5-YEAR REVIEW

Desert slender salamander (*Batrachoseps major aridus*) (=*B. aridus*)

GENERAL INFORMATION

Species: Desert slender salamander (*Batrachoseps major aridus*)
Date listed: June 4, 1973
FR citation(s): USFWS 1973 (38 FR 14678)
Classification: Endangered

BACKGROUND

Most recent status review: The U.S. Fish and Wildlife Service (USFWS) initiated a status review for the desert slender salamander in 2013 (USFWS 2013, p. 19511). The review was finalized January 31, 2014 with no recommended change in status.

Review History: Previous reviews were initiated in 1979, 1985, 1991, and 2007 (USFWS 1979, p. 29566, 1985, p. 29907, 1991, p. 56882, 2007, p. 7065); all reviews were completed with no recommended change in status.

FR Notice citation announcing this status review: The USFWS published a notice in the *Federal Register* announcing initiation of the 5-year review of the desert slender salamander and the opening of a 60-day period to receive information from the public on January 27, 2020 (USFWS 2020, p. 4692). We did not receive any information from the public relative to the desert slender salamander.

ASSESSMENT

Information acquired since the last status review:

Staff at the USFWS Carlsbad office conducted this 5-year review. We solicited data for this review from interested parties through a *Federal Register* notice announcing this review on January 27, 2020 (USFWS 2020, p. 4692). We also contacted the California Department of Fish and Wildlife (CDFW), U.S. Geological Survey (USGS), and species experts to request any data or information we should consider in our review. Additionally, we conducted a literature search and a review of information in our files.

The life history and ecology of the desert slender salamander is still largely unknown and much of the available information has been presumed through closely related species. There is little information regarding the abundance, range, dispersal, or demographic rates for the species and limited surveys for the desert slender salamander have been conducted since the last 5-year review. The species has historically been reported from two locations, Hidden Palm Canyon located within the Santa Rosa Mountains and Guadalupe Canyon located in the San Jacinto Mountains National Monument area (Bleich 1978, p. 1; Giuliani 1981, p. 3). The last observation of the desert slender salamander was recorded by the CDFW in 1997 at Hidden Palm Canyon. The

USGS has conducted the most recent surveys. These surveys occurred between 2017 and 2019 on seven different occasions; a single survey in Guadalupe Canyon and six surveys at Hidden Palm Canyon. The surveys were conducted at night using a time constrained method and coverboard surveys using a thick plastic sheet. The desert slender salamander was not observed during any of the surveys (USGS 2019, p. 1). However, these survey methods are intended to provide information on species presence at time of sampling, and cannot determine absence (Dodd 2003, p. 47). Therefore, we believe the species distribution remains the same as described in the last 5-year review and this information does not alter our understanding of the species' current distribution.

Threats identified in the 2014 5-year review include erosion, fire, nonnative plants, groundwater pumping, disease, climate change, and small population size (USFWS 2014, pp. 15–32). We are not aware of any new information to suggest the threats facing the desert slender salamander have changed since our last review. Therefore, our understanding of the current threats to the species persistence remains the same as described in our 2014 5-year review.

CONCLUSION

After reviewing the best available scientific information, we conclude that the desert slender salamander remains an endangered species. The evaluation of threats affecting the species under the factors in 4(a)(1) of the Act and analysis of the status of the species in our 2014 5-year review (USFWS 2014) remains an accurate reflection of the species current status.

RECOMMENDATIONS FOR FUTURE ACTIONS:

1. Continue to improve non-invasive survey techniques

Non-invasive survey techniques are needed to evaluate occupancy of populations at Hidden Palms Canyon and Guadalupe Canyon. The fragile condition of the habitat, especially in Hidden Palms, makes anything beyond a surface search potentially destructive to the already degraded habitat. Nocturnal surveys should be conducted when possible and the feasibility of utilizing eDNA survey techniques should be explored to gain knowledge on the presence of the desert slender salamander.

2. Perform an evaluation of the habitat and hydrology of occupied areas

An evaluation of appropriate habitat should be performed in order to gain a greater understanding of the species needs. The hydrology of the habitat should be evaluated in order to better understand and prevent impacts from erosion. Groundwater levels should be monitored and evaluated to support the persistence of the desert slender salamander at Hidden Palms Canyon and Guadalupe Canyon.

3. Identify other habitats that may support the desert slender salamander

Determine if additional populations of the desert slender salamander exist through surveys based on appropriate habitat characteristics.

Lead Field Supervisor, Fish and Wildlife Service

☒ Approved

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