

Amphibian Facts

Amphibians include frogs, toads, newts, salamanders and caecilians. Although most transform from aquatic larvae to terrestrial adults, some amphibians (such as the golden alpine salamander) live permanently on land, while others (such as the axolotl) never leave the water.

What makes an amphibian an amphibian?

- Are vertebrates
- Are cold-blooded (cannot regulate their own body temperature)
- Most spend at least part of their lives in water and part on land
- Do not have scales and their skin is permeable (molecules and gases can pass through).
- Have gills for at least part of their lives. Some species have gills only as larvae, while others can have gills throughout their lives.
- Most go through metamorphosis.

Three modern orders are:

- Anura (frogs and toads)
 - They are tailless, elongate hindlimbs that are modified for jumping and swimming, 5 to 9 presacral vertebrae with transverse processes, post sacral vertebrae fused into rod like urostyle, tympanum and larynx are well-developed
- Caudata (salamanders and newts)
 - They have a long tail, 2 pairs of appendages, and they lack a middle ear
- Gymnophiona (caecilians)
 - They are elongate, limbless, segmented by annular grooves, specialized for burrowing, they have a short and pointed tail, and rudimentary left lung

Threatened Status

Amphibians are the most threatened class of animals in nature. According to the IUCN, 32% of amphibians are either threatened or extinct and over 42% are declining in number. Even more worrying is that we do not have sufficient data to study the health of a quarter of the amphibians on Earth – they could be going extinct and we would not even know.

Current research shows that competition with other species, pollution, disease, habitat loss, parasitism, predation, UV radiation, climate change, and combinations of these stressors, are all factors contributing to the worldwide decline of amphibians. Amphibians play essential roles, both as predators and prey, in their ecosystems. However, the recent decline raises concerns not just for the fate of amphibians themselves, but for the environment as well.

Because they have porous eggs and semi-permeable skin and spend at least part of their lives in water, amphibians are extremely susceptible to changes in habitat quality and pollutants, and will be the first to be affected by changes to an ecosystem. For this reason, they are known as “indicator species,” because like the canary in the coal mine, their decline may be the first indication we have that the health of an ecosystem is suffering.



Frogs vs Toads

Frogs

- ✓ Members of the family *Ranidae*, containing more than 400 species
- ✓ Two bulging eyes
- ✓ Strong, long, webbed hind feet adapted for leaping and swimming
- ✓ Smooth or slimy skin (generally like moister environments)
- ✓ Tend to lay eggs in clusters

Toads

- Members of the family *Bufo* *idae*, containing more than 300 species
- Stubby bodies with short hind legs for walking instead of hopping
- Warty, dry skin (usually prefer drier climates)
- Parotid glands behind the eyes that typically secrete toxins
- Tend to lay eggs in long chains

