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Northern Leopard Frog

Rana pipiens

LENGTH: 5.5 TO 10 CM

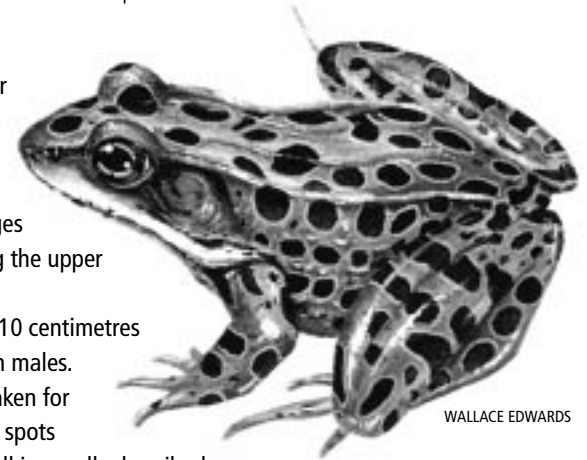
At A Glance

The Northern Leopard Frog is a medium-sized green or brown frog with distinctive dark spots ringed with paler "halos." The number and colour of spots is variable. The frogs have large hind legs with dark bars, pale underparts, and prominent dorsolateral ridges that are paler than the back. A white stripe runs along the upper jaw and back to the shoulder.

Adult Northern Leopard Frogs range from 5.5 to 10 centimetres from nose to rump. Females are somewhat larger than males.

Northern Leopard Frogs are not likely to be mistaken for any other species in B.C. The adult's pattern of haloed spots and pale dorsolateral ridges is quite distinctive. The call is usually described as a "chuckling" or "gabbling" sound. It has also been described as sounding like a hand rubbing a wet balloon. Northern Leopard Frogs also give alarm cries — shrill squeaks — if they are handled.

Tadpoles are dark brown or grey, with light blotches on the underside. The tail is pale tan.



WALLACE EDWARDS

RED-LISTED SPECIES ARE THOSE THAT HAVE BEEN LEGALLY DESIGNATED, OR ARE BEING CONSIDERED FOR LEGAL DESIGNATION, AS ENDANGERED OR THREATENED.

Home Sweet Home

Adult Northern Leopard Frogs are semi-terrestrial and maintain home ranges of up to 600 square metres during the summer. The size of the range is related to the size of the frog. Within the home range, Northern Leopard Frogs spend much of their time in small clearings of damp soil, called forms, or in crevices if the habitat is forested. They favour open, grassy sites, which has given them one of their common names, the Meadow Frog.

Breeding ponds in other parts of their range are usually under 60 m in diameter, and approximately 2 m deep at their deepest point. In British Columbia, eggs are laid in 15 to 65 cm of water. Breeding ponds are warmer and shallower than the streams and ponds used for hibernation, and usually have rich vegetation.

Northern Leopard Frogs hibernate from October through to March, in deep ponds or streams, in small indentations in the mud. These water bodies must have adequate oxygen, and not freeze solid in winter.

What's On the Menu?

Northern Leopard Frogs are indiscriminate predators as adults; they will eat virtually anything that moves. They use a sit-and-wait strategy, waiting for the prospective meal to come fairly close before they orient toward it, stalk, then leap 15-40 cm to seize the prey. The diet consists primarily of insects — beetles, ants, flies, and leafhoppers. Other invertebrate prey includes pillbugs, worms, snails and slugs. Adults often eat smaller frogs, including juveniles of their own species. Northern Leopard Frogs may occasionally consume other vertebrates; voles, birds, and even garter snakes have been found in the stomachs of large frogs. Both nocturnal (active by night) and diurnal (active by day) prey species have been found in the stomach contents, indicating that Northern Leopard Frogs hunt during both periods.

Tadpoles are mostly herbivorous, grazing on algae.

Northern Leopard Frogs are themselves on the menu for a variety of predators, including herons, grebes, mergansers, snakes, turtles, fish and larger frogs. Humans have used these frogs as a food item as well. Tadpoles are consumed by aquatic insect larvae, water birds, garter snakes, fish and leeches.

This is the Life

Adult Northern Leopard Frogs gather at breeding ponds very early in the spring — sometimes before the last frost — when the water temperature approaches 10°C. Males migrate to the breeding ponds from their hibernacula and begin calling. Females follow some five to seven days later. Calling males typically float at the water's surface in the warmest part of the pond, and are far more visible than the females clustered along the pond's shoreline.



Present range of the Northern Leopard Frog in British Columbia



no kidding!

The background colour — brown or green — of **Northern Leopard Frogs** is determined by a single gene with two alleles, with brown being dominant to green. Green is most common in Canada, and the only colour reported recently in B.C.

The species name “*pipiens*” means “peeping” in Latin. When **Northern Leopard Frogs** were first collected and studied, the people collecting them heard peeping cries and named the frogs accordingly. The peeping was probably a Spring Peeper, not a **Northern Leopard Frog** at all.



Mating takes place between late April and early June, over a period of two to seven days. Each female mates once, lays a single egg mass, and leaves the pond. Males probably mate more than once.

Egg masses are concentrated in warm, shallow water; they may float at the water's surface or be attached to submerged vegetation. Each egg mass contains between 1000 and 5000 eggs. Hatchlings emerge in about nine days and spend a couple of days clinging to vegetation and the remnants of the egg mass before becoming free-swimming tadpoles.

Tadpoles transform in summer (late July), emerging as miniature frogs (metamorphs) about 3.5 cm long. Mortality among these juveniles is very high; for a short time they make up a huge proportion of the population (up to 98 percent), but they are very quickly decimated by predation. Those metamorphs that survive to reach sexual maturity do so in about two years, though maturity is dependent more on size (and hence food availability) than age. Northern Leopard Frogs become mature at 5 to 6 cm in length.

Northern Leopard Frogs have a lifespan of about four years in the wild, and have been known to live nine years in captivity.

Where and When?

Although once found fairly widely in the eastern Kootenays, the Creston Valley and the South Okanagan, Northern Leopard Frogs are presently known from only one location in B.C., in the Creston Valley. They are most easily noticed during the breeding season, when males are calling.

How They're Doing

The Northern Leopard Frog is one of the species most at risk in B.C. Northern Leopard Frog populations across much of western Canada declined sharply in the 1970s; millions of frogs simply died, and scientists are still trying to determine the cause. The B.C. population is listed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is on the provincial Red List. Northern Leopard Frogs have reoccupied some of their former range on the Prairies, and these populations are now considered to be of Special Concern by COSEWIC. Leopard Frogs in eastern Canada are considered Not at Risk.

Northern Leopard Frogs are vulnerable to introductions of predators such as fish or Bullfrogs in the breeding ponds.

How We're Helping

The Columbia Basin Fish and Wildlife Compensation Program (<http://www.cbfishwildlife.org>) is supporting inventory for this endangered species. With the added support of the Creston Valley Wildlife Management Area, Leopard Frogs are being reared for reintroduction to formerly occupied habitats.

Fortunately, the B.C. population of Northern Leopard Frogs is situated in a protected area. A Recovery Team of biologists and local stakeholders is studying ways to further protect the population and help it increase.

Northern Leopard Frogs are protected under the British Columbia *Wildlife Act*.

How You Can Help

You can help Northern Leopard Frogs in B.C. by learning more about them and sharing that knowledge with others. It is possible that there are other populations of these frogs in B.C. that are now unknown. By joining BC Frogwatch you can add your efforts to those of other naturalists and biologists, and collect information important to conservation programs.

Help protect habitat for Northern Leopard Frogs by attending local planning meetings, and raise awareness about the effects of introduction of exotic species such as Bullfrogs and non-native fish.

You can find out more about BC Frogwatch, the Biodiversity Branch and the Conservation Data Centre at

<http://wlapwww.gov.bc.ca/wld>



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