



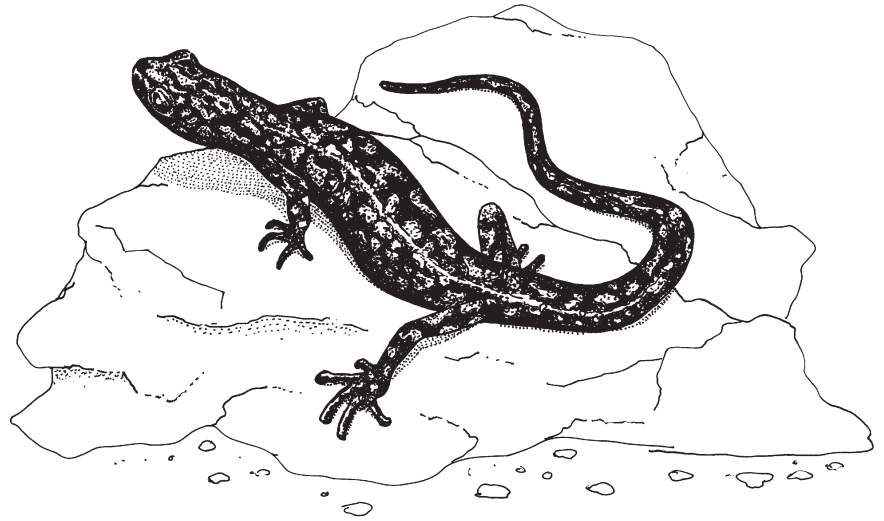
Green Salamander

Aneides aeneus

This rare and attractive salamander is the only amphibian listed as endangered in North Carolina. Though most persons have never seen one, the species has become something of a symbol for endangered species conservation, and it is an excellent example of how creatures with highly specialized lifestyles and habitat requirements have suffered the most from humans.

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 are still 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. The species is currently listed as endangered in North Carolina and may not be legally collected, harmed or possessed



without a special permit from the Wildlife Resources Commission.

Description

The green salamander's dorsal ground color is black, gray or dark brownish, heavily patterned 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.

Habitat and Habits

Green salamanders inhabit primarily narrow crevices in rock outcrops shaded by moist hardwood forests. Their flattened bodies, expanded toe tips and lichenlike markings are ideal adaptations for life on rock faces. Preferred habitats are large granite outcrops with narrow crevices that are moist but not wet. Rarely, they may be found under rocks, logs or loose bark,

and they may occasionally ascend 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 their moist skin and 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



Range Map:
Occupied range 

precipitated moisture, the 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. Amphibians are therefore excellent bio-indicators of ecosystem health. Much remains to be learned about their overall ecology.

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 and Rutherford counties.

People 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 the victims of unscrupulous collecting for the pet trade. The green salamander has been largely spared this potential problem because of its unsuitability as a captive.

References

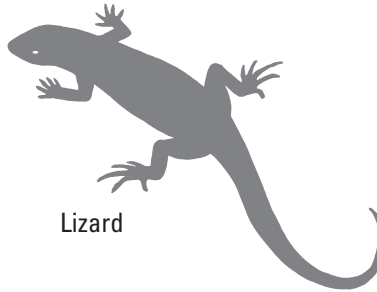
Behler, John L., and F. Wayne King. *The Audubon Society Field Guide to North American Reptiles and Amphibians* (New York: Alfred A. Knopf, 1985).

Conant, Roger, and Joseph T. Collins. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America* (Boston: Houghton Mifflin Co., 1991).

Martof, Bernard S., William M. Palmer, Joseph R. Bailey and Julian R. Harrison III. *Amphibians and Reptiles of the Carolinas and*



Salamander



Lizard

Virginia (Chapel Hill: University of North Carolina Press, 1980).

Credits

Written by Jeff Beane.

Illustrated by J.T. Newman.

Produced January 1997 by the Division of Conservation Education, N.C. Wildlife Resources Commission.

The Wildlife Resources Commission is an Equal Opportunity Employer, and all wildlife programs are administered for the benefit of all North Carolina citizens without prejudice toward age, sex, race, religion or national origin. Violations of this pledge may be reported to the Equal Employment Officer, N.C. Wildlife Resources Commission, 512 N. Salisbury St., Raleigh, N.C. 27604-1188. (919) 733-2241.

GREEN SALAMANDER

Classification

Class: Amphibia

Order: Caudata

Average Size

3¼ to 5 in.

Food

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 an inch in length and resemble miniature adults.

Life Expectancy

Unknown