



# Marbled Salamander

## North Carolina Wildlife Profiles



Jeff Hall

## Marbled Salamander

(*Ambystoma opacum*)

The marbled salamander is a relatively common resident throughout North Carolina. Sporting white or gray bands across its body, this secretive species is known to hide out beneath leaves and logs. Marbled salamanders are part of the “mole salamander” family, which is a group of salamanders endemic to North America, and the only genus in the family Ambystomatidae. The marbled salamander is North Carolina’s State Salamander, thanks, in part, to efforts by the N.C. Herpetological Society, which helped lead the effort to designate state amphibians. The designation became official on June 26, 2013.

### Description

The marbled salamander is one of the smaller Ambystomatid mole salamander species found in North Carolina, with adults only reaching lengths between 3½-4½ inches. As with many Ambystomatids, the marbled salamander is a relatively stocky species. Having an overall dark gray or black body, the marbled salamander gets its name from the 4-7 white or gray bands crossing its back and sides, often forming a “marble” pattern. Males are typically smaller than females and, during the breeding season, their silvery-white crossbands become bright white. The larger females have bands that tend to be more silvery-gray than white, although these markings can vary dramatically between individuals. The larvae are typically black or dark brown with light spots along the side. Recently metamorphosed marbled salamanders are gray or brown with pale speckles, and have striped toes.

### History and Status

In North Carolina, the marbled salamander is considered common and not threatened. However, there is some concern regarding habitat loss due to its reliance on temporary wetlands and certain forested habitats. The marbled salamander’s survival depends on the public’s ability to conserve habitat with ephemeral pools and adjacent upland forest. Many other amphibian species in the state depend on these same habitats.

### Habitats & Habits

Marbled salamanders prefer to reside in damp woodlands that are close to floodplain pools and ponds. They are occasionally spotted on dry hillsides, but rarely stray far from moist environs. Overall, they are more tolerant of dry habitat than many other salamanders, due to their burrowing ability. Like the mole, which gives rise to the common name of this family of salamanders, marbled salamanders create burrows and tunnels, and spend most of their time underground. The adults are nocturnal, spending the days under logs and leaf litter or in burrows.

*Marbled salamander larvae can help to control mosquito populations in some habitats.*

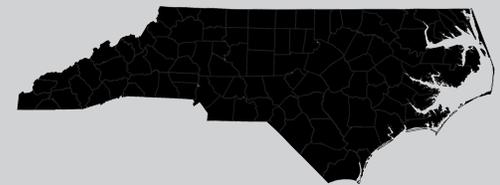


Male and female marbled salamander (Jeff Hall)

### Range and Distribution

The marbled salamander is found in the Eastern United States from Northern Florida up to southern New England, ranging west through the gulf states into Texas and northwest into Illinois. In North Carolina, marbled salamanders are found statewide in a variety of forest habitats.

### Range Map



■ Marbled Salamander Range Map

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### Habitats & Habits (continued)

Instead of breeding in water during spring like other mole salamanders, the marbled salamander breeds in the fall on land. Females lay their eggs in a variety of dried-up ponds, pools or ditches that have not yet filled with winter rains. Nests are usually laid under leaf litter, logs or other debris within the depression basin, and are guarded by the female until the eggs are covered with water. Clutch size ranges from 50-200 eggs. While in the nest, embryos will develop within their jelly coats, but they cannot hatch until the area fills with water. If there is not enough rain to fill these wetlands in the fall, the eggs will sometimes overwinter and hatch in the spring instead. Larvae generally develop over 3-6 months before going through metamorphosis.

The marbled salamander is largely a solitary species that will defend its burrow from other marbled salamanders, but it has been known to occasionally share burrows.

Effective predators, marbled salamanders consume large amounts of food, generally consisting of terrestrial invertebrates like worms, spiders, slugs, snails, centipedes, and a variety of other insects. Marbled salamanders only eat live prey. The larvae of the marbled salamander are also quite voracious predators, eating zooplankton upon hatching, but adding more prey as they grow, including aquatic insects, isopods, fairy shrimp, snails, worms, and the larvae of other amphibians. The larger larvae will also eat caterpillars and other terrestrial invertebrates that fall into ponds. Like other amphibians, marbled salamanders are preyed upon by many other animals, such as owls, snakes, raccoons, skunks, shrews and weasels.

### Human Interactions

The main threats to marbled salamanders include habitat loss, such as development, fragmentation and habitat destruction. Alteration of ephemeral habitats through draining, deepening, or introduction of fish can reduce the ability of marbled salamanders to successfully reproduce. Timber harvest that significantly reduces canopy, understory vegetation, forest litter, or woody debris can reduce the amount of available habitat for marbled salamanders and other similar amphibians. Marbled salamanders have occasionally been found in the international pet trade, but not currently at levels that threaten the species.

### References

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### Credits

Written by Jeff Hall and Malory Henderson, NCWRC, 2018.

### Wild Facts

#### Classification

Class: Amphibia

Order: Caudata

Family: Ambystomatidae

#### Average Size

Length: 3½-4½ inches; females are larger than males

#### Food

Worms, spiders, slugs, snails, centipedes, insects

#### Breeding/Young

Marbled salamanders are fall breeders. Females lay eggs under leaf litter, logs or other debris in dried-up areas that have not filled with winter rains. Clutch size varies from 50-200. Female remains with eggs, keeping them moist, until the eggs are covered with water. Larvae typically develop over 3 to 6 months before going through metamorphosis.

#### Life Expectancy

Like other mole salamanders, marbled salamanders have relatively long lifespans, potentially living 8 to 10 years or more.



Marbled salamander larvae (Jeff Hall)