

California Fish and Game Commission
Notice of Findings
for
Mojave Desert Tortoise (*Gopherus agassizii*)
May 27, 2025

NOTICE IS HEREBY GIVEN that the California Fish and Game Commission (Commission), at a meeting on April 17-18, 2024, found pursuant to California Fish and Game Code Section 2075.5 that the information contained in the petition to list the species Mojave desert tortoise (*Gopherus agassizii*) and other information in the record before the Commission, warrants adding Mojave desert tortoise to the list of endangered species under the California Endangered Species Act (CESA; Fish and Game Code, Section 2050 et seq.). (See also California Code of Regulations, Title 14, Section 670.1, subsection (i))

NOTICE IS ALSO GIVEN that, at its June 11-12, 2025, meeting, the Commission adopted the findings herein outlining the reasons for its determination.

I. Background and Procedural History

Prior Listing History

The Commission listed desert tortoise (*Gopherus agassizii*) as a threatened species under the California Endangered Species Act (CESA) in 1989. The U.S. Fish and Wildlife Service listed it under the federal Endangered Species Act (ESA) in 1990. As explained below, 2011 studies concluded that the species complex of desert tortoise consists of two species, with those present in California being classified as *Gopherus agassizii* and commonly referred to as Mojave desert tortoise.

Petition History

On March 23, 2020, Defenders of Wildlife, the Desert Tortoise Council, and the Desert Tortoise Preserve Committee submitted a petition to the Commission to change the listing status of desert tortoise (*Gopherus agassizii*; hereafter referred to as Mojave desert tortoise) from threatened to endangered under CESA. The Commission reviewed the petition for completeness and, on April 13, 2020, pursuant to Section 2073 of the California Fish and Game Code, referred the petition to the California Department of Fish and Wildlife (Department) for evaluation. The Commission gave public notice of receipt of the petition on May 1, 2020 (California Regulatory Notice Register 2020, No. 18-Z, p.693). The Department transmitted to the Commission the Department's petition evaluation on July 23, 2020 and, on August 20, 2020, the Commission publicly received the Department's petition evaluation.

At its October 14, 2020 meeting, the Commission determined that listing may be warranted, and subsequently provided notice regarding the Mojave desert tortoise's status as a candidate species (California Regulatory Notice Register 2020, No. 44-Z, p. 1445).

Status Review Overview

The Commission's action, designating Mojave desert tortoise as a candidate species, triggered the Department's process for conducting a status review to inform the Commission's decision on whether to list the species.

On January 9, 2024, the Department transmitted to the Commission the Department's report, *Status Review for Mojave Desert Tortoise (Gopherus agassizii) Report to the Fish and Game Commission*, dated February 2024. The Commission publicly identified receipt of the Department's status review report as part of the Commission's February 14-15, 2024 meeting materials. On April 18, 2024, the Commission found that the information contained in the petition to change the listing status of Mojave desert tortoise and other information in the record before the Commission, warranted listing Mojave desert tortoise as an endangered species under CESA.

Species Description

The Mojave desert tortoise is a long-lived, desert-dwelling tortoise. Desert tortoises are reptiles within the order Testudines, family Testudinidae, genus *Gopherus*. The genus *Gopherus* consists of North America's land tortoises.

When the Commission listed desert tortoise as threatened in 1989, *Gopherus agassizii* was understood to range from southeastern California, across southern Nevada, through western Arizona, and south into Sonora and Sinaloa, Mexico. In 2011, studies of tortoise genetics, morphometrics, and ecology led experts to conclude that the species complex formerly known as "desert tortoise" in fact consists of two separate species, Mojave desert tortoise and Sonoran desert tortoise (*Gopherus morafkai*) (Murphy et al. 2011, Iverson et al. 2017). Mojave desert tortoise, also known as Agassiz's desert tortoise, retains the original binomial scientific name (*G. agassizii*) and ranges across the deserts of southeastern California, southern Nevada, and small areas of Arizona and Utah north of the Colorado River, as well as southwestern Utah. In California, the range of the Mojave desert tortoise includes the Mojave Desert and portions of the Sonoran and Great Basin deserts.

Mojave desert tortoise habitat typically consists of alluvial fans and plains that facilitate the digging of burrows. Mojave desert tortoises also need sufficient forage plants, as well as larger shrubs and bushes for shade and protection of burrows, and for feeding on annual forbs, annual and perennial grasses, herbaceous perennial plants, and some cacti (Berry and Murphy 2019). Mojave desert tortoises occur in very low densities or are absent where shrub cover is sparse, precipitation is low, and annual food plants are available only intermittently.

The carapace of adults ranges in size from 178 millimeters to over 370 millimeters in length. Mojave desert tortoises make extensive use of underground burrows to regulate body temperature and as protection from predators. Studies have demonstrated male home range sizes of 39–47 hectare and female home range sizes of 14–17 hectare (Harless et al. 2009). Home ranges of individuals can overlap.

Mojave desert tortoises are long-lived and females are thought to become sexually mature at 12–20 years old (mean 18.8; Medica et al. 2012), depending on locality (Woodbury and Hardy 1948, Turner et al. 1986, Curtin et al. 2009). Generation time is estimated to be around 25 years (U.S. Fish and Wildlife Service 1994). Mating occurs in late summer and fall, and females can mate with multiple males (Davy et al. 2011).

Females typically lay one or two clutches of eggs (about six eggs per clutch) per year; however, some females have been documented to lay more than two clutches (Ennen et al. 2012, Mitchell et al. 2021). Tortoise nests are typically placed near the entrance to the burrow or within suitable soil (Ennen et al. 2012), and there is no parental care once eggs have

hatched (Berry and Murphy 2019). Newly hatched tortoises are about 4–5 centimeters in length (Bjurlin and Bissonette 2004) and their shells do not fully ossify (harden) until they are 5–7 years old.

II. Statutory and Legal Framework

The Commission, established by the California State Constitution, has exclusive statutory authority under California law to designate endangered, threatened, and candidate species under CESA (California Constitution, Article IV, Section 20, subdivision (b); California Fish and Game Code Section 2070). The CESA listing process for this species began in the present case with a petition submitted to the Commission. The regulatory and legal process that ensued is described in some detail in the preceding section, along with related references to the Fish and Game Code and controlling regulations. The CESA listing process generally is also described in some detail in published appellate case law in California, including:

- Natural Resources Defense Council v. California Fish and Game Commission (1994) 28 Cal.App.4th 1104;
- Mountain Lion Foundation v. California Fish and Game Commission (1997) 16 Cal.4th 105;
- California Forestry Association v. California Fish and Game Commission (2007) 156 Cal.App.4th 1535;
- Center for Biological Diversity v. California Fish and Game Commission (2008) 166 Cal.App.4th 597;
- Central Coast Forest Association v. California Fish and Game Commission (2017) 2 Cal.5th 594;
- Central Coast Forest Association v. California Fish and Game Commission (2018) 18 Cal.App.5th 1191; and
- Almond Alliance of California v. California Fish and Game Commission (2022) 79 Cal.App.5th 337.

The “is warranted” determination stems from Commission obligations established by Fish and Game Code Section 2075.5. Under the provision, the Commission is required to make one of two findings for a candidate species at the end of the CESA listing process; namely, whether listing a species is warranted or is not warranted. Here, the Commission made the finding under Section 2075.5, subdivision (e)(2) that listing is warranted.

The Commission was guided in making its determinations by statutory provisions and other controlling law. The Fish and Game Code, for example, defines an endangered species under CESA 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, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease” (Section 2062). Similarly, the Fish and Game Code defines a threatened species under CESA as “a native species or subspecies of a bird, mammal, fish, amphibian, reptile or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter” (Section 2067).

The Commission also considered California Code of Regulations, Title 14, Section 670.1, subsection (i)(1)(A), in making its determination. The provision provides, in pertinent part, that the Commission will list the species or subspecies as endangered or threatened under CESA if the Commission determines that its continued existence is in serious danger or is threatened by any one or any combination of six factors:

1. Present or threatened modification or destruction of its habitat,
2. overexploitation,
3. predation,
4. competition,
5. disease, or
6. other natural occurrences or human-related activities.

Fish and Game Code Section 2070 provides similar guidance, providing that the Commission shall add or remove species from the list of endangered and threatened species under CESA only upon receipt of sufficient scientific information that the action is warranted. Similarly, CESA provides that it is the policy of the state, not specific to the Commission per se, that all state agencies, boards, and commissions shall seek to conserve endangered and threatened species and shall utilize their authority in furtherance of the purposes of CESA (Fish and Game Code Section 2055). The statutory guidance does not compel a particular determination by the Commission in the CESA listing context. Nevertheless, “[l]aws providing for the conservation of natural resources’ such as the CESA are of great remedial and public importance and thus should be construed liberally.” (*California Forestry Association v. California Fish and Game Commission*, supra, 156 Cal.App.4th at pp. 1545-1546, citing *San Bernardino Valley Audubon Society v. City of Moreno Valley* (1996) 44 Cal.App.4th 593, 601; Fish and Game Code sections 2051 and 2052.)

Finally, in considering the six identified factors, CESA and controlling regulations require the Commission to actively seek and consider related input from the public and any interested party (see, e.g., Fish and Game Code, sections 2071, 2074.4 and 2078; California Code of Regulations, Title 14, Section 670.1, subsection (h)). The related notice obligations and public hearing opportunities before the Commission are also considerable (Fish and Game Code sections 2073.3, 2074, 2074.2, 2075, 2075.5 and 2078; California Code of Regulations, Title 14, Section 670.1, subsection (c), (e), (g) and (i); see also California Government Code Section 11120 et seq.). The referenced obligations are in addition to the requirements prescribed for the Department in the CESA listing process, including an initial evaluation of the petition, a related recommendation regarding candidacy, and a review of the candidate species’ status, culminating with a report and recommendation to the Commission as to whether listing is warranted based on the best available science (Fish and Game Code sections 2073.4, 2073.5, 2074.4 and 2074.6; California Code of Regulations, Title 14, Section 670.1, subsections (d), (f) and (h)).

III. Factual and Scientific Bases for the Commission’s Final Determination

The factual and scientific bases for the Commission’s determination that designating Mojave desert tortoise as an endangered species under CESA is warranted are set forth in detail in the Commission’s record of proceedings, including the petition; the Department’s petition evaluation report; the Department’s status review report; written and oral comments received

from members of the public, the regulated community, tribal entities, and the scientific community; and other evidence included in the Commission's record of proceedings, which is incorporated herein by reference.

The Commission determines that the continued existence of Mojave desert tortoise in the state of California is in serious danger or threatened by one or a combination of six factors as required by California Code of Regulations, Title 14, Section 670.1, subsection (i)(1)(A):

1. Present or threatened modification or destruction of its habitat,
2. overexploitation,
3. predation,
4. competition,
5. disease, or
6. other natural occurrences or human-related activities.

The Commission also determines that the information in the Commission's record constitutes the best scientific information available and establishes that designating Mojave desert tortoise as an endangered species under CESA is warranted. Similarly, the Commission determines that Mojave desert tortoise is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

The items highlighted here and detailed in the following threats section represent only a portion of the complex issues aired and considered by the Commission during the CESA listing process for Mojave desert tortoise. Similarly, the issues addressed in these findings represent some, but not all, of the evidence, issues, and considerations affecting the Commission's final determination. Other issues aired before and considered by the Commission are addressed in detail in the record before the Commission.

Background

The Commission bases its "is warranted" finding for Mojave desert tortoise most fundamentally on its determination that Mojave desert tortoise qualifies as a "subspecies" as specified in CESA sections 2062 and 2067. The qualification is based on the evaluation of Mojave desert tortoise as an independent, separable, and important population, with a substantial risk of extinction in the foreseeable future within the meaning of CESA.

Threats

Mojave desert tortoise is endangered due to:

- Present or threatened modification or destruction of its habitat (see, e.g., Department's status review report at pages 32-37 and 62-64, and references cited therein),
- predation (see, e.g., Department's status review report at pages 40-43 and 62-64, and references cited therein), and
- other natural occurrences or human-related activities, particularly:
 - Climate change (see, e.g., Department's status review report at pages 43-46 and 62-64, and references cited therein),

- Vehicle strikes, roads, and fencing (see, e.g., Department's status review report at pages 37-39 and 62-64, and references cited therein),
- Fire (see, e.g., Department's status review report at pages 46-47 and 62-64, and references cited therein), and
- Impacts from invasive and non-native species (see, e.g., Department's status review report at pages 39-40 and 62-64, and references cited therein).

The Commission finds these factors to result in a significant threat to the continued existence of Mojave desert tortoise as explained in the Department's status review report. This finding and the Department's explanation are supported by the whole of the record before the Commission.

IV. Final Determination by the Commission

The Commission has weighed and evaluated the information for and against designating Mojave desert tortoise as an endangered species under CESA, including scientific and other general evidence in the petition; the Department's petition evaluation report; the Department's status review report; the Department's related recommendations; written and oral comments received from members of the public, the regulated community, various public agencies, and the scientific community; and other evidence included in the Commission's record of proceedings.

Based upon the evidence in the record, the Commission has determined that the best scientific information available indicates the continued existence of Mojave desert tortoise is in serious danger or threatened by modification or destruction of the species' habitat, predation, or other natural occurrences or human-related activities, where such factors are considered individually or in combination (see, generally, California Code of Regulations, Title 14, Section 670.1, subsection (i)(1)(A); Fish and Game Code sections 2062 and 2067).

The Commission determines that there is sufficient scientific information to indicate that designating Mojave desert tortoise as an endangered species under CESA is warranted, and that, with adoption and publication of these findings, Mojave desert tortoise shall be listed as endangered for purposes of its legal status under CESA.