

FIVE YEAR STATUS REPORT

I. COMMON NAME: Tehachapi Slender Salamander
SCIENTIFIC NAME: Batrachoseps stebbinsi
CURRENT CLASSIFICATION: Threatened

II. RECOMMENDED ACTION:

Retain Threatened classification.

III. SUMMARY OF REASONS FOR RECOMMENDED ACTION:

Threatened designation is warranted for the Tehachapi slender salamander (TSS) because of its small range, which makes it especially vulnerable to environmental disturbances. In addition, the fact that most known occurrences are on private land makes it difficult to protect essential habitat for this species.

SUPPORTING INFORMATION

IV. NATURE AND DEGREE OF THREAT:

Caliente Creek Canyon harbors the largest known population of TSS. Nearly all of the canyon is privately owned, with the exception of a few small parcels owned by the Bureau of Land Management (BLM). Much of the downed wood in the area has been removed and cattle grazing is widespread. In addition, the road through the canyon is washed out periodically following exceptionally heavy rains, and use of heavy equipment for the subsequent road repairs often causes damage to surrounding habitat.

The U. S. Army Corps of Engineers is studying the potential for a dam within the canyon. If a dam is constructed, the reservoir could inundate all or most of the known TSS localities in the canyon.

No TSS have been seen in the Tehachapi Pass region since the original specimen was collected in 1957. Since then, the construction of a four lane highway through the pass may have buried much of the habitat probably occupied by this species. However, according to T. J. Papenfuss (collector of the 1957 specimen) the site was not destroyed by highway construction. A number of other areas through Tehachapi Pass have been surveyed since 1979 by R. W. Hansen without finding additional salamanders.

All TSS localities in the Tehachapi Mountains are on the privately owned Tejon Ranch. In Tejon Canyon, cattle grazing has severely disturbed the salamander habitat. In addition, the Ranch property may be subject to development for housing. In Bear Trap Canyon, cattle grazing has not directly impacted salamander habitat. Perhaps the most serious future threats

there are logging, the removal of dead wood, and conceivably, subdivision of the area (Hansen 1979).

V. HISTORIC AND CURRENT DISTRIBUTION:

Historic

Batrachoseps is believed to be an old genus, the ancestral Batrachoseps stock probably originating in the Eocene. Although the range of the genus was probably larger in early times, B. stebbinsi is a relict species which has probably always had a small range.

The holotype was collected on April 22, 1967 by John M. Brode. It was found 3 miles west of Paris Loraine (also known as Loraine), in the Piute Mountains of the southern Sierra Nevada, in Kern County, California at 2500 feet elevation. As of 1968, TSS was known only from the type locality and a single locality in the Tehachapi Pass 6.3 mi. SE of Keene Post Office, about 3200 feet elevation, Kern County.

Current

TSS is known only from Kern County (Figure 1). TSS occupies two major areas: Caliente Canyon, lying at the junction of the southern Sierra Nevada and Tehachapi; and at several localities on the northern slopes of the Tehachapi from Tejon Canyon west to Tejon Pass (Grapevine Canyon).

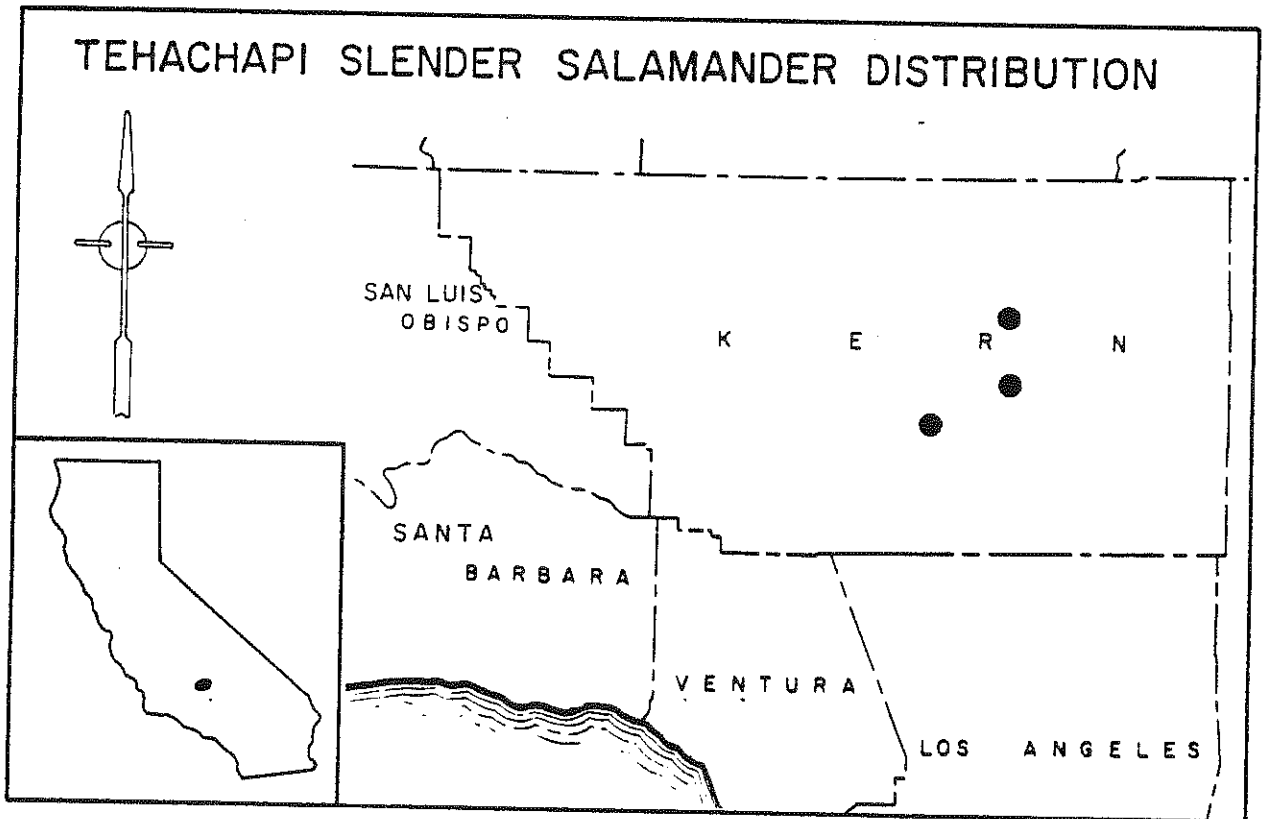
The occurrence of TSS in Caliente Canyon coincides with the distribution of a steep, north-facing exposure. This favorable salamander habitat, consisting of a pine-oak woodland composed of digger pine (Pinus sabiniana), canyon live oak (Quercus chrysolepis), and buckeye (Aesculus californica) is present from about 3 mi. east of Caliente to just east of the type locality. TSS also occurs at one locality on the north-facing slope which is drier and dominated by California juniper (Juniperus californica). The elevational range within Caliente Canyon is from 1800 to 2500 ft.

The occurrence of TSS in Tehachapi Pass is based upon the 1957 collection of a single individual from along old U.S. Hwy. 466, 6.3 mi. southeast of Keene.

In Tejon Pass recent attempts to locate TSS have been unsuccessful, but the black-bellied slender salamander (B. nigriventris) is fairly common at the site and small pockets of favorable habitat exist north of Fort Tejon. TSS also occurs within the boundaries of the State Park at Fort Tejon.

A single specimen of TSS has been found in Tejon Canyon at an elevation of about 3700 ft. TSS has been found at two points on the north-facing slope of Bear Trap Canyon. The first locality is at an elevation of 4600 ft, the highest elevation

FIGURE 1



from which TSS has been taken. Other specimens have been found on a northeast facing slope at an elevation of 4200-4250 ft. TSS have been found on the steep north-facing talus slope of a small ravine located about 2 mi. north of the mouth of Bear Trap Canyon. The elevation of this ravine is 3200 ft (Hansen 1979).

VI. HISTORIC AND CURRENT ABUNDANCE:

Neither historic nor current abundance information is available for this species.

VII. SPECIES DESCRIPTION AND BIOLOGY:

TSS is a large robust species which is distinguished from all other species of Batrachoseps by its relatively large feet. Whereas other Batrachoseps have smaller, less expanded terminal phalanges, TSS has large terminal phalanges which are bifurcated at the tip. The webbing is more extensive than in any other slender salamander species, with no more than 1 phalanx of fingers or toes free of web. TSS also has the longest legs in the genus. In addition, it has a distinctive dorsal color consisting of dark red, brick red, light or dark brown, or light beige patches or blotches, sometimes forming an indistinct band.

It is further distinguished from the Kern Canyon slender salamander (B. simatus) by having a broader head, a shorter tail, and 18 to 19 costal grooves per side in contrast to 20 to 21 grooves. It also has few to no guanophores present midventrally versus many in the Kern Canyon slender salamander.

It is distinguished from its other close relative, the Pacific slender salamander (B. pacificus) by its narrower head, and by the fact that it has a black venter with melanophores arranged in a dense reticulum. In addition, few or no guanophores are present along the middle of the belly and tail.

Sexual dimorphism is apparent in the numbers and placement of the premaxillary teeth. A few (6-8) large premaxillary teeth pierce the lips of males, while females have numerous (9-24) smaller teeth which are situated posteriorly to the lips. Females average larger in size (Brame and Murray 1968).

Species of slender salamander (Batrachoseps) are morphologically and ecologically specialized for subterranean life. They have elongated bodies with large numbers of vertebrae, markedly reduced limbs and feet, and elongated tails. Slender salamanders limit their surface activity to periods of favorable temperature and moisture conditions during the rainy months of winter. They cannot actively burrow and, in order to escape inhospitable surface conditions, rely on passages and spaces excavated by other organisms or produced by agents such as root decay and soil shrinkage.

All slender salamanders are sedentary. Populations seem to have survived in isolated patches of suitable habitat even when surrounding habitats became unsuitable (Yanev 1980).

VIII. HABITAT REQUIREMENTS:

TSS persist in scattered, localized populations restricted to moist canyons in the oak woodland. In Caliente Creek Canyon, TSS occurs sporadically along the south side of the canyon. They are found in several types of microhabitats, though nearly always associated with rocks, especially talus. This preference for utilizing rocks as surface cover may be due in part to the general paucity of fallen logs in this area. TSS have occasionally been found beneath flat rocks at the base of the canyon's north-facing slope, but more often on the steep, moist slope itself. Leaf litter is frequently abundant, though sometimes absent. The amount of moisture present in the immediate vicinity of the salamanders varies. The vegetation on the north-facing slope of Caliente Canyon consists of a moist pine-oak woodland composed of digger pine, live oak, and buckeye.

The Tehachapi Pass region is for the most part drier than other known localities for TSS, and is evidently marginal habitat for this species. The one salamander collected in 1957 was taken from beneath a log adjacent to Tehachapi Creek.

TSS is found in Tejon Canyon on a 25 degree north-facing slope. At this site, a layer of talus from 1 to 3 ft deep is interspersed with oak leaf litter. The hillside is vegetated with live oak, California black oak (Quercus kelloggii), and buckeye, with occasional currants (Ribes sp.), and herbaceous growth. Some filtered sunlight reaches this part of the forest which is about 120 ft upslope from Tejon Creek.

In Bear Trap Canyon, TSS are found beneath small, decomposing logs. Slope incline ranges from 25-35 degrees. The soil is moist and loamy. Some areas on this hillside contain patches of small rocks. Oak leaf litter is abundant. This well-wooded slope contains canyon live oak, and California black oak, with miner's-lettuce (Montia perfoliata) on the forest floor. Only heavily filtered sunlight penetrates the heavy live oak canopy.

North of Bear Trap Canyon, TSS have been found under logs on the steep north-facing talus slope. Vegetation in this small ravine is composed of live oak, California black oak, interior live oak (Quercus wislizenii), buckeye, and miner's-lettuce. Some filtered sunlight reaches the sides and bottom of the ravine (Hansen 1979).

IX. CURRENT AND RECOMMENDED MANAGEMENT:

There is no current management of TSS. Although TSS is listed as occurring in the Sequoia National Forest (SNF), the 1985 Draft Land and Resource Management Plan does not provide for management of this species (USDA 1985). The Forest should include TSS on its list of Management Indicators. TSS should be considered under the Threatened and Endangered Fish and Wildlife Section of the Minimum Management Requirements. It should also be considered in the Minimum Implementation Requirements and in the Fish and Wildlife section of the Preferred Alternatives.

The Forest Plan should incorporate information on the distribution of the TSS in the SNF. It should also define the habitat requirements of this species, and discuss the effects of land use activities on existing and potential habitat.

More information is needed to prepare a management plan for this species. Periodic surveys are necessary to evaluate TSS population and distribution changes and to assess the threats posed to TSS habitat. In addition, land uses, such as the removal of downed logs, and the use of heavy equipment should be curtailed in areas of known TSS habitat. Acquisition of private land and the establishment of at least one ecological reserve in prime habitat should receive a high priority. An ideal site for a reserve is Bear Trap Canyon because it supports a large TSS population.

X. INFORMATION SOURCES:

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