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NORTHWEST WILDLIFE PRESERVATION SOCIETY

Long-toed Salamander

Ambystoma macrodactylum



Long-toed salamanders are one of six species of salamanders in BC. They are medium-sized amphibians. Their size is usually between 8cm and 12cm (3-4 inches), averaging around 8.5 cm (3.3 inches). There are three subspecies that are found throughout Canada: the eastern, central and western long-toed salamander. The eastern long-toed salamander is found in the Rocky Mountain range of British Columbia and Alberta. This species has a yellow, thin dorsal stripe and a coloured patch above both eyelids. The central long-toed salamander can be found in most of British Columbia to the west of the Rockies. It is distinguishable through the bright yellow/tan dorsal stripe that is continuous until the head where it breaks into stripes. The western long-toed salamander is found on Vancouver Island and the far southwest of British Columbia. The distinguishing feature of this subspecies is the green dorsal stripe with rough edges.

Characteristics

The long-toed salamander is mostly brown/grey to black with a dorsal stripe ranging from yellow to green. The long-toed salamander also has white flecks on its side and feet. The belly is usually pale brown/pink colour. It is well-known for the long fourth toe on its hind legs, hence its given name.

The head is oval-shaped with prominent eyes that bulge out and can be 1/3 the length of the body. When the animal feels threatened, it can excrete a foul-tasting poison from granular glands on its back and tail. This defence seems to deter predators, however, the tail is occasionally lost in the fight. As with most salamanders, the skin looks wet due to a mucus that keeps the species hydrated and protected from foreign bodies. It also controls the amount of water absorbed whilst underwater. The larvae are translucent grey or light brown with dark flecks and a silvery belly.

Life Cycle

Between April and May, adults migrate to breeding ponds. Breeding ponds are relatively shallow, less than a metre (3.28 ft) deep. During breeding, the male swims ahead of the female and deposits small

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sperm packs, which the female absorbs into her cloaca. Usually 400 eggs in total are laid, underwater and close to the shore. Eggs are laid either singularly or in small clusters of 30 eggs. They are brown on top and cream coloured below. Eggs then hatch roughly 3 weeks later dependant on the water temperature.

When first hatched, the larvae are around 15 mm (just over 0.5 inches) but grow to between 60 to 70 mm (2.36 -2.76 inches) by late August, ready for transformation. Larvae grow quickly, developing front legs and then back legs. When they reach about 7 cm, the larvae transform into terrestrial juveniles. These salamanders have lungs and they have absorbed their fins and gills. They are now ready for life on land, and reach sexual maturity two to five years later. In locations with extreme environments, for example, high elevation with colder water, the larvae may over-winter in breeding ponds and transform into adults the next summer or even the one after that. Long-toed salamanders typically live for six to ten years.

Habitat

This species can adapt to a wide range of habitat. It can be found in western North America, extending from southeastern Alaska southward to Tuolumne County, California; east to Rocky Mountains, British Columbia; west-central Alberta, western Montana, and central Idaho. Elevation range extends from sea level to around 3,050m (10,006 ft). The species can be found in semi-arid sagebrush deserts to sub-alpine meadows, and dry woodland, humid forests and mountain lakes. Most are found in valley bottoms and humid forests near water. Adults are subterranean, found in holes underground. However, they are poor diggers and so rely on burrows made by other animals or natural nooks and crannies. During mating season adults can be found under logs, rocks and other debris near the water.

Behaviour

The long-toed salamander is mostly nocturnal. However, on rainy days these species can be found under rotten logs and leaves during the day. The easiest time to view the animals is during mating season in April and May as they are above ground and close to the water, and during late summer to early fall when the juveniles leave the pond for the terrestrial burrows.

The typical diet of the long-toed salamander consists of insects, tadpoles, worms, beetles and even small fish. Salamander larvae are carnivorous and eat insects, zooplankton and other amphibian larvae.

Threats

The long-toed salamander is classed as a Species of Least Concern on the IUCN redlist as there is a stable population. This is due to their widespread distribution around B.C. Also, they can adapt to a wide variety of habitats and newly formed or disturbed breeding ponds. However, in Alberta, the long-toed salamander is classed as a Species of Special Concern as without human intervention the species could quickly die out.

The presence of predatory fish can affect the salamander larvae survival and also distribution. The presence of game fish in breeding ponds can have a large effect on the survival rate. Road-building can also have an effect as it separates the breeding ponds and the habitats, creating smaller gene pools. Forestry and mining creating water pollution has a negative effect on long-toed salamanders, just like many of B.C.'s other native animals.

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What We Can Do To Help

- Preserve wetland habitats by not draining or filling them in.
- Leave fallen trees in wooded areas where they fall – a dead tree has more living organisms and wildlife in it than a live tree, and the ground needs the decaying material back to help nurture new trees.
- Do not ever litter on land or in the water, reuse and recycle whenever possible but better yet reduce your consumption of trashable and recyclable products – choose compostable instead! Help clean up the environment such as participating in NWPS's annual Great Canadian Shoreline Cleanup in the Fall.
- Dispose of toxic substances such as antifreeze, batteries, and paint responsibly. Municipalities usually provide special disposal facilities for these types of things, as putting them down drains can be extremely toxic.
- Buy organic food – this supports farmers who are trying to preserve the environment by not using chemical pesticides and herbicides.
- Plant native plant species in your garden. See <http://www.stanleyparkecology.ca/programs/public/ivyBusters.php> for background on the harmful impact of introduced species like English Ivy.
- Donate your financial and/or time resources to help organizations dedicated to wildlife conservation.
- Take the time to learn about wildlife. Take a walk and observe the wildlife around where you live.

Other Interesting Facts

A salamander can re-grow its tail.

Salamanders were among the first vertebrates to come onto land over 280 million years ago.

Salamanders can absorb water through their semi-permeable moist skin.

Bibliography

Web Resources:

Amphibians in British Columbia: <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-conservation/amphibians-reptiles/amphibians-in-b-c/salamanders>

Long-toed salamander fact sheet:

<http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do;jsessionid=GnfQhTHJ3hN9HyQ1c1n2XPLXCrjhQThdT7z15jy465GLK419DTI2!2073860296?subdocumentId=7965>

BC Frogwatch Programme:

<http://www.env.gov.bc.ca/wld/frogwatch/publications/factsheets/salamanders/long-toed.htm>

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Alberta Environment and Parks, long-toed salamander fact sheet: <http://aep.alberta.ca/fish-wildlife/wild-species/amphibians/salamanders/long-toed-salamander.aspx>

IUCN redlist long-toed salamander: <http://www.iucnredlist.org/details/links/59063/0>

Amphibian species of Canada, long-toed salamander: <http://www.amphibians.ca/long-toed-salamander/>

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