

Aquatic Species at Risk



The Rainbow... a *Species at Risk* in Ontario

COSEWIC Status – ENDANGERED April 2006

SARA Status – UNDER CONSIDERATION



Villosa iris

Photo by National Water Research Institute

General Description

The Rainbow (*Villosa iris*) is a small, freshwater mussel belonging to the family Unionidae. Its common name “Rainbow” originates from its iridescent nacre. It has the following characteristics:

- Compressed, long and elliptical in shape
- Average length 55 mm; maximum length roughly 85 mm
- Low and rounded posterior ridge
- Low and compressed beaks; sculpture comprises four to six bars
- Medium-sized and well developed hinge teeth
- Yellow, yellowish green or brown shell with many broken, dark green rays of differing widths
- Silvery white, iridescent nacre

This species has been identified as Endangered 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.



Distribution

The Rainbow is distributed in eastern North America from Wisconsin east to Ontario and New York and south to Oklahoma, Arkansas and Alabama. Its current distribution includes much of its historical distribution; however, it is in decline in the western part of its range. In Canada, it occurs only in Ontario where it has been observed from the Ausable, Bayfield, Detroit, Grand, Maitland, Moira, Niagara, Salmon, Saugeen, Sydenham, Thames and Trent rivers. The Maitland River supports the largest population of Rainbows; however, it is likely extirpated from the Detroit and Niagara rivers. It has also been collected in lakes Huron, Ontario, Erie and St. Clair but now only occurs in the delta of Lake St. Clair. Overall, this mussel no longer exists in roughly 30% of its historical Canadian range.

Habitat and Life History

The Rainbow is most abundant in shallow, well-oxygenated reaches of small- to medium-sized rivers and sometimes lakes, on substrates of cobble, gravel, sand and occasionally mud. During spawning in late summer, females filter the sperm released by males out of the water with their gills. Eggs are fertilized in the marsupia, an area of the gills, and held until the larval stage (glochidia), at which time they are released (in the early spring). Glochidia must find an appropriate fish host whose body fluids provide nourishment until the glochidia metamorphose into juveniles. The juveniles then release themselves as free-living mussels and bury themselves completely into the sediment until sexual maturity.

Hosts

Fish hosts for the Rainbow could include the Striped Shiner (*Luxilus chrysocephalus*), Smallmouth Bass (*Micropterus dolomieu*), Largemouth Bass (*M. salmoides*), Green Sunfish (*Lepomis cyanellus*), Greenside Darter (*Etheostoma blennioides*), Rainbow Darter (*E. caeruleum*) and Yellow Perch (*Perca flavescens*).

Diet

The Rainbow is a filter-feeder. Its diet consists of organic detritus, algae and bacteria obtained from the water column and sediment. Juveniles consume the same types of food from interstitial water or directly from the substrate in which they are buried.

Threats

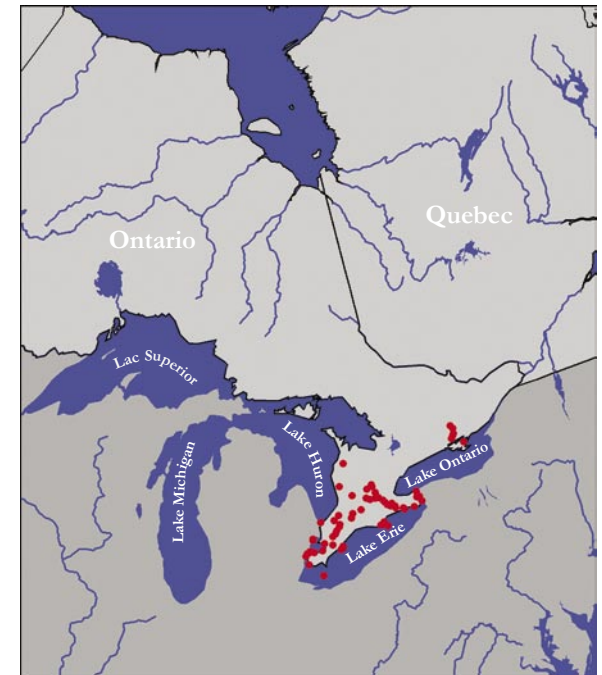
Impacts of introduced dreissenid mussels (*Dreissena polymorpha* and *D. bugensis*) represent an important threat, especially in Lake St. Clair. In rivers, habitat loss and degradation resulting from the combined impacts of agriculture and urbanization are a threat by reducing water quality and altering flow regimes.

Similar Species

The Rayed Bean (*Villosa fabalis*) is the only other species in this genus that occurs in Canada. There are no similar species.

Text Sources: COSEWIC Status Report 2006.

RAINBOW DISTRIBUTION



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.”