

Eastern Tiger Salamander:
Species Account

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Eastern Tiger Salamander (*Ambystoma tigrinum* Green 1825) is one of North America's largest terrestrial salamanders, measuring approximately 34 cm snout to tail. The species was first described by Jacob Green [Green25], from a specimen obtained in New Jersey; he described the iris as “beautifully coloured with gold and brown.”

Adult Tiger Salamanders are stout-bodied, with small eyes and broad heads. The back is dark brown to black, with blotches and spots of cream to greenish yellow; the belly is yellowish with dark marbling.

A. tigrinum is one of seven species of mole salamanders to be found in the mid-Atlantic region. Unlike its congeners, its range is generally restricted to the Coastal Plain province. However, [VDGIF16] reports a disjunct in Augusta County, Virginia, in the Ridge and Valley province.

On the basis of molecular phylogenetic data, [Crother12] splits *A. tigrinum* from the Western Tiger Salamander (*A. mavortium*) ([White07] and this paper follow this classification), while the earlier [Petranka98] describes *A. t. tigrinum* to be one species with the western *A. t. mavortium* and other subspecies.

As mapped by [Petranka98], Eastern Tiger Salamander's range extends in an arc along the Coastal Plain from Long Island to central Florida (with some extension west into the Piedmont), then sweeps back through Alabama and Tennessee into large portions of the Ohio and upper Mississippi River basins. The most northerly extent of the range is extreme southern Manitoba; there is a disjunct in east Texas, adjacent to populations of *mavortium*.

While the species' overall conservation status is ranked as Least Concern and population levels are stable [IUCN15], locally the salamander is assessed at conservation status S2 (Imperiled) in Maryland; S1 (Critically Imperiled) in Delaware, Virginia, and New Jersey; and SX (Presumed Extirpated) in Pennsylvania [NS15]. Important negative pressures on populations include deforestation and loss of wetland habitat and the introduction of non-native predatory fishes into breeding pools. The species is a generalist with respect to terrestrial habitats, and populations can rebound from declines over a period of a few years.

In the eastern U.S., Eastern Tiger Salamander, generally fossorial, favors habitats with sandy or otherwise friable soils plus abundant breeding pools. Adults will actively dig burrows with their front limbs, as well as use tunnels made by other animals. A paper from 1983 reports that a tagged specimen was recorded an average of 12 cm below ground. Relatively little is known about the diet of adults; a source from New York reports insects, worms, and young field mice as prey items [Petranka98] [NS15].

Predators of adults include owls, Badgers (*Taxidea taxus*), and Eastern Hognose Snakes (*Heterodon platirhinos*). In addition to defensive posturing, according to

one source, the salamander can produce a milky secretion that it flings with its tail [Petranka98].

Larvae can match their color to existing backgrounds to avoid predation by birds and other sight-oriented predators [Petranka98].

Breeding occurs generally in temporary habitats--seasonal ponds, ditches, "cattle tanks"--from November through May (across the species' entire range) [Petranka98] and (in Delmarva) on mild, rainy nights from December through February [White07]. During the breeding season males have a long, laterally compressed tail and an enlarged cloaca. In the breeding pool, the male and female engage in a fairly elaborate courtship dance of nudging and coordinated walking, with various undulations and tappings of the tail. The pair exchange a spermatophore that is relatively large compared to other *Ambystoma* species.

Eggs are laid in soft masses attached to twigs and other underwater vegetation. The ova are 2-3 mm in diameter, and the oblong masses are about 55 x 70 mm across. However, clutch sizes are widely variable, compared to other salamanders. Incubation periods vary by region, with 36 days reported by one source for Maryland. Hatchlings measure 13-17 mm [Petranka98]. After the larval stage, metamorphosis to the subadult stage occurs in our area in mid-June through August. Subadults may remain at this life stage for one to several years [White07].

Several variant forms of larvae and adults are known. There is a cannibalistic larval morph with an extra row of prevomerine teeth. In adults, cannibalistic forms are also documented, both with and without gills (although gilled adults are rarely found in *A. t. tigrinum*) [Petranka98].

Unisexual polyploid hybrids of various *Ambystoma* species (combinations of up to five sets of genes from *A. tigrinum*, *A. texanum*, *A. laterale*, and *A. jeffersonianum*) are common throughout the Great Lakes and Maritime Canada. These females are dependent on diploid males for successful reproduction. While some hypothesize gynogenetic reproduction, others argue that there is some hybridogenetic gene flow from the males [Petranka98].

Described by [Green25] as a species of *Salamandra*, Eastern Tiger Salamander's genus was named by [Tschudi39]. Unfortunately, Tschudi did not give a derivation for the name that he chose. It is generally thought that *Ambystoma* was an error for *Amblystoma*, "having a blunt mouth," as set forth tartly by [Scott16]. Indeed, several scientists after Tschudi silently made the correction in print and in labeling specimens. [Lyon16], after [Stejenger07], makes a dubious case that Tschudi intended *Ambystoma* all along and suggests the possible derivation "to cram into the mouth." "Cup mouth" has also been suggested.

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