

Spring Peeper

The little frog on the front is a Spring Peeper. These small, slender tree frogs have an “X” marking on their back. The tips of their fingers and toes have distinct adhesive pads. They are small frogs about 1-inch in size.

Spring Peepers can be found in woodland habitats near ponds, streams, and swamps. They are often one of the first frogs to begin calling in the spring, and their call is a clear, high-pitched peep. They feast on insects.

These tiny creatures and many just like them play a huge role in the food chain that we depend on for our own survival. It is in our best interest to protect their environment.

Dragonfly

The Dragonfly below begins his life as an aquatic insect. Dragonflies lay their eggs in water, and the nymphs that develop are somewhat sensitive to water pollution. Their presence in a stream indicates good water quality. Both young and adults are aggressive feeders. In fact, adults have been called “mosquito hawks” because they can feed on smaller insects while in flight.



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“You must have certain noble areas of the world left in as close-to-primal condition as possible . . . you must be able to drink the pure waters . . . sleep under the stars and awaken to the cool dawn wind. Such experiences are our heritage.”

Paraphrased from Ansel Adams, 1961



What can this frog tell you about water quality?

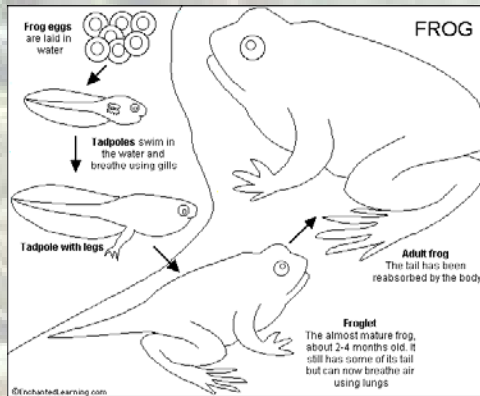


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Frogs and the stream's ecosystem.

A frog's role in the food web is unique. Instead of occupying a single level of the food web—either herbivore, predator or prey—it occupies all these levels throughout its life. For example, tadpoles (baby frogs) keep waterways clean by feeding on algae and helping to control its growth. As the tadpole changes into a frog, it switches from being a plant eater (herbivore) to being a predator that eats other aquatic and land insects, thus helping to control insects that can transmit diseases to humans such as mosquitoes. As prey, frogs provide food for terrestrial (land) creatures in the stream and land ecosystem.



Nearly 200 species of amphibians have become extinct in the last few decades. Thousands more are threatened with extinction. A species lost disturbs the intricate food web and has negative impacts through the entire ecosystem.

What is causing our frogs and other amphibians to disappear or become disfigured?

- Habitat destruction and infectious diseases
- Pesticides, pollution and invasive species
- Climate change and over-harvesting for the pet and food trade

Why are frogs good indicators of water quality?

The health of frogs is thought to be an accurate indicator of the health of the biosphere as a whole because most frogs require suitable habitat in both the terrestrial and aquatic environments. Frogs have smooth, moist skin that is permeable to substances in the water or the atmosphere. Adult frogs absorb part of the oxygen and most of the water they need through their skin, making them vulnerable to pollutants. When frogs are contaminated, they pass toxins along to their predators because toxins stay in their tissue. Since frogs are especially susceptible to environmental disturbances, their population declines.

Poor water quality will affect the physical development of frogs as well as cause profound changes to aquatic ecosystems because:

- The loss of tadpole grazers can cause an increase in algae that can deplete the oxygen in the water as it decays.
- The loss of frogs as predators can cause an abundance of insects that transmit disease.
- The loss of frogs as prey will alter nutrient cycling or what we call the food chain.

The decline of frogs in a particular area should serve as a warning to other species and humans that something is drastically wrong in the environment.

How can you help?

Protect the habitat of frogs, and keep insecticides, pesticides and herbicides away from frog habitats. Keep oil and sediment out of streams. Leave wetlands alone. Do not over-harvest, and allow the growth of a more diverse plant community along stream banks that will provide cover and insects.

Dragonfly

Dragonflies are also a good indicator of water quality. Most of a dragonfly's life is spent in nymph form beneath the water's surface. Eggs are laid in or near water. The eggs hatch into nymphs. Using extendable jaws, nymphs eat mosquito larva, invertebrates or even vertebrates. The nymph stage lasts as long as five years for larger dragonflies. Nymphs are sensitive to pollutants; therefore, will not survive if the water quality is unhealthy.

When the larva is ready to metamorphose into an adult, it climbs up an emergent plant, the skin splits behind the head and the adult dragonfly crawls out of its old larval skin, pumps its wings and flies off to feed on midges and flies.

