Mt_TMP@blm.gov)

Re: Muddy Mountains Special Recreation Management Area Travel Management Plan and
Environmental Assessment (DOI-BLM-NV-S010-2024-0087-EA)

Dear Mr. Kendrick,

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 as 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 Mojave desert tortoise is among the top 50 species on the list of the world's most endangered tortoises and freshwater turtles. The International Union for Conservation of Nature's (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers the Mojave desert tortoise to be Critically Endangered (Berry et al. 2021), "... based on population reduction (decreasing density), habitat loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (sensu stricto) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts

and is where the largest past population losses have been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (sensu stricto) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units.”

This status, in part, prompted the Council to join Defenders of Wildlife and Desert Tortoise Preserve Committee (Defenders of Wildlife et al. 2020) to petition the California Fish and Game Commission in March 2020 to elevate the listing of the Mojave desert tortoise from Threatened to Endangered in California. In its status review, California Department of Fish and Wildlife (CDFW) (2024) stated: “At its public meeting on October 14, 2020, the Commission considered the petition, and based in part on the Department’s [CDFW] petition evaluation and recommendation, found sufficient information exists to indicate the petitioned action may be warranted and accepted the petition for consideration. The Commission’s decision initiated this status review to inform the Commission’s decision on whether the change in status is warranted.”

Importantly, in their April 2024 meeting, the California Fish and Game Commission voted unanimously to uplist the tortoise from threatened to endangered under the California Endangered Species Act based on the scientific data provided on the species’ status, declining trend, numerous threats, and lack of effective recovery implementation and land management. Among other things, this determination may be interpreted to mean that the Mohave desert tortoise population in California is deemed by the California Fish and Game Commission to be closer to extinction than when it was listed as threatened in 1989.

Description of the Proposed Action and Alternatives

BLM has prepared the Muddy Mountains Special Recreation Management Area Travel Management Plan (TMP) and Environmental Assessment (EA). The description of the proposed action and alternatives is from the EA.

The 1998 Las Vegas Resource Management Plan (RMP) specified that the 128,300 acres of the Muddy Mountains area would be managed to provide semi-primitive recreation opportunities and integrated management of wildlife habitat, cultural resources, and other recreational uses.

For the EA and TMP, BLM uses the word “route” to refer to:

- paved and unpaved roads (navigable by all motorized vehicles);
- primitive roads (navigable by four-wheel drive or high-clearance vehicles);
- trails (navigable by human-powered, animal-powered, or OHV [off-highway vehicle] forms of transportation or for historical or heritage values);
- temporary routes (navigable by vehicles the development, construction, or staging of a project or event but having a finite lifespan because its purpose is the development, construction, or staging of a project or event); and
- transportation linear disturbance (planned and unplanned linear features that are not part of the BLM’s transportation system).

The Muddy Mountains Travel Management Area (TMA) contains 263 miles of routes.

Land uses and recreation in the Muddy Mountains TMA include but are not limited to mining and mineral exploration, OHV-recreation, camping, hunting, canyoneering, rock 10 climbing, wildlife viewing, hiking, horseback riding, and mountain biking, including electric bicycles (e-bikes).

BLM has developed and analyzed four alternatives in this EA, including a No Action Alternative (Alternative A) and three action alternatives.

- **Alternative A:** This is the No Action alternative. BLM would continue its current management of the TMA and keep 234.7 miles of routes open. Current OHV designations under the RMP limit motorized vehicle use on public lands to existing roads, trails, and dry washes.
- **Alternative B:** Alternative B generally closes the least number of routes, 28.9 miles, except for Alternative A. Alternative B would leave 180.7 miles of routes open to all users and 38.9 miles open to motorcycles.
- **Alternative C:** This alternative emphasizes conservation of physical, biological, and heritage resources with the most constraints on resource uses (open routes) compared to all other alternatives. It would leave 113.5 miles open to all users, 28.3 mile open to motorcycles, and 6.6 miles open seasonally. It closes 94.4 miles of routes.
- **Alternative D:** This is BLM’s preferred alternative. It is generally a “blend” of Alternative B and Alternative C. It would leave 145.9 miles open to all users, 30.3 miles open to motorcycles, and 8.6 miles open seasonally. It closes 58.1 miles of routes.

Route density (linear miles of routes per square mile) for these alternatives would be:

Designation	Alternative A	Alternative B	Alternative C	Alternative D
Open to all use	1.17	0.90	0.57	0.73
Open to authorized users only	0	0.07	0.12	0.10
Open to motorcycles	0	0.19	0.12	0.15
Open to All Use Seasonally	0	0	0.03	0.04
Non-Inventoried Route*	0.14	0	0	0

*Non-inventoried routes include Special Recreation Permit (SRP) authorized routes and additional routes proposed for other types of special recreation events, such as OHV competition or rock crawling events. These have been evaluated as existing routes in Alternative B, C, and D. No new construction of routes is proposed under all alternatives.

The TMA is in the southern Nevada Mojave Desert at elevations from 1,500 to 5,200 feet. The TMA Planning Area encompasses approximately 133,483 acres of BLM-administered lands, and is located in Clark County about 50 miles northeast of Las Vegas. It is south of the Moapa River Indian Reservation, and abuts Lake Mead National Recreation Area and Valley of Fire State Park. The TMA also encompasses the majority of the Muddy Mountains Wilderness Area and includes the Hidden Valley Area of Critical Environmental Concern (ACEC) (Figure 1).

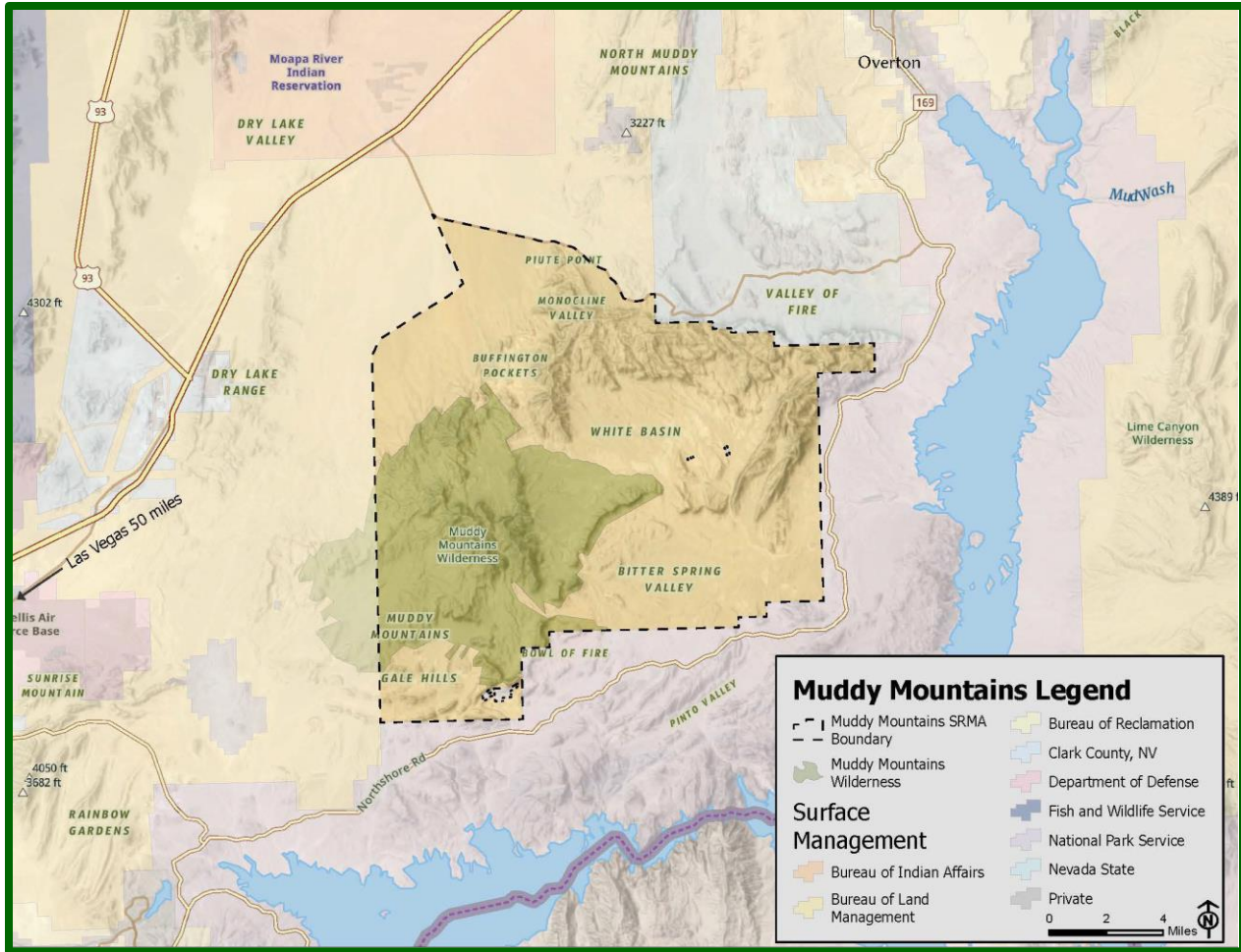


Figure 1. Location of the Muddy Mountains TMA.

Comments on the Proposed Action

Public Notification

The Council learned about this proposed action from a third party and not from the BLM. This absence of notification from BLM is especially troubling because:

- BLM notified the Council via email on 4/12/2023 of the opportunity to provide scoping comments on the Muddy Mountains Special Recreation Management Area TMP;
- the Council provided scoping comments on this proposed action to BLM in a letter dated May 10, 2023 (attached);
- we requested in the scoping letter that the Council be identified as “an Affected Interest for this and all other projects funded, authorized, or carried out by the BLM that may affect species of desert tortoises, and that any subsequent environmental documentation for this project is provided to us at the contact information listed above;”
- in the numerous comment letters sent to BLM for projects in southern Nevada, we concluded each letter with the request to be considered an Affected Interest for all proposed actions in the range of the tortoise; and

- in 2019, the Council sent a certified letter to the Southern Nevada District Manager requesting that the Council be identified as an Affected Interest and be notified of BLM proposed actions that may affect species of desert tortoises.”

In this certified letter, we reminded BLM of 40 Code of Federal Regulations 1506.6, which says, “Agencies shall make diligent efforts to involve the public in preparing and implementing their National Environmental Policy Act (NEPA) procedures. The agency should request comments from the public and should *affirmatively solicit comments* [emphasis added] from those persons or organizations who may be interested or affected.”

In addition, we reminded BLM that their NEPA Handbook (BLM 2008a) states, “A primary goal of public involvement is to ensure that all interested and affected parties are aware of your proposed action. Knowing your community well is the first step in determining the interested and affected parties and tribes” (section 6.9.1). The Handbook also states under Environmental Assessments “The EA must list tribes, individuals, organizations, and agencies consulted (40 CFR 1508.9(b))” (section 8.3.7).

Again, we request that BLM comply with these directives, include the Council on all lists of Affected Interests for any NEPA action that BLM is affiliated with in the range of the Mojave desert tortoise in Nevada, and notify the Council, preferably by email, of any proposed actions authorized, funded, or carried out by BLM that occur within the range of the tortoise.

Muddy Mountains Special Recreation Management Area Environmental Assessment

Compliance with Relevant Laws, Regulations, Policies and Other Directives: After reviewing the EA and TMP, the Council is concerned that BLM is not implementing due diligence to ensure this EA complies with NEPA, other environmental statutes and implementing regulations, and BLM policies, and to ensure that the TMP complies with all applicable environmental statutes (e.g., Federal Land Policy and Management Act (FLPMA) Federal Endangered Species Act (FESA), etc.), regulations (BLM 2024, etc.), and BLM policies (e.g., BLM 2008a, b; 2015; 2021a, b, c; 2022; 2024).

For example, BLM should clearly demonstrate how the EA and TMP comply with the Conservation and Landscape Health Rule (BLM 2024) that was recently implemented and other regulations under FLPMA, as amended, and other relevant authorities, to advance the BLM's multiple use and sustained yield mission by prioritizing the health and resilience of ecosystems across public lands. To support ecosystem health and resilience, this rule provides that the BLM will protect intact landscapes, restore degraded habitat, and make informed management decisions based on science and data.

We request that BLM personnel well-experienced with the many statutes, implementing regulations, and policies applicable to the resource issues in the EA and TMP thoroughly review these documents for compliance with these laws, regulations, and policies. This review should include ensuring that (1) statements made in these documents are appropriate especially for the section of the document where they occur; (2) analyses of direct, indirect and cumulative impacts for each resource issue identified in the EA (the Council identified the tortoise/tortoise habitat as a resource issue in its scoping comments) are included and appropriate for each resource issue; and (3) analyses and conclusions of impacts and appropriateness of management, mitigation, monitoring, and adaptive management are science-based (BLM 2015) and supported with citations from the scientific literature. Below we

provide a few examples of the inconsistencies and inadequacies that we discovered in the EA and TMP.

In addition, we suggest that BLM should include the action area (area with direct and indirect impacts from implementation of the proposed action), and not limit the analysis, mitigation, monitoring, and adaptive management implementation for the tortoise and other resource issues to the area within the TMA boundary. This request is made because the indirect and cumulative impacts from the designation and use of routes extend far beyond the footprint of the route and the boundary of the TMA (von Seckendorff Hoff and Marlow 2002, Brooks and Lair 2005, Ouren et al. 2007).

Comply with the Authorities of Land Management Entities for Adjacent Lands: The location of the TMA is adjacent to lands managed by other entities with different mandates and directives than BLM's. BLM's neighbors for this TMA are the National Park Service (NPS) and Nevada State Parks.

Because these mandates and directives differ from those of the BLM and the impacts of vehicle use extend far beyond the location of the route, BLM should ensure that the implementation and management of the Muddy Mountains TMP does not result in direct, indirect, or cumulative impacts to NPS and State Park lands that are not compliant with their directives for management of lands/resources within their jurisdictions. For example, the Muddy Mountains TMP should not designate vehicle routes or trails that stop at the boundary with NPS or State Park lands because they are not authorized to continue on these lands. Such "dead end" routes and trails would likely lead to users continuing onto these adjacent lands and adversely impacting the resources these agencies are mandated to protect/conservate. Another likely result is the users would continue the route in a different direction on BLM land, thereby creating additional unauthorized routes that result in additional impacts that were not analyzed in the EA and whose use is unauthorized.

Similarly, washes up-gradient from NPS and State Park lands should not be designated as vehicle routes. Their use by vehicles would result in degradation of soils (e.g., compaction, erosion, etc.), degradation and loss of vegetation (coating plants with dust; physical damage to roots, leaves, and stems/branches; crushing/destroying plants; introduction/spread of invasive plant species, wildfires caused by vehicles, etc.) (Brooks and Lair 2005, Brooks and Matchett 2006), that would adversely impact down-gradient areas on these lands.

Page 9, Minimization Criteria: In the EA, BLM says, "Pursuant to 43 CFR §8342.1, route management designations under all alternatives are based on the protection of the resources of the public lands." This includes considerations " [t]o minimize damage to soil, watershed, vegetation, air, or other resources of the public" and "To minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats lands."

In reviewing the EA including this information, we found no explanation of how BLM had implemented these requirements especially with respect to the tortoise and tortoise habitat. In addition, we did not find data from the scientific literature to support the conclusions that BLM presents in the EA with respect to the tortoise, tortoise habitat, and other special status species and their habitats.

Please revise the final EA to include this information, analysis, and supporting data from the scientific literature.

Page 9, line 22: “No routes within the TMA would be designated as OHV limited per 43 CFR §8342.”

This statement appears to conflict with information presented earlier in the EA. This information includes that for Alternative C, 6.6 miles of routes would be open seasonally and for Alternative D, 8.6 miles. The definition of “limited routes” is provide in the TMP – “OHV travel on routes, roads, trails, or other vehicle ways is subject to restrictions to meet specific resource management objectives. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive uses that have special limitations” (page C-6). Please clarify that this information is consistently applied throughout the final EA and its appendices including the TMP.

Page 10, Route Maintenance: BLM says, “Maintenance guidelines are provided in the TMP to inform future route maintenance, improvement projects, and new route development.” However, on page 1 of the EA, BLM says, “[n]o new construction of routes or trails is proposed under the TMP.” Please clarify here and throughout the final EA and appendices, including the TMP, whether there will be new route development under this TMP and EA, and if yes, the circumstances that would cause BLM to develop new/additional routes in the TMP.

Pages 10 – 11, Route Closures: BLM says, “Measures *may be taken* (emphasis added) to stabilize eroded areas and treat weed infestations and may include:

- Routes designated closed would be surveyed for erosional features and the presence of non-native invasive plants. If found, a treatment plan would be developed.”

This wording does not commit BLM to implement any mitigation including a treatment plan to remove invasive plant species continually brought to the TMA by vehicles or the restoration of native vegetation. We remind BLM of various regulations and policies regarding management of public lands including “to take any action necessary to prevent unnecessary or undue degradation of the lands” (FLPMA). Please revise the wording in the final EA to clarify the management, mitigation, monitoring, and adaptive management that BLM would implement.

Page 50, Vegetation Resources, Invasive Non-native Plants: BLM says, “[t]he State of Nevada list of invasive plant species is presented in Table 3.4-4.” However, Table 3.4-4 lists noxious plant species. According to the Nevada Department of Agriculture (https://agri.nv.gov/Plant/Noxious_Weeds/What_is_a_noxious_weed_/), invasive weeds are weeds that are non-native, spread prolifically, and are likely to cause harm or damage to the native ecosystem and species in which they are invading. A noxious weed is “any species of plant which is, or likely to be, detrimental or destructive and difficult to control or eradicate.” Noxious weeds are typically non-native plants, but they do not have to be. Noxious weeds may be placed on the list due to potential health hazards that pose a significant danger to either humans or animals. The Nevada noxious weed list does not include invasive species such as *Bromus rubens* and *B. tectorum* (Brooks et al. 2016).

We found no list of invasive plant species in the EA. Please correct this information and revise the final EA to include the invasive non-native plant species currently present in the TMA and adjacent areas.

Page 53, Vegetation Resource, Invasive Plant Species: BLM says, “Weed surveys would detect infestations and appropriate treatment plans would be developed on a case-by-case basis.” We reiterate our earlier comment under pages 10 – 11 that this statement by BLM does not commit BLM to implement any on-the-ground management actions to implement the treatment plans. BLM should include a commitment in the final EA and TMP to mitigate, monitor, and implement adaptive management for impacts to soils, vegetation, and wildlife including the tortoise and its habitat.

Pages 98-101, Special Status Species, Environmental Consequences: “Potential impacts to federally listed and candidate species were analyzed based on the miles of designated routes and limitations within suitable habitat for those species.”

For the tortoise, the analysis of the density of routes per area is the metric BLM should use for the tortoise (Averill-Murray and Allison 2023). BLM should use the best available science to analyze the impacts of routes to the tortoise/tortoise habitat (BLM 2015). Because tortoise habitat is patchy in distribution, tortoises have large lifetime home ranges, and historically the species had a wide distribution, management of tortoise habitat to sustain the species includes linkage habitat among patches of tortoise habitat (Averill-Murray et al. 2021) in addition to modeled habitat. Effective management of habitat for the tortoise is described in Averill-Murray et al. (2021).

The density of routes substantially affects the presence and density of tortoises. Averill-Murray and Allison (2023) found that to maintain population connectivity between Tortoise Conservation Areas (TCAs), route densities should be less than 0.75 km per km². They recommend that for areas where wildlife conservation is a priority, road density should be less than 0.6 km per km² (Averill-Murray and Allison 2023). They provide data for establishing clear road density limits on public lands within the range of the Mojave desert tortoise and list several management actions to implement based on their research. The Council requests that these management actions be added to the TMP, and the analysis in the final EA revised to reflect these management actions.

From the data on route density provided in the EA, we were unable to determine what the total route density would be for each alternative. This is because BLM used four categories when reporting the route density. (Please see the table above under Description of the Proposed Action and Alternatives). Please revise the data in the final EA to include the density of all routes per km² or mi² in the TMA so BLM clearly shows the total route density in the TMA, compare that information to the findings of Averill-Murray and Allison (2023), and analyze the impacts to the tortoise/tortoise habitat from implementation of each alternative using this and other relevant data.

The Council supports reducing road densities to the level at or below that determined from analyzing existing data on the tortoise and reported in the scientific literature including Averill-Murray and Allison (2023). Consequently, we do not support the alternatives that exceed this density threshold of routes for the TMA. From the information provided by BLM in the EA these alternatives would be Alternatives A, B, and D. Alternative C may exceed the density threshold when all routes are included

in the calculation of route density rather than being separated into the four categories of “Open to All Use,” “Open to Authorized Users Only,” “Open to Motorcycle,” and “Open to All Use Seasonally.”

Given BLM’s mandate under FLPMA to manage resources for “sustained yield” and the “environmental quality” of public lands, we believe BLM should revise the action alternatives in the final EA to comply with FLPMA by providing for sustained yield for the tortoise and environmental quality, and provide scientific information that all action alternatives would comply with FLPMA for the tortoise (e.g., have route densities below the threshold reported by Averill-Murray and Allison (2023) to manage for sustained yield of the tortoise).

Connectivity Habitat: In the EA, BLM provides a map of bighorn sheep habitat, but we could not find a similar map of tortoise habitat including connectivity habitat.

The Council on Environmental Quality (CEQ) (2023) recently issued Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors. The purpose of this document is for Federal agencies to consider “how their actions can support the management, long-term conservation, enhancement, protection, and restoration of year-round habitat, seasonal habitat, stopover habitat, wildlife corridors, watersheds, and other landscape/waterscape/seascape features and processes that promote connectivity.” “The objective is to build consideration of connectivity and corridors into the early steps of these [planning] processes to facilitate easy implementation.”

CEQ applies this guidance to the following areas:

- Agency planning and decision-making
- Science and data
- Collaboration and coordination:

For the first bullet, agency planning and decision-making, CEQ specifically identifies the following focal areas where connectivity and corridors should be considered early in planning, funding, and decision-making:

- Energy development planning and permitting
- Rangeland planning and management
- Hard rock mining and mineral exploration and development planning and permitting
- Public land planning and management
- Recreation planning
- Telecommunications infrastructure and management
- Transportation planning and use management.

In addition, CEQ identifies best practices that should be incorporated into planning and decision-making, gathering baseline information to assess public lands for connectivity and corridor values, ***using science and data*** (emphasis added) to develop performance measures and metrics to assess whether and how Federal agencies collectively are promoting greater connectivity across terrestrial habitats.

For the second bullet, science and data, CEQ says. “Federal agencies should address how the best available science and data will inform planning and decision-making, and consider approaches to

identify and address gaps in available science and data.” CEQ describes the types of science and data to be used and the sharing of science and data.

For the third bullet, collaboration and coordination, Federal agencies “should support strategic collaborations and partnerships to advance work on connectivity and corridors,” and “should promote both intra- and interagency coordination and collaboration, to ensure that planning and information regarding connectivity and corridor efforts are not siloed within individual agencies or within distinct programs within a single agency.” BLM’s proposed action is adjacent to designated areas with investments in conservation (e.g., NPS and State Park lands). BLM should reach out to these entities to explore collaborative opportunities to enhance ecological connectivity across jurisdictional boundaries as part of the process in developing and managing the Muddy Mountains TMP and EA. This collaboration effort and its result should be described in this TMP and final EA.

Because CEQ has identified recreation planning and transportation planning and use management as focal areas where connectivity and corridors should be considered early in planning, funding, and decision-making, and because these areas are what BLM is undertaking in its planning, funding, and decision-making for the Muddy Mountains Travel Management Area TMP and EA, we request that BLM explain in the TMP and final EA how it is complying with this CEQ guidance. Please explain how all the action alternatives would comply with the purpose and objective of this guidance including enabling “wildlife to adapt to fluctuating environmental conditions, including those caused by climate change.” The final EA and TMP should demonstrate how BLM is implementing “consistent Federal action on connectivity and corridors” with other Federal agencies in agency planning and decision-making, science and data, collaboration, and coordination.

In addition, BLM should demonstrate in the final EA how it is complying with Instructional Memorandum IM 2023-005 Habitat Connectivity on Public Lands (BLM 2022). Specifically, BLM should include in the final EA its determination for habitat connectivity for the tortoise in and adjacent to the TMA and how this determination was reached through “collaboration, coordination and consultation with Tribal and state wildlife managers, and other federal agencies” and “a diverse scientific field of experts to expand research on habitat connectivity on public lands to best inform the assessment of habitat connectivity.” Please add this information to the final EA.

BLM should demonstrate in the final EA and TMP that it used the best available science including these two scientific papers in its calculations and analysis of the direct, indirect, and cumulative impacts to the tortoise/tortoise habitat in the TMA as required under 40 CFR 1500.1(b) – accurate scientific analysis, 40 CFR 1502.24 – Methodology and scientific accuracy, 40 CFR 1507(2)(a) – use of science in planning and decisionmaking, and BLM IB 2015-040 – Advancing Science in the BLM (BLM 2015). Please revise the final EA and TMP to explain how BLM used these documents in its development of the alternatives for the TMP and analyzed their impacts in the final EA with respect to the tortoise/tortoise habitat, how the listed management actions are being implemented, and if they are not being implemented, why not.

Page 102. Special Status Species, Environmental Consequences, Alternative C (Conservation): BLM states, “Implementation of Alternative C would preserve and restore the most wildlife habitat of the action alternatives through the closure of selected routes.” We found no citations from the scientific literature to support this statement, and the Council disagrees strongly with this statement. While

implementation of this alternative would close routes, those closed routes and adjacent areas impacted directly and indirectly by their past use are not automatically restored wildlife habitat. After severe disturbance (such as from OHV use), desert soils require long periods to recover naturally (Chiquoine et al. 2016). For example, for biological soil crusts, Belnap (2001) reported recovery rates ranging from 14 to 50 years depending on the species comprising the soil crust. Chiquoine et al. (2016) reported that for soil crusts composed of lichens or mosses, recovery time is several decades to centuries depending on the availability of the propagules. For restoration of native perennial vegetation, Abella (2010) reported recovery of vegetation lost from surface disturbance would take 200 years, and disturbances can leave scars in the desert visible for multiple human generations.

The Council requests that BLM's statement that Alternative C would preserve and restore the most wildlife habitat should be revised in the final EA to reflect the long-term impacts from vehicle use on routes to soils and vegetation and therefore wildlife habitat for decades or longer.

Desert Tortoise Surveys: We were unable to find information in the EA that BLM conducted protocol surveys for the tortoise. For the final EA to analyze the impacts to the tortoise from authorizing vehicle use along designated routes in this TMA, BLM needs to have data on the location and abundance of tortoises and tortoise habitat in the area. BLM should provide the results of the formal protocol surveys for Mojave desert tortoise (USFWS 2019). As per this protocol, because the project area is larger than 500 acres, the surveys must be performed in the time periods of April-May or September-October so that a statistical estimate of tortoise densities can be determined for all impact areas and reported in the final EA. Only experienced biologists should perform protocol surveys, which may mean that U.S. Fish and Wildlife Service (USFWS) biologists review their credentials prior to conducting the surveys.

To determine the full extent of impacts to tortoises and to facilitate compliance with FESA, BLM should consult with the Southern Nevada Office of the USFWS to determine the action area for this project. The USFWS defines "action area" in 50 Code of Federal Regulations 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 (50 CFR §402.02)." The results of the tortoise surveys in the action area and the analysis of the impacts to the tortoise/tortoise habitat should be included in the final EA. The Council requests that BLM revise the final EA and add this information.

Impacts of OHV Use on Tortoise Populations: OHV use has highly detrimental effects on tortoise populations. Berry et al. (2014) found that within the Rand Mountains, Fremont Valley, and the Desert Tortoise Research Natural Area (DTRNA) in California, all of which are in the Fremont-Kramer Critical Habitat Unit, only populations within the fenced DTRNA were found to be stable or increasing. Within the DTRNA fenced boundary, 12 live desert tortoises were found on study plots compared with only two in the adjacent Fremont-Kramer Critical Habitat Unit. The important distinction between these two areas is that the DTRNA has been fenced and therefore closed to all motorized vehicle use since approximately 1980 whereas in the Rand Mountains and Fremont Valley, OHV use occurs on designated open dirt roads and trails, and also unauthorized use on BLM-designated closed routes or cross-country.

In reviewing the maps of the route locations provided in Appendix B of the EA, we discovered that many of the routes appear to follow ephemeral streams or washes (Figure 2). As BLM states in the

EA, “[e]xisting routes on BLM land are presently undesignated but open to all motor vehicle use on existing trails and dry washes (except the routes in the Muddy Mountains Wilderness Area)” and “[a]pproximately 96 miles of inventoried routes are in washes.” This is 41 percent of the linear routes in the TMA.

Washes are important areas used by tortoises for foraging and for movements. Desert tortoises tend to follow washes (Jennings 1993, Peaden et al. 2017). The impacts to these washes from vehicle use should be analyzed in the final EA especially with respect to tortoise movements, and forage availability should be analyzed as tortoises choose ephemeral stream channels or washes in which to forage especially in late spring (Jennings and Berry 2023). Washes are likely important to juvenile desert tortoises in the Mojave Desert because they offer foraging opportunities and because they facilitate movement (Todd et al. 2016). Todd et al. (2016) recommended that avoiding development of areas with “high perennial plant abundances, creosote bush, and more washes and rivulets can help conserve high-quality juvenile tortoise habitat.”

Given this information from the scientific literature on the importance of washes and the impacts of OHV use on tortoise populations, the Council recommends that BLM close routes in washes in the TMA and restore their ecological functions and values damaged/destroyed by vehicle use.

Page 145 – 146, Areas of Environmental Concern: The Hidden Valley ACEC is 3,357 acres designated within the Muddy Mountains TMA. According to BLM the ACEC is an area “where special management attention is needed to protect and prevent damage to important historical, cultural, and scenic values; fish, or wildlife resources; or other natural systems or processes.” “The purpose of the Hidden Valley ACEC is to conserve crucial habitat for threatened desert tortoise (*Gopherus agassizii*), protect sensitive biological soil crust (sic) (Williams, Buck, & Beyene, 2012), and to provide a valuable recreation resource for non-mechanized exploration.”

In the section under “Impacts Common to All Alternatives” and paragraphs that follow for each alternative, we found a general description of the management actions that BLM proposes to implement. We found no description or *analysis* (emphasis added) of direct and indirect impacts to tortoises, tortoise habitat, and biological soil crusts or arbuscular mycorrhizal fungi, which should be rectified in the final EA.

Under Cumulative Impacts, BLM lists past, present, and foreseeable actions that could impact the transportation network in the Hidden Valley ACEC. However, this section should analyze cumulative impacts to the Hidden Valley ACEC including how those impacts would affect the

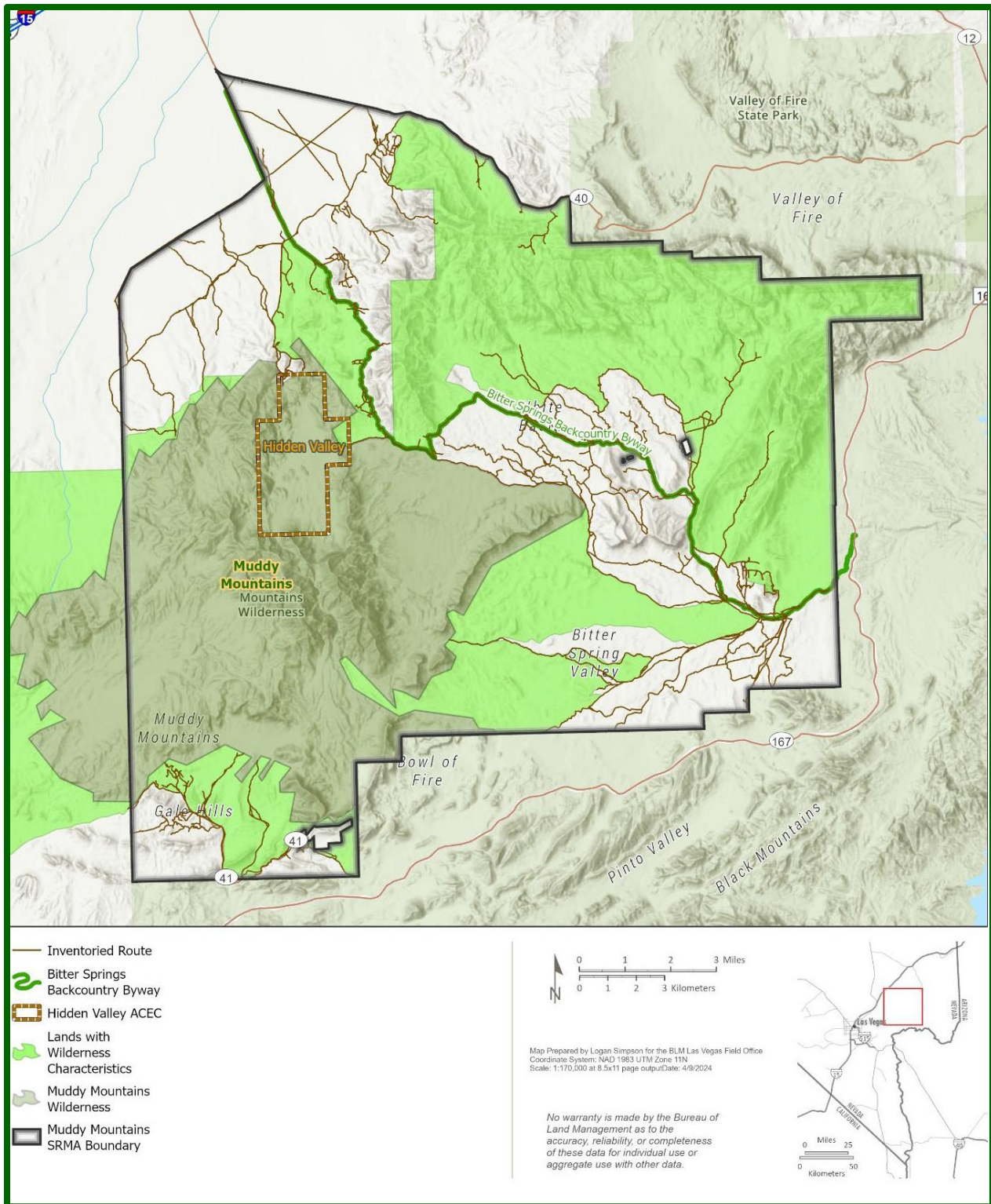


Figure 2. Location of inventoried routes in the Muddy Mountains TMA and wilderness area, and areas with wilderness-like characteristics.

purposes of the Hidden Valley ACEC (i.e., conserving crucial habitat for threatened desert tortoise (*Gopherus agassizii*) and protecting sensitive biological soil crusts).

The Council strongly requests that BLM revise this section of the final EA to analyze, using information for the scientific literature and appropriate citations, the direct and indirect impacts of each alternative on the purposes of the Hidden Valley ACEC and the cumulative, interactive, and synergistic impacts of past, present, and foreseeable actions on these purposes.

Cumulative Impacts

Please ensure that BLM is complying with CEQ's guidance on "Considering Cumulative Effects under the National Environmental Policy Act" (1997), including the eight principles listed in this guidance, when analyzing cumulative effects of the proposed action to the affected resource issues. This CEQ document is referred to in BLM's National Environmental Policy Act Handbook (BLM 2008a).

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." Hence, the cumulative effects analysis in the EA should address the sustainability of the tortoise and tortoise habitat in the TMA and adjacent areas from the implementation of each alternative in the TMP along with all other impacts occurring or likely to occur in the area.

CEQ's guidance on how to analyze cumulative environmental effects contains 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 needs 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.

We request that the final EIS be revised to (1) include these eight principles in its analysis of cumulative impacts to the Mojave desert tortoise; (2) ensure that synergistic and interactive impacts from the proposed project are included in this analysis; (3) address the sustainability of the tortoise in/near the project area and in the Eastern and Northeastern Recovery Units especially with respect to connectivity between populations in TCAs/Critical Habitat Units (CHUs); and (4) include effective science-based mitigation, monitoring, and adaptive management that protect desert tortoises and their habitats during BLM's management of the of the TMA, ACEC, and wilderness areas.

In addition, we request that BLM add this project and its impacts to a BLM database and geospatial tracking system for special status species, including Mojave/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/plan. Without such a tracking system, BLM is unable to analyze cumulative impacts to special status species (e.g., desert tortoises) with any degree of confidence.

Consultation and Coordination

BLM says, “[t]he following tribes, agencies, organizations, businesses, and individuals were consulted with or participated in the scoping process” This statement is followed only with information on Native American Tribes.

The Council participated in the scoping process and provided a letter to BLM on May 10, 2023 with comments during the public scoping period. This letter is attached. We are resubmitting it as part of our comments on the EA and TMP because after reviewing the EA and TMP, the Council believes that BLM did not address our comments in these documents.

We request that BLM revise this section of the final EA to include all entities consulted with or who participated on the scoping process. This information should include the issues/concerns identified, required mitigation under regulations and BLM’s reinstatement of its mitigation policy (BLM 2021a, b, c), and how BLM is addressing the issues/concerns identified during the consultation/coordination/scoping process. For example, BLM should include consultation with the USFWS for the proposed action because the proposed action would occur in tortoise habitat, the impacts to the tortoise, including direct mortality and other forms of take, will be ongoing, and data from the monitoring of tortoise populations in Nevada show that most tortoise populations are declining with many below the threshold for viability in areas that BLM is managing specifically for tortoises (USFWS 2019b, 2020, 2022a, 2022b).

Appendix C – Muddy Mountains Special Recreation Management Area Travel Management Plan

Page C-11: “The primary purpose of this TMP is to implement the designation of local travel networks and create a management framework that allows for both current and future user needs in the TMA, while ensuring the protection of resources...”

BLM should explain in the final EA how the proposed TMP will accomplish this primary purpose for the tortoise/tortoise habitat and use references from the scientific literature to verify this explanation.

Page C-17: “Closed routes will not be signed unless there is a perceived need, and access points would be disguised by restoration efforts to avoid attracting use.”

The Council understands the thought process behind this management practice. However, if a route is not signed as closed and is visible as a route, the public may presume it is open because it is not signed as closed or blocked. This latter interpretation is the one that the public is accustomed to for paved roads and is implemented by highway/transportation departments. A road is considered open and

available for public use unless it is signed as being closed and/or blocked. BLM provides no data to document that its practice of not signing closed routes is the most effective practice to achieve compliance. BLM should not presume that not signing closed routes as closed is the best management practice to achieve compliance. Rather BLM should use science and conduct a study of public behavior using these different scenarios and determine which one results in the greatest level of compliance. This is a scientific approach and not one of assumption.

Page C-18: Where designated motorized routes intersect with closed routes, “Closed” or “Restoration in Progress” route markers will be placed only where necessary for resource protection or public safety. This wording can be interpreted to mean that the route is being restored. We recommend that signage be clear and not ambiguous in its wording.

Page C-18: “When these closed routes are completely rehabilitated either through natural re-vegetation or reclamation efforts and the route markers are no longer necessary, they will be removed.” Please explain in the final EA how BLM will determine that route markers are no longer necessary. After removal, BLM should continue to monitor the closed route to ensure that it is not being used and if used, implement immediate action to prevent use.

Page C-19: “Priorities for Signs Containing Public Outreach Information

- 1) Public health and safety
- 2) Special management areas (e.g., developed recreation sites, SRMAs, National Scenic Trails)
- 3) Enhancement of visitor experience and convenience”

The Council believes that protection of natural and cultural resources should be a high priority for all signs. We strongly recommend that all signs include a Quick Read (QR) code that contains information that is prominently displayed and provides information about the importance of the natural and cultural resources in the area including special status species, and the actions that the public should implement to ensure that these resources are sustained and the quality of the environments is maintained or improved per the mandate under the FLPMA.

Pages C-19 and C-20, Sign Monitoring and Maintenance, Monitoring/Maintenance Overview:

“Through monitoring and ongoing public input, strategies will be developed to constantly improve signing effectiveness.” “All signed public messages should be evaluated frequently to ensure that they are adequately meeting user needs and are consistent with BLM goals and policies.”

We have two concerns with this section of the TMP. The only mention in this section of monitoring the effectiveness of the signs is the second sentence quoted above. Thus, it appears that BLM’s monitoring of signs is focused on monitoring the destruction or disappearance of signs and not the effectiveness of conveying the information to the public. The purpose of a sign is to convey information effectively. If a sign is not doing this, then there is no need to replace a missing or damaged ineffective sign. Consequently, BLM should place a high level of effort on monitoring to determine whether the signs it places in the TMA are understood and followed by the public. If they are not, then BLM should promptly implement actions to determine the effective corrective action to implement and implement it so the public clearly understands the messages on the signs.

Second, the second quote says all signed messages *should* (emphasis added) be evaluated frequently to ensure that they are adequately meeting user needs and are consistent with BLM goals and policies.” This vague wording leaves BLM free to not evaluate the effectiveness of the signed messages. The Council strongly recommend this wording be changed in the final EA to “... *will* be evaluated frequently to ensure that they are adequately meeting user needs and are consistent with BLM goals and policies.”

Also, on this page under “Sign Efficacy Planning and Review” BLM says, “Field staff *may* (emphasis added) also identify locations where signs are needed to resolve use problems, to improve stewardship ethics, and/or to accommodate public health and safety issues.” Again, BLM uses the ambiguous word “may” rather than “shall” or “will.” “May” is a word that creates an impression that something specific and meaningful will be done, when only a vague or ambiguous claim has been communicated. Unfortunately, this section does not include a requirement to monitor the efficacy of these signs after they are installed in communicating their message and whether the public is implementing the message.

Page C-21: “Field staff involved with sign placement should have input during this review, helping to determine which signs are worthwhile, which signs should be eliminated, and/or which signs should be specifically clarified.”

The Council recommends that the public and USFWS be included in this process. The public is the target audience for the signs. They may not understand the meaning of the symbols or wording that BLM uses in creating its signs (see our comment above on page C-18 about the ambiguity of wording for signs).

Page C-22 Maintenance and Engineering: “Route maintenance on BLM-administered lands can include general grading and shaping of route surfaces, maintenance and installation of water control structures, placement of gravel surfacing, washout repairs or realignment, and more.” The Council cautions BLM to ensure that these activities do not adversely affect surface hydrology especially for down-gradient soils and vegetation.

Construction and maintenance of routes can decouple up-gradient washes from down-gradient locations. At one project site, Devitt et al. (2022) reported that the decoupling of the wash system at the site “led to a significant decline in soil moisture, canopy level NDVI values and mid-day leaf xylem water potentials.” Over time especially combined with climate change, this impact may result in reduced plant reproduction, growth, and survival for plants down-gradient of the decoupling sites including potentially large areas of plants down-gradient from the project site. Consequently, BLM should ensure that any construction or maintenance activities associated with routes do not alter natural surface hydrology.

Although later in this section BLM says, “the top priorities for route maintenance are public safety, protection and/or enhancement of resources, achieving route standards, and ensuring consistency with route designation decisions,” we emphasize the importance of maintaining natural surface hydrology so that unnecessary and unintentional adverse impacts to soils, vegetation, and wildlife habitats do not occur.

Page C-23, Ground Transportation Linear Feature Geospatial Data: Please ensure that the geospatial database of motorized and nonmotorized transportation linear features is updated regularly to continually collect and update future changes in the transportation system, such as changing use patterns, incorrectly inventoried routes, and route migration. These data are necessary to analyze impacts to natural resources, especially indirect and cumulative impacts to the tortoise and tortoise habitats from route densities (Averill-Murray and Allison 2023).

Page C-25 to C-27, Engineering and Maintenance Best Management Practices and Standard Operating Procedures: In this section, BLM lists several engineering-specific best management practices (BMPs) and standard operating procedures (SOPs) that it will implement for construction and maintenance of routes. We strongly request that these BMPs and SOPs include designing and implementing features for routes (e.g., culverts, ditches, drain dips, outfall protection, catch basins, other physical barriers, etc.) that do not impede, prevent, or trap tortoises of any size class (e.g., hatchling to adult tortoises) when using these features.

In this section, we did not see a BMP or SOP that would require BLM to construct and maintain desert tortoise exclusion fencing to prevent tortoise mortality or undercrossings to provide connectivity of the tortoise population dissected by routes. These features should be included as part of BLM's compliance with BLM's Manual 6840 Special Status Species (BLM 2008b); Instructional Memorandum, Handbook, and Manual on Mitigation (BLM 2021a, 2021b, 2021c); Instructional Memorandum on Habitat Connectivity on Public Lands (BLM 2022); and Revised Recovery Plan for the Mojave population of the Desert Tortoise (USFWS 2011). This last document specifically identified "2. Protect Existing Populations and Habitat," "2.5. Restrict, designate, close, and fence roads," and "2.11. Connect functional habitat" as recovery actions.

The Council strongly recommends that BLM incorporate and use documents produced by the Mojave Desert Tortoise Transportation Ecology Task Force, including Blanchard et al. (2023), Fairbank et al. (2023), and Huijser and Fairbank (2023) when designing and implementing construction and maintenance activities for routes in tortoise habitat.

Page C-26: "Suppress dust using water." Because water that forms puddles attracts tortoise predators, particularly common ravens and coyotes, BLM should modify this requirement to specify that the use of water for construction or maintenance of routes will not result in the formation of puddles.

Page C-28, Transportation Facilities: For tortoise exclusion fencing, the "TMP guide does not identify specific network-related facilities that may need improvement or development. Such proposed improvements or developments would be addressed in specific activity-level or project-level proposals and be subject to a site-specific analysis under the NEPA." We request that BLM complete this NEPA analysis as soon as possible.

We appreciate this opportunity to provide the above comments and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the 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 notify the Desert Tortoise Council at eac@deserttortoise.org of any proposed projects that BLM may authorize,

fund, or carry out in the range of any species of desert tortoise in the southwestern United States (i.e., *Gopherus agassizii*, *G. morafkai*, *G. berlandieri*, *G. flavomarginatus*) so we may comment on it to ensure BLM fully considers and implements actions to conserve these tortoises as part of its directive to conserve biodiversity on lands managed by BLM.

Please 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,



Edward L. LaRue, Jr., M.S.
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

Attachments (2): Scoping Comments - Muddy Mountains Travel Management Plan (DOI-BLM-NV-S0102023-0040-EA); letter submitted to BLM on May 10, 2023 via email and addressed to kkendrick@blm.gov and BLM_NV_LVFO_Muddy_Mt_TMP@blm.gov

Certified Letter to BLM sent on November 7, 2019 – Reiteration of the Desert Tortoise Council’s Previous Requests as An Affected Interest for Notification of Bureau of Land Management Proposed Actions Affecting the Desert Tortoises or Habitats

Cc: Tracy Stone-Manning, Director, Bureau of Land Management, tstonemanning@blm.gov
Nada Culver, Deputy Director of Policy and Programs, Bureau of Land Management, nculver@blm.gov
Theresa Coleman, District Manager, Las Vegas District, Bureau of Land Management, blm_nv_sndowebmail@blm.gov
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Kristina Drake, Desert Tortoise Recovery Office Coordinator, U.S. Fish and Wildlife Service, karla_drake@fws.gov

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Attachment 1

Scoping Comments - Muddy Mountains Travel Management Plan
(DOI-BLM-NV-S0102023-0040-EA)



DESERT TORTOISE COUNCIL

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Via email only

10 May 2023

Attn: Kenny Kendrick
Bureau of Land Management
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
kkendrick@blm.gov, [BLM NV LVFO Muddy Mt TMP@blm.gov](mailto:BLM_NV_LVFO_Muddy_Mt_TMP@blm.gov)

RE: Scoping Comments - Muddy Mountains Travel Management Plan (DOI-BLM-NV-S010-2023-0040-EA)

Dear Mr. Kendrick,

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.

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 that you email to us 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."

We appreciate that the Bureau of Land Management (BLM) contacted the Council directly via email on 4/12/2023 for the opportunity to provide scoping comments on the above-referenced project. Given the location of the proposed project in habitats likely occupied by Mojave desert tortoise (*Gopherus agassizii*) (synonymous with Agassiz's desert tortoise), our comments pertain to enhancing protection of this species during activities funded, authorized, or carried out by the BLM, which we assume will be added to the Decision Record for this project as needed. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachments for the proposed project. The Mojave desert tortoise is among the top 50 species on the list of the world's most endangered

tortoises and freshwater turtles. The International Union for Conservation of Nature’s (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers the Mojave desert tortoise to be Critically Endangered (Berry et al. 2021) “... based on population reduction (decreasing density), habitat loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (*sensu stricto*) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts and is where the largest past population losses had been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (*sensu stricto*) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units.”

This status, in part, prompted the Council to join Defenders of Wildlife and Desert Tortoise Preserve Committee (Defenders of Wildlife et al. 2020) to petition the California Fish and Game Commission in March 2020 to elevate the listing of the Mojave desert tortoise from threatened to endangered in California.

The following project description is given in BLM’s public notice: “The Muddy Mountains planning area is approximately 123,400 acres of Bureau of Land Management (BLM) public lands located approximately 50 miles northeast of Las Vegas and approximately 25 miles southwest of Logandale in Southern Nevada. The adjacent lands are managed by several land management entities: the National Park Service, Nevada State Parks and Tribal lands. The planning area also includes and is bounded by private lands. Muddy Mountains contains unique land features, such as colorful sandstone outcrops, rugged limestone cliffs, and canyons. It is also home to sensitive cultural and natural resources that require protection and management.

“The planning area provides numerous recreational opportunities and is a destination for many types of off-highway-vehicle (OHV) uses. Muddy Mountains was designated as a Special Recreation Management Area (SRMA) in the 1998 Las Vegas Resource Management Plan (RMP). The BLM Las Vegas Field Office (LVFO) is preparing a Travel Management Plan (TMP) and Environmental Assessment (EA) for the Muddy Mountains Travel Management Area (TMA). The TMA decision area consists of only BLM-managed lands. The 1998 Las Vegas RMP management direction states that the objective of the Muddy Mountains area is ‘to provide semi-primitive recreation opportunities and integrated management of wildlife habitat, cultural resources, and other recreational uses.’ The TMP will identify, and designate routes open to the public, routes for administrative use only, and routes to be closed and rehabilitated, as well as determine the appropriate management for those routes. The TMP may also identify new routes to help meet the goals and objectives of the 1998 Las Vegas RMP, and amendments, as well as other applicable laws, regulations, and policies including, but not limited to, the Federal Lands Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA).”

We have expressed in numerous comment letters to the Las Vegas office of the BLM our concern with making decisions based on the outdated, obsolete 1998 Las Vegas Resource Management Plan (Las

Vegas RMP; BLM 1998a, 1998b). In fact, it is our understanding that, if not already, the BLM will soon be revising the Las Vegas RMP, which we fully support. We know from multiple documents published since 1998 (Allison and McLuckie 2018, USFWS 2014a, 2014b, 2015, 2016, 2017, 2018, 2019, 2020, 2022a, 2022b) that the plight of the tortoise on lands mostly managed by BLM have declined substantially throughout the listed range of the Mojave desert, which was not a consideration in the 1998 formulation of the RMP. Please be sure that the Draft Environmental Assessment (DEA) for this TMP adequately summarizes the current status of the desert tortoise in the region. To facilitate this request, we provide Appendix A, which summarizes the current status of tortoises throughout the listed range including the Northeastern Recovery Unit, which is where most or all of the planning area/proposed action appears to be located.

The presence of roads even with low vehicle use has multiple adverse effects on the desert tortoise and its habitats. 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, all of which must be analyzed in the DEA. We ask that the DEA fully divulge and assess these and other impacts associated with recreational vehicle use. To facilitate this request, we herein provide BLM with Appendix B, which is a partial bibliography of impacts associated with recreational vehicle use on arid lands. We expect the authors of the DEA to familiarize themselves with this literature to better understand direct, indirect, and cumulative impacts so that they will analyze the direct, indirect, and cumulative impacts of the proposed action to the tortoise and its habitat, including habitat for connectivity and make informed management decisions to curtail these impacts before they occur.

Please include in the DEA 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).

We note in the BLM's "Process and Schedule" graphic that "Route Inventory" is supposed to be initiated (or finalized, which is not clear) in December 2022, although we did not see any such document(s) on the eplanning website. There is a map with the TMP boundary but no routes are depicted. Please be sure that the DEA explains how this route inventory was (is being) derived and if it has (or will be) ground-truthed. It has been our experience that washes often appear on satellite imagery as routes when in fact they are natural features. Although we strongly recommend that the final proposed route inventory be fully ground-truthed, if that is not possible, we ask that the proposed network be superimposed over U.S. Geological Survey (USGS) maps to see if any of the future open routes are located in washes. Given the importance of washes to tortoises (Jennings and Berry 2015), we ask that BLM avoid designating open routes in washes. Further, we request that maps of the open, closed, and limited routes be displayed in maps in the DEA for each alternative.

Has BLM completed an inventory of tortoise abundance within the TMP planning area? If field data are unavailable, we ask that BLM use available models (e.g., Nussear 2009, Gray et al. 2019, etc.) to which the proposed route network can be compared. We ask that BLM be conscientious about minimizing the number of routes in those portions of the TMP that are known to contain higher densities of tortoises, either based on field studies (preferred) or models (less preferred). The DEA

should use the best available science in analyzing impacts of the proposed action to the tortoise/tortoise habitat and selecting open and limited routes. For example, the DEA should include results and management recommendations from modeling threats to the tortoise conducted by Tuma et al. (2016) in the nearby Gold Butte-Pakoon Tortoise Conservation Area in its analyses of these impacts (i.e., threats causing habitat degradation and slight increases in tortoise mortality over a broad area, such as livestock grazing and human presence (e.g., OHV use) are greater contributors to tortoise population declines than patchily distributed threats.

The DEA should include appropriate mitigation and monitoring plans for all direct, indirect, and cumulative effects to the tortoise and its habitats; the mitigation and monitoring plan should use the best available science with a commitment to implement the mitigation commensurate to impacts to the tortoise and its habitats. Mitigation and monitoring should include a fully-developed raven 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 develop and implement an effective education program; a plan for effective law enforcement to prevent route proliferation; and habitat restoration plan for closed routes. These plans should be part of the DEA so that the public has an opportunity to provide input on the various plans. If the plans cannot be developed in time to accompany the DEA, the BLM should commit to providing the draft plans to affected interests, including the Council, when they become available, prior to finalizing them.

These mitigation and monitoring plans should include an implementation schedule that is tied to key actions associated with route designation, signing open routes, and restoration phases of the project so that mitigation occurs concurrently with or in advance of the impacts. The Council has found that installing bright red Carsonite signs on closed routes is not effective; in fact, some routes that would not have otherwise been obvious are subject to use because of these signs. The Council prefers that closed routes be physically eradicated using vertical mulching and other techniques that eliminate the routes, and that the TMP has a schedule for closing routes. We also ask that the BLM prioritize the closure of routes based on tortoise densities derived from field studies or modelling. 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. Specific remedial measures, such as increased law enforcement, enhanced education, closure of problematic routes, etc. should be included in the plan.

Given these observations concerning closing routes, the Council provides Appendix C as a partial list of literature that will help inform the BLM in implementing restoration techniques for closed routes. In 2016, the Council funded a document (Abella and Berry 2016) presenting best management practices for arid restoration techniques, which is included in the link in the footnote¹. Also, we suggest that BLM use the attached document (Appendix D) by Abella et al. (2023) and listed in Appendix C. Habitat Restoration Bibliography for the Mojave Desert.

Given their impacts on tortoises, the DEA must analyze if the TMP would result in an increase of common ravens and other predators of the desert tortoise in the planning area. Future operations must include provisions for monitoring and managing raven predation on tortoises as a result of the proposed action. The monitoring and management plan must include reducing human subsidies for food, water, and sites for nesting, roosting, and perching to address local impacts.

¹ <https://www.dropbox.com/s/nx1b5m2b5ehya12/%23Abella%20and%20Berry%202016.pdf?dl=0>

With regards to cumulative effects, the DEA must list and discuss all project impacts within the region including future state, federal, and private actions affecting listed species on state, federal, and private lands. In particular, we ask that the DEA provide a thorough analysis of the loss and degradation of tortoises and occupied habitats throughout Nevada, particularly in the southern part of the state.

Please see *Grand Canyon Trust v. F.A.A.*, 290 F.3d 339, 345-46 (D.C. Cir. 2002) in which the court decided that federal agencies must analyze the cumulative impacts of actions in environmental assessments. In the cumulative effects analysis of the DEA, please ensure that the CEQ's "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."

CEQ's guidance on how to analyze cumulative environmental consequences, which contains 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 needs 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 resources, 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 each resource impacted by the proposed action including the Mojave desert tortoise.

We appreciate this opportunity to provide 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 species of 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,



Edward L. LaRue, Jr., M.S.
Ecosystems Advisory Committee, Chairperson
Desert Tortoise Council

cc. Glen Knowles, Field Supervisor, Southern Nevada Field Office (Las Vegas), U.S. Fish and Wildlife Service, glen_knowles@fws.gov
Jon Raby, Nevada State Director, Bureau of Land Management, jraby@blm.gov

Attachments:

- Appendix A. Demographic Status and Trend of the Mojave Desert Tortoise (*Gopherus agassizii*)
- Appendix B. Bibliography on road impacts in desert ecosystems
- Appendix C. Habitat Restoration Bibliography for the Mojave Desert
- Appendix D. Techniques for Restoring Damaged Mojave and Western Sonoran Habitats, Including Those for Threatened Desert Tortoises and Joshua Trees.

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Appendix A. Demographic Status and Trend of the Mojave Desert Tortoise (*Gopherus agassizii*)

We provide the following information on the status and trend of the listed population of the desert tortoise to assist the BLM with its analysis of the direct, indirect, and cumulative impacts of the Proposed Project on the Mojave desert tortoise.

BLM's implementation of a conservation strategy for the Mojave desert tortoise in its resource management plans through 2020 has resulted in the following changes in the status for the tortoise throughout its range and in Nevada from 2004 to 2014 (Table 1; USFWS 2015) and 2004 to 2020 (Table 2). There are 17 populations of Mojave desert tortoise described below that occur in the Critical Habitat Units (CHUs) and Tortoise Conservation Areas (TCAs); 14 are on lands managed by the BLM.

The Desert Tortoise Council (Council) has serious concerns about direct, indirect, and cumulative sources of human mortality for the Mojave desert tortoise given the status and trend of the species range-wide, within each of the five recovery units, and within the TCAs that comprise each recovery unit.

Densities of Adult Mojave Desert Tortoises: A few years after listing the Mojave desert tortoise under the Federal Endangered Species Act (FESA), the U.S. Fish and Wildlife Service (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) and certain areas of habitat with most of these areas geographically linked by adjacent borders or corridors of suitable tortoise habitat. Populations of Mojave desert tortoises with densities below this density are in danger of extinction (USFWS 1994a, page 32). The revised recovery plan (USFWS 2011) designated five recovery units for the Mojave desert tortoise that are intended to conserve the genetic, behavioral, and morphological diversity necessary for the recovery of the entire listed species (Allison and McLuckie 2018).

Range-wide, densities of adult Mojave desert tortoises declined more than 32% between 2004 and 2014 (Table 1) (USFWS 2015). At the recovery unit level, between 2004 and 2014, densities of adult desert tortoises declined, on average, in every recovery unit except the Northeastern Mojave (Table 1). Adult densities in the Northeastern Mojave Recovery Unit increased 3.1% per year (SE = 4.3%), while the other four recovery units declined at different annual rates: Colorado Desert (-4.5%, SE = 2.8%), Upper Virgin River (-3.2%, SE = 2.0%), Eastern Mojave (-11.2%, SE = 5.0%), and Western Mojave (-7.1%, SE = 3.3%) (Allison and McLuckie 2018). However, the small area and low starting density of the tortoises in the Northeastern Mojave Recovery Unit (lowest density of all Recovery Units) resulted in a small overall increase in the number of adult tortoises by 2014 (Allison and McLuckie 2018). In contrast, the much larger areas of the Eastern Mojave, Western Mojave, and Colorado Desert recovery units, plus the higher estimated initial densities in these areas, explained much of the estimated total loss of adult tortoises since 2004 (Allison and McLuckie 2018).

At the population level, represented by tortoises in the TCAs, densities of 10 of 17 monitored populations of the Mojave desert tortoise declined from 26% to 64% and 11 have densities less than 3.9 adult tortoises per km² (USFWS 2015).

Population Data on Mojave Desert Tortoise: The Mojave desert tortoise was listed as threatened under the FESA 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 (abundance) and densities continue to decline substantially (please see Tables 1 and 2).

Table 1. Summary of 10-year trend data for 5 Recovery Units and 17 CHUs/TCAs for the Mojave desert tortoise, *Gopherus agassizii* (=Agassiz’s desert tortoise). The table includes the area of each Recovery Unit and CHU/TCA, percent of total habitat for each Recovery Unit and CHU/TCA, 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 adults/km² (10 adults per mi²) (assumes a 1:1 sex ratio) and showing a decline from 2004 to 2014 are in red (Allison and McLuckie 2018, USFWS 2015).

Recovery Unit Designated CHU/TCA	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 Valley, 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

Density of Juvenile Mojave Desert Tortoises: Survey results indicate that the proportion of juvenile desert tortoises has been decreasing in all five recovery units since 2007 (Allison and McLuckie 2018). The probability of encountering a juvenile tortoise was consistently lowest in the Western Mojave Recovery Unit. Allison and McLuckie (2018) provided reasons for the decline in juvenile desert tortoises in all recovery units. These included decreased food availability for adult female tortoises resulting in reduced clutch size, decreased food availability resulting in increased mortality of juvenile tortoises, prey switching by coyotes from mammals to tortoises, and increased abundance of common ravens that typically prey on smaller desert tortoises.

Declining adult tortoise densities through 2014 have left the Eastern Mojave adult numbers at 33% (a 67% decline of their 2004 levels) (Allison and McLuckie 2018, USFWS 2015). Such steep declines in the density of adults are only sustainable if there are suitably large improvements in reproduction and juvenile growth and survival. However, the proportion of juveniles has not increased anywhere in the range of the Mojave desert tortoise since 2007, and in the Eastern Mojave Recovery Unit the proportion of juveniles in 2014 declined from 14 to 11 percent (a 21% decline) of their representation since 2007 (Allison and McLuckie 2018).

The USFWS and Utah Division of Wildlife Resources have continued to collect density data on the Mojave desert tortoise since 2014. The results are provided in Table 2 along with the analysis USFWS (2015) conducted for tortoise density data from 2004 through 2014. These data show that adult tortoise densities in most Recovery Units continued to decline in density since the data collection methodology was initiated in 2004. In addition, in the Northeastern Mojave Recovery Unit that had shown an overall increase in tortoise density between 2004 and 2014, subsequent data indicate a decline in density since 2014 (USFWS 2016, 2018, 2019, 2020, 2022a, 2022b).

Table 2. Summary of data for Agassiz’s desert tortoise, *Gopherus agassizii* (=Mojave desert tortoise) from 2004 to 2021 for the 5 Recovery Units and 17 CHUs/TCAs. The table includes the area of each Recovery Unit and CHU/TCA, percent of total habitat for each Recovery Unit and CHU/TCA, density (number of breeding adults/km² and standard errors = SE), and percent change in population density between 2004-2014 (USFWS 2015). Populations below the viable level of 3.9 breeding individuals/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) (USFWS 1994a, 2015) or showing a decline from 2004 to 2014 are in **red**.

Recovery Unit: Designated CHU/TCA &	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/ km ² (SE)	% 10- year change (2004– 2014)	2015 density/ km ²	2016 density/ km ²	2017 density/ km ²	2018 density/ km ²	2019 density/ km ²	2020 density/ km ²	2021 density/ km ²
Western Mojave, CA	24.51	2.8 (1.0)	-50.7 decline							
Fremont- Kramer	9.14	2.6 (1.0)	-50.6 decline	4.5	No data	4.1	No data	2.7	1.7	No data
Ord-Rodman	3.32	3.6 (1.4)	-56.5 decline	No data	No data	3.9	2.5/3.4*	2.1/2.5*	No data	1.9/2.5*
Superior- Cronese	12.05	2.4 (0.9)	-61.5 decline	2.6	3.6	1.7	No data	1.9	No data	No data
Colorado Desert, CA	45.42	4.0 (1.4)	-36.25 decline							
Chocolate Mtn AGR, CA	2.78	7.2 (2.8)	-29.77 decline	10.3	8.5	9.4	7.6	7.0	7.1	3.9
Chuckwalla, CA	10.97	3.3 (1.3)	-37.43 decline	No data	No data	4.3	No data	1.8	4.6	2.6
Chemehuevi, CA	14.65	2.8 (1.1)	-64.70 decline	No data	1.7	No data	2.9	No data	4.0	No data
Fenner, CA	6.94	4.8 (1.9)	-52.86 decline	No data	5.5	No data	6.0	2.8	No data	5.3
Joshua Tree, CA	4.49	3.7 (1.5)	+178.62 increase	No data	2.6	3.6	No data	3.1	3.9	No data

Recovery Unit: Designated CHU/TCA	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/km ² (SE)	% 10- year change (2004– 2014)	2015	2016	2017	2018	2019	2020	2021
Pinto Mtn, CA	1.98	2.4 (1.0)	−60.30 decline	No data	2.1	2.3	No data	1.7	2.9	No data
Piute Valley, NV	3.61	5.3 (2.1)	+162.36 increase	No data	4.0	5.9	No data	No data	No data	3.9
Northeastern Mojave AZ, NV, & UT	16.2	4.5 (1.9)	+325.62 increase							
Beaver Dam Slope, NV, UT, & AZ	2.92	6.2 (2.4)	+370.33 increase	No data	5.6	1.3	5.1	2.0	No data	No data
Coyote Spring, NV	3.74	4.0 (1.6)	+ 265.06 increase	No data	4.2	No data	No data	3.2	No data	No data
Gold Butte, NV & AZ	6.26	2.7 (1.0)	+ 384.37 increase	No data	No data	1.9	2.3	No data	No data	2.4
Mormon Mesa, NV	3.29	6.4 (2.5)	+ 217.80 increase	No data	2.1	No data	3.6	No data	5.2	5.2
Eastern Mojave, NV & CA	13.42	1.9 (0.7)	−67.26 decline							
El Dorado Valley, NV	3.89	1.5 (0.6)	−61.14 decline	No data	2.7	5.6	No data	2.3	No data	No data
Ivanpah Valley, CA	9.53	2.3 (0.9)	−56.05 decline	1.9	No data	No data	3.7	2.6	No data	1.8

Recovery Unit: Designated CHU/TCA	% of total habitat area in Recovery Unit & CHU/TCA	2004 density/ km ²	2014 density/km ² (SE)	% 10- year change (2004– 2014)	2015	2016	2017	2018	2019	2020	2021
Upper Virgin River, UT & AZ	0.45		15.3 (6.0)	-26.57 decline							
Red Cliffs Desert**	0.45	29.1 (21.4- 39.6)**	15.3 (6.0)	-26.57 decline	15.0	No data	19.1	No data	17.2	No data	
Range-wide Area of CHUs - TCAs/Range- wide Change in Population Status	100.00			-32.18 decline							

*This density includes the adult tortoises translocated from the expansion of the MCAGCC, that is resident adult tortoises and translocated adult tortoises.

**Methodology for collecting density data initiated in 1999.

Abundance of Mojave Desert Tortoises: Allison and McLuckie (2018) noted that because the area available to tortoises (i.e., tortoise habitat and linkage areas between habitats) is decreasing, trends in tortoise density no longer capture the magnitude of decreases in abundance. Hence, they reported on the change in abundance or numbers of the Mojave desert tortoise in each recovery unit (Table 2). They noted that these estimates in abundance are likely higher than actual numbers of tortoises, and the changes in abundance (i.e., decrease in numbers) are likely lower than actual numbers because of their habitat calculation method. They used area estimates that removed only impervious surfaces created by development as cities in the desert expanded. They did not consider degradation and loss of habitat from other sources, such as the recent expansion of military operations (753.4 km² so far on Fort Irwin and the Marine Corps Air Ground Combat Center), intense or large scale fires (e.g., 576.2 km² of critical habitat that burned in 2005), development of utility-scale solar facilities (as of 2015, 194 km² have been permitted) (USFWS 2016), or other sources of degradation or loss of habitat (e.g., recreation, mining, grazing, infrastructure, etc.). Thus, the declines in abundance of Mojave desert tortoise are likely greater than those reported in Table 3.

Table 3. Estimated change in abundance of adult Mojave desert tortoises in each recovery unit between 2004 and 2014 (Allison and McLuckie 2018). Decreases in abundance are in red.

Recovery Unit	Modeled Habitat (km ²)	2004 Abundance	2014 Abundance	Change in Abundance	Percent Change in Abundance
Western Mojave	23,139	131,540	64,871	-66,668	-51%
Colorado Desert	18,024	103,675	66,097	-37,578	-36%
Northeastern Mojave	10,664	12,610	46,701	34,091	270%
Eastern Mojave	16,061	75,342	24,664	-50,679	-67%
Upper Virgin River	613	13,226	10,010	-3,216	-24%
Total	68,501	336,393	212,343	-124,050	-37%

Habitat Availability: Data on population density or abundance does not indicate population viability. The area of protected habitat or reserves for the subject species is a crucial part of the viability analysis along with data on density, abundance, and other population parameters. In the Desert Tortoise (Mojave Population) Recovery Plan (USFWS 1994a), the analysis of population viability included population density and size of reserves (i.e., areas managed for the desert tortoise) and population numbers (abundance) and size of reserves. The USFWS Recovery Plan reported that as population densities for the Mojave desert tortoise decline, reserve sizes must increase, and as population numbers (abundance) for the Mojave desert tortoise decline, reserve sizes must increase (USFWS 1994a). In 1994, reserve design (USFWS 1994a) and designation of critical habitat (USFWS 1994b) were based on the population viability analysis from numbers (abundance) and densities of populations of the Mojave desert tortoise in the early 1990s. Inherent in this analysis is that the lands be managed with reserve level protection (USFWS 1994a, page 36) or ecosystem protection as described in section 2(b) of the FESA, and that sources of mortality be reduced so recruitment exceeds mortality (that is, $\lambda > 1$)(USFWS 1994a, page C46).

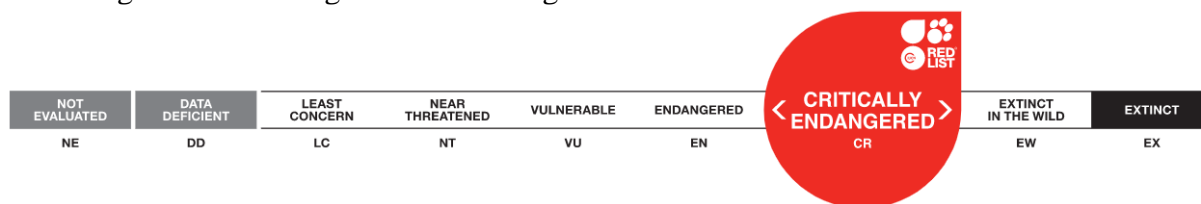
Habitat loss would also disrupt the prevailing population structure of this widely distributed species with geographically limited dispersal (isolation by resistance Dutcher et al. 2020). Allison and McLuckie (2018) anticipate an additional impact of this habitat loss/degradation is decreasing

resilience of local tortoise populations by reducing demographic connections to neighboring populations (Fahrig 2007). Military and commercial operations and infrastructure projects that reduce tortoise habitat in the desert are anticipated to continue (Allison and McLuckie 2018) as are other sources of habitat loss/degradation.

Allison and McLuckie (2018) reported that the life history of the Mojave desert tortoise puts it at greater risk from even slightly elevated adult mortality (Congdon et al. 1993; Doak et al. 1994), and recovery from population declines will require more than enhancing adult survivorship (Spencer et al. 2017). The negative population trends in most of the TCAs for the Mojave desert tortoise indicate that this species is on the path to extinction under current conditions (Allison and McLuckie 2018). They state that their results are a call to action to remove ongoing threats to tortoises from TCAs, and possibly to contemplate the role of human activities outside TCAs and their impact on tortoise populations inside them.

Densities, numbers, and habitat for the Mojave desert tortoise declined between 2004 and 2014 and densities continue to decline in most Recovery Units since 2014. As reported in the population viability analysis, to improve the status of the Mojave desert tortoise, reserves (area of protected habitat) must be established and managed. When densities of tortoises decline, the area of protected habitat must increase. When the abundance of tortoises declines, the area of protected habitat must increase. We note that the Desert Tortoise (Mojave Population) Recovery Plan was released in 1994 and its report on population viability and reserve design was reiterated in the 2011 Revised Recovery Plan as needing to be updated with current population data (USFWS 2011, p. 83). With lower population densities and abundance, a revised population viability analysis would show the need for greater areas of habitat to receive reserve level of management for the Mojave desert tortoise. In addition, we note that none of the recovery actions that are fundamental tenets of conservation biology has been implemented throughout most or all of the range of the Mojave desert tortoise.

IUCN Species Survival Commission: The Mojave 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 Mojave desert tortoise to be Critically Endangered (Berry et al. 2021). As such, it is a “species that possess an extremely high risk of extinction as a result of rapid population declines of 80 to more than 90 percent over the previous 10 years (or three generations), a current population size of fewer than 50 individuals, or other factors.” It is one of three turtle and tortoise species in the United States to be critically endangered. This designation is more grave than endangered.



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Attachment 2

Certified Letter to BLM sent on November 7, 2019 – Reiteration of the Desert Tortoise Council's Previous Requests as An Affected Interest for Notification of Bureau of Land Management Proposed Actions Affecting the Desert Tortoises or Habitats



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CERTIFIED MAIL

November 7, 2019

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Southern Nevada District
Bureau of Land Management
4701 North Torrey Pines Drive
Las Vegas, NV 89130

Shane DeForest, Acting District Manager
Ely District
Bureau of Land Management
702 North Industrial Way
Ely, NV 89301

RE: Reiteration of the Desert Tortoise Council's Previous Requests as An Affected Interest for
Notification of Bureau of Land Management Proposed Actions Affecting the Desert
Tortoises or Habitats

Dear Mr. Smith and Mr. DeForest:

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons throughout the United States and other countries. Council members 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.

The Council has submitted written comments on numerous proposed actions by the Bureau of Land Management (BLM) within the range of species of desert tortoises (i.e., *Gopherus agassizii* synonymous with "Mojave desert tortoise" and *Gopherus morafkai* synonymous with Sonoran desert tortoise).

In 2018 and 2019, the Council provided written comments on numerous BLM proposed actions in the range of the Mojave and Sonoran desert tortoises. Some of these proposed actions in southern Nevada are listed below:

In 2019:

- 2019/8/29 - Preliminary Environmental Assessment December 2019 Competitive Oil and Gas Lease Sale (DOI-BLM-NV-L000-2019-0005-EA August 2019)
- 2019/8/16 - Proposed Gemini Solar Project, Clark County, Nevada: Resource Management Plan Amendment and Draft Environmental Impact Statement

In 2018:

- 2018/11/18 - Draft Resource Management Plan Amendment and Draft Environmental Assessment for Dry Lake East Designated Leasing Area (DOI-BLM-NV-S010-2018-0131-EA)
- 2018/08/26 - Bureau of Land Management's Notice of Intent to Prepare an Environmental Impact Statement and Land Use Plan Amendment, and a Notice of Segregation, both for the Proposed Gemini Solar Project in Clark County, Nevada
- 2018/8/25 - 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

In each comment letter to the BLM, the Council asked “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 Project is provided to us at the contact information listed above.” The contact information is contained in the letterhead of these comment letters, eac@deserttortoise.org.

The Council believes this language was clear to the BLM and that the Council as an Affected Interest was to be notified of BLM proposed actions that may affect species of desert tortoises. However, the Council did not learn about any of these proposed actions from the BLM, but from several third parties. Given the numerous requests the Council has submitted to project officials at BLM field offices in southern Nevada in the last few years to be identified as an Affected Interest, we are puzzled as to why we did not (and do not) receive notification from the Southern Nevada District Office, the Ely District Office, or any of the field offices within these Districts of any proposed actions on BLM lands in southern Nevada. Consequently, we are elevating our request to you as the District Managers in southern Nevada.

Our request for the BLM to notify the Council of these proposed actions is based on federal regulations and BLM's handbook. According to 40 CFR 1500.2, “federal agencies shall to the fullest extent possible encourage and facilitate public involvement in decisions which affect the quality of the human environment.” This public involvement is further discussed in 40 CFR 1506.6, which says, “Agencies shall make diligent efforts to involve the public in preparing and implementing their National Environmental Policy Act (NEPA) procedures. The agency should

request comments from the public and should *affirmatively solicit comments* [emphasis added] from those persons or organizations who may be interested or affected.”

The BLM NEPA Handbook states, “A primary goal of public involvement is to ensure that all interested and affected parties are aware of your proposed action. Knowing your community well is the first step in determining the interested and affected parties and tribes. You may already have a core list of those interested in and potentially affected by the BLM's proposed actions; this may provide a good starting point” (section 6.9.1). The Handbook also states under Environmental Assessments “The EA must list tribes, individuals, organizations, and agencies consulted (40 CFR 1508.9(b))” (section 8.3.7).

We urge the BLM to comply with these directives. With this letter, the Council requests that you ensure that the BLM notifies the Council in a timely manner (e.g., prior to the first day of the public comment period) of any proposed action in the Southern Nevada District or Ely District that may affect the Mojave desert tortoise or its habitats. This includes any action that may affect, either directly or indirectly, this species. If the BLM is unwilling or unable to do this, we request that it provide a written response to the Council explaining why it is unable to honor this request to comply with federal regulations and the BLM NEPA Handbook.

Should you have any questions regarding this request, please contact me at the contact information on the Council’s letterhead above.

Regards,



Edward L. LaRue, Jr., M.S.
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

cc: Shonna Dooman, Field Manager – Las Vegas Field Office
Catrina Williams, Field Manager – Red Rock/Sloan Field Office
Noelle Glines-Bovio, Acting Field Manager – Pahrump Field Office

Literature Cited

Bureau of Land Management. 2008. National Environmental Policy Act Handbook. Handbook H-1790-1. January 2008.
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