

Eastern Tiger Salamander, *Ambystoma tigrinum tigrinum*

Status:

State: Endangered

Federal: Not listed

Identification

Each winter a prehistoric-like scene unfolds as adult tiger salamanders, resembling miniature dinosaurs, converge upon woodland ponds to breed. As its name implies, the tiger salamander is a robust amphibian with dark brown or black upperparts marked with yellow, gold, or olive blotches. The belly is olive or yellow with dark mottling. Tiger salamanders belong to a group of fossorial (burrowing) amphibians known as mole salamanders, which characteristically possess broad heads with blunt, rounded snouts that enable them to burrow underground. Tiger salamanders are equally adept in the water, using their laterally compressed tails for propulsion and steering during swimming.



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The tiger salamander is the largest salamander species in New Jersey, measuring 18-21 cm (7 to 8.25 in.) long, with a maximum-recorded length of 33 cm (13 in.) (Conant and Collins 1991). Adult males average 20 cm (8 in.) in length while females measure 18 cm (7 in.) (Bishop 1994). The male also has a longer tail and longer, stouter hind legs than the female.

Habitat

Tiger salamanders require both upland and wetland habitats that contain suitable breeding ponds, forests, and soil types appropriate for burrowing. Subterranean throughout much of the year, these salamanders reside in underground tunnels and burrows or beneath logs. Loamy sand and sandy loam soil types are preferred for burrowing.

As natural woodland breeding ponds have been destroyed through development, dumping, and pollution, old gravel pits and farm ponds have come to serve as breeding sites for the eastern tiger salamander. These ponds must contain clean, unpolluted water and be free of fish that prey upon salamander eggs and larvae. Like numerous other vernal pond breeding species, tiger salamanders require pools that contain water long enough during the season to allow for metamorphosis, but dry up late in the summer, preventing the establishment of predatory fish populations. Consequently, breeding ponds are typically only 2 to 4 ft. deep.

Terrestrial habitats occupied by the eastern tiger salamander include old fields and deciduous or mixed woods such as oak/pine or oak/holly forests. These woodlands typically have sandy or gravelly soil types and may contain willow (*Salix* spp.), holly (*Ilex opaca*), oaks (*Quercus* spp.), and pitch pine (*Pinus rigida*). Vegetation surrounding

breeding ponds, such as sedges (*Carex spp.*) and sphagnum moss (*Sphagnum spp.*), as well as aquatic vegetation within the pond, provides cover for the salamanders. Ponds may have gravel, mud, sand, or clay substrates (bottoms) and pH water levels ranging from 3.5 to 7.9.

Status and Conservation

Habitat loss and the pollution of breeding ponds led to declines of tiger salamander populations in New Jersey. By the mid-1970s, the known historic breeding sites had been roughly halved, to 19 sites. Consequently, the eastern tiger salamander was listed as an endangered species in New Jersey in 1974. The New Jersey Natural Heritage Program considers the tiger salamander to be “demonstrably secure globally,” yet “imperiled in New Jersey because of rarity” (Office of Natural Lands Management 1992).

Currently, the status of the tiger salamander population in New Jersey remains endangered. Population stability varies by site. At many locations, numbers have declined and habitat, particularly on private land, is increasingly threatened by encroaching development. Protected sites, such as those on state land, appear to have stable populations.

Despite the loss of much of their natural breeding habitat, the tiger salamander has been saved from localized extinction by its ability to utilize man-made pools as breeding ponds. As a result, management efforts have been implemented to create additional habitat for this species. In one case, a new population was successfully established in a pond excavated on state land specifically for tiger salamanders. Egg masses were transferred from local ponds threatened by habitat destruction. The population has been self-sustaining since 1988.

Efforts have been made to monitor eastern tiger salamander populations statewide. In 1995, surveys revealed that tiger salamanders occurred at only a limited number of sites in Atlantic and Cumberland counties.