

## PINE BARRENS TREEFROG

*Hyla andersonii*



### *Identification*

Vibrant green and boldly marked, the Pine Barrens treefrog is one of New Jersey's most beautiful amphibians. It is a tiny treefrog, between 1 1/2 to 2 inches in length. A purple stripe with a yellowish-white border extends from the snout through the eye down each side of the body. It is white below, with a vibrant orange patch beneath each hind leg that shows as a flash of color when the frog jumps. Its throat has a purplish tinge, which is particularly visible on the male. The call of the Pine Barrens treefrog is a rapid and nasal "quonk-quonk-quonk," repeated at a rate of about 25 times in 20 seconds.

### *Distribution & Habitat*

The Pine Barrens treefrog occurs in disjunct populations within the Pine Barrens of the southeastern United States. It can be found in southern New Jersey, North Carolina, South Carolina, southcentral Alabama, and along the Florida panhandle. One of the last strongholds for this species exists in the New Jersey Pine Barrens, where populations occur in state forests, wildlife management areas, and on some private lands.

The Pine Barrens treefrog requires specialized acidic habitats, such as Atlantic white cedar swamps and pitch pine lowlands that are carpeted with dense mats of sphagnum moss. Temporary woodland ponds, white cedar or cranberry bogs, and seepage areas along tributaries of major rivers and streams serve as breeding ponds for the Pine Barrens treefrog. Breeding ponds, which may dry up by mid-summer, contain shallow water, often at depths less than two feet, and have low pH values, making them acidic. The preference for acidic water serves to reduce competition with other frog species that cannot tolerate this low pH.



### *Diet*

Small invertebrates including grasshoppers, crickets, beetles, spiders, ants, flies, and other insects comprise the diet of adult Pine Barrens treefrogs. Tadpoles consume algae, microscopic invertebrates, and aquatic vegetation.

### *Life Cycle*

Warming temperatures and increased rainfall during early May stimulate the calling of male Pine Barrens treefrogs. Vocal activity, which may begin prior to sunset, peaks during warm, humid June evenings. Males may vocalize from the ground or within vegetation near the breeding pond. During the breeding season, Pine Barrens treefrogs hide within ground cover or perch in trees during the day and emerge at night to forage. Although a few individuals may call into mid-July, vocal activity typically ends by the beginning of July. To minimize the risk of losing an entire clutch, female treefrogs lay each egg singly. Upon completion, one female may deposit a total of 1,000 eggs. The eggs, which are then fertilized by the male,

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may either be attached to sphagnum moss or rest on the bottom of the pond. Within one to two weeks, they hatch into tadpoles.

Depending on weather conditions and rainfall, the tadpoles transform into tailed “froglets” within 80 to 100 days. Fat reserves stored in the tail sustain the froglets until they are able to capture their own prey. Following transformation, juvenile frogs disperse into woods, bogs, and wet meadows. After breeding activity has been completed, adult treefrogs move to the surrounding forest where they remain for the duration of the season.

### ***Management & Research***

In 1979, the Pine Barrens treefrog was listed as an endangered species in New Jersey due to its restricted range, declining population, habitat loss, and pollution of breeding ponds.

With the Pine Barrens treefrog population currently considered stable in New Jersey, the state serves as a stronghold for this species throughout its entire range. In areas of suitable habitat, they may seem abundant. However, protection of this species is warranted, as quality habitat is limited to specialized Pine Barrens ecosystems patchily distributed throughout its range.

Habitat loss, wetlands draining and filling, pollution, and increases in water pH are the primary threats facing the Pine Barrens treefrog in New Jersey. Throughout its range in the state, unchecked development has resulted in the degradation and eradication of high quality wetlands. Habitat loss also alters water quality and may increase pH levels, favoring predators and competitors of the Pine Barrens treefrog. Factors that threaten the Pine Barrens aquifer, including pollution and lowering of the water table, may also endanger the Pine Barrens treefrog. Specialized habitat requirements and fragmented populations render the Pine Barrens treefrog especially vulnerable to habitat destruction.

Because the Pine Barrens treefrog prefers acidic water, changes in pH may restrict its breeding or prohibit larval development. Increased pH levels favor the inhabitation of bullfrogs (*Rana catesbeiana*), a competitor and predator of both larval and adult Pine Barrens treefrogs. As a late breeding species, the Pine Barrens treefrog is especially vulnerable to predation from tadpoles of earlier breeding species.



***This fact sheet is part of the Adopt a Species program created by Conserve Wildlife Foundation of New Jersey (CWF).*** CWF is a non-profit organization dedicated to protecting New Jersey’s endangered and threatened wildlife and the habitats they depend on for survival. We accomplish this through research and conservation projects and education and outreach programs that advance the protection of New Jersey’s rarest wildlife residents.

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