



Green Salamander

North Carolina Wildlife Profiles



Photo by Lori Williams

Green Salamander

(*Aneides aeneus*)

Although most people have never seen one, the rare and attractive green salamander has become something of a symbol for amphibian species conservation, and is an excellent example of how creatures with highly specialized lifestyles and habitat requirements have suffered the most from humans.

Description

The green salamander's dorsal ground color is black, gray or dark brownish with bright green or yellowish green patches resembling lichens. The belly is pale yellowish or whitish. The head and body are somewhat flattened, the tail and legs are rather long, and the toes are slightly webbed with enlarged, squarish tips. With the exception of some specimens of the very different eastern newt (*Notophthalmus viridescens*), the green salamander is North Carolina's only truly "green" salamander and is easily identified on that basis.

History and Status

Green salamanders are considered uncommon to rare throughout most of their range, and many existing populations appear to be declining. Development, logging and other activities have destroyed much green salamander habitat, but acid rain may also represent a serious threat. In the 1980s, North Carolina populations — even those in apparently rather pristine areas — plummeted drastically for reasons that still are not altogether clear but are believed to be related, at least in part, to acid precipitation. Several populations have since undergone an apparent gradual recovery, but there is still much concern for the future of this rare and secretive species. Much remains to be learned about its natural history, habitat requirements, sensitivity to environmental contaminants and natural population dynamics.

For more information on the green salamander, visit www.ncwildlife.org/greensalamander.

Habitats & Habits

Green salamanders inhabit primarily narrow crevices in rock outcrops shaded by moist hardwood forests. Their flattened bodies, expanded toe tips and lichen-like markings are ideal adaptations for life on rock faces. Preferred habitats are large granite outcrops with narrow crevices that are moist but not wet. Ideal green salamander habitat includes buffers around and between rock outcrops of at least 100 meters to shade rocks, help keep them moist and provide arboreal habitat for dispersing and foraging salamanders. Clear-cutting or other intense timber harvesting directly around rocks can be detrimental to green salamander habitat. Rarely, they

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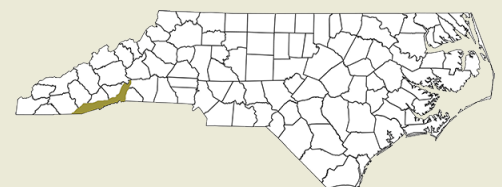


Photo by Austin Patton

Range and Distribution

Green salamanders occur in highly localized populations in portions of Pennsylvania, Maryland, West Virginia, Ohio, Kentucky, Virginia, Tennessee, Mississippi, Alabama, Georgia and the Carolinas. In North Carolina, populations are known from only the southern mountains in Macon, Jackson, Transylvania, Henderson, Polk and Rutherford counties.

Range Map



■ Green Salamander Range

Green Salamander

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Habitats & Habits (continued)

may be found under rocks, logs or loose bark, and they occasionally may climb trees. Most activity apparently takes place at night, when they may emerge from crevices to forage for small arthropods on the exposed surfaces of rock faces.

Like other members of the large family *Plethodontidae*, green salamanders lack lungs. Respiration is accomplished via moist skin and through the lining of their mouth and pharynx. They are fully terrestrial, and an individual could conceivably live out its entire life in a single rock crevice.

Green salamanders are active primarily from late March through October. They hibernate in deep crevices during the colder months.

The highly absorptive skins of amphibians make them very sensitive to environmental contaminants. Living on bare rock and in direct contact with precipitated moisture, salamanders are more vulnerable to pollutants than organisms that live in water or soil, where impurities have a chance to be diluted or filtered before moisture directly contacts the animal. Therefore, amphibians are excellent bio-indicators of ecosystem health. Much remains to be learned about their overall ecology.

Human Interactions

Green salamanders are very seldom encountered by anyone other than a very small number of herpetologists and other naturalists who know how and where to look for them. Patience, a flashlight, knowledge of the right locality and some strategic climbing are usually necessary in order to obtain a glimpse of one of these extraordinary amphibians. Rare and attractive animals often are victims of unscrupulous collecting for the pet trade. The green salamander has been largely spared this potential problem because of its unsustainability as a captive.

NCWRC Wildlife Diversity Program biologists have inventoried green salamander populations every year since 2002. Each year they monitor the same random sub-set of known sites to track changes in their ability to detect green salamanders if they are present at those sites. Over time, this metric should serve as a type of index for the health and status of local populations. They also continually look for new sites as well as visit the rest of the known historical locations every few years. Along with project partners and volunteers, staff has almost tripled the number of known sites in the past five years.

References

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Credits

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Wild Facts

Classification

Class: Amphibia (amphibians)

Order: Caudata

Average Size

3³/₄ to 5 inches.

Food

Green salamanders eat mostly live insects and other arthropods. Beetles and ants are important food items.

Breeding

Breeding usually takes place from May to August in rock crevices. Males deposit a spermatophore, or sperm capsule, which is picked up by the female and used to internally fertilize her eggs. Ten to 25 eggs are deposited in a cluster on the upper wall of a crevice. The larval stages take place within the egg, which hatches into a fully terrestrial and independent juvenile in about three months. The female remains with the eggs throughout the developmental period, presumably guarding them from potential predators.

Young

Hatchlings average slightly less than 1 inch in length and resemble miniature adults.

Life Expectancy

Unknown



Female green salamander guards her clutch. (Photo by Allen Cameron)