

**BEFORE THE SECRETARY
U.S. DEPARTMENT OF THE INTERIOR**

**Petition to List
the Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
as Threatened or Endangered under
the U.S. Endangered Species Act**



Petitioner:
Jeremy Nichols

Date:
February 2006

I. Introduction

Pursuant to the Endangered Species Act, 16 USC § 1531 *et seq.* and regulations promulgated thereunder, the Administrative Procedures Act, 5 USC § 553(e), and the First Amendment to the Constitution of the United States, Jeremy Nichols hereby petitions for a rule to list the Tehachapi slender salamander (*Batrachoseps stebbinsi*) as Threatened or Endangered under the Endangered Species Act. The best available scientific information shows the Tehachapi slender salamander, which is extremely narrowly distributed, has declined due to habitat loss and degradation and faces ongoing threats to its continued existence. The species is globally imperiled and is already listed as Threatened by the state of California. Scientists have recommended the species receive federal protection under the Endangered Species Act. For the reasons set forth below, the Tehachapi slender salamander must be listed as Threatened or Endangered as expeditiously as possible.

Petitioner understands this petition action sets in motion a specific process placing definite response requirements on the U.S. Fish and Wildlife Service (“USFWS”) and specific time constraints upon those responses. *See*, 16 USC § 1533(b). Specifically, the USFWS must determine whether or not this petition presents substantial scientific information indicating the petitioned action may be warranted within 90 days of its receipt

II. Petitioner

Jeremy Nichols is a Denver, Colorado resident who values and enjoys biological diversity because of its educational importance to his three year old son, because of the joy of viewing wildlife, fish, and plants in their native habitats, and because of the importance of biological diversity to maintaining healthy ecosystems.

III. The Tehachapi Slender Salamander

The Tehachapi slender salamander is a member of the genus *Batrachoseps*, or the slender salamanders, a genus of salamander that exists in western North America, primarily in the arid and semi-arid environments of California (Lannoo 2005). The genus *Batrachoseps* is a part of the family Plethodontidae. The Tehachapi slender salamander was discovered in 1968 and described based on specimens within Caliente Canyon at the junction of the Sierra Nevada and Tehachapi Mountains in southern California (Brame and Murray 1968). Populations of Tehachapi slender salamander in the northern slopes of the Tehachapi Mountains are actually a genetically distinct and may be more appropriately classified a distinct species (Jockusch and Wake 2002, Hanson and Wake 2005).

Tehachapi slender salamanders are known from two small areas in south-central California, both in Kern County (Hanson and Wake 2005). *See*, **Figure 1**. Within Caliente Canyon, which is the site of the type locality, salamanders have been recorded from seven locations (Brame and Murray 1968, Hanson and Wake 2005). Populations in the northern Tehachapi Mountains, which may be a different species (Jockusch and Wake 2002), inhabit several isolated canyons ranging from Tejon Canyon southwest to Fort Tejon (Hanson and Wake 2005). A population was also known from the north slope of Black Mountain in the vicinity of Tehachapi Pass, but salamanders have not been found in the area since 1957 (Hanson and Wake 2005).

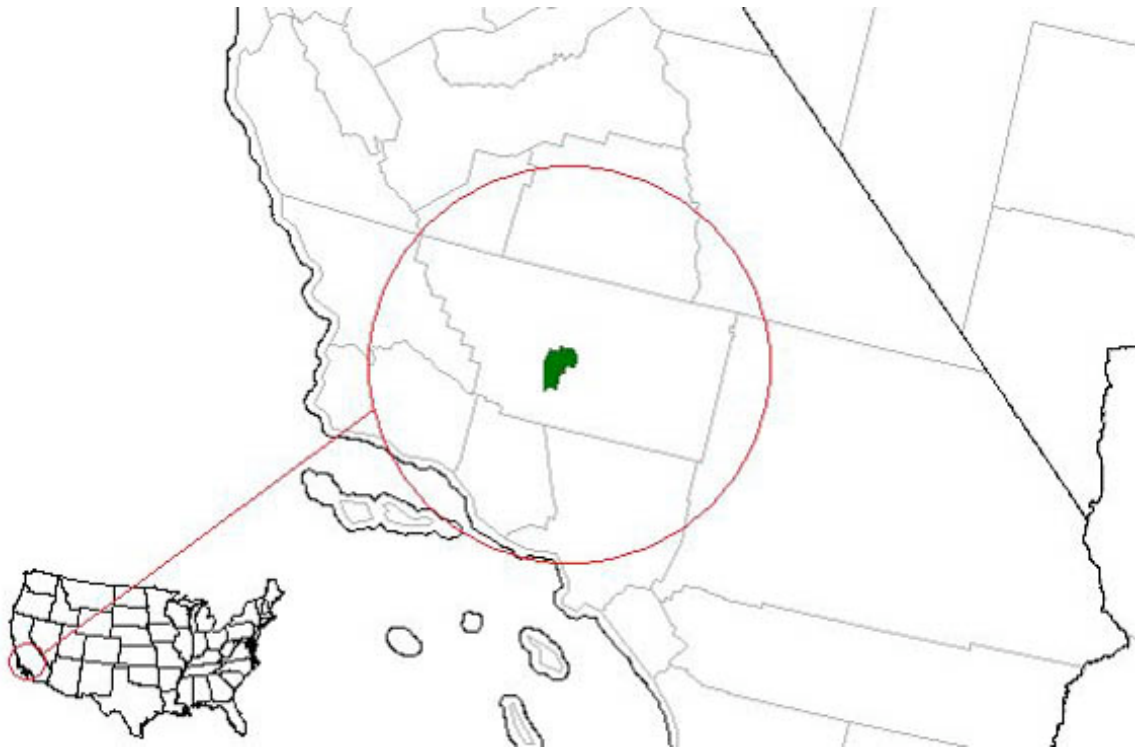


Figure 1. Distribution of the Tehachapi slender salamander. The species is known only from only two areas in Kern County, California (Blackburn et al. 2001).

The species is extremely narrowly distributed and is confined to seasonally-shaded, north-facing slopes of canyons that are located in arid to semi-arid terrain. Populations are described by Hansen and Wake (2005) as “small and localized” (p. 693). The species has already declined, becoming extirpated from the Tehachapi Pass area, likely as a result of highway construction (Brame and Murray 1968, Hansen and Wake 2005).

The seven known localities of the salamander within Caliente Canyon have all been adversely affected by road construction, mining, domestic livestock grazing, and flood control projects (Hansen and Stafford 1994, Jennings 1996, Hansen and Wake 2005). Much of the salamander’s habitat in Caliente Canyon occurs on lands administered by the U.S. Bureau of Land Management (“BLM”), which has failed to prevent the species from being adversely affected (Hansen and Wake 2005). Populations in the Tehachapi Mountains are primarily found on private lands, including the Tejon Ranch, which is succumbing to human development (Hansen and Wake 2005). Indeed, rapid population growth within the region is reported to be a significant threat. Hansen and Wake (2005) state:

Plans exist for the development of several new communities on the vast Tejon Ranch property. Owing to the small size and localized nature of Tehachapi slender salamander populations, the Tejon Ranch sites appear especially vulnerable to habitat disturbance. (p. 693)

In the Tejon Pass area, the construction of a major freeway is reported to have negatively affected salamander populations (Hansen and Wake 2005). Road building has also negatively affected the species in the Tehachapi Pass region (Brame and Murray 1968).

The species has a global heritage ranking of G2, meaning it is imperiled throughout its entire range (NatureServe 2005). The USFWS (1996) describes heritage rankings as “One of the most comprehensive information sources on rare or imperiled species” (p. 64482) and utilizes to assess the conservation status of species. The USFWS (1996) has stated:

[T]he Service regards the species ranked G1, G2, or G3, and subspecies ranked T1, T2, or T3, in the TNC [heritage] database as a reasonable subset of species and subspecies from which to identify those that may be candidates for listing under the [Endangered Species] Act. (p. 64483)

The salamander is designated as Threatened by the state of California (California Department of Fish and Game 2000). Hansen and Wake (2005) state:

Populations of this narrowly distributed species occur on both private and public lands (the latter including portions of the Caliente Canyon range segment and administered by the U.S. Bureau of Land Management) and face variety of threats as noted above. Although listed as Threatened by the State of California, Tehachapi slender salamanders probably warrant some measure of federal protection, given the near-term development pressures in the Tehachapi Mountains. (p. 695)

A. Life History

The Tehachapi slender salamander is a terrestrial breeder. It is believed movements during the breeding season do not occur for the species given that populations are associated with small, discrete patches of suitable habitat. Periods of surface activity vary, depending on precipitation. Gravid females have been reported from February and April at Fort Tejon. It is likely that eggs are deposited deep within rock talus and litter matrix, which characterizes the salamander’s habitat (Hansen and Wake 2005).

Juvenile habitat is reported to be unknown at this time as juveniles are rarely found (Hansen and Wake 2005). Adult habitat is described by Hansen and Wake (2005):

Caliente Canyon, lying at the southern end of the Sierra Nevada, is situated in a moderately arid region. Salamanders are restricted to lower margins of north-facing slopes bordering Caliente Creek, as well as a few side canyons, and are associated with granitic or limestone talus and scattered rocks. Vegetation here consists of foothill pine, interior live oak, canyon oak, blue oak, Fremont cottonwood, sycamore, and California buckeye (Brame and Murray, 1968). At more exposed locations, California juniper, yucca, brush lupine, and buckwheats grow. Substrates range from sandy-gravelly loam to decomposed granite.

In the canyons of the Tehachapi Mountains, Tehachapi slender salamander populations are likewise restricted to north-facing slopes, although they occur at higher elevations. Unlike the Caliente Canyon populations, where salamanders are nearly always associated with

rocks, the Tehachapi Mountains salamanders occur in areas of downed wood or talus. (p. 694)

Tehachapi slender salamanders are considered habitat specialists (Hansen and Wake 2005).

The salamander is vulnerable to desiccation, yet exists in an area where precipitation is unpredictable. Surface activity is tied to the onset of late fall rains, which usually last one to three months. The species may remain active as late as April, with peak surface activity occurring in February and March. During periods of freezing temperature and summer heat, the salamander remains under the surface (Hansen and Wake 2005).

The Tehachapi slender salamander is considered a “relatively large species of *Batrachoseps*” (Hansen and Wake 2005, p. 694). The species exhibits sexual dimorphism, with females averaging 57.0 mm snout to vent length and males averaging 54.0 mm. Minimum age and size at sexual maturity are unknown (Hansen and Wake 2005).

The species co-occurs with yellow-blotched ensatinas (*Ensatina eschscholtzii croceater*) in the Caliente Canyon area and Tehachapi Mountains (Hansen and Wake 2005). In the Tehachapi Mountains, the species is sympatric with black-bellied slender salamanders (*Batrachoseps nigriventris*).

High levels of genetic differentiation, color differences, and size differences are reported between the Tehachapi Mountains population and the Caliente Canyon population of the species, strongly indicating that two species are represented (Jockusch 1996, Jockusch and Wake 2002). However, for the purposes of this petition, the Tehachapi slender salamander refers to both populations. In the event the USFWS determines two species, rather than one exists, petitioner requests the agency list as Threatened or Endangered both species.

IV. Criteria for Listing the Tehachapi Slender Salamander as Threatened or Endangered

Several sections of the regulations implementing the Endangered Species Act (50 CFR § 400 et seq.) are applicable to this petition. Those concerning the listing of the Tehachapi slender salamander as Threatened or Endangered are as follows:

Endangered species means a species that is in danger of extinction throughout all or a significant portion of its range.

Threatened species means any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

A species shall be listed...because of any one or a combination of the following factors:

1. The present or threatened destruction, modification, or curtailment of habitat or range;
2. Overutilization for commercial, recreational, scientific, or educational purposes;
3. Disease or predation;
4. The inadequacy of existing regulatory mechanisms; and

5. Other natural or manmade factors affecting its continued existence.

50 CFR §§ 424.02(e), 424.02(m) and 424.11(c). At least three of the factors set forth in § 424.11(c) are applicable to the present status of the Tehachapi slender salamander

A. Present and Threatened Destruction, Modification, or Curtailment of Range or Habitat

The range of the Tehachapi slender salamander has been reduced (Hansen and Wake 2005). The population in the vicinity of Tehachapi Pass has not been observed since 1957 (*Id.*). Road building, which has destroyed habitat for the species, is reported to be a major factor in the destruction and/or curtailment of the species' range (*Id.*). Hansen and Wake (2005) report that freeway and highway construction have adversely affected the species and limited the occupied range of the species.

Habitat loss and degradation remains the primary threat to the species (Hansen and Wake 2005). The species is extremely narrowly distributed, has very specialized habitat needs, and is therefore extremely vulnerable to population declines and extinction as a result of habitat destruction or modification (*Id.*). Some sites populated by the Tehachapi slender salamander in Caliente Canyon have been adversely affected by road building, mining, domestic livestock grazing, and flood control projects (Hansen and Stafford 1994, Jennings 1996, Hansen and Wake 2005).

Growth and development of human communities is perhaps the most significant threat to the species (Hansen and Wake 2005). Hansen and Wake (2005) state:

Portions of the Tehachapi Mountains (notably Bear, Cummings, and Tehachapi Valleys) are experiencing rapid human population growth, with much development occurring in the foothills. Plans exist for the development of several new communities on the vast Tejon Ranch property. Owing to the small size and localized nature of Tehachapi slender salamander populations, the Tejon Ranch sites appear especially vulnerable to habitat disturbance. (p. 693)

Indeed, development on the Tejon Ranch property poses serious threats to the species. Its significance cannot be overstated and is most certainly cannot be dismissed as a speculative threat. As White et al. (2003) state:

The Tejon Ranch Company is currently planning development of Tejon Ranch. Presently disclosed development projects include the Tejon Industrial Complex, Centennial Project, and Mountain Village Project, all located along the western margin of the Tejon Ranch property, along the Interstate-5 corridor. These industrial and residential development projects will introduce significant additional urbanization to one of the last remaining areas of open space in a region that has experienced considerable land use changes; particularly along Interstate-5 and within the developable valley areas (e.g., Tehachapi, Cummings, San Joaquin, and Antelope valleys). The Tejon Ranch developments are proposed for areas that support regionally underprotected resources such as grassland and oak woodlands, which provide habitat for numerous listed or sensitive species. The location of these developments

has the potential to significantly compromise habitat connectivity between adjacent protected areas. Moreover, the creation of a major urban area within the relatively intact Tejon Ranch will have profound consequences for the natural resources of the area by internally fragmenting the core habitat area of the Ranch. (p. 26)

Given the near term threats of development in the Tehachapi Mountains, Hansen and Wake (2005) state, “Tehachapi slender salamanders probably warrant some measure of federal protection” (p. 695).

The USFWS has recognized that species of the genus *Batrachoseps* are especially vulnerable to habitat loss and degradation and has protected one species, the desert slender salamander (*Batrachoseps aridus*) under the Endangered Species Act (USFWS 1967).

B. Inadequacy of Existing Regulatory Mechanisms

The Tehachapi slender salamander is protected as a Threatened species under the California Endangered Species Act (California Department of Fish and Game 2000). Unfortunately, this designation does not afford adequate protection to the salamander. To begin with, the BLM, as a federal agency, which manages much of the species’ habitat within Caliente Canyon, is not bound to follow the California Endangered Species Act. Second, the California Endangered Species Act does not explicitly protect the species’ habitat or provide any protection similar to the Critical Habitat protection standards of the Endangered Species Act. See, California Endangered Species Act §§ 2070-2085, compare with U.S. Endangered Species Act 16 USC §§ 1534 and 1536. Thus, in relation to development and destruction of the species’ habitat in the Tehachapi Mountains on the privately owned Tejon Ranch, the California Endangered Species Act provides no protection. Finally, unlike the U.S. Endangered Species Act, the California Endangered Species Act does not require the development of a recovery plan for any listed species.

Regardless, Hansen and Wake (2005) explicitly recommend that the species receive federal protection in addition to its designation as a Threatened species under the California Endangered Species Act. Thus, the best available scientific information strongly indicates that federal protection is needed.

Finally, although the Tehachapi slender salamander is recognized as a sensitive species by the BLM, this designation provides no protection to the species. As has already been reported, the species and its habitat have been adversely affected on BLM lands, despite its designation (Hansen and Wake 2005).

C. Other Natural or Anthropogenic Factors

The extremely small size of populations of Tehachapi slender salamander, as well as the species’ specialized habitat needs, makes the species extremely susceptible to extinction as a result of stochastic events, be they environmental, genetic, or demographic (Allee et al. 1949, Petersson 1985, Goodman 1987, Lacy 1987, Brussard and Gilpin 1989, Hanski et al. 1996). As Hansen and Wake (2005) note, the small size and localized nature of populations makes the species “especially vulnerable” (p. 693) to the impacts of development.

The best available scientific information also strongly indicates that anthropogenic climate change resulting from emissions of greenhouse gases threatens the Tehachapi slender salamander (US EPA 1997, White et al. 2003). Climate models suggest that southern California will experience increased winter precipitation, hotter and drier summers, and more severe El Niño events as a result of anthropogenic climate change (US EPA 1997, Field et al. 1999). Hotter and drier summers and more extreme weather puts the small, narrowly distributed populations of Tehachapi slender salamander at greater risk of extirpation and/or extinction as a result of stochastic events (Hansen and Wake 2005).

VI. Summary

The Tehachapi slender salamander has an extremely small population, is extremely narrowly distributed, has declined, and faces numerous threats to its continued existence. Listing as Threatened or Endangered is needed because of the present and threatened destruction, modification, and curtailment of range and habitat, inadequate state and federal regulatory mechanisms, and the inherent vulnerability of small, narrowly distributed populations to extinction as a result of stochastic events. The Tehachapi slender salamander more than meets three criteria for listing as Threatened or Endangered and must be listed to protect and recover the species and its habitat.

VII. Documents Cited

Petitioner hereby incorporate by reference every document cited in this petition and/or cited in the References below. I am happy to provide copies of any other cited documents upon request.

VIII. 90-day Finding

Petitioner expects to receive a formal acknowledgement of this petition and expeditious finalization of a formal listing proposal and rule. Petitioner expect to receive a formal acknowledgment of this petition and a decision within 90 days of its receipt.

Submitted this ____ day of February 2006.

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enc:

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