



DESERT TORTOISE COUNCIL

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Via email only

April 1, 2023

Reuben J. Arceo, Contract Planner
County of San Bernardino
Land Use Services Department
385 North Arrowhead Avenue, 1st floor
San Bernardino, CA 92415
Reuben.Arceo@lus.sbcounty.gov

RE: Comments on Helendale Mobile Gas Station and Convenience Store – Notice of Preparation and Initial Mitigated Negative Declaration and Mitigation, Monitoring, and Reporting Program Initial Study/Mitigated Negative Declaration

Dear Mr. Arceo,

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

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

We thank the County for contacting us directly about the availability of this document prepared under the California Environmental Quality Act (CEQA).

We appreciate this opportunity to provide comments on the above-referenced project. Given that the proposed project may contribute to take of the Mojave desert tortoise (*Gopherus agassizii*) (synonymous with Agassiz's desert tortoise), our comments pertain to enhancing protection of this species during activities authorized by the County.

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), as it is a “species that possess an extremely high risk of extinction as a result of rapid population declines of 80 to more than 90 percent over the previous 10 years (or three generations), population size fewer than 50 individuals, other factors.” It is one of three turtle and tortoise species in the United States to be critically endangered. This status, in part, prompted the Council to join Defenders of Wildlife and Desert Tortoise Preserve Committee (Defenders of Wildlife et al. 2020) to petition the California Fish and Game Commission in March 2020 to elevate the listing of the Mojave desert tortoise from threatened to endangered in California.

We reviewed the Draft Initial Study and Mitigated Negative Declaration for the Helendale Mobile Gas Station and Convenience Store (MND) and the Mitigation, Monitoring, and Reporting Program Initial Study/Mitigated Negative Declaration – Helendale Mobil Gas Station & Convenience Store (MMRP) and offer the following comments for your consideration, placement into the permanent administrative/decision record for this project, and incorporation into the final document.

Description of Proposed Action

According to the MND, the Applicant/Owner of the property requests the approval of a Conditional Use Permit (CUP) to construct and operate a new gas station and a 3,705 sq. ft. convenience store with four (4) fuel dispenser islands, a 2,724 sq. ft. fuel canopy, a 206 sq. ft. trash enclosure, a 10’ 4”-foot tall vertical propane tank, and a 241 sq. ft. loading area, and a new septic system (“Project”). When construction is completed, the proposed Project will be staffed with 2-3 working employees and will be operational twenty-four (24) hours a day, seven days a week. The Project will also include a Type 20 alcohol license.

Currently the parcel has two existing buildings, Dempsey’s Pub and Joie’s Salon/Pat’s Barber shop that are 1,768 sq. ft. and 804 sq. ft. respectively. These buildings use an existing well.

The parcel is bordered by National Trails Highway on the east, Vista Road on the south, railroad tracks on the west and undeveloped land on the north. It is about 3.25 miles north of an aggregate mining operation on National Trails Highway where under the Federal Endangered Species Act (FESA) the U.S. Fish and Wildlife Service (USFWS) issued a section 10(a)(1)(B) incidental take permit to implement a habitat conservation plan for take of tortoises from the expansion of the mining facility to the north.

Comments on the Initial Study/Mitigated Negative Declaration for the Helendale Mobile Gas Station and Convenience Store , January 2023

Using Science, Implementing Agency Coordination, and Complying with Environmental Requirements

We believe the purpose of a CEQA document includes (1) conducting an analysis using the best available data of the direct, indirect, and cumulative impacts of a proposed project on the

environment and using this analysis to adopt, modify with mitigation, or reject the proposed project; and (2) documenting compliance with applicable environmental laws, regulations, policies, and plans. Unfortunately, the MND does not appear to have accomplished these purposes in the MND.

The proposed Project is within the range of the tortoise and Mohave ground squirrel (*Xerospermophilus mohavensis*). Both species are listed as threatened under the California Endangered Species Act (CESA) and the tortoise is listed as threatened under the Federal Endangered Species Act (FESA). We found no information in the MND that consultation with the USFWS and CDFW has occurred to determine whether the proposed Project is likely to result in take of these listed species. We found no information that consultation with CDFW has occurred to determine whether a Lake and Streambed Alteration Agreement under California Fish and Game Code 1600 is needed, as a waterway or drainage is located along/near the north side of the parcel. We were unable to determine from the Project description whether this waterway would be affected, either directly or indirectly, by the proposed Project.

We found no mention in the MND of consultation with CDFW and USFWS and the results of these consultations. However, we did find a section entitled “Consultation with California Native American Tribes.” This consultation is required to identify and address potential adverse impacts to tribal cultural resources from the proposed Project. We also found a section entitled “Additional Approval Required by Other Public Agencies” in the MND that listed “none” for Federal agencies and only “Caltrans” for State agencies.

We request that the County complete consultation regarding biological resources with the USFWS and CDFW to ensure compliance with the FESA, Migratory Bird Treaty Act (MBTA), CESA, and California Fish and Game Codes (e.g., streambeds, migratory birds, etc.). Further we request that the CEQA document for the proposed Project be revised and include that:

- (1) the Applicant/Owner or the County has consulted with CDFW and USFWS regarding protected/regulated biological resources, and report in the CEQA document the results of these consultations,
- (2) the proposed Project complies with the legal, regulatory, and policy requirements of FESA, CESA, and California Fish and Game Codes, and
- (3) the information/data that support the conclusions of these two agencies is provided in the CEQA document.

Absent this information, the public does not know if these requirements were accidentally overlooked by the County or the Applicant. In addition, providing this information in the MND would be consistent with the information provided in the MND’s section on “Consultation with California Native American Tribes” and would demonstrate that the County is not being arbitrary or selective in its compliance with laws/regulations/codes or presentation of data.

Compliance with California Executive Order

On October 7, 2020, Governor Newsom issued an executive order to combat the biodiversity crisis and climate change crisis. We note that other executive orders signed by California governors are cited in the MND (e.g., Executive Order S-1408). To demonstrate compliance with the purpose and intent of the executive order to combat the biodiversity crisis and climate change crisis, we

request that the County add information on how this MND complies with this executive order and other relevant executive orders for biological resources.

Climate Change

The MND has a section that analyzes impacts to air quality from a human health perspective. However, we found no section that analyzes the impacts of the proposed Project, including the construction and operations and maintenance phases, on climate change and effects on wildlife and habitats. When looking at each project individually in the region, the impacts may be minor. However, cumulative impacts should be analyzed and presented with referenced or supporting data in this CEQA document. Given the importance of this environmental factor/resource issue (e.g., Governor’s October 7, 2020 Executive Order) and its rapid and substantial impacts to many Mojave Desert species and the ecosystem (Smith et al. 2023), we request that an analysis of the proposed Project on climate change and wildlife including the tortoise be included in the MND.

Using Science to Substantiate Environmental Impacts

In the MND, several determinations regarding impacts to environmental factors/resource issues are made with little or no data and references to support these determinations. In the October 7, 2020 Executive Order, the Governor called on agencies to use the “best available science” in dealing with the biodiversity (= biological resources) and climate change crises. To help in implementing this Executive Order, we ask that this and all CEQA documents the County prepares/approves should use data, preferable the best available science, to analyze each impact to each environmental factor/resource issue and then make a determination with the data cited in the CEQA document that substantiates this determination. We request the MND be updated to provide data from scientific journals, research reports, and protocol/statistical surveys regarding direct, indirect, and cumulative impacts to the tortoise, other wildlife species, and their habitats in the MND from implementation of all phases of the proposed Project.

Biological Resources as an Environmental Factor – Standard Questions Analyzed in a MND

Under Biological Resources, the MND limits its analysis of impacts from the proposed Project to six specific questions typically asked under CEQA. One question on impacts to species asks if the Proposed Project would “Have substantial adverse effects, *either directly or through habitat modifications* [emphasis added], 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 the MND, the County’s answer is “no.” This conclusion is supported with a description of the biological resources currently believed to be on the parcel and concludes that “[d]ue to the Project site’s existing conditions, the proposed Project would not cause a substantial adverse effect on any species identified as a candidate, sensitive or special status species. Therefore, a less than significant impact would occur.”

Unfortunately, this question does not consider whether the proposed Project would have indirect impacts that would result in or contribute to substantial adverse effects to a candidate, sensitive, or special status species or its habitat. We presume this is because this question is not asked, so there is no analysis of indirect impacts of the proposed Project to candidate, sensitive, or special status species near the proposed Project. Specifically, on page 27 of the MND, the County says, “the Project site is located within the Biotic Resource Overlay for Mojave Ground Squirrel Habitat and Desert Tortoise Habitat.” However, we found no information in the MND whether the

proposed Project would indirectly impact any of these species, and if so, how these impacts would affect their survival.

The absence of a description and analysis of indirect impacts to biological resources is a major oversight in the analysis of impacts in this MND and the MND process. We understand these questions are standard questions used in all MND. However, these questions do not describe/analyze indirect impacts from proposed projects (e.g., introduction of or increase in subsidies for predators of candidate, sensitive, and special status species, introduction of or increase in environmental contaminants, introduction of or increase in the spread of invasive plant species, new or increased sources or wildfires, etc.). This oversight by CEQA should be corrected. We request that these questions be revised so they require analysis of all indirect impacts, not just impacts within the project footprint/parcel. Further, we request that this MND analyze the indirect impacts of the Proposed Project for the candidate, sensitive, and special status species listed in the MND including the tortoise and Mohave ground squirrel,

Indirect Impacts

In the MND, the County says, “the Project site has been developed with two (2) buildings that have a combined footprint of 2,572 sq. ft. and a paved parking lot. The vacant portion of the Project site appears to be utilized for additional parking beyond the paved parking area. The vacant space has been cleared of natural vegetation and is well-traversed; therefore, the Project site does not appear to be a viable location for animal habitat.”

While the Project site may not provide habitat for permanent occupancy of the tortoise, Mohave ground squirrel, and other special status species, these species may use the areas adjacent to the Project site. Species in these areas would be indirectly impacted by the construction, operations, and/or maintenance of the proposed Project and may result in incidental take of these species that would violate federal laws and regulations and state laws and codes for the tortoise.

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

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

provided resource subsidies must be reduced to facilitate a smaller raven population in the desert and reduced predation on the tortoise.

Coyotes are known predators of tortoises. High adult tortoise mortality from coyote predation was reported by Petersen (1994), Esque et al, (2010) and Nagy et al. (2015). In some areas, numbers of ravens correlated positively with coyote abundance (Boarman et al. 2006). Lovich et al. (2014) reported tortoise predation may be exacerbated by drought if coyotes switch from preferred mammalian prey to tortoises during dry years. Because the Mojave Desert has been in a multi-decade drought (Stahle 2020, Williams et al. 2022) due to climate change and 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 construction and operations and maintenance. For example, during the construction phase the water used to control dust and the waste generated during construction including food brought to the Project site by workers for meals, etc., are examples of food and water subsidies for ravens and coyotes that would attract these predators to the Project area and increase their numbers in the surrounding area. The presence of food waste during operations and maintenance at the trash enclosure and waste containers outside the convenience store and at the fuel islands would provide food subsidies for ravens and coyotes. The convenience store's roof and the fuel canopy could be used by ravens for roosting or nesting.

These subsidies of tortoise predators could be easily mitigated by requiring Best Management Practices (BMPs) that include using water for dust suppression so it does not form puddles, requiring waste containers that are predator-proof and wind-proof and are regularly maintained by the Owner of the property, and designing the building and canopy/installing deterrents so larger birds such as ravens cannot roost or nest on them.

We request that the County revise the CEQA document and include the analysis of increased predation and other indirect impacts to the tortoise that may occur from the construction, operations, and maintenance of the proposed Project. The County should require the Applicant/Owner to implement mitigation and BMPs to substantially reduce/eliminate these indirect impacts to the tortoise and other special status species and coordinate the development and implementation of these BMPs with CDFW and USFWS. In addition, the County should require the Owner/Applicant to contribute to the National Fish and Wildlife Foundation's Raven Management Fund for regional and cumulative impacts of projects that subsidize common ravens (USFWS 2010) and other predators of the tortoise and other wildlife, as other project proponents have done for projects on private property in San Bernardino County.

We request that the MND be revised to include the analysis of the indirect and cumulative impacts of the construction, operations, and maintenance of the proposed Project especially with respect to the tortoise and other special status species.

Environmental Factors Potentially Affected

This section includes a "standard list" of environmental factors in MND. In this section the County says, "[t]he environmental factors checked below will be potentially affected by this project."

However, none of the boxes are checked. This would indicate that a MND is not necessary for the proposed Project. However, under each of the 21 environmental factor/resource issues that follow this section, 20 have checkmarks saying there would be impacts from implementation of the proposed Project. Please correct this discrepancy in the CEQA document.

Specific Comments

Page 22, Air Quality: Under Resource Issue for Air Quality in the MND, the County says, “The [Mojave Desert Air Quality Management District] MDAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. The most recent AQMP for the [Mojave Desert Air Basin] MDAB was published in 2016 and demonstrates attainment of the federal 24-hour PM_{2.5} standard by 2027.”

The MND cites the Countywide Plan; San Bernardino Countywide Plan Draft EIR; Submitted Project Materials; Air Quality and Greenhouse Gasses Study, prepared March 27, 2020 as being the source of information for CEQA compliance with air quality standards. Please note that the U.S. Environmental Protection Agency (USEPA) recently published a proposed decision to revise the primary (health-based) annual PM_{2.5} standard from its current level of 12.0 µg/m³ to within the range of 9.0 to 10.0 µg/m³ (88 *Federal Register* 5558-5718). Please revise the MND to demonstrate how the proposed Project would comply with this proposed change by USEPA.

Page 27, Biological Resources: In the MND, the County says that according to the California Department of Fish and Wildlife (CDFW), “a number of threatened or endangered species, such as northern harrier, merlin, prairie falcon, yellow-headed blackbird, yellow-breasted chat, loggerhead shrike, burrowing owl, least Bell’s vireo, Mohave river vole, pallid San Diego Pocket mouse, Mohave ground squirrel, silver-haired bat, western pond turtle, desert tortoise, western Joshua Tree, Mojave fish-hook cactus, Beaver Dam breadroot, solitary blazing star, and Mojave monkeyflower” may occur near the proposed Project.

Not all of these species are listed as threatened or endangered under FESA or CESA. CDFW (2023a) has a list of Special Animals or “species at risk” or “special status species.” The species on this list include at least one of the following conditions:

- Officially listed or proposed for listing under state and/or federal endangered species acts
- Taxa considered by the Department of Fish and Wildlife to be a Species of Special Concern (SSC)
- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act Guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range, but not currently threatened with extirpation
- Population(s) in California that may be peripheral to the major portion of a taxon’s range but are threatened with extirpation in California
- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.)
- Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or a non-governmental organization (NGO), and determined by the CNDDDB to be rare, restricted, declining, or threatened across their range in California

CDFW has a list of Special Plants (CDFW 2023b). “Special Plants” is a broad term used to refer to all the plant taxa inventoried by the CDFW’s California Natural Diversity Database (CNDDDB), regardless of their legal or protection status. The species on this list include at least one of the following conditions:

- Officially listed by California or the Federal Government as Endangered, Threatened, or Rare;
 - A candidate for state or federal listing as Endangered, Threatened, or Rare;
 - Taxa listed in the California Native Plant Society’s Inventory of Rare and Endangered Plants of California;
 - Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines; these taxa may indicate “None” under listing status, but note that all California Rare Plant Rank 1 and 2 and some Rank 3 and 4 plants may fall under Section 15380 of CEQA;
 - Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation;
 - A Bureau of Land Management, U.S. Fish and Wildlife Service, or U.S. Forest Service Sensitive Species/Species of Conservation Concern;
 - Population(s) in California that may be peripheral to the major portion of a taxon’s range but are threatened with extirpation in California; and
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- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.).

We suggest that the County update the information in the MND that clarifies the status of the species listed in the MND, refines the list to those species that would be impacted, directly and indirectly, by the proposed Project, and add the regulatory requirements for when the proposed Project would impact a species with federal and/or state protection.

Page 54, Hydrology and Water Quality: The County says, “the Project must comply with the County’s conditions regarding construction erosion and dust control.” We request that the CUP specify that water discharged on the property during construction, operations, or maintenance not be allowed to form puddles. This restriction would help reduce water as a subsidy for predators of the tortoise and assist in reducing tortoise predation.

Page 82 and 83, Mandatory Findings of Significance: In this section, the County asks two questions –

1. Does the proposed 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?”

The County’s answer is “The proposed Project would not significantly impact any sensitive plants, plant communities, fish, wildlife, or habitat for any sensitive species.”

2. 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)

The County’s answer is “Construction of the Project in conjunction with other approved or pending projects in the region would not result in cumulatively considerable impacts to the physical environment. As concluded throughout the analysis above, the proposed Project would include both operation- and construction-related Project components whose adherence to applicable regulations would ensure that the proposed Project’s incremental contribution would be less than cumulatively considerable. Further, the proposed Project would not achieve short-term environmental goals to the disadvantage of long-term goals.”

The answer to question 2 does not appear to address biological resources.

To assist the County in answering these two questions regarding the impacts to the tortoise, we are attaching Appendix A – Demographic Status and Trend of the Mojave Desert Tortoise including 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, and the density of tortoises continues to decline in the Western Mojave Recovery Unit. 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 population are below the level needed to be self-sustaining and any additional impact to these populations would exacerbate this density below the level of self-sustaining. We conclude the answer to these two questions is yes and the impacts from the proposed Project would be significant.

**Comments on Mitigation Monitoring and Reporting Program,
Initial Study/Mitigated Negative Declaration,
Helendale Mobil Gas Station & Convenience Store, January 2023**

This document addresses only cultural resources, geology and soils, and tribal cultural resources. No mitigation is included for biological resources.

The Council has provided comments on the absence of analysis of indirect impacts from the proposed Project to the tortoise in the MND. The Council has provided data to the County on the demographic status and trend of the tortoise including that all populations in the Western Mojave Recovery Unit, where the proposed Project is located, as below the densities need for population viability (please see Appendix A, which is attached). Consequently, any proposed Project that would further reduce the density of the tortoise, especially in the Western Mojave Recovery Unit, would result in a significant impact to this species’ survival and recovery. The Council provided a brief analysis of one of several indirect impacts to the tortoise in which the proposed Project is likely to further reduce tortoise densities in the Western Mojave Recovery Unit. Consequently, we conclude the proposed Project would result in a significant impact by contributing to keeping tortoise densities below the population viability threshold unless the County requires effective

mitigation for all indirect impacts. We request that the County revise the MND so it includes (1) the data provided in this comment letter and (2) the analyses of the indirect and cumulative impacts to the tortoise from the proposed Project. To reduce the impacts below the level of significance, the County should then require the Owner/Applicant to implement effective mitigation to reduce these impacts below the level of significance.

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

Respectfully,



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

Ecosystems Advisory Committee, Chairperson
Desert Tortoise Council

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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 2021 (**Table 3**; USFWS 2016, 2018, 2019, 2020, 2022a, 2022b).

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 – Nevada and California

- This recovery unit had a 51 percent decline in tortoise density from 2004 to 2014.
- Tortoises 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/km² 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/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) or showing a decline from 2004 to 2014 are in red.

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

¹ 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 Habitat (km ²)	2004 Abundance	2014 Abundance	Change in Abundance	Percent Change in Abundance
Western Mojave	23,139	131,540	64,871	-66,668	-51%
Colorado Desert	18,024	103,675	66,097	-37,578	-36%
Northeastern Mojave	10,664	12,610	46,701	34,091	270%
Eastern Mojave	16,061	75,342	24,664	-50,679	-67%
Upper Virgin River	613	13,226	10,010	-3,216	-24%
Total	68,501	336,393	212,343	-124,050	-37%

Table 3. Summary of data for Agassiz’s desert tortoise, *Gopherus agassizii* (=Mojave desert tortoise) from 2004 to 2021 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/km² and standard errors = SE), and percent change in population density between 2004-2014 (USFWS 2015). Populations below the viable level of 3.9 breeding individuals/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) (USFWS 1994a, 2015) or showing a decline from 2004 to 2014 are in **red**.

Recovery Unit: Designated CHU/TCA &	% of total habitat area in Recovery Unit & CHU/TCA	2004 density/ km ²	2014 density/ km ² (SE)	% 10- year change (2004– 2014)	2015 density/ km ²	2016 density/ km ²	2017 density/ km ²	2018 density/ km ²	2019 density/ km ²	2020 density/ km ²	2021 density/ km ²
Western Mojave, CA	24.51		2.8 (1.0)	–50.7 decline							
Fremont-Kramer	9.14		2.6 (1.0)	–50.6 decline	4.5	No data	4.1	No data	2.7	1.7	No data
Ord-Rodman	3.32		3.6 (1.4)	–56.5 decline	No data	No data	3.9	2.5/3.4*	2.1/2.5*	No data	1.9/2.5*
Superior-Cronese	12.05		2.4 (0.9)	–61.5 decline	2.6	3.6	1.7	No data	1.9	No data	No data
Colorado Desert, CA	45.42		4.0 (1.4)	–36.25 decline							
Chocolate Mtn AGR, CA	2.78		7.2 (2.8)	–29.77 decline	10.3	8.5	9.4	7.6	7.0	7.1	3.9
Chuckwalla, CA	10.97		3.3 (1.3)	–37.43 decline	No data	No data	4.3	No data	1.8	4.6	2.6
Chemehuevi, CA	14.65		2.8 (1.1)	–64.70 decline	No data	1.7	No data	2.9	No data	4.0	No data
Fenner, CA	6.94		4.8 (1.9)	–52.86 decline	No data	5.5	No data	6.0	2.8	No data	5.3
Joshua Tree, CA	4.49		3.7 (1.5)	+178.62 increase	No data	2.6	3.6	No data	3.1	3.9	No data
Pinto Mtn, CA	1.98		2.4 (1.0)	–60.30 decline	No data	2.1	2.3	No data	1.7	2.9	No data
Piute Valley, NV	3.61		5.3 (2.1)	+162.36 increase	No data	4.0	5.9	No data	No data	No data	3.9

Northeastern Mojave AZ, NV, & UT	16.2		4.5 (1.9)	+325.62 increase							
Beaver Dam Slope, NV, UT, & AZ	2.92		6.2 (2.4)	+370.33 increase	No data	5.6	1.3	5.1	2.0	No data	No data
Coyote Spring, NV	3.74		4.0 (1.6)	+ 265.06 increase	No data	4.2	No data	No data	3.2	No data	No data
Gold Butte, NV & AZ	6.26		2.7 (1.0)	+ 384.37 increase	No data	No data	1.9	2.3	No data	No data	2.4
Mormon Mesa, NV	3.29		6.4 (2.5)	+ 217.80 increase	No data	2.1	No data	3.6	No data	5.2	5.2
Eastern Mojave, NV & CA	13.42		1.9 (0.7)	-67.26 decline							
El Dorado Valley, NV	3.89		1.5 (0.6)	-61.14 decline	No data	2.7	5.6	No data	2.3	No data	No data
Ivanpah Valley, CA	9.53		2.3 (0.9)	-56.05 decline	1.9	No data	No data	3.7	2.6	No data	1.8
Upper Virgin River, UT & AZ	0.45		15.3 (6.0)	-26.57 decline							
Red Cliffs Desert**	0.45	29.1 (21.4-39.6)**	15.3 (6.0)	-26.57 decline	15.0	No data	19.1	No data	17.2	No data	
Rangewide Area of CHUs - TCAs/Rangewide Change in Population Status	100.00			-32.18 decline							

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

**Methodology for collecting density data initiated in 1999.

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 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 population viability threshold. 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 is not declining is on land managed by the National Park Service, which has increased 178 percent in 10 years.

Important points to note from the data from 2015 to 2021 in Table 3 are:

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

- Density of tortoises continues to decline in the Western Mojave Recovery Unit
- Density of tortoises continues to fall below the density needed for population viability from 2015 to 2021

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

- The population that had the highest density in this recovery unit had a continuous reduction in density since 2018 and fell substantially to the minimum density needed for population viability in 2021.

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.
- The most recent data from three of the four populations in this recovery unit have densities below the minimum density needed for population viability.
- The population that had the highest density in this recovery unit declined since 2014.

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 individual 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).

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