



**Status:** Federal and State Endangered

**Global and State Rank:** G3/S1

**Family:** Unionidae (Pearly Mussels)

**Total Range:** The snuffbox mussel ranges from western New York and southern Ontario; west to Wisconsin, Iowa and eastern Nebraska; and south to Oklahoma and northern Alabama (Burch 1975).

**State Distribution:** The snuffbox mussel is found in eastern and southeastern rivers in Michigan. Historically, the most northern sightings of the snuffbox were in the Big Salt River and Chippewa River in Midland County, the Titabawassee and Saginaw Rivers in Saginaw County, and the Sebewaing River in Huron County. In southern Michigan, snuffboxes were found in the St. Joseph River in St. Joseph and Berrien Counties, the Huron and Portage Rivers in Livingston County, and Otter Creek in Monroe County. The snuffbox mussel has been confirmed recently in the Pine, Belle and St. Clair Rivers in St. Clair County; the Clinton River in Oakland County; the Grand River in Ionia County; and the Detroit River in Wayne County.

**Recognition:** The snuffbox mussel is about 2 inches in length, with males slightly larger. Shells are triangular and thick, yellowish on the outside, and covered with numerous, broken, dark green rays. Hinge teeth are elevated and compressed, and beak sculpture is double looped (Burch 1994, Clarke 1981).

**Best Survey Time:** April through September.

**Habitat:** The snuffbox mussel inhabits small and medium-sized rivers, although specimens have been taken from Lake Erie and large rivers, such as the St. Clair River. Preferred habitat usually has sand, gravel, or cobble substrate with a swift current. Individuals are often found buried deep in the sediment (Burch 1994).

**Biology:** Reproduction occurs in the snuffbox mussel in early to mid-August. Males release sperm into the water, which is taken in by the females through their respiratory current for internal fertilization (Lefevre and Curtis 1912). Glochidia (the parasitic stage of mussels) are released from May to mid-July. In Michigan, the only host fish known is the log perch (*Percina caprodes*); however, in other areas in the range, the banded sculpin (*Cottus caroliniae*) is also a known host (Sherman 1994). After completing the parasitic stage, snuffboxes remain relatively sessile on the river bottom, living between 8-10 years.

**Conservation/Management:** The snuffbox mussel is sensitive to river impoundment, siltation and disturbance, due to its requirement for clean, swift current and relative immobility as an adult. In order to maintain the current populations in Michigan, rivers need to be protected to reduce silt loading and run-off. Efforts to maintain and increase riffle habitat with deep gravel beds would benefit the mussel. Because the life cycle of the snuffbox is inherently linked with that of the logperch in Michigan, conservation and management of this fish species is needed to insure that of the snuffbox.



**Research Needs:** Additional surveys are needed to determine the distribution and numbers of remaining snuffbox mussels. Also, studies should focus on the possibility of additional fish hosts, especially the hornyhead chub (*Nocomis biguttatus*) in which natural glochidal infections are found (Sherman 1994).

**Selected References:**

Burch, J.B. 1994. Mollusk: Species Accounts. Pages 395-410 in D.C. Evers, ed. Endangered and Threatened Wildlife of Michigan. University of Michigan Press, Ann Arbor, MI.

Burch, J. B. 1975 Freshwater Unionacean clams (Mollusca: Pelecypoda) of North America. Malacological Publication, Hamburg, MI.

Clarke, A.H. 1981. The freshwater molluscs of Canada. Natl. Mus. of Nat. Sci./Nat. Mus. of Can.:Ottawa, Ontario, Canada. 446 pp.

Lefevre, G. and W. C. Curtis, 1912. Experiments in the artificial propagation of fresh-water mussels. Proc. Intl. Fishery Congress, Washington. Bull. Bur. Fisheries 28: 617:626.

Sherman, R.A. 1994. Life history information critical to the management of the state endangered snuffbox mussel, *Epioblasma triquetra* (Bivalvia:Unionidae) in Michigan. Ms. Thesis. The University of Michigan.

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