



# Eastern Newt

## North Carolina Wildlife Profiles



Red-spotted newt, eft stage (Photo: Jeff Hall)

## Eastern Newt

(*Notophthalmus viridescens*)

North Carolina is home to seven different families of salamanders, with the majority of species belonging to the family Plethodontidae. However, the Eastern newt, also a salamander, is the only representative found in the state from the family Salamandridae. Newts are an unusual salamander because they can have an immature eft stage, which can be brightly colored and completely terrestrial.

### Description

Two subspecies of the eastern newt occur in North Carolina, the red-spotted newt and the broken-striped newt. As an adult, the red-spotted newt stretches 4 to 5 inches long. It has smooth skin and a yellow belly. Its back is olive green or yellowish brown, with two rows of orange-brown, black-bordered spots. The adult broken-striped newt is smaller, about 3 ½ inches long. Olive green and yellow in color, as well, the broken-striped newt gets its name from a broken red stripe edged in black that extends from the back of the head to the base of the tail on each side.

### History and Status

Fossil records from Florida show that newts have crawled on Earth since the Pleistocene era some 1 million years ago. Today, about 40 species of newts are found worldwide; six occur in North America and one in North Carolina. Newt populations remain strong, especially in North Carolina where millions occur. Newts are resilient creatures and their populations are healthy enough to withstand local droughts.

### Habitats & Habits

The newt is an unusual member of the Salamandridae family because it undergoes two transformations during its lifetime, rather than one experienced by many other amphibians. Most salamanders have two forms, larval and juvenile/adult, where the juvenile and adult stages are similar in their appearance and choice of habitat. Newts typically pass through three stages—the larval stage, in water, the eft stage, on land, and the adult stage where the newt returns to the water again.

Newts can survive in a wide variety of aquatic habitats. Unlike some salamanders, newts can adapt to permanent ponds with fish. Newts' favorite habitat, however, is temporary, or ephemeral, ponds that fill and dry out in cycles.

As winter rains fill these ponds, and as temperatures drop, newts move toward water to breed. Once a male locates a mate, he grasps the female around the neck or front legs with his large back legs, grabbing tightly to prevent an escape. He rubs his cheeks and neck on her head, smearing his scent in a motion that looks like a kiss. Then he scoots off a short distance in the water and deposits a spermatophore, the

The newt is a salamander with three life stages.

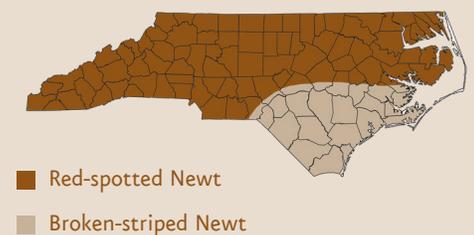


Broken-striped newt, eft stage (Photo: Jeff Hall)

### Range and Distribution

Newts populate every county in North Carolina. The red-spotted newt thrives primarily in the mountains, Piedmont and northern Coastal Plain. The broken-striped newt inhabits the southeastern Coastal Plain and the Sandhills.

### Range Map



### Habitats & Habits (continued)

male spermatozoa enclosed in a capsule like form. She follows, collecting the cluster into a cavity on her belly called a cloaca through which her eggs will pass. Within a few hours she begins to lay. The female lays each egg singly, fastening it to a small plant in quiet waters. Over several months, a female newt may deposit 200 to 375 of the tiny yellow eggs in a breeding pond.

The newt's second stage is called an eft. The red-spotted newt's eft is usually bright orange or red, while the broken-striped eft is usually a dull red or brown. The eft now has lungs and less porous skin as it emerges from the water for this land stage. It is small, measuring 1 to 3 inches in length. It scurries to the forest to live, sheltering under logs or leaf litter and foraging for small insects, spiders, snails and earthworms for food. Possessing toxic skin at all stages of development, the newt in this eft stage is well protected from most terrestrial predators. Efts may remain on land for as long as three to four years before returning to the pond for a second transformation. Once back in at the pond or pool, the eft becomes sexually mature and develops a tail fin and darker coloration. In some instances however, newts skip the terrestrial eft stage and transform directly to the adult stage. This is poorly understood by biologists, and is not limited to local populations or geographic distribution.

Adult newts eat a wide variety of small animals, preferring tadpoles, mosquito larvae and especially amphibian eggs, such as those of other salamanders. Raccoons, minks, weasels and other mammals prey on newts, often peeling off their toxic skin and rolling them in the grass. Snakes and birds may also eat newts. But newts' distasteful skin and hiding instincts usually provide ample protection.

### Human Interactions

Some newt populations may have benefited from farming, since this hearty amphibian can survive in ponds with fish. People also find newts beneficial because the larvae and adults eat mosquito larvae.

Eastern newts are considered a common species in North Carolina but as with many other amphibian species, Commission biologists could use the public's help monitoring their population. Attracting these salamanders to a yard can be as simple as providing cover by not removing fallen logs or creating wood piles and maintaining suitable adult aquatic habitat with both emergent and submerged native plants. [Herpmapper](http://www.herpmapper.org) ([www.herpmapper.org](http://www.herpmapper.org)) is an online database available for anyone to log their amphibian sightings into.

### For More Information/References

Beane, Jeffrey C., et al. *Amphibians and Reptiles of the Carolinas and Virginia* (University of North Carolina Press, 2010.)

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

Earley, Lawrence S. "Back to the Pond," *Wildlife in North Carolina*, Dec. 1991, pp. 2-3.

#### Credits

Originally written by Sarah Friday; updated by Kim Burge, Mike Campbell, NCWRC 2018

### Wild Facts

#### Classification

Class: Amphibia

Order: Caudata

Family: Salamandridae

#### Average Size

Red-spotted newt – 4 to 5 inches

Broken-striped newt – 3 ½ inches

#### Food

Larvae: plankton, small insect larvae

Adults: tadpoles, insect larvae, amphibian eggs and many other small animals.

#### Breeding/Young

Most breeding takes place in winter and early spring. Male deposits spermatophore in water and the female collects it. She lays 200 to 375 eggs through the summer, which incubate 20 to 35 days. Larvae live in ponds for 2 to 3 months, transforming to an eft, or land stage, by fall. Remain in eft stage up to 3 to 4 years before returning to pond as adult. Some individuals skip the eft stage.

#### Life Expectancy

Newts are long-lived, and can survive for 10 to 15 years.



Red-spotted newt (Photo: Brian Gratwicke)