

Amphibians of Alberta

Ecology and Management

The class Amphibia to over 300 million years old and contains nearly 5000 living species, consisting of three orders (salamanders, frogs and toads, and caecilians). Ten species of amphibians representing the families (mole salamanders, spadefoots, true toads, tree frogs and treefrogs) occur in Alberta. Reintroduction of reptiles, amphibians are cold-blooded or poikilothermic, therefore their body temperature varies with that of their environment.

Amphibians play an important role in the ecosystem. The eggs, larvae and adults of amphibians frequently account for a large part of the biomass in many areas where they exist and are an important food source for insects, fish, reptiles, birds and mammals. In addition, adult amphibians consume countless numbers of insects and other small animals.

each year. Amphibians have a highly vascular skin, permeable to water and air, making them sensitive to environmental contaminants and conditions. Thus, amphibians are reliable indicators of the health of the environment, particularly water quality.

Declines in amphibian populations are occurring around the world. In the early 1970s the northern leopard frog (*Rana pipiens*) experienced significant population declines throughout Alberta. The cause(s) for these declines are uncertain, however several factors may be involved, including loss of habitat, water pollution, insecticide use, water management projects, increased ultraviolet (UV) light, changing climatic conditions, disease, gene flow introduction and over collecting.

In Alberta, management and conservation initiatives for amphibians include increasing public awareness of amphibians in the province and collecting scientific data on long-term population trends and current distributions. Reintroduction programs may also play an important role in repopulating areas where amphibian species no longer exist.

Through co-operation among government and non-government agencies, as well as landowners and the general public, the success and health of amphibians of Alberta can be maintained.

Volunteer participation and intensive site based monitoring programs, such as the Alberta Amphibian Monitoring Program, are instrumental in the conservation of amphibians.

For further information on amphibians, the Alberta Amphibian Monitoring Program or how to become a volunteer, contact Alberta Conservation Association or Alberta Environmental Protection/Natural Resources Services - Fisheries and Wildlife Management Division, 7th floor, O.S. Longman Building, 6909 - 116 Street, Edmonton, Alberta T6H 0Z2.

Tiger Salamander

(*Ambystoma tigrinum*)

- Total Length: 14.0 - 25.0 cm (record 33.0 cm - neotenic)
- Identification: robust body with pronounced variation in coloration and pattern, ranges from yellow-brown, gray or olive-green background, with dark blotches, spots or bars; broad, flat head with small eyes and muscular tail and limbs
- Habitat: found underground in pocket gopher mounds, small animal burrows, loose soil and under objects near water; often found above ground after rain (especially during the breeding season and in the fall); wide ranging throughout the aspen parkland and prairie ecoregions; can be neotenic
- Cool Fact: some individuals do not metamorphose, maturing as aquatic adults called neotenics, and retaining their larval gills and other characteristics.



Long-toed Salamander

(*Ambystoma macrodactylum*)

- Total Length: 8.0 - 12.0 cm (record 17.5 cm)
- Identification: slender; all black or dark brown salamander with an irregular yellow-orange stripe down center of back and tail; long, slender toes with fourth toe on hind foot longer than other toes
- Habitat: typically found under rocks and rotting logs along ponds and lakes in the mountain and foothill ecoregions of western Alberta; can be neotenic
- Cool Fact: the yellow stripe of this nocturnal animal is "warning coloration", indicating that it tastes bad; it may also serve to camouflage the animal



Boreal Toad

(*Bufo boreas*)

- Snout-Vent Length: 5.5 - 12.5 cm (record 14.5 cm)
- Identification: large toad covered with small round warts that may be reddish in color; background color is green, gray or brown; often has a light dorsal stripe; prominent oval-shaped parotid glands behind eyes; boss on top of head between eyes, diverge behind eyes in an "L" shaped pattern (See diagram below)
- Call: a repeated melodic chirping or peeping
- Habitat: found around ponds, streams, rivers, and lakes; associated with boreal, foothill, and mountain ecoregions
- Cool Fact: this species may be found at high elevations, up to 3 000 meters



Canadian Toad

(*Bufo hemophrys*)

- Snout-Vent Length: 3.7 - 7.5 cm (record 8.3 cm)
- Identification: small, warty toad that is gray, olive-green or brown in color, with dark spots; may have a light cream-colored dorsal stripe; prominent oval-shaped parotid glands behind eyes; boss on top of head between eyes, consisting of two parallel ridges that may be fused (See diagram below)
- Call: harsh, raspy, continuous, high pitched trill lasting 1-5 seconds
- Habitat: primarily a toad of aspen parkland and prairie-ecoregions associated with ponds, marshes, lakes and streams; inhabits both animal burrows and burrows of its own construction
- Cool Fact: venom produced from the glands and warts of toads can cause nausea, irregular heart beat, and inflammation of the mouth and throat of would-be predators



Great Plains Toad

(*Bufo cognatus*)

- Snout-Vent Length: 4.5 - 11.0 cm (record 11.2 cm)
- Identification: large toad covered with dark symmetrical blotches on back; background color is pale brown-gray or olive; distinct parotid glands behind eyes; boss on top of head between eyes, diverge behind eyes in an "L" shaped pattern (See diagram below)
- Call: a harsh, loud, trill lasting up to 50 seconds or more; sound can carry up to 2 km
- Habitat: ponds, ditches, and flooded areas in the grassland ecoregion; associated with loose soil to allow for burrowing
- Cool Fact: up to 20 000 eggs may be laid by one female



Plains Spadefoot

(*Spea bombifrons*)

- Snout-Vent Length: 3.7 - 6.2 cm (record 6.4 cm)
- Identification: relatively smooth skinned, stout-bodied toad, with a pug-like snout and a vertical eye pupil; wedge-shaped bony projection on hind feet used for digging burrows; pale grey, brown or dull green coloration; lacks parotid glands; solid raised boss between eyes
- Call: a distinct short duck-like note, repeated every 5-10 seconds
- Habitat: temporary or permanent prairie ponds, usually in areas where soil is loose; found chiefly in short-grass prairie ecoregion
- Cool Fact: these irritable breeders are prompted by heavy rainfall; tadpoles develop extremely fast; accomplished burrowers. They can be found as deep as one meter below the surface.



Northern Leopard Frog

(*Rana pipiens*)

- Snout-Vent Length: 4.4 - 10.0 cm (record 13.0 cm)
- Identification: large, slender frog; coloration on back varies from green to brown (occasionally golden) with a pale white belly; large, dark spots on back with pale borders; two light-colored dorsolateral ridges running down sides of back
- Call: rubbery pattering and trills; sounds like rubbing a wet finger on a balloon
- Habitat: associated with ponds, marshes, springs, and backwaters of streams and rivers of short-grass prairie and Cypress Hills; historically distributed throughout southern, and eastern Alberta to Wood Buffalo National Park
- Cool Fact: this frog is a good jumper and can leap a distance of up to 1.8 meters or 15 times their body length



Wood Frog

(*Rana sylvatica*)

- Snout-Vent Length: 3.0 - 6.0 cm (record 10.0 cm)
- Identification: coloration varies from pink-tan, gray, olive-green, various shades of brown, to almost black; whitish jaw stripe contrasts with a dark eye mask that extends from the nostril over the eye and just behind the ear; light dorsal stripe is frequently present
- Call: series of short, hoarse, raspy clucking, clicking and quacking sounds
- Habitat: closely associated with the aspen parkland, boreal forest and foothill ecoregions; found in shady mixed forest areas near ponds, marshes and intermittent streams
- Cool Fact: Canada's hardiest amphibian, it is the only one found north of the Arctic Circle; able to withstand subzero temperatures and partial freezing during hibernation by producing a glucose "antifreeze" in their blood that inhibits tissue damage



Columbia Spotted Frog

(*Rana luteiventris*)

- Snout-Vent Length: 4.4 - 10.0 cm (record 10.2 cm)
- Identification: brownish frog with dark spots on back, often with a single light dot in the center; undersides of hind legs pinkish red; white upper lip; eyes positioned toward the top of the head and are bright yellow or gold
- Call: sounds like a quiet helicopter
- Habitat: marshes, permanent ponds, lake edges where there is abundant aquatic vegetation; restricted to mountains, foothills, and associated drainages
- Cool Fact: it can take 4-6 years for this frog to reach sexual maturity



Boreal Chorus Frog

(*Pseudacris maculata*)

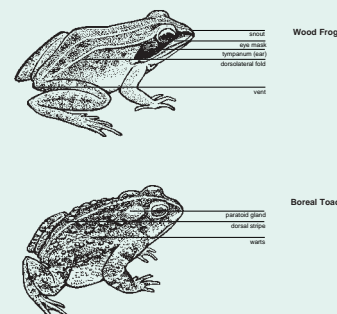
- Snout-Vent Length: 1.9 - 3.7 cm (record 4.0 cm)
- Identification: small, delicate frog with high variation in coloration that ranges from gray, brown, or green; back with three pale stripes that may be broken, reduced to spots, or absent; distinct dark stripe runs through eye and down side of body; toes have small round tips
- Call: sounds similar to running your fingernail down the teeth of a pocket comb
- Habitat: most widely distributed frog in Alberta; it occurs in ponds, marshes and lakes in grassland, parkland, and forest ecoregions
- Cool Fact: Alberta's only treefrog; it has small disks on the tips of the toes that aid in climbing



Diagram of Toad Bosses



Diagram of Frog and Toad



Amphibian Life Cycles

