

Aquatic Species at Risk



The Snuffbox... a Species at Risk in Canada

COSEWIC Status - ENDANGERED May 2001; November 2011
SARA Status - ENDANGERED June 2003



This species has been identified as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It is listed under the federal *Species at Risk Act* (SARA) and was afforded protection under the Act as of

June 2004. Additional protection is afforded through Ontario's *Endangered Species Act, 2007*. As required under SARA, a recovery strategy and an action plan have been developed for this species.

General description

The Snuffbox (*Epioblasma triquetra*) is one of Canada's 54 freshwater mussel species and the most widely distributed member of the genus *Epioblasma*. It is a small, unique-looking mussel with the following features:

- shell is solid and thick, triangular in shape in males, somewhat longer and "puffed-up" in females;
- males may reach seven cm, females may reach six cm in length;
- the raised part at the top of the shell (beak) is swollen and sculptured with three or four faint double-looped ridges;
- the shell is rounded at both ends, while top and bottom edges are nearly parallel;
- outside shell is smooth, yellowish to yellow-green and marked with many dark green rays that are often broken into triangular spots that look like "dripping paint";
- inside shell (nacre) is white and shiny on the back half and has a grey-blue tinge in the depression inside the beak; and
- there are deep scars on the inside of the shell where the muscles that hold the two shell-halves together attach.

Freshwater mussels are molluscs, soft-bodied animals without a skeleton (invertebrates), that live on the bottom of streams, rivers, lakes and ponds. They use a muscular foot to burrow and crawl and have a pair of hinged shells. Mussels are filter feeders — nature's water purifiers — and are food for other wildlife like fishes, otters, mink, muskrats and some birds. They are also among the most endangered creatures in the world.



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Distribution

Historically, the Snuffbox was found in Ontario in lakes Erie and St. Clair and the Ausable, Grand, Niagara, Sydenham and Thames rivers. It is currently known to occur only in a 93 km reach of the East Sydenham River as well as at five sites within a 91 km reach of the Ausable River. The Snuffbox was also known from 18 American states, but is now thought to be lost from Iowa, Kansas, New York and Mississippi. Overall, the Snuffbox has been lost from 60 per cent of historically occupied rivers and streams in North America and remaining populations are small and isolated from each other.

Habitat and life history

The Snuffbox is typically found in small- to medium-sized rivers in “riffles,” shallow areas with clear, swift-flowing water over coarse, firmly packed rubble/gravel/sand substrates. The Snuffbox is a moderately long-lived, sexually dimorphic species (males and females look different from each other), with a lifespan of at least ten years. It is believed that spawning occurs in late summer and the glochidia (larvae) are released the following May–June. Like most other freshwater mussels, the glochidia are parasitic on fishes. Using its shell, the female Snuffbox grabs and holds a host fish while releasing glochidia into the fish’s mouth. The glochidia then attach to the host fish as they flow through its gills. Here they will remain until they reach their juvenile, free-living stage and drop off onto the substrate below. Adult Snuffbox are sedentary and spend their lives completely or partially burrowed in the substrate. Throughout their lives, they may move only a few metres through the substrate.

In Canada, the Logperch (*Percina caprodes*) is the main host fish identified for this mussel, but other possible host fishes include the Iowa Darter, Mottled Sculpin, Largemouth Bass, Brook Stickleback and Rainbow Darter.

Diet

Like all species of freshwater mussels, the Snuffbox filters its food from the water. Bacteria and algae are its primary food sources.

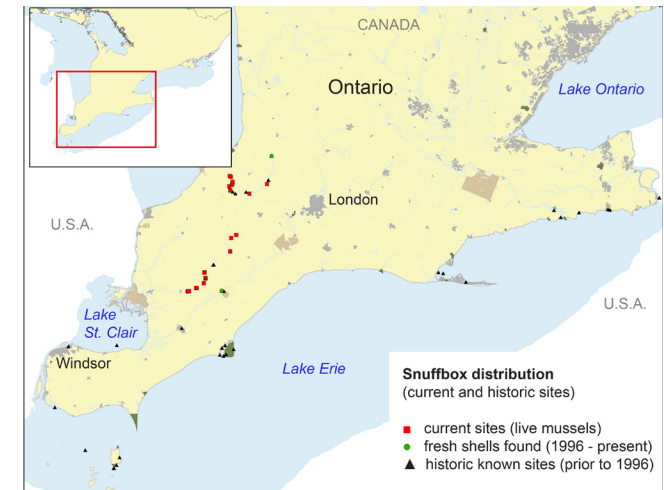
Threats

The major threats to the Snuffbox continue to be habitat loss and destruction from increasing municipal, industrial, and agricultural activities. Disturbances to Snuffbox habitat, such as flooding of riffle areas and the impoundment of large rivers, have also destroyed much of its habitat over the last century. More recently, the Zebra Mussel has devastated the Great Lakes Snuffbox populations, while the Round Goby may pose a new threat by competing with the mussel’s known host fishes and feeding on juvenile mussels.

Similar species

This species is similar to the Fawnsfoot (*Truncilla donaciformis*) and the Deertoe (*Truncilla truncata*).

Snuffbox distribution in Canada



Text Sources: COSEWIC Status Report on the Snuffbox (*Epioblasma triquetra*) in Canada, 2011; Fisheries and Oceans Canada. Action Plan for the Sydenham River in Canada [proposed], 2012; Fisheries and Oceans Canada. Recovery Strategy for Northern Riffleshell, Snuffbox, Round Pigtoe, Mudpuppy Mussel and Rayed Bean in Canada [proposed], 2012; Metcalfe-Smith et al. Photo Field Guide to the Freshwater Mussels of Ontario, 2005.

For more information, visit the SARA Registry at www.SARAreistry.gc.ca or the website below.

Cette publication est également disponible en français.

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www.aquaticspeciesatrisk.gc.ca

Section 32 (1) of the Species at Risk Act (SARA) states that “no person shall kill, harm or harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.”