



**DESERT TORTOISE COUNCIL**

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**Via email**

April 21, 2023

Reuben J. Arceo, Contract Planner  
County of San Bernardino  
Land Use Services Department  
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San Bernardino, CA 92415  
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RE: Comments on Joshua Tree Camp Site – Draft Initial Study and Mitigated Negative Declaration for a Conditional Use Permit and Biological Resources Assessment, Jurisdictional Delineation, and Native Plant Protection Plan for the Joshua Tree Campsite Development (APN: 0631-283-07) – Joshua Tree, San Bernardino County, California

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.

As of June 2022, our mailing address has changed to:

Desert Tortoise Council  
3807 Sierra Highway #6-4514  
Acton, CA 93510.

Our email address has not changed. Both addresses are provided above in our letterhead for your use when providing future correspondence to us.

We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats likely occupied by Mojave desert tortoise (*Gopherus*

*agassizii*) (synonymous with Agassiz's desert tortoise), our comments pertain to enhancing protection of this species during activities funded, authorized, or carried out by the San Bernardino County (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), "... based on population reduction (decreasing density), habit loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (sensu stricto) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts and is where the largest past population losses had been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (sensu stricto) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units." 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 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 appreciate the County contacting the Council directly about the availability of the proposed project for public comment.

We have reviewed two documents, the Initial Study and Environmental Checklist Form for Preparing a Mitigated Negative Declaration/Mitigated Negative Declaration (Initial Study) and the Biological Resources Assessment, Jurisdictional Delineation, and Native Plant Protection Plan for the Joshua Tree Campsite Development (APN: 0631-283-07) Joshua Tree, San Bernardino County, California and offer the following comments and attachment for your consideration, placement into the permanent administrative/decision record for this project, and incorporation into the final California Environmental Quality Act (CEQA) document.

### **Description of Proposed Action**

The Applicant, Steve Lan is requesting a Conditional Use Permit to develop and operate the Joshua Tree camp site (Proposed Project) that has four campsites or units. Each unit will contain: a Camping Dome (a clear geodome), wood decking, outdoor jacuzzi, hot tub, fire pit, concrete step seating adjacent to the fire pit, sand base walkway, planter areas (using desert plant species), stairs to access the unit, and perimeter wall and steel fencing around each unit. Each unit will have a four-space vehicle parking area adjacent. The camp sites will be open daily and activities will be reduced for quiet time at 10 p.m. each evening. A maximum of 16 people will be allowed at the Campground at any one time (e.g., four persons per unit). A property manager (offsite) will handle daily operations and units will be visited daily for cleaning and maintenance. The units would be installed on the approximate 2.4-acre site.

Construction includes removing the vegetation from the areas supporting the domes and the site access area, and grading for the driveway and the individual camp sites. The installation of one or more septic tank/leach line wastewater management systems would occur. A potable water line exists in Stonehill Avenue and would be extended using trenching onto the property.

The Proposed Project is located on the west side of Stonehill Avenue in the community of Joshua Tree in the Morongo Basin of San Bernardino County. It is zoned Rural Living and in an area of low-density residential uses and undeveloped land. It is about 5.5 miles north of State Route 62 and about 1.5 miles south of the southern boundary of the Marine Corps Air Ground Combat Center.

**Comments on the Joshua Tree Camp Site – Initial Study/Mitigated Negative Declaration,  
March 2023  
and Biological Resources Assessment, Jurisdictional Delineation, and Native Plant  
Protection Plan for the Joshua Tree Campsite Development (APN: 0631-283-07) Joshua  
Tree, San Bernardino County**

The Initial Study has a section entitled “Additional Approvals That May Be Required By Other Public Agencies.” This section mentions a Storm Water Pollution Prevention Plan (SWPPP) and a Water Quality Management Plan (WQMP) from the County and Colorado River Regional Water Quality Control Board that will be needed. No other permits are mentioned in this section of the Initial Study.

The Biological Resources Assessment, Jurisdictional Delineation, and Native Plant Protection Plan (Biological Resources Assessment) recommended that pre-construction surveys be completed for the tortoise and that these surveys should be conducted by a qualified biologist and at an appropriate time of day/year to observe signs of desert tortoise. In addition, avoidance and buffer areas for Joshua tree (or an incidental take permit) and surveys to avoid nesting birds were recommended in the Biological Resources Assessment.

Following this section is one entitled “Consultation with California Native American Tribes.” Because of information provided in the Biological Resources Assessment summarized above, we request the County include in the CEQA document the need (1) to coordinate with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) regarding desert tortoise pre-construction surveys and, if needed, (2) to conduct clearance surveys and obtain an incidental take permit for this species; and (3) to avoid nesting birds. In addition, CDFW should be consulted to ensure avoidance of the western Joshua tree from implementation of all phases of the Proposed Project or obtain an incidental take permit, and to comply with California Fish and Game Code regarding a streambed alteration agreement.

Without this information, the public and the decisionmaker do not know whether these requirements were accidentally overlooked by the County. In addition, providing this information in the CEQA document would be consistent with the information provided in the 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 (N-82-20) to combat the biodiversity crisis and climate change crisis. To demonstrate compliance with the purpose and intent of this executive order, we request that the County include information in the CEQA document on how the Proposed Project complies with this executive order.

### **Climate Change**

The Initial Study 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 during the construction, use, and maintenance phases, on climate change and effects on wildlife and habitats. When looking at each project individually in the region, the impacts are likely 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 CEQA document.

### **CEQA's Omission of Indirect Impacts to Biological Resources**

Under the issue "Biological Resources," the Initial Study responds to six questions from a CEQA Handbook to determine whether the impacts of a proposed project would need to be analyzed in an environmental impact statement. The first is for direct impacts or habitat modification to listed, proposed or candidate species followed by impacts to riparian habitat or sensitive natural community, impacts to wetlands, substantial interference with the movement of wildlife, conflicts with local ordinances protecting biological resources, and conflicts with a habitat conservation plan or natural community conservation plan.

We are concerned about the first question. It appears to address only direct impacts and those that occur on the Project site. For the Proposed Project, the site of direct impacts is small and may not provide habitat for permanent occupancy of the tortoise and other special status animal species (e.g., western burrowing owl, kit fox, American badger), these species may use the areas adjacent to the Project site. These species in the area of the proposed Project may be indirectly impacted by the construction, use, and/or maintenance of the Project and these activities may result in incidental take of these species that would violate federal laws/regulations and/or state laws/regulations (California Fish and Game Codes).

For the tortoise, many reasons for its substantial decline in the last few decades have been because of indirect impacts. One example of an indirect impact from the Project's construction, use, and/or maintenance that 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.

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 part if 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 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, use, and maintenance. For example, during the construction phase the water used to control dust (AQ-1 Fugitive Dust Control) to water exposed surfaces at least 2-3 times a day 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 site 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. During the use and maintenance phases, the presence of food waste in waste containers would provide food subsidies for ravens and coyotes.

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, , no draining of jacuzzis or hot tubs on the surface where water would be available to predators, requiring waste containers that are predator-proof, wind-proof, and regularly maintained by the Applicant/Owner of the property, etc. We request that these BMPs be added to the CEQA document and the Applicant be required to implement them. Please see the Council’s (2017) “A Compilation of Frequently Implemented Best Management Practices to Protect Mojave Desert Tortoise during Implementation of Federal Actions” for examples of BMPs for the tortoise, many of which are applicable to the Proposed Project. While the title mentions implementation of Federal actions, the BMPs should also be implemented on non-Federal projects to minimize the likelihood of take under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA).

We request that the County revise the CEQA document to include an analysis of increased

predation and other indirect impacts to the tortoise that may occur from the construction, use, and maintenance of the Proposed Project. The County should require the Applicant/Owner to implement BMPs to substantially reduce/eliminate these indirect impacts to the tortoise and other special status species. Coordination with the USFWS and CFDW should occur in the development of these BMPs. 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.

### **Surveys for Special Status Species**

We appreciate that the Initial Study recommends protocol level pre-construction surveys for the tortoise and western burrowing owl be implemented. The Proposed Project is located in the range of these species and the Project site contains suitable habitat components for them on or adjacent to the Project site.

### **Cumulative Impacts/Mandatory Findings of Significance**

Two 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, 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. Please include this information in the CEQA document.

## **Specific Comments**

Page 2, Construction Scenario: The Proposed Project would include the construction of a septic system and water lines to deliver water to the Project site. These activities usually require trenching and temporary storage and installation of pipes. Standard mitigation measures should be implemented to ensure that these actions are not likely to adversely affect the tortoise. For example, projects that involve trenching in tortoise habitat usually have requirements that trenches be checked as a minimum at the beginning and end of each day to ensure that the tortoise and other wildlife species are not in the trench. Trenches are also checked for wildlife species including tortoises immediately before they are backfilled. Pipes with a diameter greater than a few inches that are stored at the project site and the open end of installed pipes are capped to ensure that no tortoises or other wildlife are using them for cover sites. Pipes are inspected immediately before installation to ensure that no wildlife including tortoises are located inside them. Please see the Council's (2017) "A Compilation of Frequently Implemented Best Management Practices to Protect Mojave Desert Tortoise during Implementation of Federal Actions" for BMPs for this activity. We request that the County include these mitigation measures in the CEQA document to avoid take of tortoises for this Project.

### **Precautionary Avoidance Measures/Mitigation Measures**

Page 35, Sensitive Biological Resources, Impact Analysis: BIO-1 mitigation measure calls for the development of a Worker Environmental Awareness Program (WEAP) that includes information on the biology of the tortoise, current legal status, techniques, and mitigation measures to avoid impacting the species. Because the Proposed Project is a commercial development in a rural residential area, persons using the Camp Sites may be visiting from areas where tortoises do not occur or they have no knowledge of their legal status. We request that an environmental awareness document be developed and posted on the website for the Campground and displayed in each camping dome so the visitors are educated about the tortoise and how they can ensure that their actions do not harm the tortoise, either directly or indirectly.

Page 36, Sensitive Biological Resources, Impact Analysis: BIO-2 mitigation measure includes the following wording for the tortoise. "If the [pre-construction] survey confirms presence of desert tortoise, the [qualified] biologist will make a determination regarding tortoise mitigation: (1) if a biological monitor should be present at the site during all clearing and grubbing activities above grade; (2) if desert tortoise fencing needs to be installed around the perimeter of the construction work zone; or (3) if no further action is required. The biologist/monitor should remain on-call during construction activities to respond to a circumstance where a desert tortoise wanders into the construction area."

We are unsure what the actions of the biologist/monitor would be if a tortoise were to wander onto the Project site. Without an incidental take permit, the biologist would need to halt Project activities until the tortoise has walked off the Project site and beyond harm's way. We recommend that the MND clarify that moving a tortoise is not considered an avoidance and would require obtaining an incidental take permit from the USFWS and CDFW. In addition, we recommend that the qualified biologist consult with the USFWS and DFFW to determine the mitigation that should be implemented to ensure compliance with FESA and CESA.

Pages 36 and 37, Sensitive Biological Resources, Impact Analysis: We remind the County that the pre-construction survey protocol for the tortoise includes conducting surveys for the action area. The USFWS defines “action area” the Code of Federal Regulations (CFR) and the Desert Tortoise Field Manual (USFWS 2009, 2019) as “all areas to be affected directly or indirectly by proposed development and not merely the immediate area involved in the action (50 CFR §402.02).” Thus, the action area includes more than the footprint of the Proposed Project. We suggest that the Applicant/County consult with the USFWS and CDFW to determine the action area for the Proposed Project prior to conducting the pre-construction survey.

Because the pre-construction survey should be conducted by experienced biologists approved by the USFWS and CDFW (USFWS 2009, 2019), we suggest that USFWS and CDFW biologists review the credentials of the biologist who would conduct the survey prior to initiating the survey.

Pages 36 and 98, Mitigation Measures: The Initial Study mentions there are seven mitigation measures under Biological Resources, but we only found BIO-1 through BIO-6 described. Please revise this section in the CEQA document.

Page 64, Mitigation Measure: We appreciate the County requiring that the Project must implement a design that perpetuates the existing flood plain. This action should ensure that there is no upstream or downstream alteration of surface flow from rainfall events and little or no impact to soils and vegetation from a change of surface flow.

Page 92, Wildfire: The Initial Study says the Proposed Project area is located in an “area moderately susceptible to wildland fires, and is located within a delineated Moderate Fire Hazard Severity Zone (VHFHSZ)” in a State Responsibility Area. The Proposed Project will remove some desert vegetation, “thereby minimizing the already small potential fire risks within this site. No mitigation is needed.”

Habitat disturbance from development and other sources in the Mojave Desert has promoted the establishment of nonnative plants, so that native annual plants are now intermixed with, or have been replaced by invasive, nonnative Mediterranean grasses (Drake et al. 2016). We contend that while grading removes vegetation, surface disturbance combined with climate change encourages the proliferation of invasive non-native annual grasses creating a carpet that, when dry, form a continuous fuel source to feed the size, intensity, and frequency of wildfires in the Mojave Desert.

Whereas some plant communities have evolved under fire regimes and are dependent upon fire for seed germination, plant communities within the Mojave Desert are not dependent on a fire regime and therefore are highly impacted by fire (Brown and Minnich 1986, Brooks 1999). As noted by Johansen (2003) natural range fires are not prevalent in the Mojave and Sonoran Deserts, because with native vegetation there is not enough vegetation present (too many shrub interspaces) to sustain a fire.

In the last few decades, however, invasion of mid-elevation shrublands by non-native *Bromus madritensis* ssp. *rubens* and *Bromus tectorum* (Hunter 1991) have been highly correlated with increased fire frequency in the Mojave Desert (Brooks and Berry 2006, Brooks and Matchett 2006). Some sites will never regain a species composition similar to pre-fire conditions. This alteration of species composition may have significant impacts on ecosystem function, fire re-occurrence and habitat for native animals (Fenstermaker 2012).



We suggest the County require the Applicant to implement BMPs to control invasive non-native annual plants on the parcel to reduce the likelihood of wildfires and minimize the spread of these invasive plants to nearby areas.

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 San Bernardino County that may affect species of desert tortoises, and that any subsequent environmental documentation for this project is provided to us at the contact information listed above. Additionally, we ask that you respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this project.

Respectfully,



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

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

cc: Trisha A. Moyer, Region 6 – Desert Inland Region, Habitat Conservation Program Supervisor, California Department of Fish and Wildlife, Bishop, CA [Patricia.Moyer@wildlife.ca.gov](mailto:Patricia.Moyer@wildlife.ca.gov)  
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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/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: Designated Critical Habitat Unit <sup>1</sup> /Tortoise Conservation Area	Surveyed area (km <sup>2</sup> )	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/km <sup>2</sup> (SE)	% 10-year change (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 - TCAs/Range-wide Change in 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 Habitat (km <sup>2</sup> )	2004 Abundance	2014 Abundance	Change in Abundance	Percent Change in Abundance
<b>Western Mojave</b>	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%
<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 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/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: Designated CHU/TCA &	% of total habitat area in Recovery Unit & CHU/TCA	2004 density/ km <sup>2</sup>	2014 density/ km <sup>2</sup> (SE)	% 10- year change (2004– 2014)	2015 density/ km <sup>2</sup>	2016 density/ km <sup>2</sup>	2017 density/ km <sup>2</sup>	2018 density/ km <sup>2</sup>	2019 density/ km <sup>2</sup>	2020 density/ km <sup>2</sup>	2021 density/ km <sup>2</sup>
<b>Western Mojave, CA</b>	<b>24.51</b>		<b>2.8 (1.0)</b>	<b>–50.7 decline</b>							
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
<b>Colorado Desert, CA</b>	<b>45.42</b>		<b>4.0 (1.4)</b>	<b>–36.25 decline</b>							
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

<b>Northeastern Mojave AZ, NV, &amp; UT</b>	<b>16.2</b>		<b>4.5 (1.9)</b>	<b>+325.62 increase</b>							
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
<b>Eastern Mojave, NV &amp; CA</b>	<b>13.42</b>		<b>1.9 (0.7)</b>	<b>-67.26 decline</b>							
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
<b>Upper Virgin River, UT &amp; AZ</b>	<b>0.45</b>		<b>15.3 (6.0)</b>	<b>-26.57 decline</b>							
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	
<b>Rangewide Area of CHUs - TCAs/Rangewide Change in Population Status</b>	<b>100.00</b>			<b>-32.18 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.



*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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