



**DESERT TORTOISE COUNCIL**

3807 Sierra Highway #6-4514

Acton, CA 93510

[www.deserttortoise.org](http://www.deserttortoise.org)

[eac@deserttortoise.org](mailto:eac@deserttortoise.org)

**Via email only**

October 23, 2025

Derek Newland  
County of San Bernardino  
Land Use Services Department, Planning Division  
385 N. Arrowhead Ave 1st Floor  
San Bernardino, CA 92415-0187  
[derek.newland@lus.sbcounty.gov](mailto:derek.newland@lus.sbcounty.gov)

RE: LCM Railroad (Project No.: PROJ-2024-00080; Assessor Parcel Number(s): 0496-011-07)

Dear Mr. Newland,

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

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

We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats potentially occupied by the 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 that may be authorized by the County of San Bernardino, Land Use Services Department, Planning Division (County), which we recommend be added to project terms and conditions in the authorizing documents [e.g., issuance of permits, etc.] as appropriate. Please accept, carefully review, and include in the relevant project file the Council's following comments for the proposed action.

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 the Desert Tortoise Preserve Committee (DTPC) to petition the California Fish and Game Commission (Commission) in March 2020 to elevate the listing of the Mojave desert tortoise from Threatened to Endangered under the California Endangered Species Act (CESA) (Defenders of Wildlife et al. 2020). Importantly, following California Department of Fish and Wildlife's (CDFW) (2024a) status review, in their April 2024 meeting the Commission voted unanimously to accept the CDFW's petition evaluation and recommendation to uplist the tortoise from threatened to endangered under the CESA. This unanimous vote was based on the scientific data provided on the species' status, declining trend, numerous threats, and lack of effective recovery implementation and land management (CDFW 2024b). On July 15, 2025, the tortoise was officially uplisted to endangered status under the CESA (Commission 2025).

Thank you for including the Council on the County's list of Affected Interests and contacting us via email on 9/22/2025 regarding the public comment period on this "Initial Study and Mitigated Negative Declaration for the LCM Railroad (Project No.: PROJ-2024-00080; APN 0496-011-07) (County 2025) (Initial Study/Mitigated Negative Declaration). In the Initial Study/Mitigated Negative Declaration, we found the following project description.

### **Description of the Proposed Project**

LCM Development, LLC (LCMD; Applicant or project proponent), who operates the nearby Lynx Cat Mountain Quarry (Quarry), is requesting approval of a Conditional Use Permit (CUP) from the County to construct a railway track loop and loading facility for aggregate materials. The track alignment would consist of two parallel separate single standard rail tracks approximately 8,758 feet in length (outer loop) converging as a "Y" into a single track across public lands managed by the Bureau of Land Management (BLM). The "Y" rail line will extend south approximately 1,500 linear feet long and 100 feet in width to tie into the Burlington Northern Santa Fe (BNSF) mainline.

The proposed project also includes the realignment of an approximately 4,000-foot section of the unpaved County-maintained Santa Fe Road and the construction of a private unpaved haul road extending from the Lynx Cat Mine Road southwest to the rail loadout facility. The relocated Santa Fe Road will be approximately 4,500 feet in length, 60 feet wide, and adjacent to the outer rail track loop. It would be 300 feet north of its present alignment. In addition, a private unpaved haul road will be constructed and will be entirely within the applicant's private land. It will be approximately 4,750 feet long and 40 feet wide including shoulders (approximately 6.5 acres).

A 60 ft. wide X 60 ft. long concrete rail crossing capable of supporting the 65-ton rock trucks delivering the aggregate from the quarry to the facility will be constructed across both Santa Fe Road and the rail loop track. Haul trucks would deliver aggregates from the Quarry located about 3 miles north of the proposed project to the proposed rail loading facility, where it would be stored in stockpiles inside the rail loop, loaded by 2 - 3 loaders into hopper rail cars with 100 to 110-ton capacities (typical), and then transported by rail to various projects in the high desert and across the southwest region. The proposed project is located about 3 miles west of Hinkley and 1.5 miles north of State Route 58 (Figures 1, 2, and 3). The proposed facility is to be constructed on a 131-acre portion of a 640-acre property owned by LCMD. The entire facility and rail loop would be constructed on the privately owned property. The 640-acre property has BLM-managed land on the north, east, and south sides of the proposed project.

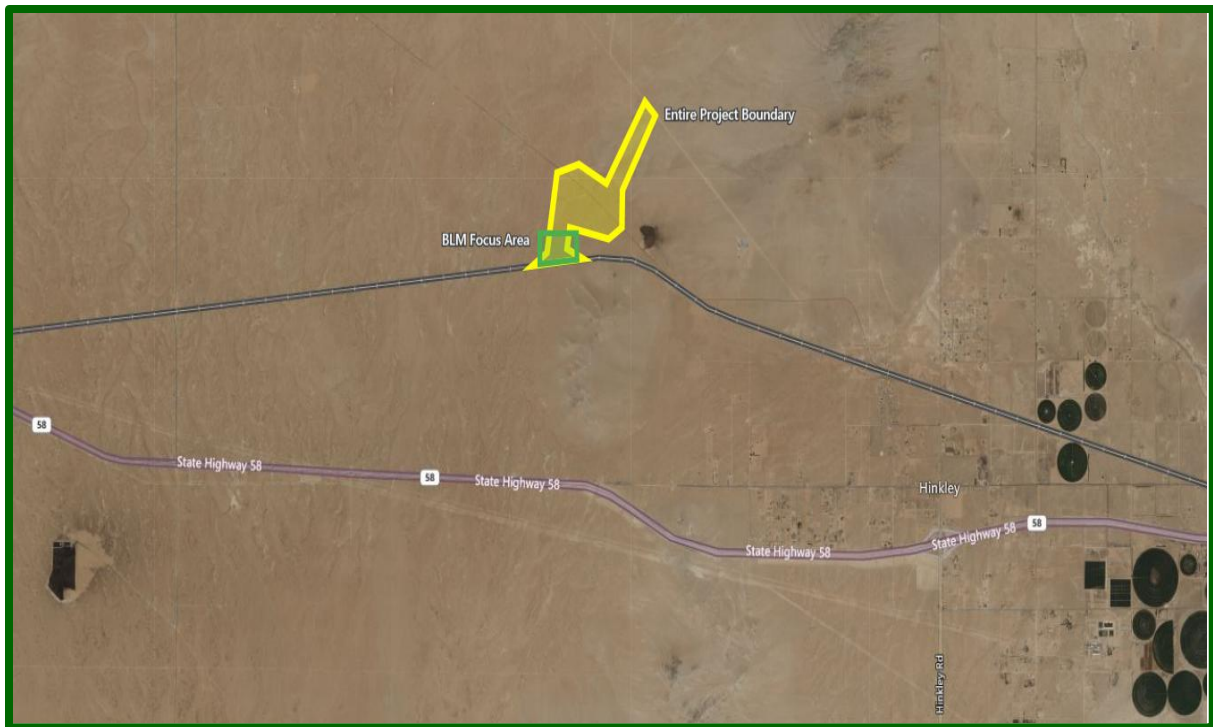
## **Comments on the Proposed Project**

### **General Biological Resources Assessment**

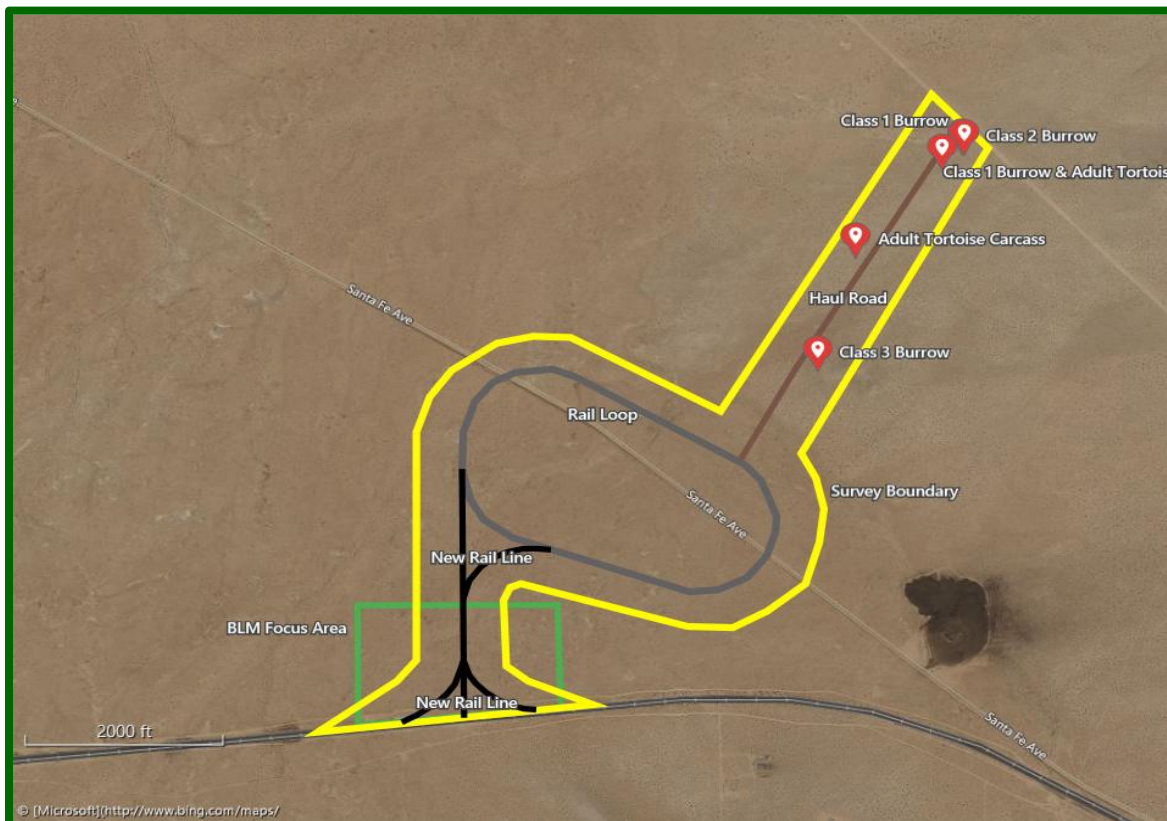
The following comments are for the General Biological Resources Assessment, Rail Loop Project Hinkley, San Bernardino County, California, prepared by RCA Associates, Inc. (2024).

Pages 3 & 4, Methodologies, Desert Tortoise: “A habitat assessment of the primary project area, the BLM easement area, and the 1-mile haul road leading to the planned rail loop area was conducted on May 14, 2024.” “Transects were walked in 10-meter intervals in an east-west direction inside and around the rail loop project. 10-meter transects were then walked along the proposed haul road in a northeast-southwest direction until the entire property had been checked for any tortoise sign (burrows, tracks, scats, etc.). Surveys in the zone of influence (ZOI) were also conducted surrounding the site out to 500 feet.”

The USFWS (2019a) survey protocol for the tortoise to determine whether tortoise may use the area impacted by the project does not include a Zone of Influence. Rather, it encompasses the action area. ). 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.” For a project that includes the construction and use of a new road, the action area may extend away from the road on either side to a distance of 3576 feet if using the results from von Seckendorff Hoff and Marlow (2002) on the impacts of roads to tortoise presence/tortoise sign. Thus, a 500-foot buffer would not have met the requirement for conducting surveys of the action area because it did not include the entire area indirectly affected by the proposed project with respect to the tortoise.



**Figure 1.** General location of the rail loop, new haul road to the northeast, and the “Y” rail line on BLM managed land to the south to connect to the BNSF track.



**Figure 2.** Location of the new rail line, rail loop, and haul road.





Please see our comments at the end of this letter regarding the citing and use of data from the scientific literature to develop conclusions about impacts to the tortoise and other listed/special status species to support a decision made by the County.

Page 4, Methodologies, Desert Tortoise: “Due to the presence of tortoises and tortoise sign on site, a Section 10(a) incidental take permit from the USFWS and a Section 2081 permit from CDFW will be required to mitigate impacts to the species.”

We wish to clarify this statement. Because a tortoise and tortoise sign were located in the project area, the project cannot be implemented without obtaining incidental take permits (ITPs) from USFWS and CDFW under FESA and CESA, respectively. The purpose of the ITPs is twofold – to authorize the incidental take of the tortoise, which is otherwise prohibited by FESA and CESA, and to minimize and mitigate the impacts of the taking under FESA and fully mitigate under CESA.

Page 5, Methodologies, Burrowing Owl: “A habitat assessment (Phase 1) was conducted for the burrowing owl in conjunction with the general biological surveys to determine if the site supports suitable habitat for the species on May 14, 2024.”

The burrowing owl was designated as a Candidate Species for Listing with the California Fish and Game Commission on 10/9/2024. This designation occurred after the General Biological Resources Assessment for the proposed project was prepared. Until the Commission makes a final decision on its status, under CESA, the burrowing owl is treated as a listed species under CESA. Please revise the information in the General Biological Resources Assessment and the Initial Study/Draft Mitigated Negative Declaration to reflect this change in the species’ legal status.

We recommend that the General Biological Resources Assessment include appropriate information on how the CDFW’s (CDFG 2012) survey requirements for the burrowing owl were implemented by the consultant.

Regarding this statement, we are unclear whether general biological surveys were conducted in addition to the USFWS’s (2019a) presence-absence surveys for the tortoise or whether only general biological surveys were conducted. The USFWS methodology for conducting presence-absence surveys was developed from statistical analysis of the survey data collected annually during rangewide surveys for the tortoise since 2001. These data were used to determine the survey methodology such as the appropriate transect width in which a surveyor would see tortoises or tortoise sign that is present. Tortoises are cryptic in coloration and behavior; thus, they are not easily seen when above ground and spend most of their time underground. The USFWS tortoise presence-absence survey methodology presumes that the qualified tortoise surveyor is searching only for tortoises and no other special status species concurrently. Please clarify this information in the General Biological Resources Assessment.

“After the field investigation it was determined that there was no owl sign (e.g. whitewash, feathers, or castings) or inhabiting owls due to the lack of many suitable burrows on site or in the immediate vicinity.”

However, on page 9 of the General Biological Resources Assessment is the information that “Two mammals were observed during field surveys, the California ground squirrel (*Otospermophilus beecheyi*) and Antelope ground squirrel (*Ammospermophilus leucurus*).” Because the California ground squirrel is one of the species occurring onsite, there would be ground squirrel burrows onsite. California ground squirrel burrows are one of the primary burrow types used by burrowing owls, assuming they are not occupied by squirrels. As such, the conclusion by RCA Associates, Inc. (2024) that owls were not present “due to the lack of many suitable burrows on site or in the immediate vicinity” seems to conflict with the survey findings for both burrowing owls and California ground squirrels. Please clarify this discrepancy in the General Biological Resources Assessment and the Initial Study.

Page 5, Methodologies, Mohave Ground Squirrel: “An evaluation for suitable habitat of the Mohave ground squirrel was performed as per CDFW protocol including evaluation of local populations and an assessment of connectivity with habitats in the surrounding area which might support populations of the Mohave ground squirrel.” “. . . it is the opinion of RCA Associates, Inc. that the likelihood of a Mohave ground squirrel occurring on the proposed project site is extremely low.”

The Council questions whether the CDFW protocol for suitable habitat assessment for the MGS was followed. CDFW’s protocol (2023a) says that the time for “conducting visual surveys to determine Mohave ground squirrel activity and habitat quality [is] during the period of 15 March through 15 April.” However, the field work at the location of the proposed project was conducted on May 14 which is outside this survey window.

In addition, it is not possible for a biologist to conduct ambulatory, visual surveys of the project area to determine that MGS are absent. This conclusion by the consultant is not appropriate because the methodology implemented for MGS surveys did not comply fully with the Mohave Ground Squirrel Survey Guidelines published by CDFW (2023a).

In addition, please see our comments on “Page 11, Results, Federal and State Listed Species, Mohave Ground Squirrel” for more information on CDFW’s (2023a) survey protocol.

Page 7, Literature Search, Table 4-2: In this table, the burrowing owl’s legal status is given as “Federal: None State: None, CDFW: SSC [species of special concern]” However, as mentioned earlier in this letter, the burrowing owl is a candidate species under CESA and afforded all the protections of CESA. Please revise this information the General Biological Resources Assessment and Initial Study/Draft Mitigated Negative Declaration.

Also, on page 12 the burrowing owl’s legal status should be revised from “Species of Special Concern – Sensitive Wildlife” to candidate under CESA.

Page 8, Literature Search, Table 4-2: In this table the status of the tortoise is given as State threatened. The tortoise is State endangered. Please revise the legal status of the tortoise in the General Biological Resources Assessment and the Initial Study/Draft Mitigated Negative Declaration. (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405&inline>).

Page 10, Results, BLM Easement: “This project area includes a 1500 LF x 100 ft. wide “Y”-Track easement from the BNSF Main rail line across BLM property and into the proposed rail loop area in Section 13 (Figures 5, 7, and 8). To satisfy BLM requirements this survey included this easement and its zone of influence.” What was the areal extent of the zone of influence and how was it determined? Did it comply with the zone of influence for burrowing owl surveys and the action area for tortoise surveys? Please provide this information in the General Biological Resources Assessment and Initial Study/Draft Mitigated Negative Declaration.

Pages 10 & 11, Results, Federal and State Listed Species, Desert Tortoise: “Due to the presence of tortoises and tortoise sign on site, a Section 10(a) incidental take permit from the USFWS and a Section 2081 permit from CDFW will be required to mitigate impacts to the species. It is the opinion of RCA Associates, Inc. that with proper mitigation measures such as the installation of a tortoise fence the mortality of any tortoises can be avoided.”

Please see our earlier comments on page 4, Methodologies, Desert Tortoise regarding ITPs. This information should clarify that the purpose on an ITP is not just to avoid direct mortality and that management and monitoring actions in addition to the “installation of a tortoise fence” would likely be required for the construction, operation, and maintenance of the proposed project.

Page 11, Results, Federal and State Listed Species, Mohave Ground Squirrel: CDFW (2019) published a “A Conservation Strategy for the Mohave Ground Squirrel (*Xerospermophilus mohavensis* = MGS).” In this document CDFW identified 11 core population areas (CPAs) for MGS including the Harper Lake CPA. This CPA is located west of Hinkley, along Highway 58 from Harper Lake to 5 miles (8 km) east of Kramer Junction, extending to approximately 15 miles (24 km) east of the junction, approximately 68,061 acres (27,543 ha). The proposed project is located in this CPA. In this Conservation Strategy, CDFW (2019) provided a map of known locations of MGS, and the map indicates that MGS have been found in the project area.

CDFW has published survey guidelines for the MGS (CDFW 2023a). These MGS Survey Guidelines include conducting surveys by qualified biologists that have obtained a Memorandum of Understanding from CDFW prior to trapping; conducting visual surveys to determine Mohave ground squirrel activity and habitat quality during the period of 15 March through 15 April; if no MGS are observed, establishing standard small-mammal trapping grids from late winter through mid-summer. Once the results of the trapping are completed, they should be shared with CDFW.

Once a project area is determined to be occupied by MGS, it will be considered occupied in subsequent years, given the relatively low detectability of MGS using standard survey methods and the dynamic nature of site occupancy during population cycles of expansion and contraction. In the absence of other MGS detection data for the site, surveys conducted according to these guidelines that result in no detection of MGS (“negative” survey results) are interpreted to mean that MGS are not present on the project area for the survey year. In other words, negative survey results are valid until the start of the next survey season (March of the subsequent year).

In these Guidelines, CDFW provides the following caution – “it is essential for project proponents or their biological consultants to confer with the appropriate regional CDFW office prior to implementing a survey program for MGS to ensure the surveys consider the site-specific conditions of the project area and the nature of the project. Lack of consultation with CDFW prior to implementing an MGS survey program may cast doubt on a negative finding (“absence”) determination.”



To determine whether the proposed project may result in take of MGS, the County should ensure that the project proponent implements CDFW's requisite surveys before the CEQA document is written so that the survey results can be published in the appropriate CEQA document. The County should ensure quality control in this matter. Requisite MGS surveys are conducted from March through July of a given year.

We strongly recommend that the site be live-trapped and that tissue be collected from any captured MGS to determine whether any of them have hybridized with round-tailed ground squirrels (*Xerospermophilus tereticaudis*). In 2014 at a site located nearby, an adult female MGS and four juveniles were captured by eight live traps placed in the vicinity of an incidental observation. When the tissue was analyzed, the female and three of the juveniles were determined to be MGS and the fourth juvenile was a hybrid. Given the proximity of the proposed project to this location, it is important to determine whether any squirrels captured are MGS or hybrids.

Page 12, Species of Special Concern, Sensitive Wildlife: "Three of the five species have a nominal chance to occur on site being the American badger, burrowing owl, and Mojave fringe-toed lizard. The site shows very little suitable habitat for these species, and they are most likely not to occur on site."

First, please see our comment above on the legal status of the owl, a candidate for listing under CESA. Second, this statement should be supported with citations from the scientific literature and the results from implementing CDFW's burrowing owl survey protocol (CDFG 2012).

Page 13, Impacts and Mitigation Measures, Federal and State Listed and Species of Special Concern: "Only one federal or State-listed species was observed on the site during the field investigations, which was the desert tortoise."

In this section of the General Biological Resources Assessment, we found no description or analysis of direct, indirect, or cumulative impacts to the tortoise or tortoise habitat. Despite the observation of a tortoise and tortoise sign in the project area, no mitigation or monitoring measures were recommended in this section of the General Biological Resources Assessment. We question how the County is able to determine that a mitigated negative declaration is the appropriate CEQA document when no mitigation or monitoring is recommended in the General Biological Resources Assessment for the loss and degradation of tortoise habitat and other impacts to the tortoise from the construction, operations and maintenance of the proposed project.

"As per CDFW Staff Report on Burrowing Owl Mitigation, a pre-construction survey is required to determine if any owls have moved on to the site since the May 2024 survey. As stated by CDFW's protocol, the most effective method of completing a pre-construction survey (take avoidance survey) should be performed no less than 14 days prior to ground disturbance, followed by a final pre-construction survey within 24 hours of breaking ground."

This is a data-gathering process to help determine what the impacts to the owl are likely to be from project implementation. It is not an assessment of the impacts to the owl or description of mitigation recommended to offset these impacts.

Page 14, Conclusions and Recommendations: “However, the cumulative impacts to the general biological resources (plants and animals) in the surrounding area are expected to be negligible. This assumption is based on the presence of ample suitable habitat in the surrounding areas. In addition, future development activities are expected to have minimal impact on any State or Federal listed or State special status plant or animal species.”

The Council requests that any conclusions or recommendations be supported with data and references from the scientific literature. Otherwise, this is an unsupported conclusion and as indicated from the citations below, an inaccurate conclusion.

If there is ample suitable habitat available for the tortoise and future development activities are expected to have minimal impact on any State or Federal listed or State special status plant or animal species, why is the USFWS considering listing the MGS under FESA, why is the Commission considering listing the burrowing owl under CESA, and why have tortoise numbers and densities sharply declined since 2004 (Allison and McLuckie 2018, USFWS, 2016, 2018, 2019b, 2020a, 2022a, 2022b, 2025) and continue to be below the viability level for the tortoise in the West Mojave Desert? Why did the California Fish and Game Commission recently uplist the tortoise from threatened to endangered?

For the tortoise, the Council concludes from the available scientific data that the demographic status of the tortoise and its ongoing declining trend demonstrate that there is not suitable habitat for the tortoise to survive, reproduce, and recruit new tortoises into the population to sustain the population well into the future. Please see Appendix A – Demographic Status and Trend of the Mojave Desert Tortoise including the Western Mojave Recovery Unit (attachment) for data and scientific references that support this conclusion.

Page 14, Conclusions and Recommendations; “The following mitigation measures are recommended:

1. Pre-construction surveys for burrowing owls, desert tortoise, and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.

a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as the desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.

b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas.”

We support the implementation of these survey protocols. However, these are not mitigation measures, Rather they are prescribed actions to collect data that are needed to determine the type and extent of impacts, if any, to the subject species and whether any impacts can be avoided, fully offset, or reduced by implementing mitigation measures. For example, the surveys for the MGS to determine presence-absence should have been performed and the results included in the Initial Study/Draft Mitigated Negative Declaration for the proposed project. This information should be included in the CEQA document and used to help assess the direct, indirect, and cumulative impacts to the MGS and other species protected under FESA and CESA (e.g., desert tortoise and burrowing owl) and other special status species.

In the General Biological Resources Assessment, we were unable to find a recommendation that the project proponent comply with the CDFW (2023a) survey guidelines for the MGS. This should be a standard requirement by the County for all proposed projects located in the known distribution of the MGS (CDFW 2019).

Pages 14 & 15, Conclusions and Recommendations: “If any sensitive species are observed on the property during future activities, CDFW and USFWS (as applicable) should be contacted to discuss specific mitigation measures which may be required for the individual species. CDFW and USFWS are the only agencies which can grant authorization for the “take” of any sensitive species and can approve the implementation of any applicable mitigation measures.”

The last part of this statement is not entirely correct. Avoidance is a form of mitigation and avoidance of take of a species protected under FESA or CESA does not necessarily require approval by USFWS or CDFW. However, USFWS and CDFW are the agencies that have the knowledge and experience to determine whether a mitigation measure would be effective when implemented and how to monitor the effectiveness of the implemented mitigation. Monitoring usually is required to determine the effectiveness of mitigation that is implemented.

Pages 16 & 17, Bibliography: The references used in preparing this General Biological Resources Assessment do not appear to be current. For example, the USFWS document that is cited for survey protocols for the tortoise is U.S. Fish and Wildlife Service 2010 Desert Tortoise Survey Protocol. The version that the USFWS uses currently for presence-absence and clearance surveys are provided in the Literature Cited section at the end of this letter.

In addition, we found no reference for the current CDFW (2023a) survey guidelines for the MGS.

Also, there may be an editing error in the citation for the version of the Natural Diversity Database that was used, which is given as 2014 (California Department of Fish and Game. 2014. Rarefind 3 Natural Diversity Database. Habitat and Data Analysis Branch. Sacramento, CA).

The General Biological Resources Assessment should be using nomenclature sources and scientific names that are current. For example, nomenclature for reptiles and amphibians on-site used Stebbins (2003) but should be updated to nomenclature used in Stebbins and McGuinness (2018), Hanson and Shedd (2025), and the California Herps website. The use of outdated species names leads to confusion about conservation status. Additionally, nomenclature for vegetation community classifications should follow the California Native Plant Society’s Manual of California Vegetation to be able to make proper determinations of sensitivity cross-referencing the CDFW California Natural Communities List (CDFW 2023b).

The County should be aware that the Commission was petitioned to list the Bendire’s thrasher (*Toxostoma bendirei*) and LeConte’s thrasher (*Toxostoma lecontei*) as a threatened or endangered species under CESA. CDFW will evaluate the petition and make its recommendation to the Commission whether to list one or both species likely in February 2026. If the recommendation is to list, the species will be candidates under CESA and treated as listed species until the Commission makes a final decision. The proposed project is located within the known distribution of these species. Thus, additional surveys and mitigation measures may be needed for implementation of the proposed project if these species become candidate species under CESA.

## **Initial Study and Draft Mitigated Negative Declaration**

Pages 28 – 30, IV. Biological Resources, Question a. Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?: In this section of the Initial Study/Draft Mitigated Negative Declaration, the County repeats the information from the General Biological Resources Assessment. Because some of this information is not correct and other information is missing (e.g., results from the MGS surveys, etc.), we recommend that the County review our comments on the General Biological Resources Assessment and correct/add this information to the CEQA document.

Pages 30 & 31, Mitigation Measure BIO-1 (desert tortoise): Mitigation: While the County has authority to require the implementation of mitigation measures to reduce the impacts to the tortoise/tortoise habitat, the information provided in the General Biological Resources Assessment confirms that tortoises occur within the project area and that tortoise sign was also found. Consequently, the one mitigation measure that the County did not require but that the data indicate is needed and as stated in the General Biological Resources Assessment is to consult with the USFWS and CDFW on obtaining ITPs from these agencies prior to initiating any surface disturbance associated with the proposed project. Please add this mitigation measure to the Initial Study/Draft Mitigated Negative Declaration and add that the implementation of all terms and conditions in the ITPs must occur, including monitoring and reporting.

The County is requiring clearance surveys for the tortoise. This is standard operating procedure when a tortoise or tortoise sign is found in the action area of a proposed project. However, the authorized biologist(s) conducting the clearance surveys would be handling any tortoises found during this survey. Handling is a form of take under FESA and CESA and authorization from USFWS and CDFW is required prior to taking a species. This authorization is in the form of an ITP under CESA and an ITP (for a non-federal action) or a biological opinion (for a federal action) under FESA. Please add these requirements to the CEQA document.

From the information provided in the Initial Study/Draft Mitigated Negative Declaration, there is no federal nexus under FESA. Although part of the proposed project would occur on BLM land, BLM has no enforcement authority to ensure that the minimization measures for the tortoise that the USFWS would require will be implemented on adjacent private land. Thus, the project proponent would need to obtain an ITP from USFWS and CDFW prior to implementing clearance surveys.

We request that the County specify that authorized biologists (authorized by USFWS and CDFW) are implementing fully the clearance survey methodology as described in USFWS (2009). This methodology requires two negative passes along transects spaced at 5-meter intervals as well as other requirements. We request this clarification so that the clearance survey for the tortoise is not confused with the presence-absence survey as described in USFWS (2019a), which requires a single pass along transects spaced at 10-meter intervals.

For the second bulleted mitigation measure, “If desert tortoise are found on-site during the pre-construction clearance survey, coordination will be required with the USFWS and CDFW to determine if avoidance and minimization measures can be implemented to avoid any direct or indirect impacts to desert tortoise, or if an ITP will need to be prepared, and approved by the USFWS and CDFW,” the presence-absence survey has already determined that tortoises use the site. Because of the type of activities that would be implemented in the proposed project and results of research on impacts to the tortoise/tortoise habitat from these activities, there will be direct and indirect adverse impacts. For example, the construction and use of a new road in occupied tortoise habitat has a suite of adverse direct and indirect impacts that would occur to the tortoise/tortoise habitat.

The construction/use of a new road and increased traffic on an existing/relocated road are sources of mortality for the tortoise. These sources of mortality are from both direct and indirect impacts to the tortoise. The impacts of road use are extensive and far reaching. Road construction, use, and maintenance impact the tortoise and other species of wildlife through numerous mechanisms that can include mortality from vehicle collisions; the loss, fragmentation, alteration/destruction of habitat; collection; vandalism; increased predation; and modification of behavior with increasing levels of stress and energy expenditure (Harju et al. 2024); and transport and spread of invasive non-native plants. Field studies (LaRue 1992, Nafus et al. 2013,; von Seckendorff Hoff and Marlow 2002) have shown impact zones from road use eliminate or substantially reduce tortoise numbers along/near roadways. These impacts are attributed to road kill with roads acting as a population sinks for tortoises.

Nafus et al. (2013) state that the ecologically affected areas along roads, otherwise known as “road-effect zones,” are those in which a change in wildlife abundance, demography, or behavior is observed. Von Seckendorff Hoff and Marlow (2002) reported that they detected reductions in tortoise numbers and sign from infrequent use of roadways to major highways with heavy use. There was a linear relationship between traffic level and reduction. For two graded, unpaved roads that were utility rights-of-ways (ROWs), the reduction in tortoises and sign was evident 1.1 to 1.4 km (3,620 to 4,608 feet = 0.68 to 0.87 mile) from the road on each side. For roads with more than 5000 vehicles per day, the reduction was evident more than 4000 meters (13,166 feet = 2.49 miles) from the road. They noted that the installation of exclusion fences and other barriers along roadways helps reduce direct tortoise mortalities. However, exclusion fencing needs to be monitored and maintained. It also fragments populations of tortoises and other wildlife.

Nafus et al. (2013) reported that roads may decrease tortoise populations via several possible mechanisms, including cumulative mortality from vehicle collisions and reduced population growth rates from the loss of larger reproductive animals. Other documented impacts from increased road use include increases in roadkill of wildlife species as well as tortoises, creating or increasing food subsidies for common ravens, and contributing to increases in raven numbers and predation pressure on the desert tortoise. The same “benefits” from road use occur to coyotes, also predators of the tortoise.

We were unable to find information in the General Biological Resources Assessment and the Initial Study/Draft Mitigated Negative Declaration on the impacts to the tortoise from the construction, use, and maintenance of the newly aligned Santa Fe Road and the new haul road. The proposed project would increase vehicle use on existing roads and create a new road in tortoise habitat resulting in increases in these direct and indirect impacts to the tortoise and tortoise habitat.

We found no analysis of these impacts or requirements to mitigate these impacts in the Initial Study/Draft Mitigated Negative Declaration. Please revise the CEQA document to include this information along with an analysis of the direct, indirect, and cumulative impacts from the construction, use, and maintenance of the proposed project for the tortoise and other species protected under CESA and FESA as well as other special status species whose distribution overlaps the project area.

An example of one indirect impact from the Project's construction, operations, and maintenance and how it is likely to 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.

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 roadkill. 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. Subsidies also include perch, roost, and nest sites on power towers, telephone poles, light posts, billboards, fences, freeway or railroad overpasses, abandoned vehicles, and buildings (Boarman 1993). The human-provided 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 part of the range of the tortoise. 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. Because the Mojave Desert has been in a multi-decade drought (Stahle 2020, Williams et al. 2022) due to climate change and these drought conditions are expected to continue and intensify in future years, increased predation pressure from coyotes on tortoises is expected to continue.

The proposed project would likely increase the availability of human-provided subsidies for predators of the tortoise including the common raven and coyote during the construction, operations, and maintenance phases of the proposed project. For example, during the construction phase the water used to control dust and the waste generated during construction including food brought to the project area 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. Grading the site would expose, injure, or kill fossorial animals and provide a subsidized food source for ravens and coyotes. During the operations and



maintenance phases, the presence of food waste in uncovered trash containers or litter from the meals of workers would provide food subsidies for ravens and coyotes that would attract them to the project area and increase the likelihood of them preying on tortoises in the project area. Vehicles driving to and from the project area daily are likely to result in roadkill of wildlife that would subsidize ravens and coyotes thus increasing their numbers in the project area and increasing predation pressure on the tortoises in the area.

Other impacts to the tortoise from new roads and vehicle use include repeatedly transporting invasive plants to the area by vehicle use, providing an enhanced supply of water to areas along roads that collect water during precipitation events and depositing it off of the shoulder of the road. This increased amount of water promotes the growth of non-native invasive plant species near the roadway (an area of surface disturbance) for its entire length, outcompetes native plants, provides a fuel source for fire, provides a recurring seed source of non-native seed for the seed bank near the road – all of this promotes the growth of non-native plants that provide inadequate nutrition for tortoises to survive (Drake et al. 2016). Thus, a new road and its use establish a long-term cycle that promotes the growth of invasive annual vegetation.

Although some of these food subsidies for ravens and coyotes are mitigated in the Initial Study/Mitigated Negative Declaration, many still remain. Thus, this impact is not fully mitigated or mitigated to the maximum extent practicable.

Rail lines have been documented to take tortoises and create a barrier to their movements. Popp and Bole (2017) describe a “rail effect zone” similar to a road effect zone. For herpetofauna, they indicate that the largest effects are seen within 500 m of railway, but smaller impacts have been detected up to 3500 m away. Railways have been noted to trap and potentially lead to overheating of smaller vertebrates between the tracks. Similar to roadkill, rail kill of small vertebrate animals would attract scavengers such as coyotes and ravens, predators of tortoises, and increase the predation rate on tortoises.

The mitigation the County proposes appears to be limited to addressing only actions conducted during the construction phase of the proposed project and only actions that would result in the direct take of a tortoise. We found no mitigation that was required during the use of the project area or the maintenance of the facilities at the project area. The use of the roads, rail line, and area inside the rail line for storage and processing of material from the quarry will likely continue for decades. We found no mitigation for the loss or degradation to tortoise habitat or the habitat of other species protected under CESA/special status species.

Because of the long-term impacts to the tortoise/tortoise habitat from the implementation of the proposed project, take of tortoises is likely to continue for this same time as long as tortoises continue to survive within a few miles of the project area. Mitigation should include the impacts during construction, use, and maintenance of the proposed project. It should also address, direct, indirect, and cumulative impacts to the tortoise and other species protected under FESA, CESA, and special status species.

Currently the priority for managing the tortoise is to substantially reduce mortality and manage desert tortoise habitat for persistence and connectivity of the species (Averill-Murray et al. 2021, Holcomb 2025 personal communication). The major threat to the survival of the tortoise is mortality from the impacts from human activities – direct, indirect, and cumulative impacts. These include human activities that result in the destruction, degradation and/or fragmentation of tortoise habitat; surface disturbance and introduction of non-native invasive plant species from vehicles and equipment brought to the project area during construction, operation, and maintenance; replacement of native forbs that have high nutritional and water value with low nutritional non-native invasive grasses (Drake et al. 2016); increased fire size, intensity, and frequency of human-caused wildfires fueled by non-native invasive plant species (Brooks and Esque 2002); increased predation from increased numbers of predators that utilize human-provided subsidies of food, water, and nesting locations (Boorman 2003); and increased human access that provides opportunities for vandalism and collecting tortoises for pets. Most of these are indirect impacts and they occur throughout much of the Mojave and Colorado Deserts in California resulting in cumulative impacts to the tortoise. Major sources of surface disturbance include residential, commercial, and industrial development projects and associated roads/highways (such as the proposed project); military training; and off-highway vehicle use (USFWS 2011, Tuma et al. 2016).

These sources of mortality must be substantially reduced or eliminated if the tortoise is to survive in the near future. The indirect impacts from the proposed project to the tortoise should be described, analyzed, and mitigated in the Initial Study/Mitigated Negative Declaration.

Please revise the Initial Study/Draft Mitigated Negative Declaration to add and require these effective mitigation measures to address the direct, indirect, and cumulative impacts to the tortoise from all phases of the proposed project and require monitoring to ensure that the mitigation is effective.

Page 31, Mitigation Measure BIO-2 (burrowing owl): “A pre-construction survey is required to be conducted per CDFW protocol to determine if any burrowing owls have moved on to the site since the May 2024 survey. As per CDFW Staff Report (2012) on Burrowing Owl Mitigation protocol, the most effective method of completing a pre-construction survey (take avoidance survey) should be performed no less than 14 days prior to ground disturbance, followed by a final preconstruction survey within 24 hours of breaking ground. If burrowing owls are observed, consultation with CDFW is required to determine if avoidance and minimization measures can be implemented to avoid any direct or indirect impacts to burrowing owl, or if an ITP will need to be prepared and approved by the CDFW.”

Because the burrowing owl is a recently designated candidate species under CESA, the County should require the project proponent to coordinate with CDFW to determine whether CDFW has modified the survey requirements for the owl because of its elevated legal status.

Page 31, Mitigation Measure BIO-4: “Temporary exclusion fencing will be installed around the rail loop disturbance area and a pre-construction clearance survey will be conducted that is supervised by an authorized biologist - any desert tortoises found in this fenced area shall be translocated a short distance, not more than 300 meters, outside of the fenced area to a site with

cover (i.e., at the mouth of a burrow or under a shrub). Fence installation must be overseen by an authorized biologist or desert tortoise monitor. This provision may be modified based on the Translocation Plan which shall be developed as part of the CDFW Incidental Take Permit (ITP) process.”

Note that an ITP from USFWS would also be required and that ITPs from CDFW and USFWS must be issued prior to any surface disturbance, conducting clearance surveys for the tortoise, or translocating a tortoise.

We question why temporary exclusion fencing rather than permanent fencing is required. Permanent fencing is required along the haul road north of the rail loop and the rail line south of the rail loop.

Page 32, Mitigation Measure BIO-5: “Permanent exclusion fencing with appropriately spaced shade structures shall be installed along both sides of the haul road followed by a pre-construction clearance survey within the haul road area by an authorized biologist. Fence installation must be overseen by an authorized biologist or desert tortoise monitor. Any tortoises found during the pre-construction clearance survey shall be translocated a short distance (i.e., not more than 300 meters) to either side of the fenced area to a site with cover (i.e., at the mouth of a burrow or under a shrub) or consistent with the Translocation Plan.”

The County should require that any tortoise exclusion fencing will be maintained by the landowner for the life of the project. Otherwise lack of maintenance may result in tortoises moving onto a road and result in take of tortoise on the roadway from a vehicle strike or other human activity because of improved access to tortoises/tortoise habitat.

A Translocation Plan should be required prior to moving a tortoise even if it is a short distance. This is because a myriad of factors (e.g., air temperature, time of day, season of year, physiological water balance of the tortoise, availability of cover, etc.) are crucial to the survival of a tortoise that is moved to a new location (USFWS 2020b). Please revise this mitigation measure to say, “Any tortoises found during the pre-construction clearance survey shall be translocated a short distance (i.e., not more than 300 meters) consistent with the Translocation Plan approved by USFWS and CDFW.”

Page 32, Mitigation Measure BIO-6: “The project shall submit the names and statements of qualifications of all proposed authorized biologists to the BLM for review and approval by USFWS at least 30 calendar days prior to initiation of any ground-disturbing activities and pre-activity surveys.”

Please add that CDFW should also receive for approval the names and statements of qualifications of all proposed authorized biologists.

Page 32, Mitigation Measure BIO-7: “The Applicant shall install at least two culverts in the ‘straight section’ of the rail extension that runs from the main BNSF rail line to the rail loop. Culverts shall be at least 36 inches diameter (per the Desert Renewable Energy Conservation Plan)”

and

Mitigation Measure BIO-8: “The Applicant shall include two tortoise escape channels on the rail lines allowing escape to the west side of the project. The placement and design of these escape channels must be approved by BLM. USFWS can provide schematics.”

For BIO-7, we suggest coordinating with the USFWS’s Desert Tortoise Recovery Office for the latest information on the design and placement of the required culverts that tortoises use (e.g., diameter of opening, length, bottom material, ingress and egress access, etc.) and monitoring requirements. As with the permanent tortoise exclusion fencing, the County should require the project proponent or their successor to regularly maintain the culverts. When the rail line on BLM land is no longer used, the project proponent should be required to remove the rail line and associated structures and return the area to pre-project conditions.

For BIO-8, please explain the reason for requiring tortoise escape channels on the rail lines allowing escape only to the west side of the proposed project.

The installation and maintenance of permanent tortoise exclusion fencing around the rail line loop is not mentioned in the Initial Study/Draft Mitigated Negative Declaration. Please explain why this measure is not required when the rail line to the south of the rail line loop will have permanent tortoise exclusion fencing along it.

Page 32, Mitigation Measure BIO-9: “The Applicant shall promptly remove and dispose of any roadkill found along the haul route or rail loop during operation to minimize subsidies for desert tortoise predators (i.e., common raven, coyotes, etc.).”

This mitigation measure should also be implemented during the construction phase of the proposed project.

Page 32, Mitigation Measure BIO-10: “All personnel working at the project will attend a Worker Environmental Awareness Program conducted by an authorized biologist (or desert tortoise monitor with approval by an authorized biologist) prior to the commencement of construction activities and each calendar year until the end of construction. This program will include at a minimum information on desert tortoise biology and identification and the protective measures required by the BLM of any personnel working at the project.”

Please add that “. . . the protective measures required by the BLM **and required in the ITPs issued by USFWS and CDFW** of any personnel working at the project.”

Page 33, Mitigation Measure BIO-11: “In the event a desert tortoise is found injured at the project, the project is responsible for notifying BLM and the USFWS immediately so that they can determine if further action is required and provide guidance on veterinary care. Written follow-up notification and a brief report will be submitted via email to the BLM within two calendar days of the incident. All veterinary care costs shall be the responsibility of the Applicant.”

Please modify this language to clarify who is responsible for implementing this mitigation measure. We recommend that this mitigation measure be revised to say, “In the event a desert tortoise is found injured at the project **or uninjured at the project**, the **project proponent** is responsible for notifying **immediately** BLM, CDFW, and the USFWS **including the Desert Tortoise Recovery Office immediately** so that they can determine if further action is required and provide guidance on veterinary care **if the tortoise is injured**. Written follow-up notification and a brief report will be submitted via email to the BLM, CDFW, and USFWS **including the DTRO** within two calendar days of the incident. All veterinary care costs shall be the responsibility of the Applicant.”

Page 33, Mitigation Measure BIO-12: “In the event a desert tortoise is found dead at the project, the project is responsible for securing the carcass (i.e., putting a tarp over it) and notifying BLM and the USFWS within 24 hours so that they can determine if further action is required. Written follow-up notification and a brief report will be submitted via email to the BLM within two calendar days of the incident.”

Please add CDFW and the DTRO to the entities that would be notified within 24 hours, and clarify that the project proponent, not the project, is responsible for securing the carcass. In addition, the typical protocol is to require photographs of the dead tortoise before it is moved and the area where the tortoise was found to document the conditions/cause of mortality and implement appropriate actions to avoid future mortalities. Please include these modifications in this mitigation measure.

Page 33, Mitigation Measure BIO-13: Ballast size for the base of rail lines shall be sized large enough to deter passage of desert tortoises. Size of this ballast will be discussed with the Applicant, BLM and USFWS. Please add CDFW and DTRO to the entities that would be included in this discussion.

Page 33, Mitigation Measure BIO-16: “If a desert tortoise is found under vehicle, equipment, or within construction materials, an authorized biologist will be contacted to capture and translocate the animal a short distance (not more than 300 meters) to a site with cover (i.e., at the mouth of a burrow or under a shrub).”

Please clarify in this mitigation measure that before it can be implemented, the project proponent must first obtain an ITP from CDFW and USFWS. This mitigation measure, when implemented, is a form of take under FESA and CESA. Therefore, the project proponent must have ITPs for the tortoise to legally take a tortoise.

Pages 31 -33: A standard mitigation measure for the tortoise that we did not find in the Initial Study/Draft Mitigated Negative Declaration is for workers at the proposed project to not bring firearms to the project area. Please add this requirement.

We found no requirement in this section of the Initial Study/Mitigated Negative Declaration for the project proponent to implement the CDFW required MGS trapping surveys. Please add this as a requirement to the Initial Study/Draft Mitigated Negative Declaration. This is a requirement by CDFW for projects that occur in the known range of the State-threatened MGS. Also, please add that if MGS presence is found after implementing fully the CDFW survey protocol, the project

proponent will obtain an ITP from CDFW prior to implementing any ground disturbance and will implement all terms and conditions of the ITP. For more information on CDFW's requirement, please see our earlier comments under "Page 5, Methodologies, Mohave Ground Squirrel" and "Page 11, Results, Federal and State Listed Species, Mohave Ground Squirrel."

After reviewing this Initial Study/Draft Mitigated Negative Declaration and other recent Initial Studies for proposed projects in the desert portion of San Bernardino County, our conclusion is that the County does not require a project proponent to comply with the survey methodologies for listed and special status species that have been developed by USFWS and CDFW prior to preparing a draft CEQA document. The County requires general surveys of the project area but appears to have no minimum requirements for when or how these visual surveys or site visits are conducted. Yet these arbitrary surveys are used by the County to make its CEQA determinations on what mitigation, if any, will be required for proposed projects.

In addition, the "mitigation" that is then recommended by the County may include that the project proponent conduct the CDFW and USFWS surveys for the listed/special status species. As previously reported to the County in our comment letters (e.g., Kramer Junction Travel Stop, Cactus Club Hotel, Kramer, Tentative Tract Map 20577, Landers Hotel), the implementation of these survey methods is **not** mitigation; it is data collection to determine whether the subject listed/special status species likely uses the project area, would be impacted directly or indirectly from the implementation of the proposed project, and the extent and duration of the impacts. Once the results from implementation of surveys for the species are known along with literature searches of occurrences and data bases with similar information (e.g., California Natural Diversity Database, USFWS's IPaC [Information for Planning and Consulting] etc.), then the County can use this information along with information from the scientific literature and reports to determine the direct, indirect, and cumulative impacts of the proposed action to the identified species and its habitat.

Page 36, IV. Biological Resources, Question f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?

"The Project Site is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan. Therefore, no impacts are identified or anticipated, and no mitigation measures are required."

The County should contact the USFWS to determine whether they have adopted a General Conservation Plan for the tortoise, which is a regional habitat conservation plan (HCP). If they have, the response to paragraph f would need to be changed to reflect the existence of this regional HCP.

Under the FESA, its implementing regulations, and the USFWS's HCP Handbook that further explains the status and regulations, issuance of an ITP requires minimizing and mitigating the **impacts of the taking** [emphasis added] to the maximum extent practicable, not the numerical count of tortoises to be taken. Under California Fish and Game Code for issuing an ITP for species listed under CESA, the requirement is to fully mitigate the impacts. Thus, the mitigation for an ITP usually requires that the loss and degradation of habitat on non-federal lands be fully mitigated. We did not see this requirement in the mitigation listed in the Initial Study/Draft Mitigated

Negative Declaration. We hope this was an inadvertent oversight by the County and that in the final CEQA document, the County will require that any compensation required in an ITP for destroyed or degraded habitats for species protected under FESA or CESA will also be required by the County in its final CEQA document.

Pages 71-73, XXI. Mandatory Findings of Significance: In the section on “Mandatory Findings of Significance,” two of the three questions under the CEQA Handbook are applicable to the tortoise. They are:

Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

and

Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)

To assist the County in answering these two questions regarding the impacts to the tortoise from the construction, operations, and maintenance of the proposed project, we are attaching “Appendix A – Demographic Status and Trend of the Mojave Desert Tortoise including Tortoises in the Western Mojave Recovery Unit.” Note that the proposed project is in the Western Mojave Recovery Unit, the tortoise populations in this Unit are below the density needed for population viability (Allison and McLuckie 2018), and the density of tortoises continues to decline in the Western Mojave Recovery Unit (USFWS 2025). The adult tortoise population declined by about 50 percent and the number of juvenile tortoises decline by 91 percent between 2004 and 2014 (Allison and McLuckie 2018), and this downward trend continues (USFWS 2025). Also note that the tortoise cannot achieve recovery, that is, be removed from the list of threatened species under FESA unless it achieves recovery in all five recovery units including the Western Mojave Recovery Unit (USFWS 2011). This includes having viable populations. We conclude that having populations below the density needed for population viability means these populations are below the level needed to be self-sustaining, and any additional impacts to these populations would exacerbate this declining trend and remain below the level of self-sustaining. Using the information in this Appendix, we conclude the answer to these two questions is “yes,” which means the impacts from the proposed project would be significant. Please include this information in the County’s analysis of the project in the CEQA document.

Because the County has prepared a draft Initial Study/Mitigated Negative Declaration, it contains mitigation and monitoring sections that are supposed to demonstrate that their implementation will reduce the level of impacts from the construction, use, and maintenance of the proposed project to less than significant. However, until the County (1) determines the use of the project area and surrounding area by tortoises; (2) determines the type and extent of the direct, indirect, and cumulative impacts to the tortoise/tortoise habitat from the construction, use and maintenance of the proposed project; and (3) analyzes these impacts to the tortoise, the County is unable to identify the appropriate mitigation and monitoring to offset these impacts. Consequently, the County is currently unable to determine whether a mitigated negative declaration or an environmental impact report is the appropriate CEQA document to prepare for the proposed project with respect to impacts to the tortoise.



The County should reassess all relevant biological data, require appropriate surveys for special status species including the tortoise, MGS, and burrowing owl, and use the results of these surveys along with the available literature on special status species to determine the types and extent of the direct, indirect and cumulative impacts to these species including the tortoise. Only then will the County have sufficient information to determine the appropriate and effective mitigation required to reduce the level of impacts to less than significant and determine whether a mitigated negative declaration or an environmental impact report is the appropriate CEQA document to prepare.

Regarding significant impacts and cumulative impacts, it appears that the County relied on the “professional opinion” of the biologist(s) who prepared the General Biological Resources Assessment that the proposed project will have no significant environment impact to the identified species. We remind the County that of the general biological reports/assessments we have reviewed recently, there is no scientific information provided in these reports to support these opinions and therefore no scientific information to support the County’s determinations in their CEQA documents. Thus, the County is not on “solid ground” should their CEQA decision be legally challenged.

We offer to assist the County to work toward a scientifically supported process that the County would implement to comply with the purpose and intent of CEQA in the development of initial studies and mitigated negative declarations with respect to the desert tortoise and other species protected under the FESA and CESA.

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 County 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 the County continue to notify the Council at [eac@deserttortoise.org](mailto:eac@deserttortoise.org) of any proposed projects that may affect the desert tortoise so we may comment on them to ensure the County fully considers and implements actions to conserve these tortoises as part of its directive to conserve biodiversity on lands it oversees in San Bernardino County.

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,



Mari Quillman  
Desert Tortoise Council, Chairperson

**Attachment – Appendix A:** Demographic Status and Trend of the Mojave Desert Tortoise including the Western Mojave Recovery Unit

Cc: Brian Croft, Assistant Field Supervisor, Palm Springs Fish and Wildlife Office, U.S. Fish and Wildlife Office, [brian\\_croft@fws.gov](mailto:brian_croft@fws.gov)  
Peter Sanzenbacher, Mojave Desert Division Supervisor, [peter\\_sanzenbacher@fws.gov](mailto:peter_sanzenbacher@fws.gov)  
Heidi Calvert, Regional Manager, Region 6, Inland and Desert Region, California Department of Fish and Wildlife, [Heidi.Calvert@wildlife.ca.gov](mailto:Heidi.Calvert@wildlife.ca.gov)  
Steven Recinos, Environmental Scientist, Region 6, Inland Deserts Region, California Department of Fish and Wildlife, [steven.recinos@wildlife.ca.gov](mailto:steven.recinos@wildlife.ca.gov)

## Literature Cited

- Allison L.J. and A.M. McLuckie. 2018. Population trends in Mojave desert tortoises (*Gopherus agassizii*). *Herpetological Conservation and Biology*. 2018 Aug 1;13(2):433-52. [http://www.herpconbio.org/Volume\\_13/Issue\\_2/Allison\\_McLuckie\\_2018.pdf](http://www.herpconbio.org/Volume_13/Issue_2/Allison_McLuckie_2018.pdf)
- 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>
- 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>
- 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. 2003. Managing a Subsidized Predator Population: Reducing Common Raven Predation on Desert Tortoises. *Environmental Management* 32, 205–217 (2003). <https://doi.org/10.1007/s00267-003-2982-x>
- Boarman, W.I., M.A. Patten, R.J. Camp, and S.J. Collis. 2006. Ecology of a population of subsidized predators: Common ravens in the central Mojave Desert, California. *Journal of Arid Environments* 67 (2006) 248–261. <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. <https://pubs.usgs.gov/publication/1008328>
- [CDFW] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. March 7, 2012. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline>
- [CDFW] California Department of Fish and Wildlife. 2019. A Conservation Strategy for the Mohave Ground Squirrel, *Xerospermophilus mohavensis*. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=171301&inline>
- [CDFW] California Department of Fish and Wildlife. 2023a. California Department of Fish and Wildlife Mohave Ground Squirrel Survey Guidelines. Revised October 2023. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83975&inline>

[CDFW] California Department of Fish and Wildlife. 2023b. Natural Communities List. Website: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>

[CDFW] California Department of Fish and Wildlife. 2024a. Status Review for Mojave Desert Tortoise (*Gopherus agassizii*) Report to the Fish and Game Commission, February 2024. <https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=CESA-Listing>

[CDFW] California Department of Fish and Wildlife. 2024b. 2022-2024 News Releases. California Fish and Game Commission Holds Hybrid Meeting, April 23, 2024. <https://wildlife.ca.gov/News/Archive/california-fish-and-game-commission-holds-hybrid-meeting11>

California Herps. 2025. A Guide to the Amphibians and Reptiles of California. Website: <http://www.californiaherps.com/>

[CNPS] California Native Plant Society. 2025. A Manual of California Vegetation Online. Website: <https://vegetation.cnps.org/>

[Commission] California Fish and Game Commission. 2025. CESA, Petitions to List Species Under the California Endangered Species Act, Finalized Petitions. <https://fgc.ca.gov/CESA#1089124-mojave-aka-agassizs-desert-tortoise-2025>

[County] San Bernardino County. 2025. Initial Study and Mitigated Negative Declaration LCM Railroad PROJ-2024-00080 APN 0496-011-07. September 2025. <https://lus.sbcounty.gov/wp-content/uploads/sites/48/PROJ-2024-00080-LCM-RAILROAD-Initial-Study-MND-FINAL.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. [https://defenders.org/sites/default/files/2020-03/Desert%20Tortoise%20Petition%203\\_20\\_2020%20Final\\_0.pdf](https://defenders.org/sites/default/files/2020-03/Desert%20Tortoise%20Petition%203_20_2020%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>

Hansen, R. W. and J. D. Shedd. 2025. California Amphibians and Reptiles. Princeton Field Guides, Princeton University Press. Princeton, New Jersey.

Harju, S., S. Cambrin, and J. Berg. 2024. Indirect impacts of a highway on movement behavioral states of a threatened tortoise and implications for landscape connectivity. *Scientific Reports* 14:716. <https://doi.org/10.1038/s41598-024-51378-z> <https://www.nature.com/articles/s41598-024-51378-z.pdf>

- Holcomb, K.L. 2025. Personal communication. Desert Tortoise Recovery Office. U.S. Fish and Wildlife Service, Palm Springs, CA.
- 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://doi.org/10.2193/0091-7648\(2004\)32\[244:DCOCRA\]2.0.CO;2](https://doi.org/10.2193/0091-7648(2004)32[244:DCOCRA]2.0.CO;2)
- LaRue, E. 1992. Distribution of desert tortoise sign adjacent to Highway 395, San Bernardino County, California. *Proceedings of the 1992 Symposium of the Desert Tortoise Council*.
- 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>
- Nafus, M.G., T.D. Tuberville, K.A. Buhlmann, and B.D. Todd. 2013. Relative abundance and demographic structure of Agassiz’s desert tortoise (*Gopherus agassizii*) along roads of varying size and traffic volume. *Biological Conservation* 162 (2013) 100–106.  
<https://www.sciencedirect.com/science/article/abs/pii/S0006320713001043>
- 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>
- 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>
- Popp, J.N., and S.P. Boyle. 2017. Railway ecology: Underrepresented in science? *Basic and Applied Ecology* 19 (2017) 84–93.  
<https://doi.org/10.1016/j.baae.2016.11.006>
- RCA Associates, Inc. 2024. General Biological Resources Assessment Rail Loop Project, Hinkley, San Bernardino County, California. June 24, 2024.  
<https://lus.sbcounty.gov/wp-content/uploads/sites/48/Appendix-A-PROJ-2024-00080-LCM-RAILROAD-BIOLOGICAL-ASSESSMENT-FINAL.pdf>
- Stahle, D.W. 2020. Anthropogenic megadrought. *Science* 368 (6488): 238-239. DOI: 10.1126/science.abb6902.  
<https://par.nsf.gov/servlets/purl/10166645>
- Stebbins, R. C. and S. M. McGinnis. 2018. *Field Guide to Amphibians and Reptiles of California*. California Natural History Guides, University of California Press. Berkeley, California.

- Tuma, M.W., C. Millington, N. Schumaker, and P. Burnett. 2016. Modeling Agassiz's Desert Tortoise Population Response to Anthropogenic Stressors. *Journal of Wildlife Management* 80(3):414–429.  
<https://wildlife.onlinelibrary.wiley.com/doi/abs/10.1002/jwmg.1044>
- [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. 2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, California and Nevada Region, Sacramento, California.  
<https://www.fws.gov/sites/default/files/documents/USFWS.2011.RRP%20for%20the%20Mojave%20Desert%20Tortoise.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2016. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2015 and 2016 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.  
<https://www.fws.gov/sites/default/files/documents/USFWS.2016%20report.%20Rangewide%20monitoring%20report%202015-16.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2018. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2017 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.  
<https://www.fws.gov/sites/default/files/documents/USFWS.2018%20report.%20Rangewide%20monitoring%20report%202017.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2019a. 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)
- [USFWS] U.S. Fish and Wildlife Service. 2019b. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2018 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.  
<https://www.fws.gov/sites/default/files/documents/USFWS.2019%20report.%20Rangewide%20monitoring%20report%202018.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2020a. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2019 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 42 pages.  
[https://www.fws.gov/sites/default/files/documents/2019\\_Rangewide%20Mojave%20Desert%20Tortoise%20Monitoring.pdf](https://www.fws.gov/sites/default/files/documents/2019_Rangewide%20Mojave%20Desert%20Tortoise%20Monitoring.pdf)

- [USFWS] U.S. Fish and Wildlife Service. 2020b. Revised Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance and Attachments 1 and 2. 52 pp.  
<https://www.fws.gov/media/revised-usfws-dt-translocation-guidance>  
<https://www.fws.gov/media/translocation-guidance-attachment-1-clearance-survey-protocol-0>  
<https://www.fws.gov/media/translocation-guidance-attachment-2-temporary-captive-care-wild-mojave-desert-tortoises>
- [USFWS] U.S. Fish and Wildlife Service. 2022a. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2020 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.  
<https://www.fws.gov/sites/default/files/documents/USFWS.2022%20report.%20Rangewide%20monitoring%20report%202020.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2022b. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2021 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.  
<https://www.fws.gov/sites/default/files/documents/USFWS.2022%20report.%20Rangewide%20monitoring%20report%202021.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2025. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2024 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Las Vegas, Nevada.  
<https://www.fws.gov/sites/default/files/documents/2025-08/2024-range-wide-mojave-desert-tortoise-monitoring-report.pdf>
- von Seckendorff Hoff, K. and R. Marlow. 2002. Impacts of vehicle road traffic on desert tortoise populations with consideration of conservation of tortoise habitat in southern Nevada. *Chelonian Conservation and Biology* 4: 449–456.
- 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>

## **Appendix A**

### **Demographic Status and Trend of the Mojave Desert Tortoise including the Western Mojave Recovery Unit**

Status of the Population of the Mojave Desert Tortoise: The Council provides the following information for resource and land management agencies so that these data may be included and analyzed in their project and land management documents and aid them in making management decisions that affect the Mojave desert tortoise (tortoise).

There are 17 populations of Mojave desert tortoise described below that occur in Critical Habitat Units (CHUs) and Tortoise Conservation Areas (TCAs); 14 are on lands managed by the BLM; 8 of these are in the California Desert Conservation Area (CDCA).

As the primary land management entity in the range of the Mojave desert tortoise, the Bureau of Land Management's (BLM's) implementation of a conservation strategy for the Mojave desert tortoise in the CDCA through implementation of its Resource Management Plan and Amendments through 2014 has resulted in the following changes in the status for the tortoise throughout its range and in California from 2004 to 2014 (**Table 1, Table 2**; USFWS 2015, Allison and McLuckie 2018). The Council believes these data show that BLM and others have failed to implement an effective conservation strategy for the Mojave desert tortoise as described in the recovery plan (both USFWS 1994a and 2011), and have contributed to tortoise declines in density and abundance between 2004 to 2014 (**Table 1, Table 2**; USFWS 2015, Allison and McLuckie 2018) with declines or no improvement in population density from 2015 to 2024 (**Table 3**; USFWS 2016, 2018, 2019, 2020, 2022a, 2022b, 2025).

Important points from these tables include the following:

#### *Change in Status for the Mojave Desert Tortoise Range-wide*

- Ten of 17 populations of the Mojave desert tortoise declined from 2004 to 2014.
- Eleven of 17 populations of the Mojave desert tortoise are below the population viability threshold. These 11 populations represent 89.7 percent of the range-wide habitat in CHUs/TCAs.

#### *Change in Status for the Western Mojave Recovery Unit – California*

- This recovery unit had a 51 percent decline in tortoise density from 2004 to 2014.
- Tortoise populations in all three TCAs in this recovery unit have densities that are below viability.

#### *Change in Status for the Superior-Cronese Tortoise Population in the Western Mojave Recovery Unit.*

- The population in this recovery unit experienced declines in densities of 61 percent from 2004 to 2014. In addition, there was a 51 percent decline in tortoise abundance.
- This population has densities less than needed for population viability (USFWS 1994a).



**Table 1.** Summary of 10-year trend data for the 5 Recovery Units and 17 CHUs/TCAs for Mojave 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/km<sup>2</sup> and standard errors = SE), and the percent change in population density between 2004 and 2014. Populations below the viable level of 3.9 breeding individuals/km<sup>2</sup> (10 breeding individuals per mi<sup>2</sup>) (assumes a 1:1 sex ratio) or showing a decline from 2004 to 2014 are in red.

| Recovery Unit:<br>Designated Critical Habitat<br>Unit <sup>1</sup> /Tortoise Conservation Area | Surveyed area<br>(km <sup>2</sup> ) | % of total habitat<br>area in Recovery<br>Unit & CHU/TCA | 2014<br>density/km <sup>2</sup><br>(SE) | % 10-year change<br>(2004–2014) |
|------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------|-----------------------------------------|---------------------------------|
| <b>Western Mojave, CA</b>                                                                      | <b>6,294</b>                        | <b>24.51</b>                                             | <b>2.8 (1.0)</b>                        | <b>–50.7 decline</b>            |
| 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                   |
| <b>Colorado Desert, CA</b>                                                                     | <b>11,663</b>                       | <b>45.42</b>                                             | <b>4.0 (1.4)</b>                        | <b>–36.25 decline</b>           |
| 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                |
| <b>Northeastern Mojave</b>                                                                     | <b>4,160</b>                        | <b>16.2</b>                                              | <b>4.5 (1.9)</b>                        | <b>+325.62 increase</b>         |
| 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               |
| <b>Eastern Mojave, NV &amp; CA</b>                                                             | <b>3,446</b>                        | <b>13.42</b>                                             | <b>1.9 (0.7)</b>                        | <b>–67.26 decline</b>           |
| 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                  |
| <b>Upper Virgin River</b>                                                                      | <b>115</b>                          | <b>0.45</b>                                              | <b>15.3 (6.0)</b>                       | <b>–26.57 decline</b>           |
| Red Cliffs Desert                                                                              | 115                                 | 0.45                                                     | 15.3 (6.0)                              | –26.57 decline                  |
| <b>Range-wide Area of CHUs -<br/>TCAs/Range-wide Change in<br/>Population Status</b>           | <b>25,678</b>                       | <b>100.00</b>                                            |                                         | <b>–32.18 decline</b>           |

<sup>1</sup> U.S. Fish and Wildlife Service. 1994b. Endangered and threatened wildlife and plants; determination of critical habitat for the Mojave population of the desert tortoise. Federal Register 55(26):5820-5866. Washington, D.C.

**Table 2.** 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<br>Habitat (km <sup>2</sup> ) | 2004<br>Abundance | 2014<br>Abundance | Change in<br>Abundance | Percent Change in<br>Abundance |
|-----------------------|---------------------------------------|-------------------|-------------------|------------------------|--------------------------------|
| <b>Western Mojave</b> | <b>23,139</b>                         | <b>131,540</b>    | <b>64,871</b>     | <b>–66,668</b>         | <b>–51%</b>                    |
| 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%                           |
| <b>Total</b>          | <b>68,501</b>                         | <b>336,393</b>    | <b>212,343</b>    | <b>–124,050</b>        | <b>–37%</b>                    |



**Table 3.** Summary of data for Agassiz’s desert tortoise, *Gopherus agassizii* (=Mojave desert tortoise) from 2004 to 2024 for the 5 Recovery Units and 17 Critical Habitat Units (CHUs)/Tortoise Conservation Areas (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/km<sup>2</sup> 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/km<sup>2</sup> (10 breeding individuals per mi<sup>2</sup>) (assumes a 1:1 sex ratio) (USFWS 1994a, 2015) or showing a decline from 2004 to 2014 are in **red**.

| Recovery Unit:<br>Designated<br>CHU/TCA & | % of total<br>habitat<br>area in<br>Recovery<br>Unit &<br>CHU/TCA | 2004<br>density<br>/ km <sup>2</sup> | 2014<br>density/<br>km <sup>2</sup><br>(SE) | % 10-year<br>change<br>(2004–<br>2014) | 2015<br>density<br>/ km <sup>2</sup> | 2016<br>density<br>/ km <sup>2</sup> | 2017<br>density<br>/ km <sup>2</sup> | 2018<br>density<br>/ km <sup>2</sup> | 2019<br>density<br>/ km <sup>2</sup> | 2020<br>density<br>/ km <sup>2</sup> | 2021<br>density<br>/ km <sup>2</sup> | 2024<br>density<br>/km <sup>2</sup> |
|-------------------------------------------|-------------------------------------------------------------------|--------------------------------------|---------------------------------------------|----------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|
| <b>Western Mojave,<br/>CA</b>             | <b>24.51</b>                                                      |                                      | <b>2.8 (1.0)</b>                            | <b>–50.7<br/>decline</b>               |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                     |
| Fremont-Kramer                            | 9.14                                                              |                                      | 2.6 (1.0)                                   | –50.6<br>decline                       | 4.5                                  | No data                              | 4.1                                  | No data                              | 2.7                                  | 1.7                                  | No data                              | 1.8                                 |
| Ord-Rodman                                | 3.32                                                              |                                      | 3.6 (1.4)                                   | –56.5<br>decline                       | No data                              | No data                              | 3.9                                  | 2.5/3.4*                             | 2.1/2.5*                             | No data                              | 1.9/2.5*                             | 2.7                                 |
| Superior-Cronese                          | 12.05                                                             |                                      | 2.4 (0.9)                                   | –61.5<br>decline                       | 2.6                                  | 3.6                                  | 1.7                                  | No data                              | 1.9                                  | No data                              | No data                              | No data                             |
| <b>Colorado Desert,<br/>CA</b>            | <b>45.42</b>                                                      |                                      | <b>4.0 (1.4)</b>                            | <b>–36.25<br/>decline</b>              |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                     |
| Chocolate Mtn<br>AGR, CA                  | 2.78                                                              |                                      | 7.2 (2.8)                                   | –29.77<br>decline                      | 10.3                                 | 8.5                                  | 9.4                                  | 7.6                                  | 7.0                                  | 7.1                                  | 3.9                                  | 7.4                                 |
| Chuckwalla, CA                            | 10.97                                                             |                                      | 3.3 (1.3)                                   | –37.43<br>decline                      | No data                              | No data                              | 4.3                                  | No data                              | 1.8                                  | 4.6                                  | 2.6                                  | No data                             |
| Chemehuevi, CA                            | 14.65                                                             |                                      | 2.8 (1.1)                                   | –64.70<br>decline                      | No data                              | 1.7                                  | No data                              | 2.9                                  | No data                              | 4.0                                  | No data                              | No data                             |
| Fenner, CA                                | 6.94                                                              |                                      | 4.8 (1.9)                                   | –52.86<br>decline                      | No data                              | 5.5                                  | No data                              | 6.0                                  | 2.8                                  | No data                              | 5.3                                  | No data                             |
| Joshua Tree, CA                           | 4.49                                                              |                                      | 3.7 (1.5)                                   | +178.62<br>increase                    | No data                              | 2.6                                  | 3.6                                  | No data                              | 3.1                                  | 3.9                                  | No data                              | No data                             |
| Pinto Mtn, CA                             | 1.98                                                              |                                      | 2.4 (1.0)                                   | –60.30<br>decline                      | No data                              | 2.1                                  | 2.3                                  | No data                              | 1.7                                  | 2.9                                  | No data                              | No data                             |

|                                                                                            |               |                           |                   |                             |         |         |         |         |         |         |         |         |
|--------------------------------------------------------------------------------------------|---------------|---------------------------|-------------------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Piute Valley, NV                                                                           | 3.61          |                           | 5.3 (2.1)         | +162.36<br>increase         | No data | 4.0     | 5.9     | No data | No data | No data | 3.9     | 4.0     |
| <b>Northeastern<br/>Mojave AZ, NV, &amp;<br/>UT</b>                                        | <b>16.2</b>   |                           | <b>4.5 (1.9)</b>  | <b>+325.62<br/>increase</b> |         |         |         |         |         |         |         |         |
| Beaver Dam<br>Slope, NV,<br>UT, & AZ                                                       | 2.92          |                           | 6.2 (2.4)         | +370.33<br>increase         | No data | 5.6     | 1.3     | 5.1     | 2.0     | No data | No data | 1.7     |
| Coyote Spring, NV                                                                          | 3.74          |                           | 4.0 (1.6)         | + 265.06<br>increase        | No data | 4.2     | No data | No data | 3.2     | No data | No data | 2.7     |
| Gold Butte, NV &<br>AZ                                                                     | 6.26          |                           | 2.7 (1.0)         | + 384.37<br>increase        | No data | No data | 1.9     | 2.3     | No data | No data | 2.4     | No data |
| Mormon Mesa,<br>NV                                                                         | 3.29          |                           | 6.4 (2.5)         | + 217.80<br>increase        | No data | 2.1     | No data | 3.6     | No data | 5.2     | 5.2     | No data |
| <b>Eastern Mojave,<br/>NV &amp; CA</b>                                                     | <b>13.42</b>  |                           | <b>1.9 (0.7)</b>  | <b>-67.26<br/>decline</b>   |         |         |         |         |         |         |         |         |
| El Dorado Valley,<br>NV                                                                    | 3.89          |                           | 1.5 (0.6)         | -61.14<br>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<br>decline           | 1.9     | No data | No data | 3.7     | 2.6     | No data | 1.8     |         |
| <b>Upper Virgin<br/>River, UT &amp; AZ</b>                                                 | <b>0.45</b>   |                           | <b>15.3 (6.0)</b> | <b>-26.57<br/>decline</b>   |         |         |         |         |         |         |         |         |
| Red Cliffs<br>Desert**                                                                     | 0.45          | 29.1<br>(21.4-<br>39.6)** | 15.3 (6.0)        | -26.57<br>decline           | 15.0    | No data | 19.1    | No data | 17.2    | No data | No data | 17.5†   |
| <b>Rangewide Area<br/>of CHUs -<br/>TCAs/Rangewide<br/>Change in<br/>Population Status</b> | <b>100.00</b> |                           |                   | <b>-32.18<br/>decline</b>   |         |         |         |         |         |         |         |         |

\*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.

†Results from 2023

*Change in Status for the Mojave Desert Tortoise in California*

- Eight of 10 populations of the Mojave desert tortoise in California declined from 29 to 64 percent from 2004 to 2014 with implementation of tortoise conservation measures in the Bureau of Land Management's Northern and Eastern Colorado Desert (NECO), Northern and Eastern Mojave Desert (NEMO), and Western Mojave Desert (WEMO) Plans.
- Eight of 10 populations of the Mojave desert tortoise in California are below the viability threshold for density. These eight populations represent 87.45 percent of the habitat in California that is in CHU/TCAs.
- The two viable populations of the Mojave desert tortoise in California are declining. If their rates of decline from 2004 to 2014 continue, these two populations will no longer be viable by about 2030.

*Change in Status for the Mojave Desert Tortoise on BLM Land in California*

- Eight of eight populations of Mojave desert tortoise on lands managed by the BLM in California declined from 2004 to 2014.
- Seven of eight populations of Mojave desert tortoise on lands managed by the BLM in California are no longer viable.

*Change in Status for Mojave Desert Tortoise Populations in California that Are Moving toward Meeting Recovery Criteria*

- The only population of Mojave desert tortoise in California that did not decline is on land managed by the National Park Service, which increased 178 percent from 2004 to 2014.

Important points to note from the data from 2015 to 2024 in Table 3 are:

*Change in Status for the Mojave Desert Tortoise in the Western Mojave Recovery Unit:*

- The density of tortoises continues to decline in the Western Mojave Recovery Unit
- The density of tortoises from 2015 to 2024 continues to fall below the density needed for population viability.

*Change in Status for the Mojave Desert Tortoise in the Colorado Desert Recovery Unit:*

- Many of the populations in this recovery unit have densities that are near the threshold for population viability.

*Change in Status for the Mojave Desert Tortoise in the Northeastern Mojave Recovery Unit:*

- Two of the three population with densities greater than needed for population viability declined to level below the minimum viability threshold.
- Three of the four populations in this recovery unit have densities below the minimum density needed for population viability.

*Change in Status for the Mojave Desert Tortoise in the Eastern Mojave Recovery Unit:*

- Both populations in this recovery unit have densities below the minimum density needed for population viability.

*Change in Status for the Mojave Desert Tortoise in the Upper Virgin River Recovery Unit:*

- The one population in this recovery unit is small and appears to have stable densities.

The Endangered Mojave Desert Tortoise: The Council believes that the Mojave desert tortoise meets the definition of an endangered species. In the FESA, Congress defined an “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range...” In the California Endangered Species Act (CESA), the California legislature defined an “endangered species” as a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant, which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes (California Fish and Game Code § 2062). Because most of the populations of the Mojave desert tortoise were non-viable in 2014, most are declining, and the threats to the Mojave desert tortoise are numerous and have not been substantially reduced throughout the species’ range, the Council believes the Mojave desert tortoise should be designated as an endangered species by the USFWS and California Fish and Game Commission. Despite claims by USFWS (Averill-Murray and Field 2023) that a large number of individuals of a listed species and an increasing population trend in part of the range of the species prohibits it from meeting the definitions of endangered, we are reminded that the tenants of conservation biology include numerous factors when determining population viability. The number of individuals present is one of a myriad of factors (e.g., species distribution and density, survival strategy, sex ratio, recruitment, genetics, threats including climate change, etc.) used to determine population viability. In addition, a review of all the available data does not show an increasing population trend (please see Tables 1 and 3).

**Literature Cited in Appendix on Status and Trend of the Mojave Desert Tortoise**

Allison L.J. and A.M. McLuckie. 2018. Population trends in Mojave desert tortoises (*Gopherus agassizii*). *Herpetological Conservation and Biology*. 2018 Aug 1. 13(2):433–452. [http://www.herpconbio.org/Volume\\_13/Issue\\_2/Allison\\_McLuckie\\_2018.pdf](http://www.herpconbio.org/Volume_13/Issue_2/Allison_McLuckie_2018.pdf)

or

<https://www.fws.gov/media/allison-and-mcluckie2018mojave-desert-tortoise-population-trends>

[USFWS] U.S. Fish and Wildlife Service. 1994a. Desert tortoise (Mojave population) Recovery Plan. U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. 73 pages plus appendices. [https://ecos.fws.gov/docs/recovery\\_plan/940628.pdf](https://ecos.fws.gov/docs/recovery_plan/940628.pdf)

[USFWS] U.S. Fish and Wildlife Service. 1994b. Endangered and threatened wildlife and plants; determination of critical habitat for the Mojave population of the desert tortoise. Federal Register 55(26):5820-5866. Washington, D.C.

[USFWS] U.S. Fish and Wildlife Service. 2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, California and Nevada Region, Sacramento, California. <https://www.fws.gov/sites/default/files/documents/USFWS.2011.RRP%20for%20the%20Mojave%20Desert%20Tortoise.pdf>

- [USFWS] U.S. Fish and Wildlife Service. 2015. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2013 and 2014 Annual Reports. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. <https://www.fws.gov/sites/default/files/documents/USFWS.2015%20report.%20Rangewide%20monitoring%20report%202013-14.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2016. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2015 and 2016 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. <https://www.fws.gov/sites/default/files/documents/USFWS.2016%20report.%20Rangewide%20monitoring%20report%202015-16.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2018. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2017 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. <https://www.fws.gov/sites/default/files/documents/USFWS.2018%20report.%20Rangewide%20monitoring%20report%202017.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2019. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2018 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. <https://www.fws.gov/sites/default/files/documents/USFWS.2019%20report.%20Rangewide%20monitoring%20report%202018.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2020. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2019 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 42 pages. [https://www.fws.gov/sites/default/files/documents/2019\\_Rangewide%20Mojave%20Desert%20Tortoise%20Monitoring.pdf](https://www.fws.gov/sites/default/files/documents/2019_Rangewide%20Mojave%20Desert%20Tortoise%20Monitoring.pdf)
- [USFWS] U.S. Fish and Wildlife Service. 2022a. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2020 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. <https://www.fws.gov/sites/default/files/documents/USFWS.2022%20report.%20Rangewide%20monitoring%20report%202020.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2022b. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2021 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. <https://www.fws.gov/sites/default/files/documents/USFWS.2022%20report.%20Rangewide%20monitoring%20report%202021.pdf>
- [USFWS] U.S. Fish and Wildlife Service. 2025. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2024 Annual Reporting. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Las Vegas, Nevada. <https://www.fws.gov/sites/default/files/documents/2025-08/2024-range-wide-mojave-desert-tortoise-monitoring-report.pdf>