



Amphibian Decline

What do frogs, toads and salamanders have in common? They are all amphibians. Characteristically, amphibians hatch from eggs laid in or near water and begin life as aquatic larvae with gills. Adult amphibians live mostly on land, often returning to the water to breed and hibernate. The word “amphibian” is derived from the Greek “amphi” and “bios” which means two lives and refers to the aquatic tadpole stage and the terrestrial adult frogs, toads, and other amphibians.

Unlike birds and mammals that use energy from food to generate heat to warm their bodies, amphibians depend upon the sun to warm them. Because of their permeable skins, amphibians must replenish lost water while basking. This is why frogs sitting in full sun are often also sitting in water along the shores of ponds, lakes, and rivers. Amphibians do not drink water, but absorb it and much of the oxygen they need through their permeable skin.

The Mystery of Amphibian Decline

Historically, frogs and other amphibians have been survivors. They have lived through the last two extinction episodes, including the one that saw the end of the dinosaurs. Amphibians are found from the southern tip of Australia, South America and Africa to north of the Arctic Circle. They live in deserts, rain forests, tundra, caves, on mountaintops, and in backyards. Amphibians have long managed to prosper despite the widespread changes in their habitats.



So it was strange and alarming when amphibians began to disappear at the unprecedented rates around the globe. Even previously abundant and common species like leopard frogs were becoming harder to find. It was at the 1989 First World Congress of Herpetology that scientists made a startling discovery that all over the planet their colleagues were noticing amphibian declines and disappearances. Until then, there had been no scientific studies of this phenomenon and virtually no data existed to give a clear picture of the status of the amphibian populations.

In addition to widespread decline, there has been an increased incidence of amphibian deformities. In 1995, students on a field trip to a pond in Minnesota discovered large number of frogs with misshapen, extra or missing limbs. About 50% of the northern leopard frogs they examined that day were deformed. Since then, reports of amphibian deformities from other parts of North America have drawn public attention. Deformed amphibians are not a new phenomenon, but reports were only infrequent until recently. Since 1995, reports have become increasingly common, and a number of scientists are looking for the cause.

What You Can Do to Help Amphibians

Protect Existing habitat. Help preserve habitat for frogs and other amphibians in your community by educating others about the importance of protecting existing natural habitats, such as woodlands and wetlands, and the importance of keeping your watershed healthy.

If you are aware of a population of amphibians, you can inform property owners, park employees, or local industries about them and of your interest in their survival. Let others know that you would like these areas preserved. Ask people involved in activities that might impact the area to take into consideration that living things are found there.

Landscape naturally to keep local streams and wetlands healthy. Create a Backyard Wildlife Habitat landscape and encourage your neighbors to do the same. Together, your actions are cumulative, and can make a difference in the health of your watershed. Landscape with plants native to your region and don't use pesticides or commercial fertilizer, as they are common watershed pollutants. Choose a variety of plants with different root depths and structure to improve the stability of your soil and the drainage of rainwater into the ground. If you live near a stream, plant trees or other vegetation to shade the water, provide food and habitat for wildlife, and act as a buffer against erosion and runoff.



Create a frog pond in your backyard. Water is especially important to amphibians since this is where most species lay their eggs and spend their early stages of life. A small pool or pond for wildlife can be created as part of almost any Backyard Wildlife Habitat project. The location of your pond will determine the kinds of frogs and other amphibians that will breed there. Amphibians can travel a long distance to breeding ponds, but the closer your pond is to existing wetlands, ponds, or streams, the more likely they will colonize and breed in new ponds. After one or two frogs breed in your pond, their offspring will return each year to breed in the habitat that you have created. Let the frogs or toads come to your pond naturally. Locate your pond so that it fits into the landscape as naturally as possible. Think about ways to carefully use runoff from the yard to help keep the water level high. A plastic liner can be used to keep the water from soaking into the ground.

Your pond can be almost any size or shape, but make sure that the edges are gently angled so frogs and other wildlife can enter and exit easily. Add native aquatic and wetland plants to provide cover and perching places for wildlife. All ponds take time to develop into good amphibian habitat. New ponds can not replace the complex ecosystem of established wetlands, and this is why it is so important to protect existing ponds and wetlands. The quality of your new pond's habitat will improve when plants and algae are established, and when decomposed plant matter has settled to the bottom, forming a source of nutrients for tadpoles and other aquatic life.

Help scientists solve the mystery of frog decline. Participate in a scientific monitoring project like Frogwatch USA. Data collected by volunteers becomes part of the global pool of information being used to understand why amphibians are disappearing and how we can save them. See <http://www.nwf.org/frogwatchUSA/>.