

SPECIES SPOTLIGHT: Eastern Spadefoot Toad Text by Laura McCormack. Photo by K. Breisch

Within the Capital District Region of New York State, there exists an ecosystem that has survived for thousands of years. This ecosystem is the Albany Pine Bush. A landscape with many unique qualities, the Pine Bush is home to a rare wetland community known as the pine barrens vernal ponds. Not only are pine barrens vernal pond communities rare and significant in their own respect, they also serve as a habitat for a variety of species. One such species that makes its home in the vernal ponds of the Albany Pine Bush is the Eastern Spadefoot Toad (*Scaphiopus holbrookii*).



IDENTIFICATION

The Spadefoot toad, a Species of Special Concern in New York State, is a stout and plump amphibian with bright golden eyes and pupils that orient vertically in strong light. It is characteristically known for the black, sharp-edged spade-like projections found on its hind feet. This unique foot design allows the toad to quickly burrow underground, an effective tool used for escape as well as for hibernation. Aside from its crescent-shaped feet, the Spadefoot is also characterized by two light-yellow lines on its back that form a crude hourglass shape.

LIFE CYCLE

Spadefoot toads favor dry to semi-dry areas like fields, farmlands, dunes and woodlands with sandy or loose soil. They breed in temporary pools of water called vernal ponds or pools. The presence of both sandy soils and vernal ponds in the Pine Bush make it a suitable habitat for the Spadefoot toad.

Spadefoot toads can breed several times throughout the warm season, usually when there is a drop in the barometric pressure, 2 or more inches of rainfall, and the darkness of night. Males are the first to arrive at the pond, sending out a mating call. This call consists of a short, explosive “wonk”, similar to the call of a crow. The females then arrive, and breeding occurs underwater. Here, a female will generally release an average of 2,500 eggs. After breeding occurs, females leave the pond, while the males stay and call out to new females.

The physical transformation of the Spadefoot toad from tadpole to toad must occur quickly, since growth takes place in temporary pools of water. Eggs usually hatch within 2-4 days, depending on water temperature and other factors. Tadpoles also develop quickly, feeding on plankton until they grow

into toads within 16-20 days. The entire life span of the Spadefoot toad averages about 5 years.

CHARACTERISTICS

Spadefoot toads are difficult to find not only because they’re nocturnal, but also because they spend most of their lives underground. They can burrow as deep as 2 meters underground thanks to the spades on their feet. They use these feet to shovel into the dirt, turning their body one way and then the other in a corkscrew fashion. This quick process of digging allows the Spadefoot toad to rapidly descend underground.

Aside from their useful feet, Spadefoot toads are also equipped with a unique tool which helps them survive during extended periods of drought. During a long, dry period, the Spadefoot toad will go underground and excrete a fluid into the space around itself. It then curls into a tight ball, and lies dormant. The fluid hardens the earth around the toad and forms a compact den that holds whatever moisture is there. The Spadefoot toad will stay in this position until heavy rains come once again and soak deep into the ground.

SPECIES STATUS

The Albany Pine Bush was once thought to be the northernmost extent of the eastern spadefoot toad’s range. This changed in the year 2000 when the toads were observed north of Albany in Wilton, NY. The eastern spadefoot toad’s range extends south from Massachusetts and New York to Florida and west to southeastern Missouri, eastern Arkansas, and Louisiana. Each state classifies them differently, but in NY, the eastern spadefoot toad is considered a Species of Special Concern. A primary reason for this classification is loss of habitat due to increasing development and urbanization. The pine barrens vernal ponds themselves are classified as a rare community in NYS. The Albany Pine Bush Commission is working to maintain the unique natural processes and characteristics of the Pine Bush so that rare and endangered species like the spadefoot toad will have a better chance at continued survival.

For more information visit the Albany Pine Bush Discovery Center or www.albanypinebush.org

