



**DESERT TORTOISE COUNCIL**

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**Via email and BLM NEPA ePlanning Portal**

10 January 2024

Nancy Army, Wendy Seley, Carolyn Sherve  
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Carson City, NV 89701  
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RE: Reno to Las Vegas Fiber Optic Project Preliminary Environmental Assessment [DOI-BLM-NV-C000-2023-0003-EA; Long-term ROW Grant (N-100968/NVNV105856545) Short-term ROW Grant (N-100968-01/NVNV106240146)]

Dear Ms. Army, Ms. Seley, and Ms. Sherve,

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 to receive emails for future correspondence, as mail delivered via the U.S. Postal Service may take several days to be delivered. Email is an "environmentally friendlier way" of receiving correspondence and documents rather than "snail mail."

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

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.

The Council sent a comment letter dated May 2, 2023 to BLM during the scoping period for the Reno to Las Vegas Fiber Optic Project; DOI-BLM-NV-C000-2023-0003-EA. The comment letter was sent to the following email addresses – [BLM\\_NV\\_RenotoLasVegasFiberOpticProject@blm.gov](mailto:BLM_NV_RenotoLasVegasFiberOpticProject@blm.gov), [kpaiva@blm.gov](mailto:kpaiva@blm.gov), [narmy@blm.gov](mailto:narmy@blm.gov), [wseley@blm.gov](mailto:wseley@blm.gov), and [csherve@blm.gov](mailto:csherve@blm.gov). In addition, the comment letter was carbon copied to Kim Dow, District Manager, BLM Carson City District, [BLM\\_NV\\_CCDOwebmail@blm.gov](mailto:BLM_NV_CCDOwebmail@blm.gov), and John Raby, State Director, BLM Nevada State Office, [BLM\\_NV\\_NVSO\\_web\\_mail@blm.gov](mailto:BLM_NV_NVSO_web_mail@blm.gov). The email addresses for Ms. Dow and Mr. Raby were the only ones we found that were provided on BLM's website.

In the above-referenced letter dated May 2 (attached), as with all the Council's comment letters, we stated "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." The contact information includes the email address for the Council's Ecosystem Advisory Committee.

During the past few years, we have carbon copied Mr. Raby on many of the Council's letters that commented on BLM proposed projects in southern Nevada with the same request reiterated in these letters. However, the Council did not learn about the availability of this Environmental Assessment for the proposed project from BLM, but from a third party. The Council is unsure of what actions it needs to take so BLM will provide us with notices it has requested for projects that are proposed in the range of desert tortoises in Nevada and the southwestern U.S. For this comment letter, we are sending it to the BLM Director, Secretary of the Interior, and Senator Alex Padilla on the Senate Energy and Natural Resources Committee with the hope that for all future proposed projects that BLM may authorize, fund, or carry out, BLM will send a brief electronic correspondence to the Council about the availability of these proposed projects at the beginning of the applicable public comment periods.

## **Description of the Proposed Project and Alternatives**

Vero Fiber Networks (Vero or Project Proponent) proposes to construct, own, operate, and maintain the Reno to Las Vegas Fiber Optic Project (Project), an approximately 450-mile-long, underground shielded dark fiber (dark fiber contains the infrastructure including conduits and fiber cable, but no actual service or "traffic" on the network) optic network from Reno to Las Vegas, Nevada. The Project would be located primarily on public land managed by three BLM Districts — Carson City District (CCD), Battle Mountain District (BMD), and Southern Nevada District (SND). In addition, the Project crosses public land managed by the United States Forest Service (USFS), the Lahontan State Recreation Area [part of the Bureau of Reclamation (BOR) Newlands Project but is managed by the Nevada Division of State Parks], and a State of Nevada (State) parcel. The Project would provide the option for service providers to branch off the line to provide service to local communities.

Vero is requesting a 20-foot-wide short-term right-of-way (ROW) corridor for construction, with a 10-foot-wide long-term permanent ROW on BLM-managed land, easements on private land, an Application for Authorization to use State Owned Lands on State land, a Use Permit on BOR Land, and Special Use Permit on USFS land. Construction activities include using plowing, trenching, or boring techniques and constructing nine inline amplifier buildings. The Project area and ROW would include approximately 58 acres. The Project would cross through Washoe, Lyon, Storey, Churchill, Mineral, Nye, Esmeralda, and Clark counties in Nevada. It would be located within existing rights-of-way that predominantly follow U.S. Highways 50 and 95; Nevada State Highways 160, 839, and 439; and county-maintained roads from Reno to Las Vegas. All ancillary facilities (e.g., staging areas, and material storage yards) would be located on private land at existing commercial locations in communities along the route or on federal lands within the ROW.

BLM has prepared the Reno to Las Vegas Fiber Optic Project Preliminary Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) to respond to Vero's ROW request. The EA analyzes two alternatives, the No Action Alternative and the Proposed Action Alternative. BLM considered other routes but dismissed them from detailed analysis in the EA (Appendix I). Most alternatives considered were variations of the route in the northern portion of the ROW. BLM presented one alternative that occurred in the range of the Mojave desert tortoise – at the intersection of Highway 50 and Highway 95, the route would follow Highway 95 on the north side of the Sheep Mountains south to North Las Vegas, Nevada, then continue approximately 26 miles south through the Las Vegas metropolitan area to the southern Project terminus in unincorporated Enterprise, Nevada.

## **Comments on the Proposed Project**

We appreciate that the BLM provided extensive aerial photographs of the Project route and photographs of the construction methods that would be used to construct the proposed Project.

## **Project Description**

We found descriptions of the construction and decommissioning activities in the EA. We were unable to find a description of the operation and maintenance activities that would be implemented by Vero, or, that BLM used this information to analyze the impacts of operations and maintenance activities on the resource topics, particularly for the tortoise and other special status and wildlife species. Please include this information and analysis in the appropriate sections of the final EA.

In the EA, BLM mentions that Vero has requested a short-term ROW and a long-term ROW. Please include the duration of each of these ROWs in the final EA.

## **Compliance with Relevant Regulations, Codes and Policies**

In the EA BLM says that under the Federal Land Policy and Management Act of 1976 (FLPMA) for issuance of ROW Grants (43 Code of Federal Regulations [CFR] 2800), BLM shall take any action necessary to prevent unnecessary or undue degradation of the land. In the decision process, the BLM must consider how the BLM's resource management goals, objectives, opportunities, and/or conflicts relate to this non-federal use of public lands (BLM 2023). We appreciate that the southern portion of the proposed route follows the shoulder areas of existing highways in tortoise habitats and that according to BLM no new access roads would be needed. This is one of the measures that BLM proposes to implement to mitigate direct, indirect, and cumulative impacts to the tortoise and tortoise habitats. The other mitigation measures, called environmental protection measures (EPMS) in the EA, are listed in Appendix H of the EA and are addressed below in the section on this appendix.

## **Affected Environment**

From the information provided in the EA (pages 135 to 160), with respect to tortoise habitat the proposed Project route follows US 95 south to SR 160, follows SR 160 through Pahrump to the west side of the Las Vegas area where it then follows city streets to its termination. BLM estimates that 151 miles of potential and suitable Mojave desert tortoise habitat is present along the alignment. Tortoise carcasses, shell fragments, and burrows were found along the proposed route. In addition, the proposed Project would intersect scores of major and moderate water crossings (= washes) that course under the highways.

## **Environmental Consequences**

**3.13 Threatened and Endangered Species:** In this section of the EA for the Battle Mountain District, BLM says with respect to the impacts to the tortoise in the Battle Mountain District, "it is expected that impacts to Mojave desert tortoise as a result of the Proposed Action would be minor, long-term, and localized." However, we did not find information or references that supported this conclusion by BLM. We remind BLM that in the regulations for implementing NEPA, federal agencies are to "insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on the human environment" (40 Code of Federal Regulations (CFR) 1507(2)(a)) and that the "information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA" (40 CFR 1500.1(b)). The Council requests that when BLM provides conclusions on impacts to tortoises/tortoise habitat, these conclusions should be supported by data and/or relevant references from the scientific literature. Please revise the final EA to comply with this requirement to use science in analyzing impacts.

In the Las Vegas District, “up to 142 miles of fiber optic line would be installed via the trenching/plowing methods and approximately nine miles of boring would be needed within potentially suitable Mojave desert tortoise habitat.” BLM estimated that “approximately 350 acres of undisturbed desert tortoise habitat would temporarily be affected. For the nine miles of fiber optic line installed using the boring method, no temporary or permanent impacts are expected given the line would be installed underground, and the conservation measures would be implemented to avoid any potential effects including Vero paying the remuneration fees for impacts on undisturbed desert tortoise habitat.”

Regarding temporal impacts to tortoise habitat, BLM may categorize them as temporary but they would be long-term. Surface disturbance from trenching or plowing would degrade/destroy soil crusts and vegetation. Without the presence of or competition from non-native plant species, germination and growth of native perennial plants to pre-project conditions would take decades or longer (Abella 2010). With the presence of non-native species, the effects of competition and rapid growth from non-native plants would likely result in longer germination and growth times or would not result in the Project area returning to pre-project conditions. We found no verbiage in the EA that BLM would require the Project Proponent to mitigate the long-term temporal loss of this habitat. Please include this mitigation in the final EA. We remind BLM that it should demonstrate in the final EA how it is complying fully with its Instructional Memorandum on Mitigation (BLM 2021a), Mitigation Handbook (2021b), and Mitigation Manual (2021c) especially for the tortoise.

BLM states, “Effects on individual tortoises are not expected given the findings from the desert tortoise surveys...” While information was summarized in the EA for the results of tortoise surveys, we found no mention that 100 percent coverage surveys were conducted for the tortoise. One hundred percent surveys are specific to transect width, approval of the biologist conducting the surveys, area to be surveyed (i.e., actions area), and in some cases, the time of year. One hundred percent surveys are conducted to determine whether tortoises/tortoise sign are present in the “action area” for the proposed project (USFWS 2019). The “action area” is defined in 50 Code of Federal Regulations 402.2 and the USFWS 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 Code of Federal Regulations Section 402.02).” Thus, the 100 percent coverage survey area is larger than the project footprint/project site. Please clarify in the EA whether 100 percent coverage surveys were conducted by biologists deemed qualified by the USFWS, and describe the action area as determined by the USFWS that was surveyed by these biologists.

The analysis of operations and maintenance activities assume that none of the fiber optic lines would need to be replaced. For the EA to fully analyze the effects and identify potentially significant impacts to resource issues, the final EA should describe the maintenance activities that are likely to occur during the long-term ROW period.

### **Ecological Connectivity**

In reviewing the EA, we found no analysis of the impacts of the Project on tortoise connectivity. We remind BLM of their Instructional Memorandum on Habitat Connectivity (BLM 2022).

BLM should conduct an examination of species reports and the scientific literature to help determine whether wildlife corridors would be impacted by the proposed Project. An online search of scientific literature (e.g., Google Scholar) would reveal the existence of scientific papers on areas important for connectivity for species such as the Mojave desert tortoise. For example, for the tortoise, Averill-Murray et al. (2021) published a paper on connectivity of Mojave desert tortoise populations and linkage habitats. The authors emphasized that “[m]aintaining an ecological network for the Mojave desert tortoise, with a system of core habitats (TCAs = Tortoise Conservation Areas) connected by linkages, is necessary to support demographically viable populations and long-term gene flow within and between TCAs.”

“Ignoring minor or temporary disturbance on the landscape could result in a cumulatively large impact that is not explicitly acknowledged (Goble, 2009); therefore, understanding and quantifying all surface disturbance on a given landscape is prudent.” Furthermore, “habitat linkages among TCAs must be **wide enough** [emphasis added] to sustain multiple home ranges or local clusters of resident tortoises (Beier and others 2008; Morafka, 1994), while accounting for edge effects, in order to sustain regional tortoise populations.” Consequently, effective linkage habitats are not long narrow corridors. Any development within them has an edge effect (i.e., indirect impact) that extends from all sides into the linkage habitat, further narrowing or impeding the use of the linkage habitat, depending on the extent of the edge effect.

Averill-Murray et al. (2021) further notes that “To help maintain tortoise inhabitation and permeability across all other non-conservation-designated tortoise habitat, all surface disturbance could be limited to less than 5-percent development per square kilometer because the 5-percent threshold for development is the point at which tortoise occupation drops precipitously (Carter and others, 2020).” They caution that the upper threshold of 5 percent development per square kilometer may not maintain population sizes needed for demographic or functional connectivity; therefore, development thresholds should be lower than 5 percent.

The lifetime home range for the Mojave desert tortoise is more than 1.5 square miles (3.9 square kilometers) of habitat (Berry 1986) and, as previously mentioned, may make periodic forays of more than 7 miles (11 kilometers) at a time (Berry 1986).

We add that the fundamentals of conservation biology include the need for gene flow between populations to maintain genetic diversity; this enables a species to more likely survive, especially during climate change, which enables biodiversity. Thus, linkage habitats are important as they provide connectivity among wildlife populations to maintain viability and biodiversity.

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 in early 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 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.”

The southern part of the Project is in the Eastern Mojave Recovery Unit for the tortoise. Because CEQ has identified telecommunications infrastructure and management as a focal area where connectivity and corridors should be considered in early planning, funding, and decision-making, and because BLM is undertaking in its planning, funding, and decision-making a telecommunications infrastructure project in this tortoise recovery unit, we request that BLM explain in the final EA how BLM is complying with CEQ’s guidance. Please explain how the action alternative 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.” In addition, the final EA 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.

**Cumulative Impacts Analysis:** BLM provided a section in the EA on Cumulative Effects to the tortoise. However, the process implemented and the information provided in this section did not follow the guidance in CEQs “Considering Cumulative Effects under the National Environmental Policy Act” (1997). Please revise the final EA to ensure that the guidance in this document is followed, including the eight principles listed below, when analyzing cumulative effects of the proposed Project to the tortoise. This CEQ document is referred to in BLM’s NEPA Handbook (BLM 2008).

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.”

CEQs 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 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.

Please add an analysis of cumulative impacts of each alternative to the final EA for the tortoise using these eight principles. This analysis should include as a minimum habitat quality, configuration, tortoise populations density, and population connectivity.

Note that CEQ recognizes that synergistic and interactive impacts as well as cumulative impacts should be analyzed in the NEPA document for the resource issues.

We request that the final EA (1) include these eight principles in its analysis of cumulative impacts to the Mojave desert tortoise; (2) address the sustainability of the tortoise in/near the project area; and (3) include effective science-based mitigation, monitoring, and adaptive management that protect desert tortoises and their habitats during BLM's management of the Project area.

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 desert tortoises, that track cumulative impacts (e.g., surface disturbance, paved and unpaved routes, linear projects, invasive species occurrence, herbicide/pesticide use, wildfires, etc.), management decisions, and effectiveness of mitigation for each project. Without such a tracking system, BLM is unable to analyze cumulative impacts to special status species (e.g., desert tortoises) with any degree of confidence.

**Appendix F – Public Scoping Issues:** We were unable to locate in this document the issues that the Council identified in its May 2, 2023 comment letter to the BLM during the public scoping period for this Project (attached). Specifically, we found no mention in the EA of the precipitous decline in Mojave desert tortoise populations throughout their range, especially in the Eastern Mojave Recovery Unit where the southern portion of the Project would be located, or an analysis of the data that we provided to BLM on the tortoise population trends for each recovery unit and rangewide.

In addition, we found no discussion or analysis on connected actions or growth-inducing impacts. In 40 CFR 1508.25 of CEQ’s regulations on implementing NEPA, the NEPA document must cover the entire scope of a proposed action, considering all connected, cumulative, and similar actions in one document. We identified these issues in our scoping comments because BLM indicated that the Project would provide the option for service providers to branch off the proposed Project’s fiber optic line to provide service to local communities. This branching off would not occur but for the proposed Project. This new or increased internet availability would encourage business growth at the locations of the branches likely in existing communities with associated new development. Again, we request that BLM revise the final EA to include these issues and analyses of their impacts to the resource issues including the tortoise, tortoise habitats, and connectivity of tortoise populations.

#### **Appendix H – Environmental Protection Measures**

In the EA and this appendix, BLM mentions several plans that are intended to mitigate impacts to the tortoise and other resource issues. However, we were unable to find these plans in the EA. All mitigation plans referenced in the preliminary EA (e.g., Dust Suppression Plan, Fire Protection Prevention Plan, Transportation Plan, etc.) should be completed and provided in the final EA so the public and the decisionmaker can review them and determine the effectiveness of the proposed mitigation. Stating that a mitigation plan will be developed even if this statement includes “using the best available science” is not adequate or appropriate, as the preparers are not always experts on the best available science for that specific subject/resource issue. When mitigation plans are included in the public review process, this provides the public with the opportunity to provide comments based on their diverse knowledge and experience regarding the adequacy and soundness of the proposed mitigation plans. This public review process increases the likelihood that the mitigation plans when reviewed and finalized will be effective when implemented.

*Fire Protection:* Under Fire Protection, BLM says, “[t]he Permittee or its contractor would be responsible for fire suppression and rehabilitation.” We presume this is the Project Proponent or Vero because BLM is granting a ROW, not issuing a permit. If wildlife habitat, including tortoise habitat, that is adjacent to the Project is degraded or destroyed from a fire linked to the construction, operations or maintenance of the Project, the Project Proponent should be responsible for all damages to this habitat (e.g., soils and soil crusts, native annual and perennial vegetation, disruption in tortoise population connectivity, etc.) and BLM should require restoration of the impacted areas to pre-fire conditions. Additional mitigation should be required because of the long-term temporal loss of habitat, usually decades or longer (Abella 2010).

Fire is a well-documented threat to the tortoise/tortoise habitat. As noted by Johansen (2003) natural range fires are not prevalent in the Mojave and Sonoran deserts because there is not enough vegetation present (too many shrub interspaces) to sustain a fire. Because of the recent prevalence of non-native annual grasses and forbs along roadways and the presence of humans, the probability of human-caused fires is increased (Gucinski et al. 2001) in the Mojave Desert.

Fenstermaker (2012) compiled existing research on impacts of fire on Mojave Desert vegetation. Many Mojave Desert shrubs are not fire-tolerant because their drought-adaptive features (thin bark, shallow root system, small leaves) and high dead-to-live woody material ratio make them vulnerable to fire (Brooks et al. 2007). Some species, including creosote bush, can resprout after burning; however, survival rates decline significantly if more than 10 percent of their aboveground biomass is consumed by fire (Brooks and Minnich 2006). Native plants are generally slow to re-establish after fire and recurrent fire may prevent their re-establishment (Brooks and Minnich 2006, Brown and Minnich 1986, O’Leary and Minnich 1981). The loss of native plants can be followed by increased dominance of non-native annual grasses. The post-fire vegetation has typically lower species diversity and plant structural diversity than the native community, which can negatively affect the desert tortoise (Brooks and Esque 2002, Esque et al. 2003) and other desert wildlife. Thus, non-native grasses and fire create a cycle that supports the rapid growth of non-native grasses that provide a carpet of fuel to carry fires across large areas and destroy native perennial plants. Increased human access is added to this with most human-caused fires in the Mojave Desert started along roads (Brooks and Matchett 2006).

In addition, BLM says that a Fire Protection Prevention Plan would be prepared and approved prior to Project approval. The requirements in the Fire Protection Plan should also apply to all operations and maintenance activities. Please revise the final EA to include mitigation for operations and maintenance activities in this Plan and all mitigation plans.

Soils: Under Soils, BLM references the Dust Control Plan, which we were unable to find in the EA. Note that the Dust Control Plan may adversely impact the tortoise. Activities that result in the deposition of water on the surface such that it forms puddles will attract coyotes (*Canis latrans*) and common ravens (*Corvus corax*) and other tortoise predators to the Project area. Please see the section on Subsidized Predators below for a discussion on this indirect impact from construction and maintenance projects.

Mojave Desert Tortoise:

Field Contact Representative: “The BLM would ensure a Field Contact Representative (FCR) or Compliance Inspection Contractor (CIC) is designated...” BLM and U.S. Fish and Wildlife Service (USFWS) should ensure that this person is a neutral third party that can effectively serve as a liaison between the Proponent and agencies to ensure all protective measures are adequately implemented.

Handling Desert Tortoises: “If Mojave Desert tortoises need to be moved at a time of day when ambient temperatures could harm them (less than 40°F or greater than 95°F)...” We request that BLM provide a citation for the lower temperature in this statement in the final EA.

General Environmental Protection Measures (EPMS) for Threatened and Endangered Species (TES)

“Development of a Noxious Weeds Management Plan.” As discussed above, this mitigation plan and all other mitigation plans should be included in the final EA so the public may comment on their adequacy and effectiveness. In addition, please provide a definition of a noxious weed. We strongly recommend that BLM use the following definition “generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the United States.” This definition would include non-native annual plant species such as *Bromus rubens*, *Schismus* species, and *Brassica tournefortii*.

The Noxious Weed Management Plan or Non-native Plant Species Management Plan should include objectives that stress the need to substantially reduce/eliminate the occurrence of non-native plant species and encourage the establishment and expand the abundance and density of native plants species, especially annual forbs required by tortoises for adequate nutrition (Drake et al. 2016).

The EA indicates, “A litter control program would be instituted during all construction activities. All workers would place their food scraps, paper wrappers, food containers, cans, bottles, and other trash in covered or closed trash containers. The trash containers would be removed from the work areas at the end of each working day.” This EPM addresses only one part of the subsidies provided to tortoise predators from construction, operation, and maintenance activities of surface disturbance projects. Additional impacts are described in the next paragraph.

*Subsidized Predators:* One example of an indirect impact from Project construction and operation and maintenance that may impact the tortoise and may result in take of the tortoise is increased tortoise predation. Common ravens are known to prey on juvenile desert tortoises based on direct observations and circumstantial evidence, such as shell-skeletal remains with holes pecked in the carapace (Boarman 1993). The number of common ravens increased by 1,528% in the Mojave Desert since the 1960s (Boarman 1993). This increase in raven numbers is attributed to unintentional subsidies provided by humans.

In the Mojave Desert, common ravens are subsidized predators because they benefit from resources associated with human activities that allow their populations to grow beyond their “natural” carrying capacity in the desert habitat. Kristan et al. (2004) found that human developments in the western Mojave Desert affect raven populations by providing food subsidies, particularly trash and road-kill. Boarman et al. (2006) reported raven abundance was greatest near resource subsidies (specifically food = trash and water). Human subsidies include food and water from landfills and other sources of waste, reservoirs, sewage ponds, agricultural fields, feedlots, gutters, as well as perch, roost, and nest sites from power towers, telephone poles, light posts, billboards, fences, freeway or railroad overpasses, abandoned vehicles, and buildings (Boarman 1993). Subsidies allow ravens to survive in the desert during summer and winter when prey and water resources are typically inactive or scarce. Boarman et al. (1993) concluded that the human-provided resource subsidies must be reduced to facilitate a smaller raven population in the desert and reduced predation on the tortoise.

Coyotes are known predators of tortoises. High adult tortoise mortality from coyote predation was reported by Petersen (1994), Esque et al. (2010) and Nagy et al. (2015). In some areas, numbers of ravens correlated positively with coyote abundance (Boarman et al. 2006). Lovich et al. (2014) reported tortoise predation may be exacerbated by drought if coyotes switch from preferred mammalian prey to tortoises during dry years. The Mojave Desert has been in a multi-decade drought (Stahle 2020, Williams et al. 2022) due to climate change and drought conditions, which are expected to continue and intensify in future years, likely resulting in increased predation pressure from coyotes on tortoises.

The proposed Project would likely increase the availability of human-provided subsidies for predators of the tortoise including the common raven and coyote during construction, operations, and maintenance. For example, during the construction phase the water used to control dust and the waste generated during construction including food brought to the Project site by workers for

meals, etc., are examples of food and water subsidies for ravens and coyotes that would attract these predators to the Project area and increase their numbers in the surrounding area. Additionally, construction projects kill or injure fossorial animals that become a human-subsidized food source for common ravens and coyotes. This would increase the numbers of these predators in the Project area and predation pressure on the tortoise. Similar impacts would occur although to a lesser extent during maintenance activities.

These subsidies of tortoise predators may be mitigated by requiring Best Management Practices (BMPs) that include using water for dust suppression so it does not form puddles, requiring waste containers that are predator-proof and wind-proof and are regularly maintained by the Project Proponent, designing above-ground structures so larger birds such as ravens cannot roost or nest on them, and installing effective deterrents.

We request that BLM revise the final EA to include the analysis of increased predation and other indirect impacts to the tortoise that may occur from the construction, operations, and maintenance of the proposed Project. BLM should require the Project Proponent to implement effective mitigation and BMPs to substantially reduce/eliminate these indirect impacts to the tortoise and other special status species and coordinate the development and implementation of these BMPs with Nevada Department of Wildlife and USFWS.

*Mitigation for water crossings:* The proposed Project would intersect scores of major and moderate water crossings (= washes) that course under highways in the range of the tortoise. These water crossings or washes are used by tortoises as foraging areas and for movements. Desert tortoises tend to follow washes (Jennings 1993, Peaden et al. 2017). The impacts to these washes from trenching/plowing 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). In addition, the backfilling of material into trenches or plowed areas should be of a size that can be easily navigated by tortoises of any size class. Soils composed of large rocks or debris would block tortoise movements along washes. For example, gravel that is coarse or larger would impede the movement of small tortoises along a wash. In addition, if the washes flow under the highway through a culvert, a large gravel size or debris would impede/block access for tortoises to use the culvert and impede connectivity between tortoise populations on either side of the highway. Please ensure that mitigation measures are implemented at all washes in the range of the tortoise to ensure that the proposed Project does not impede/prevent tortoise movements in the washes or access to the culverts.

In the document entitled “Biological Resources Supplemental Environmental Report – Reno to Las Vegas Fiber Optic Project” we found the following information:

The cumulative effects study area (CESA) for Mojave desert tortoise was determined to be a two-mile buffer from the area of analysis within Mojave desert tortoise habitat. The CESA boundary consists of 383,487 acres.

Please explain how this distance was determined. We refer BLM to the CEQ’s (1997) directive on cumulative effects analysis and ask that BLM explain in the final EA the scientific information on the tortoise that was used to select this distance and how this selected distance complies with CEQ’s 1997 directive. Without this explanation, the distance appears to be an arbitrary determination.

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 Council at [eac@deserttortoise.org](mailto: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 them to ensure BLM fully considers actions to conserve these tortoises as part of BLM's directive to conserve biodiversity on lands it manages.

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,



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**Attachment:** May 2, 2203 Letter from Desert Tortoise Council to BLM on Reno to Las Vegas Fiber Optic Project; DOI-BLM-NV-C000-2023-0003-EA during Public Scoping Period

### Literature Cited

Abella, S.R. 2010. Disturbance and plant succession in the Mojave and Sonoran Deserts of the American Southwest. *International Journal of Environmental Research and Public Health* 7.4 (2010): 1248-1284. <https://www.mdpi.com/1660-4601/7/4/1248>

Averill-Murray, R.C., T.C. Esque, L.J. Allison, S. Bassett, S.K. Carter, K.E. Dutcher, S.J. Hromada, K.E. Nussear, and K. Shoemaker. 2021. Connectivity of Mojave Desert tortoise populations—Management implications for maintaining a viable recovery network. U.S. Geological Survey Open-File Report 2021–1033, 23 p., <https://doi.org/10.3133/ofr20211033>. <https://pubs.usgs.gov/of/2021/1033/ofr20211033.pdf>

- Beier, P., Majka, D.R., and Spencer, W.D., 2008, Forks in the road—Choices in procedures for designing wildland linkages: *Conservation Biology*, v. 22, no. 4, p. 836–851, <https://doi.org/10.1111/j.1523-1739.2008.00942.x>.
- Berry, K.H. 1986. Desert tortoise (*Gopherus agassizii*) relocation: Implications of social behavior and movements. *Herpetologica* 42:113-125. <https://www.jstor.org/stable/3892242>
- Beier, P., D.R. Majka, and W.D. Spencer. 2008. Forks in the road—Choices in procedures for designing wildland linkages. *Conservation Biology* 22(4): 836–851, <https://doi.org/10.1111/j.1523-1739.2008.00942.x>.  
<https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/j.1523-1739.2008.00942.x>
- Berry, K.H., L.J. Allison, A.M. McLuckie, M. Vaughn, and R.W. Murphy. 2021. *Gopherus agassizii*. The IUCN Red List of Threatened Species 2021: e.T97246272A3150871. <https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T97246272A3150871.en>
- [BLM] U.S. Bureau of Land Management. 2008. H-1790-1 - National Environmental Policy Act Handbook. National Environmental Policy Act Program, Office of the Assistant Director, Renewable Resources and Planning, Washington, D.C. January 2008. [https://www.blm.gov/sites/blm.gov/files/uploads/Media\\_Library\\_BLM\\_Policy\\_Handbook\\_h1790-1.pdf](https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_Handbook_h1790-1.pdf)
- [BLM] Bureau of Land Management. 2021a. Reinstating the Bureau of Land Management (BLM) Manual Section (MS-1794) and Handbook (H-1794-1) on Mitigation. Instruction Memorandum IM 2021-046. September 22, 2021.
- [BLM] Bureau of Land Management. 2021b. Mitigation Handbook (H-1794-1). [https://www.blm.gov/sites/default/files/docs/2021-10/IM2021-046\\_att2.pdf](https://www.blm.gov/sites/default/files/docs/2021-10/IM2021-046_att2.pdf).
- [BLM] Bureau of Land Management. 2021c. Mitigation Manual (MS-1794). Bureau of Land Management, September 22, 2021. [https://www.blm.gov/sites/default/files/docs/2021-10/IM2021-046\\_att1\\_0.pdf](https://www.blm.gov/sites/default/files/docs/2021-10/IM2021-046_att1_0.pdf).
- [BLM] Bureau of Land Management. 2022. Habitat Connectivity on Public Lands Instruction Memorandum 2023-005. <https://www.blm.gov/policy/im-2023-005-change-1>
- [BLM] Bureau of Land Management. 2023. Reno to Las Vegas Fiber Optic Project Preliminary Environmental Assessment. Vero Fiber Networks. December 2023. DOI-BLM-NV-C000-2023-0003-EA. Long-term ROW Grant (N-100968/NVNV105856545). Short-term ROW Grant (N-100968-01/NVNV106240146). Bureau of Land Management, Carson City District, Carson City, NV.
- Boarman, W.I. 1993. When a native predator becomes a pest—A case study, in Majumdar, S.K., Miller, E.W., Baker, D.E., Brown, E.K., Pratt, J.R., and Schmalz, R.F., eds., *Conservation and resource management*: Easton, Pennsylvania Academy of Science, p. 186–201.

- Boarman, W.I., M.A. Patten, R.J. Camp, and S.J. Collis. 2006. Ecology of a population of subsidized predators: Common ravens in the central Mojave Desert, California. *Journal of Arid Environments* 67 (2006) 248–261. <https://www.sciencedirect.com/science/article/abs/pii/S0140196306003016>
- Brooks, M.L., and T.C. Esque. 2002. Alien plants and fire in desert tortoise (*Gopherus agassizii*) habitat of the Mojave and Colorado Deserts. *Chelonian Conservation and Biology* 4: 330–340.
- Brooks, M.L., and J.R. Matchett. 2006. Spatial and temporal patterns of wildfires in the Mojave Desert, 1980–2004. *Journal of Arid Environments* 67 (2006): 148–164. [https://cdn.greensoft.mn/uploads/users/1277/files/Greenmongolia/%D0%93%D0%B0%D0%B4%20and%20transition%20model/Brooks\\_Matchett\\_Mojave\\_wildfire\\_2006.pdf](https://cdn.greensoft.mn/uploads/users/1277/files/Greenmongolia/%D0%93%D0%B0%D0%B4%20and%20transition%20model/Brooks_Matchett_Mojave_wildfire_2006.pdf)
- Brooks, M.L., and R.A. Minnich. 2006. Southeastern Deserts Bioregion. In: Sugihara, Neil G.; van Wagtenonk, Jan W.; Shaffer, Kevin E.; Fites-Kaufman, JoAnn; Thode, Andrea E., eds. *Fire in California's ecosystems*. Berkeley, CA. The University of California Press: 391-414.
- Brooks, M.L., T.C. Esque, and T. Duck. 2007. Creosotebush, Blackbrush, and Interior Chaparral Shrublands. Chapter 6. In *USDA Forest Service Gen. Tech. Rep. RMRS-GTR-202*. 2007
- Brown, D.E. and R.A. Minnich, 1986. Fire and changes in creosote bush scrub of the western Sonoran Desert, California (USA). *American Midland Naturalist* 116: 411–422. <https://www.resolutionmineeis.us/sites/default/files/references/brown-minnich-1986.pdf>
- Carter, S.K., K.E. Nussear, T.C. Esque, I.I.F. Leinwand, E. Masters, R.D. Inman, N.B. Carr, and L.J. Allison. 2020. Quantifying development to inform management of Mojave and Sonoran desert tortoise habitat in the American southwest. *Endangered Species Research* 42: 167–184. <https://doi.org/10.3354/esr01045>. <https://www.int-res.com/articles/esr2020/42/n042p167.pdf>
- [CEQ] Council on Environmental Quality. 1997. Considering Cumulative Effects under the National Environmental Policy Act. [https://ceq.doe.gov/publications/cumulative\\_effects.html](https://ceq.doe.gov/publications/cumulative_effects.html)
- [CEQ] Council on Environmental Quality. 2023. Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors. March 21, 2023. <https://www.whitehouse.gov/wp-content/uploads/2023/03/230318-Corridors-connectivity-guidance-memo-final-draft-formatted.pdf>
- Defenders of Wildlife, Desert Tortoise Preserve Committee, and Desert Tortoise Council. 2020. A Petition to the State of California Fish And Game Commission to move the Mojave desert tortoise from listed as threatened to endangered. Formal petition submitted 11 March 2020. [https://defenders.org/sites/default/files/2020-03/Desert%20Tortoise%20Petition%202020%20Final\\_0.pdf](https://defenders.org/sites/default/files/2020-03/Desert%20Tortoise%20Petition%202020%20Final_0.pdf).



- Drake, K. K., L. Bowen, K. E. Nussear, T. C. Esque, A. J. Berger, N. A. Custer, S. C. Waters, J. D. Johnson, A. K. Miles, and R. L. Lewison. 2016. Negative impacts of invasive plants on conservation of sensitive desert wildlife. *Ecosphere* 7(10):e01531. 10.1002/ecs2.1531. <https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecs2.1531>
- Esque, T.C., C.R. Schwalbe, L.A. Defalco, R.B. Duncan, and T.J. Hughes Effects of desert wildfires on desert tortoise (*Gopherus agassizii*) and other small vertebrates. *The Southwestern Naturalist* 48(1):103-111, (1 March 2003). [https://doi.org/10.1894/0038-4909\(2003\)048<0103:EODWOD>2.0.CO;2](https://doi.org/10.1894/0038-4909(2003)048<0103:EODWOD>2.0.CO;2) [https://bioone.org/journals/The-Southwestern-Naturalist/volume-48/issue-1/0038-4909\(2003\)048%3C0103:EODWOD%3E2.0.CO;2/EFFECTS-OF-DESERT-WILDFIRES-ON-DESERT-TORTOISE-span-classgenus-speciesGOPHERUS/10.1894/0038-4909\(2003\)048%3C0103:EODWOD%3E2.0.CO;2.short](https://bioone.org/journals/The-Southwestern-Naturalist/volume-48/issue-1/0038-4909(2003)048%3C0103:EODWOD%3E2.0.CO;2/EFFECTS-OF-DESERT-WILDFIRES-ON-DESERT-TORTOISE-span-classgenus-speciesGOPHERUS/10.1894/0038-4909(2003)048%3C0103:EODWOD%3E2.0.CO;2.short)
- Esque, T.C., K.E. Nussear, K.K. Drake, A.D. Walde, K.H. Berry, R.C. Averill-Murray, A.P. Woodman, W.I. Boarman, P.A. Medica, J. Mack, and J.H. Heaton. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, U.S.A. *Endangered Species Research*, Vol. 12-167-177, 2010, doi: 10.3354/esr00298. <https://www.int-res.com/articles/esr2010/12/n012p167.pdf>
- Fairbank, E., M. Huijser, and F. Deffner. 2021. Technical Guidance: Mojave Desert Tortoise Conservation and Recovery Measures Along Roads. <https://largelandscapes.org/wp-content/uploads/Technical-Guidance.-Mojave-Desert-Tortoise-Conservation-and-Recovery-Measures-Along-Roads.pdf>
- Fenstermaker, L. 2012. Fire Impacts on the Mojave Desert Ecosystem: Literature Review. U.S. Department of Energy National Nuclear Security Administration Nevada Site Office. January 2012. Publication No. 45238.
- Goble, D.D., 2009, The endangered species act—What we talk about when we talk about recovery: *Natural Resources Journal*, v. 49, p. 1–44. <https://www.jstor.org/stable/24889187>
- Gucinski, H. 2001. Terrestrial and aquatic natural ecosystems: potential responses to global climate change. Pages 41-66 In: Bringing climate change into natural resource management, Proceedings of a workshop. USDA Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-706 Match 2007.
- Jennings, W.B. 1993. Foraging ecology and habitat utilization of the desert tortoise (*Gopherus agassizii*) in the western Mojave Desert. Ph.D. Thesis, University of Texas Arlington, Texas, USA.
- Jennings, W.B., and K.H. Berry. 2023. Selection of microhabitats, plants, and plant parts eaten by a threatened tortoise: observations during a superbloom. *Frontiers in Amphibian and Reptile Science* 1:1283255. doi: 10.3389/famrs.2023.1283255. [https://www.researchgate.net/profile/W-Jennings/publication/376072354\\_Selection\\_of\\_microhabitats\\_plants\\_and\\_plant\\_parts\\_eaten\\_by\\_a\\_threatened\\_tortoise\\_observations\\_during\\_a\\_superbloom/links/6568a29d3fa26f66f43a85aa/Selection-of-microhabitats-plants-and-plant-parts-eaten-by-a-threatened-tortoise-observations-during-a-superbloom.pdf](https://www.researchgate.net/profile/W-Jennings/publication/376072354_Selection_of_microhabitats_plants_and_plant_parts_eaten_by_a_threatened_tortoise_observations_during_a_superbloom/links/6568a29d3fa26f66f43a85aa/Selection-of-microhabitats-plants-and-plant-parts-eaten-by-a-threatened-tortoise-observations-during-a-superbloom.pdf)

- Johansen, J.R., 2003. Impacts of Fire on Biological Soil Crusts. In: Belnap, J. and O.L. Lange, editors. *Biological Soil Crusts: Structure, Function, and Management*. Ecological Studies Series 150, Second Edition. Springer-Verlag, Berlin.
- Kristan, W.B., W.I. Boarman, and J.J. Crayon. 2004. Diet composition of common ravens across the urban wildland interface of the west Mojave Desert. *Wildlife Society Bulletin* 32: 244–253. [https://wildlife.onlinelibrary.wiley.com/doi/abs/10.2193/0091-7648\(2004\)32\[244:DCOCRA\]2.0.CO;2](https://wildlife.onlinelibrary.wiley.com/doi/abs/10.2193/0091-7648(2004)32[244:DCOCRA]2.0.CO;2)
- Lovich, J.E., C.B. Yackulic, J.E. Freilich, M. Agha, M. Austin, K.P. Meyer, T.R. Arundel, J. Hansen, M.S. Vamstad, and S.A. Root. 2014. Climatic variation and tortoise survival—Has a desert species met its match? *Biological Conservation* 169: 214–224. <https://www.sciencedirect.com/science/article/pii/S0006320713003443>
- Morafka, D.J., 1994, Neonates—Missing links in the life histories of North American tortoises, in Bury, R.B., and Germano, D.J., eds., *Biology of North American tortoises*: Washington, D.C., National Biological Survey, Fish and Wildlife Research, v. 13, p. 161–173.
- Nagy, K.A., L.S. Hillard, M.W. Tuma, and D.J. Morafka. 2015, Head-started desert tortoises (*Gopherus agassizii*)—Movements, survivorship and mortality causes following their release: *Herpetological Conservation and Biology* 10: 203–215. <https://escholarship.org/content/qt67f7t2n6/qt67f7t2n6.pdf>
- O’Leary, J.F., and R.A. Minnich. 1981. Postfire recovery of creosote bush scrub vegetation in the Western Colorado Desert. *Madroño* 28: 61-66.
- Peaden, J.M., A.J. Nowakowski, T.D. Tuberville, K.A. Buhlmann & B.D. Todd. 2017. Effects of roads and roadside fencing on movements, space use, and carapace temperatures of a threatened tortoise. *Biological Conservation* 214: 13-22.
- Peterson, C.C. 1994. Different rates and causes of high mortality in two populations of the threatened desert tortoise *Gopherus agassizii*. *Biological Conservation* 70: 101–108. <https://www.sciencedirect.com/science/article/abs/pii/0006320794902771>
- Stahle, D.W. 2020. Anthropogenic megadrought. *Science* 368 (6488): 238-239. DOI: 10.1126/science.abb6902. <https://par.nsf.gov/servlets/purl/10166645>
- [USFWS] U.S. Fish and Wildlife Service. 2009. Desert Tortoise (Mojave Population) Field Manual: (*Gopherus agassizii*). December 2009. Region 8, Sacramento, California. <https://www.fws.gov/sites/default/files/documents/Desert-Tortoise-Field-Manual.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2019. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). USFWS Desert Tortoise Recovery Office. Reno, NV. October 8, 2019. [https://www.fws.gov/sites/default/files/documents/Mojave%20Desert%20Tortoise\\_Pre-project%20Survey%20Protocol\\_2019.pdf](https://www.fws.gov/sites/default/files/documents/Mojave%20Desert%20Tortoise_Pre-project%20Survey%20Protocol_2019.pdf)
- Williams, A.P., B.I. Cook, and J.E. Smerdon. 2022. Rapid intensification of the emerging southwestern North American megadrought in 2020–2021. *Nature Climate Change*. 12 (2022):232–234. <https://doi.org/10.1038/s41558-022-01290-z>.

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<https://www.dropbox.com/scl/fi/b09pl157u14fyhg0leahu/Reno-to-Las-Vegas-Fiber-Optic-Line.5-2-2023.pdf?rlkey=uxr517hbk3nafyb73mc3yfko8&dl=0>