



“Seashore Science”

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# Eastern Spadefoot Toads at Cape Cod National Seashore



Common Name: eastern spadefoot toad

Scientific Name: *Scaphiopus h. holbrookii*

Status: threatened in Massachusetts

Potential threats: vehicles, reduced groundwater levels, habitat degradation

## Background

The eastern spadefoot toad is one of 12 species of amphibians found at Cape Cod National Seashore. The toad has a plump body with tiny warts, vertically-oriented pupils, and a golden, lyre-shaped marking on its back. It owes its name to a spade-like protrusion, called a tubercle, on its hind feet. The toad uses the tubercle to dig burrows, where it spends most of its life, only emerging to breed or feed. Spadefoots emerge on rainy nights in spring and summer, especially when



water tables are high and rain is heavy, and move *en masse* to temporary pools, where they mate. Spadefoots have adapted to these

unpredictable, infrequent, and short-lived conditions by being “explosive breeders.” Eggs hatch within one week into tadpoles. Tadpoles develop into toadlets in as few as two weeks if they can avoid predators and if their ponds do not dry out.

Spadefoots occur frequently in the Province Lands, where the vast sand dunes and many shallow, temporary ponds create an ideal habitat.

## It's Not Easy Being a Spadefoot

The life span of a spadefoot toad is five to twelve years. This longevity compensates for the uncertainties of reproduction. While many tadpoles perish from competition, predation, and ponds drying up, adult toads reduce these threats by burrowing underground, and emerging mostly at night. Their small paratoid glands make them distasteful to predators. However, human-caused mortality can cut the adult life span by years, affecting long-term population levels. Land development can impact breeding and hibernation habitat, and traffic on roads near breeding pools can kill migrating toads. As a result of these factors, the eastern spadefoot toad is listed as threatened in Massachusetts, and is similarly listed by most states in the northeast.

Data collected by Cape Cod National Seashore's Inventory and Monitoring program indicate that the Province Lands area supports perhaps the largest concentration of eastern spadefoot toads in the northeast. Unfortunately, much of this data is based on animals killed on roads on rainy nights. During nighttime road surveys in 2001, almost half of 153 toads found were road killed. In addition, there are concerns that reduction in groundwater levels may cause ponds to dry out more frequently, further reducing the odds for successful reproduction.

### How You Can Help

The first step in protecting these threatened toads, as well as other amphibians, is to be aware of their breeding habits and their vulnerability to vehicles. When driving on warm, rainy nights, slow



down to help avoid running over the many frogs, toads, and salamanders on roadways. Some roads within the park, such as Province Lands Road, may be closed on such nights to protect spadefoots and other amphibians. Please respect these closures to preserve this rare species in one of its last New England strongholds.

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