



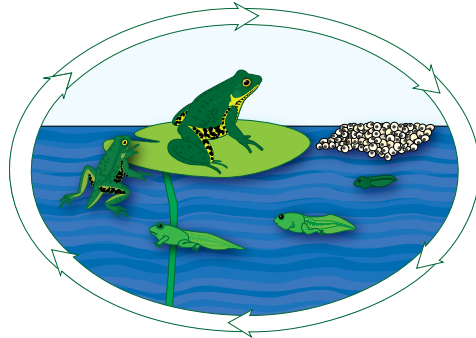
# Amphibians

of Monmouth County



Wood Frog

Amphibians (a Greek word meaning “double life”) occupy the middle ground between fish and reptiles. As such, they were the first land dwelling vertebrates (animals with backbones) and paved the way for the development of our own species. Amphibians first appeared in the geologic record during the Devonian Period that began 408 million years ago. They most likely descended from a group of “lobe-finned” fish whose modified fins allowed them to move on land for brief periods of time. This was a great competitive advantage in an age when the oceans were a crowded and dangerous place to live, compared to the almost vacant land.



Green Frog Life Cycle (clockwise): eggs, 3 stages of tadpole development, froglet, adult frog.

### Amphibian Means Double Life

Amphibians are best defined as exothermic (cold-blooded) land and water vertebrates that can breathe with lungs, gills, or through scale-less skin, and who generally lay their jelly-like eggs in water. The young—who look quite different from their parents—will remain in the water until metamorphosis into adult form. Thus, they lead a double life.

Adults may or may not live on land, but, even if they do, they tend to stick near water or areas of high humidity.

### A Sensitive Species

Amphibians play an important role in the environment—controlling insect

pests, providing food for larger species, and acting as “first responders” to changes in the environment because of their unique sensitivity. According to the International Union for Conservation of Nature (IUCN), over 1,000 species of amphibians are at risk of extinction worldwide—more than any other species.

Even simple environmental changes can challenge amphibians. Consider this local



Bullfrog

example involving the Bullfrog. Historically, this large and dominant frog species was not found in the Pine Barrens region of NJ because of the highly acidic water. Due to pollution, the water became less acidic allowing Bullfrogs to move in and take over species native to that area: the Pine Barren Treefrog is now threatened and the Carpenter Frog is a species of special concern.



Pine Barren Tree Frog (Source: US FWS)

The Monmouth County Park System has two environmental centers dedicated to nature education. Each has a trained staff of naturalists to answer questions and a variety of displays, exhibits, and hands-on activities where visitors of all ages can learn about area wildlife and natural history.

The **Huber Woods Environmental Center**, on Brown’s Dock Road in the Locust Section of Middletown, features exhibits about birds, plants, wildlife and the Lenape Indians. Miles of surrounding trails offer many opportunities to enjoy and view nature.



The **Manasquan Reservoir Environmental Center**, on Georgia Tavern Road in Howell specializes in wetland species. The center has many water-related displays, exhibits and tours to learn about local plants and wildlife. The 5-mile perimeter trail is a great place to explore and enjoy nature.



## Frogs and Toads

### Toads

- Eastern Spadefoot
- Fowler's Toad (*Special Concern*)



Fowler's Toad

### Treefrogs and Allies

- Northern Cricket Frog
- Northern Spring Peeper
- Northern Gray Treefrog
- New Jersey Chorus
- Pine Barrens Tree Frog (*Threatened*)

### True Frogs

- Bullfrog
- Carpenter (*Special Concern*)
- Green
- Wood
- Southern Leopard
- Pickerel

## Salamanders/Newts

### Mole Salamander

- Marbled (*Special Concern*)
- Spotted

### Lungless Salamander

- Northern Dusky
- Redback
- Northern Slimy
- Four-toed
- Northern Red
- Northern Two-lined

### Red-spotted Newt

## Frog vs. Toad—Can You Tell the Difference?

Although frogs and toads are more familiar than salamanders, people still question how to tell them apart. They are very similar with many overlaps, and should be thought of as a continuum, ranging from aquatic to terrestrial. There are three broad groups.



Fowler's Toad; note the squat, chubby body and warty, splotchy skin



The tiny Spring Peeper sings a loud, high-pitched song in chorus on spring evenings.



Wood Frog



Green Frog

True Toads have squat, chubby bodies with warty, spotty, and blotched skin that matches their environment, in shades of green and brown. Their posture is upright and they have large, bubble-like glands (parotoid) behind their eyes that produce a self-defense poison. They lack teeth and are not explosive jumpers, instead they move by walking or in a sequence of short hops. They are not bound to the water except for breeding, so they are more terrestrial.

Treefrogs and their Kin. Treefrogs, cricket frogs, and chorus frogs are generally small and slender frogs that may be adapted to living in trees (if so, they will have adhesive discs on their fingers and toes). They are all found near water, but not necessarily in the water, as is generally the case with true frogs.

True Frogs. For most people, "true frogs" are what they imagine when they hear the word "frog:" long legs, narrow waists, webbed toes, explosive jumping, and croaking. This group is normally found in the water, although some species will leave the water during certain periods.

All of these species, regardless of the habitat in which they spend their adulthood, must return to the water to lay their eggs. Their offspring (called tadpoles) will remain in the water from a few months up to two years depending on the species.

Among True Frogs, these two can look very similar. Tell them apart by noting how far the dorsolateral ridge extends around the ear drum. For the Green Frog, it extends around the gland and down the back; for the Bull Frog it is just around the ear drum.



This Gray Tree Frog was perched in a tree near the front pond at the Manasquan Reservoir Environmental Center—a location that tells its type



Pickerel Frog



Leopard Frog



Bull Frog

## Salamanders: Fire Myth & Secrets

Salamanders are often confused with lizards because they share a similar body plan: four legs, a long body, and a long tail; but lizards are no more closely related to amphibians than to any other reptile. Throughout history, salamanders have been linked to myths, especially myths dealing with fire. This may stem from the fact that salamanders often hide in dead logs that may have been used for firewood. Upon lighting the log in a hearth, the sight of a creature emerging (fleeing, really) from the flames clearly would have seemed supernatural.



Northern Red, a lungless salamander

In NJ, salamanders are divided into two groups. Mole salamanders are burrowing animals as adults and breathe with their lungs. Lungless salamanders breathe through their moist skin and mouth. (The only newt found in NJ is the red-spotted newt; it differs from other salamanders because it has three life stages: aquatic larva, a juvenile land, and aquatic adult.)



Redback Salamander



Redback Salamander in lead-back stage (without red stripe)

### Further Reading:

Schwartz, Vicki, and Golden, David M. 2002. *Field Guide to Reptiles and Amphibians of New Jersey*. New Jersey Division of Fish and Wildlife