



The Mapleleaf (Great Lakes-St. Lawrence Population) a *Species at Risk* in Ontario

COSEWIC Status – **THREATENED** April 2006

SARA Status – **UNDER CONSIDERATION**



Quadrula quadrula

Photo de National Water Research Institute

This species has been identified as Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It is currently being considered for listing under the federal *Species at Risk Act* (SARA).

Protection is afforded through the federal *Fisheries Act*. If listed under the SARA, it will be afforded additional protection. Under the SARA, a recovery strategy must be developed for this species.

General Description

The Mapleleaf (*Quadrula quadrula*) is a medium to large freshwater mussel in the family Unionidae. It is named after its shape, which resembles a mapleleaf. It has the following characteristics:

- Thick, square-shaped shell
- Specimens reach 125 mm in length, 100 mm in height and 50 mm in width
- Raised nodules form a v-shape from the umbo (beak) to the ventral margin; separated by a shallow groove
- Small umbos slightly raised above the hinge line
- Heavy hinge teeth
- Variable colouration; young specimens are yellowish green to light brown and older specimens are greenish brown to dark brown
- Growth lines range from well-defined (young specimens) to crowded/difficult to discern (older specimens)
- White nacre

Distribution

In the United States, the Mapleleaf occurs from Texas to Alabama. Its northern distribution includes the Great Lakes drainage in Minnesota and Wisconsin to New York and extends into the Red River drainage in Minnesota and North Dakota. In Canada, the Mapleleaf is restricted to the Red River drainage (Manitoba) and the Great Lakes-St. Lawrence watershed (Ontario). The Great Lakes-Western St. Lawrence population is confined to some larger rivers draining into Lake St. Clair and Lake Erie including the Sydenham, Ausable, Grand and Thames rivers. Overall, the extent of occurrence of this mussel in Ontario has declined by nearly 50% of its former range.

Habitat and Life History

The Mapleleaf is usually found in medium to large rivers with slow to moderate currents and firmly packed substrate of sand, coarse gravel or clay/mud. During spawning, males release sperm into the water and females siphon it out of the water and filter it with their gills. In the marsupium (special area of the gill), the female eggs are fertilized and develop into glochidia (larvae). This 'brooding' period is generally short, lasting from late spring to early summer. Once released, glochidia require a fish host for 50 to 60 days to develop into juveniles, which then drop off the host and exist as free-living mussels. The lifespan of the Mapleleaf is long; specimens from Manitoba have lived up to 64 years of age but average 22 years.

Hosts

In Canada, the Channel Catfish (*Ictalurus punctatus*) and Flathead Catfish (*Pylodictus olivaris*) are known hosts. The Flathead Catfish, however, is a vagrant in Canada (rarely occurs). It is likely that the Brown Bullhead (*Ameiurus nebulosus*) is a suitable host given its range, but this has not been documented.

Diet

This mussel is a filter-feeder and its diet, therefore, likely consists largely of algae and bacteria obtained from the water column and substrate in which it lives.

Threats

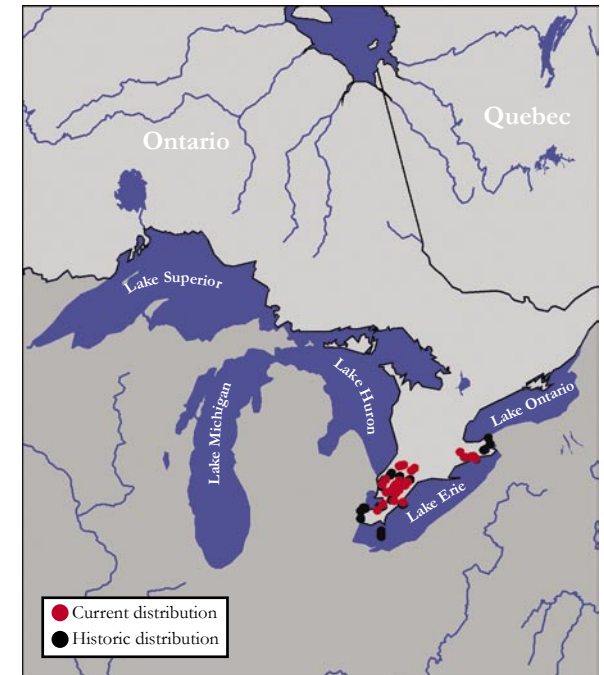
In both Manitoba and Ontario, the Mapleleaf is threatened by habitat loss and degradation due to agricultural runoff, industrial and urban pollution, and the presence of dams and reservoirs. In Ontario, invasions by Zebra and Quagga Mussels (*Dreissena polymorpha* and *D. bugensis*) in the lower Great Lakes and connecting channels have also adversely impacted this species along with most other freshwater mussels.

Similar Species

The Mapleleaf most resembles the Pimpleback (*Q. pustulosa*). However, *Q. pustulosa* is rounded in outline and its nodules are more uniformly scattered.

Text Sources: COSEWIC Status Report 2006.

MAPLELEAF DISTRIBUTION - Great Lakes-Western St. Lawrence



For more information, visit the SARA Registry Website at www.SARAreistry.gc.ca and the Fisheries and Oceans Canada (DFO) Website noted 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, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.”