



Salamander on the prairie NA Cairns: "Western Tiger Salamanders occur in the southern portions of Alberta, Saskatchewan and Manitoba in a wide range of habitats. (c) NA Cairns

## Tigers on the Prairies—The Story of Saskatchewan's Only Native Salamander

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The Western Tiger Salamander (*Ambystoma mavortium*) is the only native species of salamander in Saskatchewan. They are one of the largest salamanders in North America, often measuring around 20 centimetres long, but can reach up to 30 centimetres (12 inches).

They have a broad, flat head with small eyes. Adults have a dark body, usually olive-green to black, with a barred or web-like pattern of black lines and irregular splotches of off-white, yellow or greenish patches.

Tiger Salamanders can be elusive as they are nocturnal amphibians, and may only move around at night or following a significant period of rain. They can be found in a wide range of habitats, including grasslands, aspen parkland, low-elevation meadows, and semi-deserts. Their preferred habitat tends to have key features including sandy or crumbly soils, and semi-permanent to permanent waterbodies without predatory fish (ECCC, 2023).

Soil texture is important because it allows salamanders to dig underground during the summer season when daytime temperatures are too hot for them to be aboveground. Tiger Salamanders also use small mammal burrows (such as those of Richardson's ground squirrel), as a refuge during the day or as a place to spend the winter.

All salamanders are ectotherms, which means their body temperature is dependent on ambient air and ground temperature. Burrows provide an escape from heat and tend to be more humid than the surface of the ground, which allows salamanders to regulate both their body temperature and skin moisture. Because Tiger Salamanders are unable to metabolically-control their body temperature, they must overwinter deep underground to avoid freezing.

In the spring, soon after ice-melt, adults migrate to breeding sites in wetlands, lakes, ponds and slow-moving streams with no fish. Females lay eggs singly or in

small clusters attached to twigs or stems, just below the water's surface. The aquatic larvae hatch two to three weeks later and live underwater, breathing through feathery gills around their heads.

These aquatic larvae undergo metamorphosis into terrestrial juveniles after three to four months, depending on water temperature, food availability and other factors (as shown in a video of closely-related Eastern Tiger Salamander development at "Egg to Salamander" within [NatureNorth.com](https://www.naturenorth.com)).

Because many prairie waterbodies only hold water through the spring and part of summer, water temperatures rise and water depths decrease as the season passes. During this progression, the salamander's gills shrink away, much like a frog or toad tadpole's tail. Eventually, juvenile salamanders emerge from their natal wetland, with no gills, breathing through lungs that will support their terrestrial life-form.

Juvenile salamanders migrate from their breeding site into terrestrial habitats in late summer, and only return to breeding sites when they are mature adults, four to five years later. Adult salamanders are not aquatic but they do need to maintain moist skin; so, they spend most of their time underground. Wetlands and other waterbodies are important for their survival.

Both larvae and adults are carnivorous and opportunistic predators, feeding on a wide range of small prey like tiny aquatic invertebrates and tadpoles to worms, beetles, leeches, snails and the occasional frog. Adult salamanders can also eat small mammals like young mice. Salamanders will act as top predator in fishless habitats, helping to control invertebrate abundance and influence nutrient cycles.

The introduction of fish into waterways can be devastating for populations of salamanders and other amphibians, whose eggs are vulnerable to predation. Salamanders also have their place as

prey in the food web, as the larvae are a food source for fish, aquatic invertebrates, dragonflies, and beetles—and adult salamanders are a food source for coyotes, snakes and some birds.

The Prairie/Boreal population of Western Tiger Salamanders has been listed as a species of Special Concern. Threats to this species arise from habitat loss and fragmentation associated with agricultural, oil and gas development; and urban expansion; all of which can cause disruption of migration routes, mortality on roads, and a decrease in the quality of breeding and upland habitat for larvae and adult salamanders.

In addition to threats to salamander habitat, fish stocking and emerging diseases, such as a species-specific virus can decimate local populations (ECCC, 2023).

One way to help salamanders is to maintain intact native vegetation around breeding ponds. Land owners and range managers can protect and maintain wetlands by preventing sedimentation, degradation and drainage through fencing livestock away from ponds, wetlands and streams. By providing livestock with access points to waterbodies or alternative off-channel water development, most or all of the shoreline or streambank can be protected.

These beneficial management practices will protect Tiger Salamanders, and will support other aquatic vertebrates and invertebrates by maintaining healthy food webs and intact native prairie ecosystems.



Salamander close up NA Cairns: "Western Tiger Salamanders are nocturnal amphibians, and tend to only move around at night or following a significant period of rain. (c) NA Cairns

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### Neat Facts:

- The Plains Cree people relate that some stories should not be told unless there is snow on the ground. Breaking this taboo risks a visit from Osikiyáwis (salamander), who will crawl into their sleeping blankets at night (Favel, 2018).
- Unlike frogs, Tiger Salamanders do not produce vocalizations. There is evidence that they communicate with each other using touch, including nose and head bumping, and cheek-pressing (Chernoff, 2019).
- If a young Tiger Salamander does not experience a drawdown of water depth, and if food is plentiful (in lakes or large slow-moving rivers), the juvenile can progress to an adult stage while still retaining their fringe of gills for the rest of their aquatic life.