



# Seepage Salamander

North Carolina Wildlife Profiles



Photo by Gary Nafis

## Seepage Salamander

(*Desmognathus aeneus*)

The Seepage salamander is a small terrestrial salamander endemic to the southeastern United States. Its name describes its preferred habitat — seepages or small headwater streams. In North Carolina, seepage salamanders are restricted to the southwestern corner of the state. Like all salamanders in the family Plethodontidae, seepage salamanders lack lungs and instead conduct respiration through their skin and the tissues lining their mouth. Although the current range of seepage salamanders is small, they may be locally abundant. Seepage salamanders are an extremely secretive species and are active primarily at night. Biologists have noticed that seepage salamanders are unaffected by predatory interactions with other locally abundant salamanders, such as species in the mountain dusky salamander complex.

### Description

The seepage salamander is small and slender with a relatively round, short tail. Adults have dark bellies and a yellowish to reddish-brown back adorned with a wavy or sometimes straight dorsal stripe. The dorsal stripe is usually a line or series of spots, with darker sides. Seepage salamanders often have a dark “Y” on their heads, posterior to the eyes. Most individuals have a light circular mark on the top of each thigh. Adults have 13–14 costal grooves with a maximum snout vent length of 29 mm (1.14 inches) in males and 26 mm (1 inch) in females. Total lengths (snout to tail tip) range from 38–57 mm (1.5 -2.4 inches). Like all members of the Plethodontidae family, seepage salamanders do not have lungs.

### History and Status

The seepage salamander’s distribution extends throughout the United States, in southwestern North Carolina, eastern Tennessee, northern Georgia and north-central Alabama. However, populations occur sporadically, as they are restricted to specific habitats. Although sometimes locally abundant, seepage salamanders are listed as Near Threatened by IUCN Red List and Significantly Rare by the state of North Carolina because habitats primarily used (small seeps and headwater springs) are under-protected and threatened by human activities. The North Carolina designation also reflects its patchy statewide distribution. Increased monitoring of North Carolina and southeastern populations is needed to assess long-term status of this species.

For more information on the seepage salamander, visit [www.ncwildlife.org/seepage-salamander](http://www.ncwildlife.org/seepage-salamander).

A secretive species active primarily at night



Photo by Gary Nafis

### Range and Distribution

The seepage salamander is located in an isolated region in the Southeastern United States. It occurs in southwestern North Carolina, eastern Tennessee, northern Georgia, and north-central Alabama. In North Carolina, this species has a limited, patchy range in deciduous forests and seepages of a few far southwestern mountain counties.

### Range Map



■ Seepage Salamander Range

# Seepage Salamander

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## Habitats and Habits

Although seepage salamanders do prefer seeps, wetlands or headwater springs, they also are terrestrial and can often be found in well-shaded upland habitats in the general vicinity of seeps and streams. Adult salamanders are nocturnal and typically remain hidden under debris and vegetation on the forest floor. When active, this species is not known to climb or actively burrow. Seepage salamanders are not believed to be territorial in the wild, and under laboratory settings the salamanders show little to no aggression towards dusky or pigmy salamanders. Seepage salamanders coexist with other *Plethodon* species at most locations. Seepage salamanders are most active during the spring and summer. During this time, seepage salamanders breed terrestrially. The females stay with the clutch of 3-19 eggs until hatching. When encountered by predators, such as spring salamanders and ringneck snakes, seepage salamanders remain immobile, primarily in a linear posture.

## Human Interactions

The major threat to seepage salamanders is habitat loss due to development and intensive forest management practices including clear-cutting. These salamanders are seldom active on the surface and can't adapt well to these habitat changes. Aside from habitat degradation, human interactions with seepage salamanders are minimal due to this salamander's preference for isolated, semi-aquatic habitats. This non-migratory species of salamanders is active at night and remains under the foliage of the forest for the majority of the time.

## NCWRC Spotlight

The [N.C. Wildlife Action Plan](#) designates the seepage salamander as a Species of Greatest Conservation Need and the N.C. Natural Heritage Program considers it "Significantly Rare" in the state. Because the primary threats to seepage salamander habitat come as a result of intensive timber cutting activities, leaving streamside buffer zones intact around headwater springs and seepages can help diminish the effects of logging on these salamander habitats. The goals of the Wildlife Commission for this species include establishing baseline population-size and distributional data, and implementing monitoring studies to track and understand long-term trends.

### Sources

NatureServe Explorer. *Desmognathus aeneus* Brown and Bishop, 1947 Seepage Salamander. Hammerson, Geoffrey and Julian Harrison. 2004. *Desmognathus aeneus*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.1. [www.iucnredlist.org](http://www.iucnredlist.org).  
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### Credits

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## Wild Facts

### Classification

Class: Amphibia  
Order: Caudata  
Family: Plethodontidae

### Average Size

Adult total length 3.8 – 5.7 cm (~2 inches)

### Food

Seepage Salamanders feed primarily on insects and other arthropods, but will also eat earthworms and land snails.

### Breeding

Seepage Salamanders breed on the forest floor, near seepage areas and streams. Females lay 3-19 eggs, usually from April through June. Eggs are deposited under mosses, logs or leaf-litter and the female stays with the clutch for 5 to 7 weeks until hatching.

### Young

The young hatch after 5 to 7 weeks and mature in two years. Some seepage salamanders hatch with tiny gills and dorsal fins but these are absorbed and disappear within a few days. These salamanders have no aquatic larval stage.

### Life Expectancy

A wild caught specimen survived 4 years and 14 days. However, life expectancy in the wild is unknown.



Photo by Franco Andreone