



Tiger Salamander

Ambystoma tigrinum

Shy and secretive, the tiger salamander eludes most people and animals. But declining numbers due to habitat loss make this large, quiet salamander an even rarer sight in North Carolina.

History and Status

Before the late 1800s, tiger salamanders thrived in the sandhills and pine forests of the Southeast. Records show that this native species once was much more common and ranged from the eastern edge of the Piedmont through the upper Coastal Plain in a band from Virginia to South Carolina. Clay-based Carolina bays and longleaf pine forests, especially, made prime habitats for tiger salamanders. The bays provided rich breeding grounds with fertile vegetation; the forests brought protection, places to burrow and food.

By clearing forested land and draining ponds for farmland, beginning in the 1800s, humans altered living space for the tiger salamander. Without suitable habitat, tiger salamander populations declined rapidly. Breeding sites present in the 1950s are the only ones left today. North Carolina declared the tiger salamander a threatened species in 1990.

Description

The largest salamander in the family Ambystomatidae, the tiger salamander grows to be about 7 to 11 inches long. Dark gray or gray-brown, it has yellowish blotches on its back, sides and belly. Males and females look much the same, except the

female's tail is shorter and does not flatten like the male's during the breeding season. Tiger salamanders, like other mole salamanders, have five toes on each hind foot and four on each front foot.

Habitat and Habits

Tiger salamanders need two types of habitat to survive—ponds for breeding and moist earth for burrowing. In North Carolina, they favor upland areas with sandy soils and sandhills or flatwoods vegetation. Pine forests are common near breeding ponds.

Once a year, tiger salamanders migrate from their terrestrial homes to a breeding site as little as a few yards or as far as a half-mile away. They generally choose clear, fish-free ponds that dry up from time to time. These temporary, or ephemeral, ponds produce the lush vegetation tiger salamanders need for cover and egg-laying surfaces. They can be small farm ponds or large bays of up to 100 acres.

In North Carolina, male tiger salamanders start moving to the breeding ponds in December when adequate rains occur. Females follow soon after. In prime weather conditions, females may arrive the same night as the males. But frequently they come two weeks to a month later. The cold breeding conditions and recently filled

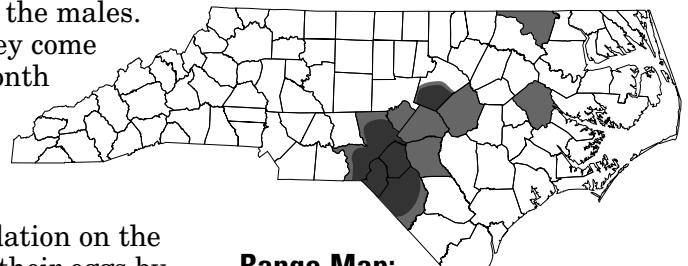
ponds reduce predation on the salamanders and their eggs by aquatic predators. Early breeding helps to ensure complete meta-

morphosis by the larvae before the ponds normally dry out in late spring or early summer.

During breeding, a pair of tiger salamanders may nuzzle as a type of courtship. Then the male deposits a spermatophore on the bottom of the pond. The female glides over the spermatophore and picks it up through a vent on her underside. Over the next two or three nights, she lays 200 to 400 eggs in clusters of about 30 to 60 eggs each. With the next rain, the female leaves. Males stay at the pond through most of February.

The egg masses are usually attached to twigs, stems or grasses, but they may float free if the support is broken. Typically, the eggs hatch in about two weeks to a month. The warmer the weather, the quicker they hatch.

Tiger salamander larvae grow quickly under good conditions. Voracious eaters, they feed on dragonfly nymphs, tadpoles and about anything else that fits in their mouths. In May or early June, the larvae, about 6 inches long, transform into juveniles. They test their lungs in the shallow edges of the pond after reabsorbing their gills and losing



Range Map:

Present range ■
Historic range ■



their fins. Once transformed, they leave the breeding site at the next wet period. Some tiger salamanders may mature in North Carolina by the following year's breeding season, but typically males are believed to mature in two years; females, in three.

Once transformed, tiger salamanders spend the rest of their life on land except for annual trips to breeding ponds.

Tiger salamanders favor natural upland wetlands for their breeding habitats. Longleaf pine communities, especially, provide the terrestrial habitats with food, cover and moist soils the tigers need to survive. They dig or find burrows such as a mole hole or a rotten root. Usually they locate one or two in a general area and return to the same burrows after each breeding season. Most tiger salamander burrows are 2 to 6 inches below the surface and about as wide as a quarter. Tiger salamanders do not burrow in groups, but a number of burrows may be found in one area if the soil is soft and moist.

Tiger salamanders feed mostly at night, catching prey in and around their burrows rather than foraging for food. Earthworms, spiders, pill bugs and other insects make typical meals. Tiger salamanders use tiny teeth to grasp their prey and their tongues to help them swallow it.

Range and Distribution

Tiger salamanders can be found over much of the central and eastern United States and into Mexico. With most of the populations east of the Appalachian Mountains in decline, tiger salamanders are more commonly found in the Midwest, such as in Wisconsin and Colorado.

Once widely scattered in the inner Coastal Plain and lower Piedmont, and in the Sandhills, the tiger salamander's range is limited to Hoke, Scotland, Robeson,

Moore and Wake counties. Only one breeding site remains in Wake County, and one in Moore County was discovered in 1993, the first time the tiger salamander had been seen there since 1893.

People Interactions

People enjoy tiger salamanders as pets. These amphibians are easily maintained in terrariums layered with a few inches of damp earth. Potential problems exist, though, if tiger salamanders from other states and regions are sold and then released in North Carolina, carrying disease or stresses the local species cannot tolerate.

The biggest threat to native tiger salamanders is the loss of habitat in North Carolina. With suitable forests and upland wetlands, people and tiger salamanders can coexist. However, land-clearing for farms in the late 1800s through the 1950s reduced much of the tiger salamander's living room. The conversion of pine savannas to timber plantations and wetland draining limited habitat further.

References

Martof, Bernard S., William M. Palmer, et. al. *Amphibians and Reptiles of the Carolinas and Virginia* (Chapel Hill, N.C.: University of North Carolina Press, 1980).

Cochran, Doris M. *Living Amphibians of the World* (Garden City, N.Y.: Doubleday & Company Inc., 1972).

Conant, Roger. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*, (Boston, Mass.: Houghton Mifflin Company, 1975).

Credits

Written by Sarah Friday.

Illustrated by J.T. Newman.

Produced January 1994 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.

TIGER SALAMANDER

Classification

Class: Amphibia

Order: Caudata

Average Size

Length: 7 to 11 inches

Food

Earthworms, spiders, pill bugs and other insects.

Breeding

Mate in winter in ephemeral ponds. One male can fertilize eggs of several females.

Young

Females lay 200 to 400 eggs each season. Eggs hatch about two weeks after deposited in the water. Larvae grow rapidly, transforming in about five months. Young remain in pond until transformation, then migrate to land.

Life Expectancy

Long-lived. May live up to 20 years, but average is 5 to 10 years.