



Dwarf Wedge Mussel Fact Sheet

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Dwarf Wedge Mussel *Alasmodonta heterodon*

New York Status: **Endangered**

Federal Status: **Endangered**

Description

The dwarf wedge mussel is a small freshwater mussel that rarely exceeds 1.5 inches (38 mm) in length. It is brown or yellowish-brown in color. Adult mussels are filter-feeders, feeding on algae and other small suspended particles.

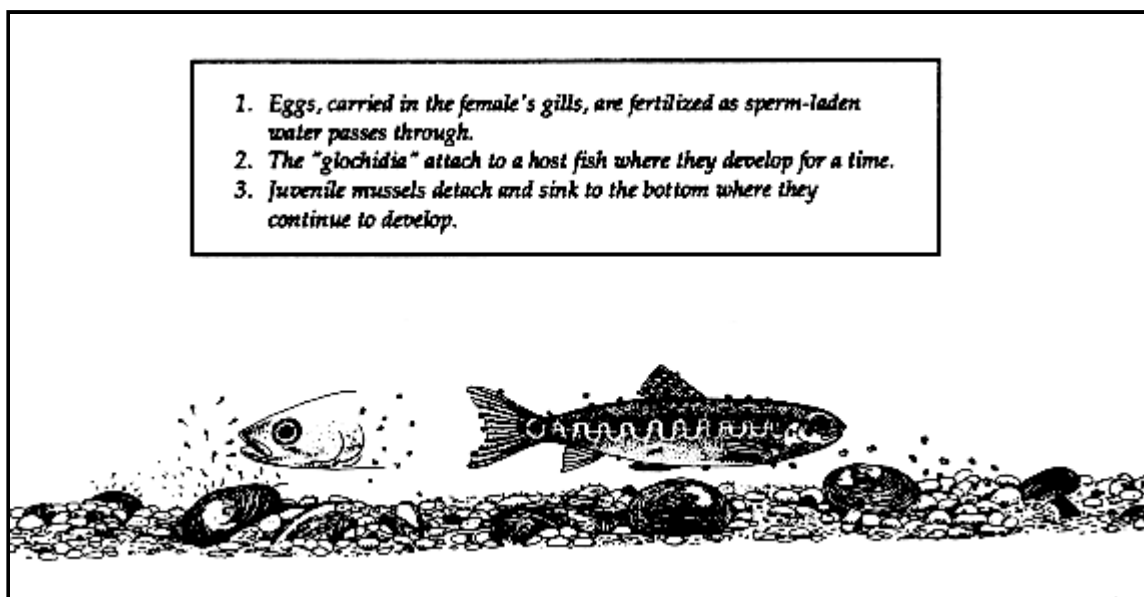
They spend most of their time buried almost completely in the bottom of streams and rivers.



Life History

The dwarf wedge mussel is sexually dimorphic, with separate sexes, unlike some mussels which are hermaphroditic, with individuals having both male and female reproductive organs. Even so, the dimorphism is very subtle; routine determination of sex in dwarf wedge mussels is at best difficult. Male dwarf wedge mussels release sperm into the water column during the mid-summer or fall. Females collect the sperm while siphoning water for food; the eggs are then fertilized and kept within the female until they are released the following spring. By then, each egg has developed into a parasitic larvae called a glochidium. After release from the female, the glochidium attaches itself to a fish with the aid of a small hook-like appendage. Mussel glochidia are generally

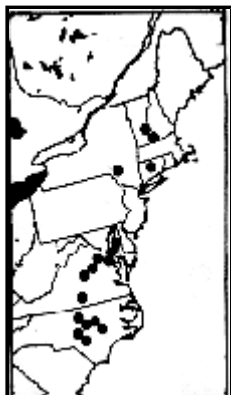
species-specific and will only live if they find the correct host. With dwarf wedge mussels, the right hosts are small bottom-dwelling fish, the tessellated darter (*Etheostoma olmstedii*) and the mottled sculpin (*Cottus bairdi*). It appears that the glochidium receives little nutrition from the fish, but uses it only as a means of dispersal. After several weeks, the glochidium detaches itself from the unharmed fish and drops to the river bottom. It is then a juvenile mussel.



Dwarf Wedge Mussel Life Cycle

Many mussels have lifespans that range upwards of 20, 30 or even 100 years. The dwarf wedge mussel is considerably different in this regard, though, as it appears to only live about 10 years. Adults must therefore be constantly replaced to maintain a viable population.

Distribution and Habitat



The dwarf wedge mussel is found at 17 sites in seven Atlantic Coast drainages. These are located in New Hampshire, Vermont, Connecticut, New York, Maryland, Virginia and North Carolina.

Typical habitat for this mussel includes running waters of all sizes, from small brooks to large rivers. Bottom substrates include silt, sand and gravel, which may be distributed in relatively small patches behind larger cobbles and boulders. The river velocity is usually slow to moderate.

Dwarf wedge mussels appear to select or are at least tolerant of relatively low levels of calcium in the water.

Status

This mussel was once found at 70 locations in 15 major Atlantic Coast drainages. Its numbers have declined drastically; most populations that remain number in the 100's. The two exceptions are the lower Neversink River in Orange County, where there appears to be at least ten thousand if not tens of thousands of dwarf wedge mussels, and the Tar River in North Carolina.

Water pollution, including sediments and chemicals from agriculture and other development projects such as golf courses, have been implicated in the mussel's decline. Also, impoundments and channelization may have eliminated the mussel from former habitat.

Management and Research Needs

Studies by the Institute of Ecosystem Studies at Millbrook, New York and the Nature Conservancy are presently underway to better understand the habitat requirements of the dwarf wedge mussel. It is still largely unknown what determines the location of mussel beds on the river bottom. More detailed population surveys in the Neversink River will be done to determine the age structure, distribution and size of the New York population. Research will focus on potential threats to the mussels such as the effects of dams and agricultural practices.

Additional References

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