

FROGS & TOADS

Frog and Toad Essentials

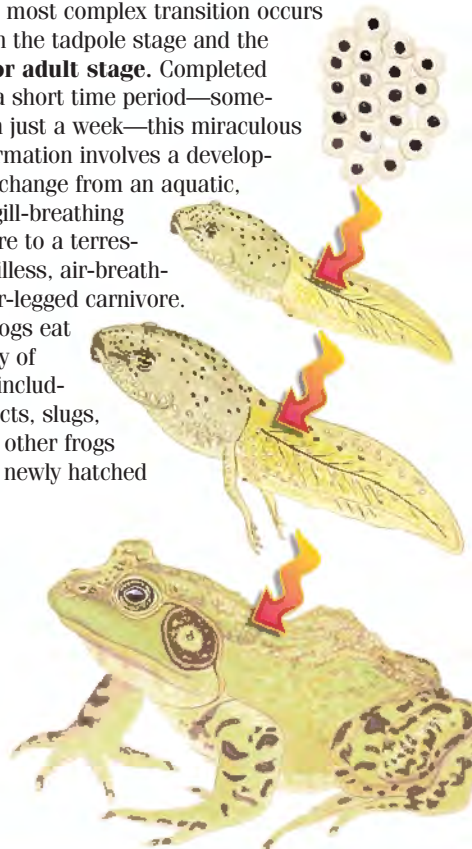
Most of New York's 14 species of frogs and toads are reclusive creatures, often lurking unnoticed for much of the year underground, in water or in trees. On warm spring and summer nights, however, frogs and toads emerge from these spots in great numbers to converge in ponds. Using calls that are unique for each species, males will advertise loudly for mates. Some of these calls, such as the Spring Peeper's signature "peep" or the Bullfrog's "rum-rum," are familiar sounds to many people.

Identification

Often very similar in appearance, identifying different species of frogs and toads can be tricky, and requires looking at a number of features. For instance, colors and patterns are often highly variable within a species, and can change with the seasons or as an individual matures. As such, it is difficult to use coloration as a defining characteristic for a species. Skin texture is a good characteristic to look at. Depending on the species, the skin may be moist or dry, or smooth, granular or warty. Another feature to look for is the presence or absence of glandular ridges of skin, called dorsolateral folds, that extend from behind the eyes down each side of the back. The amount of webbing between the toes of the rear feet and the presence of swollen discs on the ends of toes are other key features to compare. Telling the difference between males and females of a species can be difficult. In some species, such as the Bullfrog and Green Frog, the male's tympanum (or eardrum) is larger than the diameter of the eye, whereas the female's is equal to or smaller than the eye.

LIFE CYCLE

The noisy mating choruses heard in spring and early summer are the beginning of a fascinating and complex life cycle that includes three key stages. **First is the egg.** Individual females often extrude thousands of eggs, which are fertilized in the water by males clasping females in a behavior called amplexus. Eggs hatch quickly, entering the aquatic larval or **second stage, better known as the tadpole or pollywog.** Tadpoles are typically herbivorous, scraping algae and other organisms off submerged surfaces. To avoid the constant threat of rapidly evaporating breeding ponds, and predators such as aquatic insects, fishes and wading birds, tadpoles develop rapidly. A few species, especially in northern New York, will spend two summers as tadpoles, overwintering under the ice. The most complex transition occurs between the tadpole stage and the **third, or adult stage.** Completed during a short time period—sometimes in just a week—this miraculous transformation involves a developmental change from an aquatic, tailed, gill-breathing herbivore to a terrestrial, tailless, air-breathing, four-legged carnivore. Adult frogs eat a variety of things, including insects, slugs, worms, other frogs or even newly hatched turtles.



Artwork by Jean Gawalt (art not to scale)
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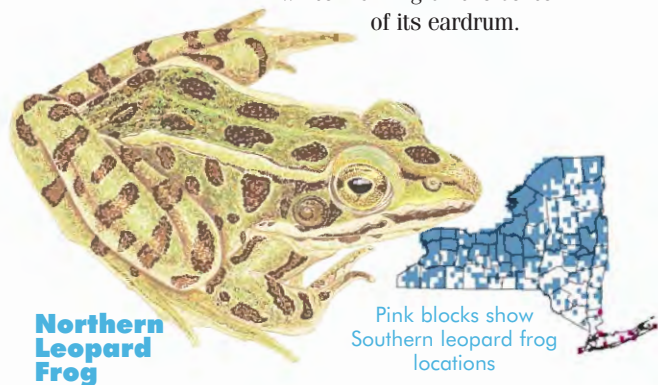
FROGS & TOADS of New York State



**NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**
George E. Pataki, Governor Erin M. Crotty, Commissioner
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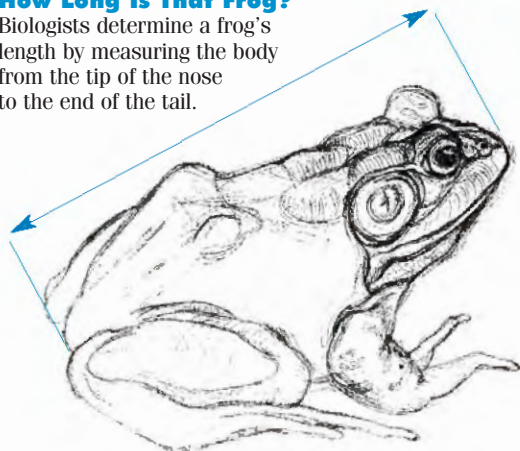
Northern and Southern Leopard Frogs

Frequently confused with the Pickerel Frog, the Northern Leopard Frog has an elongated body with two or three rows of roundish dark spots on its back. Perhaps the most common frog of grassland areas, this is also the frog most frequently encountered in biology class. Preferring submerged grassy habitats near marshes and ponds, this frog is an excellent jumper, leaping in zig-zag fashion when disturbed. Breeding peaks in April and May, with eggs deposited in flattened oval-shaped clusters that stick to submerged vegetation. Tadpoles are large, dark brown with fine gold spots. The Northern Leopard Frog's voice is a low, guttural snore that lasts about three seconds, followed by several nasal clucks. Adults average 3 to 4 inches long. Another species of Leopard Frog, the Southern Leopard Frog, a species of special concern, also occurs in New York State. It is distinguished from its cousin by a white marking on the center of its eardrum.



How Long Is That Frog?

Biologists determine a frog's length by measuring the body from the tip of the nose to the end of the tail.

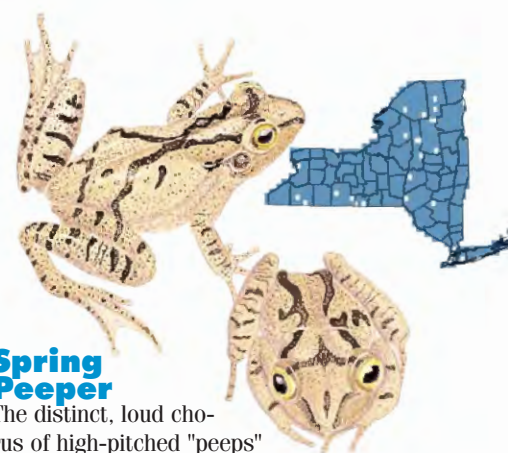
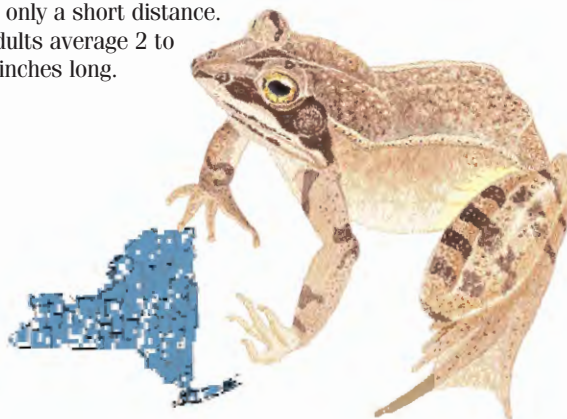


Pickerel Frog

Common across the state, the Pickerel Frog's name is thought to come from its popularity as a bait for pickerel fishing, or its similarity in pattern to the fish. Often mistaken for a Leopard Frog, the Pickerel Frog has orange or yellow on concealed surfaces of hind legs and two rows of squarish spots on its back. Adults breed April to May, depositing the brown and yellow eggs in firm, globular, jelly masses in slow, shallow, moving waters with dense vegetation. Tadpoles have dark backs with small yellow and black spots, and dark tails that are twice the length of the body. After breeding, adults become quite terrestrial. The Pickerel Frog's call is like a low-pitched rolling snore. Adults average 2½ to 3 inches long.

Wood Frog

Found in close-canopied forests, the Wood Frog is easily recognized by the dark mask around its eyes and the prominent ridges along the sides of its back. It breeds in cold, clear waters of temporary pools, and sometimes in beaver meadows, swamps and bogs. Following winter, Wood Frogs emerge during the first hard rain of March or April to breed over a brief 3- or 4-night period. Often deposited in large aggregations, the black and white eggs occur in bluish, transparent masses attached to sticks just below the water's surface. Tadpoles are rotund, with high fins and dark sides and back. A male Wood Frog's call is a series of short hoarse quacks, audible at only a short distance. Adults average 2 to 3 inches long.

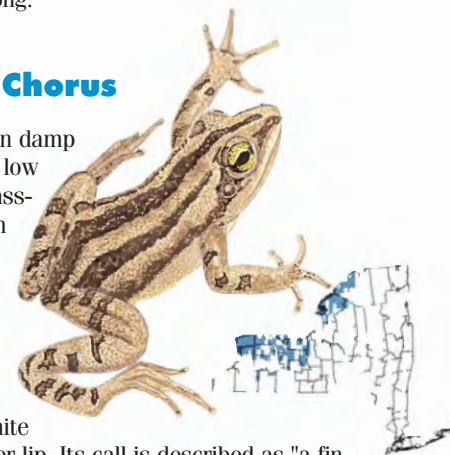


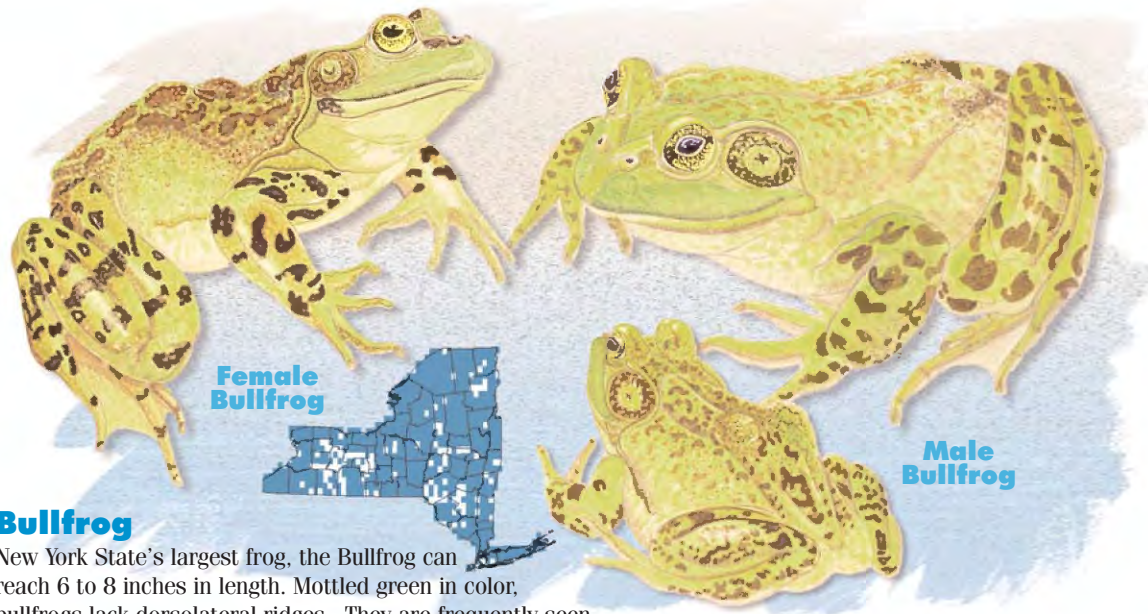
Spring Peeper

The distinct, loud chorus of high-pitched "peeps" made by these frogs is considered by many an announcement of spring. More often heard than seen, these very small pale-brown frogs emerge during the first rains of the year. They are smooth-skinned with an X-shaped mark on their backs, and small discs on the tips of their toes. Spring Peepers breed from March to May in marshes, ponds, alder-filled ditches, swamps and gravel pits. The nearly microscopic eggs are individually attached to submerged plants. Tadpoles are tiny and distinctive, with high speckled dorsal fins. Adults average 1 to 1½ inches long.

Western Chorus Frog

Usually found in damp meadows with low shrubs and grasses, the Western Chorus Frog is a small secretive frog with dark stripes down its back, a dark facial mask and a white line on its upper lip. Its call is described as "a fingernail dragged along a plastic comb's teeth." It breeds from mid-March to early May in temporary pools, flooded fields and ditches. Eggs are laid in a cylindrical mass, and attach to submerged vegetation. The plump tadpoles are dark brown to mouse gray. While common in many areas, this species is experiencing puzzling and widespread declines in areas where other frogs still thrive. Adults average 1 to 1½ inches long.





**Female
Bullfrog**

**Male
Bullfrog**

Bullfrog

New York State's largest frog, the Bullfrog can reach 6 to 8 inches in length. Mottled green in color, bullfrogs lack dorsolateral ridges. They are frequently seen along the banks, edges and shallows of warmer, permanent waters, especially those with floating or submerged vegetation. Often a familiar sound on warm summer nights, they make a loud, bull-like resonant "rum-rum" noise. Bullfrogs breed late, starting in June, producing black and white eggs that are deposited in a mat-like surface film up to two feet in diameter. Tadpoles are large, bullet-shaped and olive-green, requiring a two-year larval period. Bullfrog legs are considered a delicacy by many.

Green Frog

A common, long-legged, highly aquatic frog, found in ponds, marshes, lake fringes and sometimes along stream sides. Similar in appearance to the Bullfrog and Mink Frog, the Green Frog is usually green or bronze in color, has prominent dorsolateral ridges, and often has spots on its hind legs that align to form stripes when the legs are folded. Green Frogs breed from May to August, depositing the black and white eggs in a jelly mass that attaches to vegetation but partly floats on the water's surface. Tadpoles are elongate and olive-green. A male Green Frog's call sounds like plucking a loose banjo string. When distressed, this frog emits a loud squeak as it leaps from danger. Adults average 3 to 4 inches long.



**Male
Green
Frog**

**Female
Green
Frog**

Maps

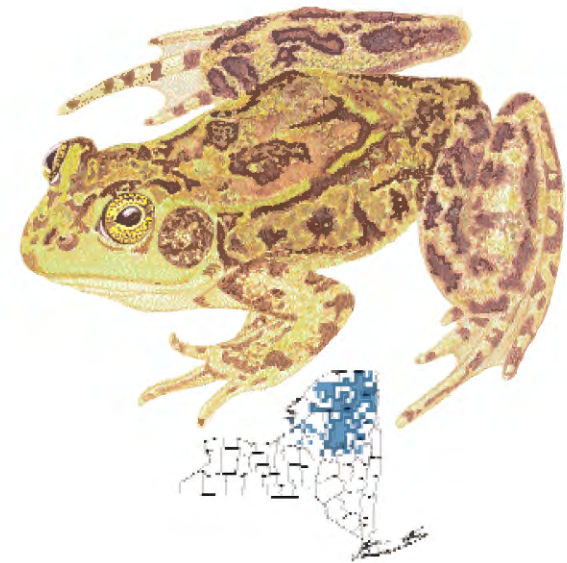
Shaded portions indicate where a species was reported as occurring.

The distribution maps presented here for each species are based on New York Amphibian and Reptile Atlas data. The project was funded by Return A Gift To Wildlife, U.S. Fish & Wildlife Service and NYS Biodiversity Research Institute.

Maps were prepared by John Ozard.

Mink Frog

Having a uniformly mottled back with indistinct ridges, the Mink Frog is found in small ponds and beaver impoundments. When disturbed, it will emit a musky, mink-like odor. The "frog of the north," it breeds from June to early August, depositing its eggs in globular masses in the aquatic vegetation of cold lakes, ponds and streams. Like the adults, tadpoles are greenish and darkly mottled. The Mink Frog's call is best described as a "cut-cut-cut-ghur-r-r"—higher, more rapid and sharper than the call of the Green Frog. Adults average 2½ to 3 inches long.



Eastern Spadefoot - *Species of Special Concern*

An uncommon, plump toad with protuberant golden eyes with vertical pupils. Its name comes from the sickle-shaped spade on its hind feet that it uses for digging burrows. The Eastern Spadefoot prefers areas with well-drained, loose and sandy soil in open forests, brushy areas, meadows and croplands. It breeds from April through September in the temporary, rain-formed pools following intense rainstorms. Eggs are laid in strings and hang on submerged stems of emergent plants. Tadpoles are bronze with short, rounded, finely spotted tails. This toad's voice is a coarse, repetitive "wank, wank, wank." Adults average 2 to 2½ inches long.



American Toad



American and Fowler's Toads

Similar in appearance, the American and Fowler's Toads can be told apart by looking at their spots. The American Toad has a spotted belly, and one to two warts per spot on its back. The Fowler's Toad has no spots on its belly, and three to seven warts per spot on its back. Hybrids do occur with intermediate features. While American Toads occur in a broad array of habitats, from forests to lawns, Fowler's Toads prefer lowlands, particularly dry sandy woodlands. Both species breed from April to May in the shallow waters of ponds, ditches, lakes, marshes and wet meadows. Eggs are laid in long double-strings that are looped loosely around submerged aquatic plants. The ink-black tadpoles often swim in schools. The call of the male American Toad is a sustained, high, trilling whir. In contrast, the call of the Fowler's Toad is described as a short bleat. Adult American Toads average 3 to 4 inches long with Fowler's Toads being slightly smaller.

Fowler's Toad



Gray Treefrog

More frequently heard than seen, the Gray Treefrog is a secretive arboreal frog with large adhesive discs on the tips of its toes. Found in moist, deciduous woodlands, adults have rough skin with dark blotches on the back, and a base color that can range from gray to light green; immatures are lime green. The frog's Latin name, *versicolor*, refers to its remarkable ability to change color. A Gray Treefrog's call is a hearty trilling, often sung while high in a tree near its breeding area. Adult frogs converge on semi-permanent wetlands, usually beaver ponds and red-maple swamps, to breed from late April to July. The bi-colored eggs are laid singly or in clusters, and attach to submerged vegetation. Tadpoles are green or black with high, dark, blotched fins and often a reddish tail. Adults average 1½ to 2 inches long.

Eastern Cricket Frog - Endangered

New York State's smallest and rarest frog, full grown Eastern Cricket Frogs are usually less than one inch long. Despite their small size, they are champion jumpers, capable of jumping 50 times their body length, often fleeing danger by jumping repeatedly across the water's surface. These frogs have brown or dull green backs, small dorsal warts, and often a triangular mark between the eyes. Some individuals have brilliant red or green stripes. Eastern Cricket Frogs are found amid mats of floating vegetation in shallow ponds. Their call, which sounds like pebbles being tapped together, can be heard from late May until mid-July. Eggs are laid singly or in small clusters, hatching into a tadpole with a black-tipped tail.

