

Tailed Frog



Ascaphus truei (coastal species), *Ascaphus montanus* (inland species)

The tailed frog is unique among North American frog species. It is one of the most primitive of frog species, and its most distinctive feature is the ‘tail’ on males. Surprisingly, it is actually not a tail, because it has no bones, but a copulatory organ.

Characteristics

The tailed frog is a small amphibian. Adults are 2-3 cm from nose to rear, fitting neatly in the palm of your hand. Adults are typically tan or brown, with shades of green, red, or black. They have grainy skin, and the tail is the same colour, often with a white spot on the tip. Like other frogs, they have vertical pupils; however, they do not have an external ear and are also voiceless, which sets them apart from other frogs. Their toes are flat and wide, without the round bulbs which are emblematic of other frogs. Older tadpoles are brown speckled with black and can be distinguished from other tadpole species by their sucker-like mouth. Hatchlings are almost transparent, helping them escape the watchful eyes of predators.

Life Cycle

Tailed frogs have a life span of 15-20 years, one of the longest-lived frog species. Tadpoles take up to four years to transform into adults, and sexual maturity takes another 2-4 years. Fertilization is internal and takes place in early fall. The male’s ‘tail’ swells with blood and becomes erect, allowing penetration, and sperm is deposited within the female. The sperm stays viable within the female until the following summer, when the eggs are deposited. Eggs are pea-sized and are laid in double strands on the underside of large rocks. The rocks provide shelter and safety from predators. After about six weeks, hatchlings appear. They stay in the pool over the winter, feeding off their yolk sac until their mouths develop. By the spring, a tadpole’s developed sucker-like mouth allows it to adhere to rocks, preventing it from being swept away in the current. When mature, tadpoles will become adults during the fall.

Habitat

This species is uniquely adapted to cold, fast-flowing mountain streams. Tadpoles live best in water that is below 15°C and will die in temperatures around 30°C. Adults are even more sensitive; temperatures above 23°C can be lethal. The tailed frog prefers streams that have old-growth forest cover. Their range is the western coast of BC as far north as Prince Rupert to as far south as California. There are also isolated inland populations on the southwestern tips of BC and as far east as western Idaho and Montana.

Diet

Tadpoles scrape filamentous green algae from rocks. They also eat pine pollen and diatoms. Adults eat a variety of insects, insect larvae, spiders, snail, ticks, mites, and snow fleas. The tongue of a tailed frog is attached to the bottom of its mouth, further back than in other frog species. As a result, it cannot flick its tongue out to catch prey. Instead, it will sit and wait, and at an opportune moment, shoot out like a spring with its mouth near the ground and snatch up its food. The hind feet never leave the ground and the front feet are kept to the side of the body.

Behaviour

Tailed frogs do not migrate. They stay close to their home stream year-round and become less active in the colder months. Because they rely mostly on their skin to breathe, their environment must be moist or wet. This is why they tend to come onto land at night, or during humid or rainy days. They do not regularly exhibit territoriality, but males have been observed to defend small territories around their mate during mating season. Tailed Frogs do not have mating calls, and seem to find mates by visual or chemical cues.

Threats

Tadpoles are more vulnerable to predation than the adults. Fish, especially trout, feed on both adults and tadpoles. In addition to fish, their predators include giant salamanders, other frogs, garter snakes, mink and herons.

Human activity however is the frog's major threat. Habitat destruction or alteration, and toxins in the environment are the main issues faced by amphibians. Clear-cutting increases silt in streams, clogging the protective spaces between rocks and smothering tadpoles. Without canopy cover, the streams temperature also tends to rise. The change in temperature may be too much for this sensitive species. Also, machinery that runs through streams overturns rocks and crushes frogs. Because they are so small, tailed frogs are also vulnerable to humans trampling on streambeds.

In addition, because a frog's skin is sensitive, pollutants in their environment can severely affect their health. This is also why they are excellent indicator species to the overall health of the environment.

The coastal populations of the tailed frog are on the BC's Blue List, meaning it is particularly vulnerable to human activities. The Kootenay population is on the Red List; it is an endangered species. Tailed frogs are protected by law from being killed, collected or harmed.

Bibliography

British Columbia Ministry of Environment, Land, and Parks. "Tailed Frog Fact Sheet."

<<http://wlapwww.gov.bc.ca/wld/frogwatch/whoswho/factshts/tailed.htm>>

—2000. "Inventory Methods for Tailed Frog and Pacific Giant Salamander."

<<http://srmwww.gov.bc.ca/risc/pubs/tebiodiv/frog/assets/tailedfrog.pdf> >

Nielson, M., K. Lohman, and J. Sullivan. 2000. Phylogeography of the tailed frog (*Ascaphus truei*): Implications for the biogeography of the Pacific Northwest. *Ecology* 55: 147-166.

Morey, S. "California Wildlife Habitat Relationships System."

<<http://www.dfg.ca.gov/whdab/pdfs/tailedfrog.pdf>>